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**THE USE OF CHINESE PHILOSOPHIES TO ASSIST**  
**ACHIEVEMENT OF**  
**WORLD-CLASS BUSINESS EXCELLENCE**



**University of Warwick**

**Warwick Manufacturing Group**

**THE USE OF CHINESE PHILOSOPHIES TO ASSIST**

**ACHIEVEMENT OF**

**WORLD-CLASS BUSINESS EXCELLENCE**

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**To my**  
**Beloved Mother,**  
**Wife**  
**Catherina Kam-Fun Fan Lee,**  
**And**  
**Children**  
**Chun-Kei Lee,**  
**Jocelyn Yuen-Shan Lee,**  
**Stephanie Yuen-Yin Lee.**

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## **Declarations**

I declare that the work presented herein is my own work and has not been submitted to another institution for another award.

## Summary

The use of total quality management philosophies and business management strategies are an effort to approach quality process and business improvement as a systematic process. Its human resource theme describes how the organisation involves its employees in the quality and business management improvement effort by educating them about problem-solving tools, techniques and strategies. It also allows them to obtain the knowledge and skills they need to perform their jobs better. The technology and systems theme of TQM advocates the use of state-of-the-art technology that is available and economically feasible to achieve the desired goals. It also helps make use of the best business strategy practices to achieve business success.

The original theme of the research project was to develop a knowledge-based expert system that would help in the achievement of a world-class business excellence performance through continuous process improvement. The system so developed would make use of the knowledge of the system providing recommendations to its users as to what quality management remedial actions; quality strategic plans or business management strategies should be taken. The user's quality or specific management problems were initially identified. The system would assist users to achieve continuous improvement to world-class business performance level by using different quality management tools and techniques, gurus' philosophies and different business management strategies.

Development of an expert system for achieving world-class business performance through continuous process improvement requires a better knowledge base and

incorporating the Chinese philosophies for Eastern culture countries will be advantageous. The gap in knowledge set the scene for the direction of the research project. The gap in current thinking is:

- The lack of integration of Chinese philosophies into organisational development towards world-class business excellence
- The lack of understanding how Chinese values or thinking can assist achievement of world-class business excellence.

There are a number of major objectives in this research project:

- Review the philosophies of the quality gurus, total quality management principles and detailed elements of the ISO 9000 quality management system,
- Review the quality management improvement tools, in particular the Quality Function Deployment (QFD) methodology for quality management and business strategic planning.
- Understand the meaning of world-class business excellence by reviewing the quality awards, in particular the Malcolm Baldrige National Quality Award and The European Quality Award models.
- Understand the philosophy of Chinese philosopher Confucius and how this relates to quality management strategy and the economic influences.
- Understand the philosophy of Chinese philosopher Sun Tzu's The Art of War and The Thirty-six Strategies, and how these relate to business management strategies.
- Substantiate the Eastern gurus' philosophies and hypotheses in business management and strategic planning by surveys and analyses.

## Chapter 1 Introduction

### 1.1 Statement of the Research Problem

This research project was initiated in 1992 with the view of developing an expert system for an ISO 9000 quality management system. It was intended that the computer system so developed would assist organisations in achieving the certification of ISO 9000 quality management system. Both Hong Kong and China in the early 1990's had a strong demand for the ISO 9000 quality management system certification as well as acquiring the necessary background information for the quality system. In the 1990's, there were not many organisations in Hong Kong and East Asian countries, which succeeded in getting the certification of ISO 9000 quality management system. Because of the need for certification before entering into business with European countries, there were continuous demands on all aspects of ISO 9000 quality management systems including education and training, quality system auditing and statistical techniques.

The details of the ISO 9000 quality management system were studied and a preliminary literature survey was done. As the ISO quality management system was mainly on quality system documentation, the system itself did not necessarily satisfy the needs of organisations looking for total quality management and improvement. The theme of the research project was then reviewed and proposed to include Total Quality Management (TQM) philosophy. Franz proposed that TQM is a philosophy of management that is a process effecting the change of emphases of the following strategies: (Franz et al. 1992).

- changing the organisation culture;
- accomplishing quality goals through participatory management;
- encouraging education and training;
- striving for continuous process improvement;
- facilitating communication for improvement;
- identifying and satisfying customers' needs, both internal and external;
- measuring the process and displaying improvement positions;
- seeking to empower improvement on quality of products and services; and
- involving employees in quality and management processes.

The research project was then extended in the scope to *the development of a knowledge-based expert system enabling achievement of world-class business performance through continuous process improvement*. The research concentrated on how to achieve world-class performance in business and what are the major criteria and elements in both organisations and people working in these organisations in order to achieve the goals. It was proposed that meeting the criteria of TQM in an organisation through continuous process improvement would help achievement of world-class business performance excellence.

### **1.1.1 Initial Stage of the Research**

The implementation of TQM was considered to be difficult using traditional methods of changing an organisation. However, interest in the design and implementation of TQM programmes to enhance productivity and quality had increased greatly in a wide variety of organisations. Although there were some general agreements on the need of top management support for quality improvement activities, few mechanisms existed to assist management in providing inputs into the development of such programmes. Apart from external consultant help, the idea of using a decision support system with an imbedded expert system was revealed. The decision support system would assist managers or decision makers in both assessing the target for improvement as well as selecting TQM tools and techniques that were appropriate for organisations looking for changes. It was believed that the use of a computer-based expert system would enhance the overall speed of change. The system so developed would be equivalent to a number of experts helping the organisations in carrying out these changes. These changes range from the education and training of people, organisational culture change to quality system evaluation and improvement.

Assessment of the current state of quality in an organisation or enterprise can be accomplished by isolating the components of quality. Quality indicators such as those drawn from the Deming's Award, Malcolm Baldrige National Quality Award (MBNQA) and European Quality Award (EQA) can be self-assessed by organisations entering into TQM improvement processes. The choices of tools and techniques to accomplish these improvement goals are constrained by organisational resources, characteristics, and commitment to TQM, as well as their organisational

needs. These tools and approaches address specific organisational needs and range from statistical process control techniques to quality circles. A means is therefore needed to facilitate management participation in setting their TQM policies. Managers need to understand the nature of their quality problems and be actively involved in the determination of which quality techniques may be useful in solving the problems' impact upon their companies.

### **1.1.2 Second Stage of the Research**

The expert system so developed was intended to provide a mechanism for both determining the current and desired state of quality in the organisation, as well as providing information with respect to quality management tools and techniques. The decision supporting components of the system automates a questionnaire instrument that helps the decision-makers determine where improvement is most needed in the organisation and what quality management approach is most appropriate with respect to the organisation's environment and strategies.

The expert system should be a system for an ISO 9000 quality management system, TQM and business management strategies that helps to define and solve problems in these respective areas effectively. The system consists of phases of problem definition, alternatives generation and selection of the best alternative. The system is to assist all these phases of the problem-solving processes. It consists of practical descriptions, instructions, and improvement tools for both quality management and strategies a person can use to define the problem, develop alternatives, make a choice and provide solutions.

Total quality management and business management strategies are an effort to approach quality and business process improvement as a systematic process. Its human resource theme describes how the organisation involves its employees in quality improvement and business management by educating them about problem-solving tools, techniques and strategies. It also allows them to obtain the knowledge and skills they need to perform their jobs better. The technology and systems themes of TQM advocate the use of state-of-the-art technology that is available and



economically feasible to achieve the desired goals. It also helps make use the best business management strategy to achieve business success.

The system so developed also has the potential as a TQM and business management strategy training tool to enhance human learning and decision-making skills, in turn supporting productivity enhancement, quality improvement goals and business performance excellence. The system can be employed as a part of the management training or the total quality programme in an organisation. With practice, the system can be used to help improve the speed and quality of employees' problem-solving skills that are relevant to a TQM and business management decision-making work culture.

### **1.1.3 Third Stage of the Research**

Western philosophies of TQM are an amalgam of the ideas evolving from W. Edwards Deming, Joseph M. Juran, Philip B. Crosby, Armand V. Feigenbaum and Kaoru Ishikawa and many others. It is the management philosophy that focuses on fulfilling customer expectations by providing quality services and products as a result of continuous improvement to organisation processes. For most organisations, implementing TQM philosophy causes significant changes. The changes may impact on the organisational culture, the leadership, the organisational structure, or the design process. The best road map for this change is a strategic planning process that supports the organisation's vision and goals.

Most quality management theories can be traced back to the ideas and philosophies of the group of Western gurus because they form a corner stone of quality management theory and culture. The Malcolm Baldrige National Quality Award criteria focus on organisations, people, and management systems. Eleven out of Deming's fourteen points address organisational culture, leadership, and people. Levinson in his book 'The Way of Strategy' (Levinson, 1996) remarked that people, organisations, and management systems put together would win business wars and capture market share. People, organisations, and systems design will deliver quality products and services. Of course they use new technologies and statistical methods to accomplish them. Levinson wrote "Business, like war, is a competition between

organisation and systems” and “War drove the development of techniques for leadership, organisation, and competition.”

Study of Western management philosophies and practices revealed that there was little incorporation of philosophies of the Chinese philosophers like Confucius and Sun Tzu and Thirty-six Strategies in their current thinking. There were a number of economic reports and data published including those from the World Bank showing the high annual growth rate in these East Asian countries (Hofstede et al., 1988). These countries in the East, sometimes called the ‘Five Dragons’, are leading in performance with a much higher average annual growth rate over a period of years. Comparisons with those figures of the Western countries really show that they have high growth rates and future potential. Some years ago, a number of economists even failed to predict the staggering economic rise of the East Asian countries, and some of them even failed to recognise it when it was well underway.

*a) Neo-Confucian Hypothesis*

For the real explanation, researchers labelled the cultures of the East Asian countries ‘Neo-Confucian’, that is, rooted in the teachings of Confucius. Hofstede, Kahn and Bond (Hofstede et al, 1988) and others hold their views that specific nations have specific cultural traits that are “rather sticky and difficult to change in any basic fashion, although they can often be modified”. They defined culture as the collective programming of the mind that distinguishes the members of one category of people from those of another. This definition applies to national as well as to corporate level. For the Neo-Confucian hypothesis, it is the East Asian countries that have common cultural roots going far back into history. During the past 30 to 40 years this cultural inheritance has constituted a competitive advantage for successful business activities under the world market conditions.

Hofstede et al. also stressed that the cultural inheritances are not genetically transferred; they can be in principle acquired by any human being that is at the right place at the right time. People will receive the mental programming called culture from the day a person is born.

*b) Sun Tzu's The Art of War and The Thirty-six Strategies*

Sun Tzu's *The Art of War* is the most famous work on military operations in ancient China and it is also the most referred and well-known military text outside China (Wee et al., 1995). Being the oldest military treatise in the world, it is one of the greatest cultural legacies of the Chinese nation. The significance of Sun Tzu's works in influencing military thoughts has seldom been questioned. There is no direct evidence that Sun Tzu actually wrote down his own thoughts (Krause, 1996), however, his works and military statements were known to have been used extensively during the Warring States Period (about 403 BC to 221 BC) (Wee et al, 1995) in Chinese history.

The *Thirty-six Strategies* is a collection of thirty-six sayings that encapsulates thirty-six stories of strategic prowess in ancient Chinese history. Most of these stories are derived from military ploys applied during the Warring States Period or during the Three Kingdom Period in 220-265 BC (Cleary, 1991). Together, Sun Tzu's *The Art of War* and the *Thirty-six Strategies* have become part of the collective conscious of most educated Chinese. The author of the *Thirty-six Strategies* is unknown in spite of the renown of his work. The strategies are encapsulated in mnemonic phrases, many of which passed into proverb and are very widely known in the Chinese cultural sphere (Chinese Strategies, 1995).

#### **1.1.4 Direction of the Research**

The last few sections state the initial stages of the development of the research. Development of an expert system for achieving world-class business performance through continuous process improvement requires a good knowledge base, and incorporating the Chinese philosophies for Eastern culture countries will be advantageous. This gap in knowledge set the scene and direction of the research and outlines the future preparation of the thesis. The gaps in current thinking are:

- The lack of integration of Chinese philosophies into organisational development towards world-class business excellence.
- The lack of understanding how Chinese values or thinking can assist achievement of world-class business excellence.

To summarise, the previous sections help to identify:

- Traditional approaches and methods in changing an organisation towards business excellence are difficult.
- Use of computer technology such as an expert system will enhance the speed of changes.
- Western quality gurus' philosophies on quality and management focus on organisational culture, leadership and people. Incorporation of Chinese philosophies from Confucius and Sun Tzu will enhance the knowledge base through individual cultivation, ethics and business management strategies.
- Indicators of quality and business excellence performance such as those drawn from the Deming's Award, Malcolm Baldrige National Quality Award or European Quality Award for business excellence model are used to assess by organisations desiring to enter continuous improvement processes.

## **1.2 Aim and Objectives of the Research**

### **1.2.1 Aim of the Research**

The aim of this research is to determine the impact of applying Chinese philosophies to organisational change that helps achieve world-class business excellence in Hong Kong organisations.

### **1.2.2 Objectives of the Research**

#### *a) Description of Objectives*

There are a number of objectives under this research project:

- Review the philosophies of the quality gurus, total quality management principles and detail elements of the ISO 9000 quality management system.
- Review the quality management improvement tools, in particular the quality function deployment (QFD) methodology for quality management and business management strategic planning.
- Understand the meaning of world-class business excellence by reviewing the quality awards, in particular the Malcolm Baldrige National Quality Award and the European Quality Award for business excellence.

- Devise an instrument or methodology that would help organisations that wish to go for world-class business excellence programmes carrying out self-assessment and identifying priorities of an improvement programme.
- Understand the philosophies of the Chinese philosopher Confucius and how these relate to quality management and strategy as well as economic influences.
- Understand the philosophies of Chinese philosopher Sun Tzu's *The Art of War* and *The Thirty-six Strategies* and how these relate to business management strategies.
- Identify the gaps in knowledge, which are the lacks of incorporation of Chinese philosophies in the Western quality gurus' philosophies.
- Assist organisations in self-evaluation of their quality and business management strategies using QFD methodology.
- Substantiate the hypotheses of the Eastern gurus in quality management and business management strategic planning by surveys.
- Summarise the findings of the research and make further recommendations for further research work.

*b) Describe how the Objectives can be achieved*

The objectives of the research can be achieved in the following chapters. In Chapter 1, the scene of the research was set and presented. In Chapter 2, the philosophies of the principal quality gurus, total quality management principles and detail elements of the ISO 9000 quality management system were reviewed. In Chapter 3, the QFD methodology in quality management and business strategic planning was reviewed. In Chapter 4, the meaning of world-class business excellence based on the Malcolm Baldrige National Quality Award and the European Quality Award for business excellence model was discussed. In Chapter 5, the philosophies of Chinese philosopher Confucius and how this relates to quality management strategies were reviewed and discussed. In Chapter 6, the philosophies of Chinese philosopher Sun Tzu's *The Art of War* and *The Thirty-six Strategies* and how these relate to modern business and management strategies were reviewed and discussed. In Chapter 7, the evaluation of quality and business management strategies using QFD

methodology was included. In Chapter 8, the questionnaire design methodologies and bases of questions were discussed. Questionnaires so designed would help to substantiate the hypotheses of Eastern gurus' philosophies for quality management and business management strategies. In Chapter 9, summaries of the surveys' findings were consolidated and presented. These surveys' findings were used to demonstrate the impact of incorporating Chinese philosophies in Hong Kong business improvement programmes. In Chapter 10, based on the surveys' findings, conclusions of the research were made. In Chapter 11, recommendations for further work were suggested. That included the development of a business management and strategy expert system based on the new knowledge-base, the research on the Christian virtues and characters for Western countries for strategic total quality management in contrast to employ Confucius' philosophies for the East Asian Neo-Confucian countries.

### **1.3 Contributions of Research**

#### **1.3.1 Contributions to Knowledge**

The aim of this research is to determine the impact of applying Chinese philosophies to organisational change that helps achieve world-class business excellence in companies. This research looks into some very old solutions and provides answers that have existed for thousands of years. A lot of today's competitive improvements are the rediscoveries of the ancient sayings and philosophies as well as the way of strategies. These ancient philosophies and strategies are the art and science of managing organisations in a competitive environment to achieve world-class business excellence.

Achieving Global Total Quality Management Strategies (GTQMS) employing both Western quality gurus' and Eastern guru Confucius' philosophies adds a new dimension to Strategic Total Quality Management (STQM). On the other hand, evaluations of business excellence strategies by employing Sun Tzu's philosophies for business management strategic planning was also devised.

### **1.3.2 Contributions to the Development of Expert System on Quality Management and Business Strategies**

An expert system on quality management and business strategies incorporating Chinese philosophies together with an appropriate knowledge database is undergoing development in parallel with the research project.

The system so developed make use of the knowledge of the system providing recommendations to its users as to what quality management remedial actions; quality strategic plans or business management strategies should be taken. The user's quality or specific management problems were initially identified. The system also assists the users to achieve continuous improvement to world-class business performance level by using different quality management tools and techniques, gurus' philosophies and different business management strategies.

### **1.4 Research Methodologies and Organisation of the Thesis**

As has been described in the aims and objectives section, it is essential to identify the gaps in the knowledge that exist in Western philosophies on total quality management and business strategies.

The current understanding and applications of ISO 9000 quality management system and total quality management philosophies in Hong Kong were reviewed through questionnaire to assess the current status of the quality management situation in the region.

Five surveys with properly designed questionnaires based on the research of the philosophies were conducted. Target organisations or groups of people were carefully selected. In some surveys two groups from different populations were drawn for statistical comparison of significant differences. Statistical analysis methods were used to assist survey analysis and reporting. All detail computations were carried out on the computerised statistical SAS package.

In Hong Kong, most of the ISO 9000 certified companies are registered under the Hong Kong Quality Assurance Association (HKQAA) agency who publishes a buyer's guide of these companies regularly. A mailing list published quarterly by the agency is then very up-to-date and meets the objectives of the surveys. The surveys' questionnaires were then sent to those ISO 9000 registered companies that addressed to appropriate management level personnel. Some of the returned questionnaires had letters attached to them asking for future summaries of the surveys, which is very encouraging.

The other target group of people was those who have been working in their respective sectors for quite a number of years and their levels of education are sub-degree levels. A typical example is the technical or engineering people who have had a number of years of experience in industries at supervisory level.

This thesis is written and presented with the view of giving a clear understanding of the research methodologies used and setting a clear scene to the readers the aims and objectives of the research project. This project involves good understanding of the philosophies of the TQM as well as Chinese philosophers Confucius, Sun Tzu and the understandings of the Thirty-six Strategies. To facilitate the better understanding of these philosophies, where possible flow-charts and tables consolidating the essential points of the philosophies were used.



## **Chapter 2 Understanding of the ISO 9000 Quality Management System, Total Quality Management System and Philosophies of the Principal Quality Gurus**

### **2.1 ISO 9000 Quality Management System**

#### **2.1.1 Introduction to Quality and Quality Management**

The quality standard published by the American Society for Quality Control defined quality as the totality of features and characteristics of products or services that bear on their abilities to satisfy implied or stated needs. Stated needs are determined by the contract, whereas implied needs are a function of the market and must be properly identified and defined. These needs involve safety, availability, maintainability, reliability, usability, economics and environment. They are defined by translating the features and characteristics for the manufacture of a product or service to these specifications. Specifications are measurable and provide a quantifiable and operational definition of quality. If the specifications do not satisfy the customer needs, they should be changed. Needs usually change over time, thereby requiring a periodic reevaluation of specifications.

Quality management is introduced through the promotion of quality awareness, enhancement of existing quality services and introduction of quality management certification. Companies who decide to manage the quality of their operations also face the problem of deciding which of the many philosophies for quality management they should follow. Development of a quality system standard provides a basis for both manufacturers and suppliers to assess the quality of their products, incoming materials and other services.

#### **2.1.2 Responsibility for Quality in an Organisation**

*Quality* is not the responsibility of any one person or department; it is the job of everybody. It includes the assembly-line workers, purchasing agents, engineers, managers and top management of the organisation. The responsibility for quality begins when marketing determines the customer's quality requirements and continues until a satisfied customer receives the product. *Quality control* is the use of

techniques and activities to achieve, sustain, and improve the quality of a product or service.

All the planned or systematic actions necessary to provide adequate confidence that a product or service will satisfy the given requirements for quality is called *quality assurance*. It is a continuing evaluation of the adequacy and effectiveness of the quality system with a view of initiating corrective actions where necessary. There is a distinctive difference between quality control and quality assurance. *Quality control* is involved with the activities of specification, design, production, installation, inspection, and review of usage. *Quality assurance* is involved with these activities as well as the entire quality system.

The responsibility for quality is delegated to various departments with the authority to make quality decisions, such as decisions on cost, scrap rate, or level of non-conformance of products, are included. The departments responsible for quality control include marketing, product engineering and design, purchasing, engineering, manufacturing, inspection and test, packaging and shipping, and product service.

### **2.1.3 ISO 9000 Series Quality Management System and Detail Elements**

ISO 9000 is a series of international standards for quality systems. They were developed by the International Organisation for Standardisation (ISO) and its objective is to promote the development of standards, testing and certification in order to encourage the trade of goods and service. It may also be applicable to other business sectors regardless of their organisation size, product type or service. These standards specify requirements and recommendations for the design and assessment of quality management system, the purpose of which is to ensure that suppliers provide services and produce products that satisfy the specified requirements. Ultimately the standards provide the basis for a company to achieve quality system registration. Achieving registration does not guarantee defect-free products and services; however, it does demonstrate that a company has a system in place for effecting and improving quality with a distinctive competitive advantage. ISO 9000

is not a revolutionary international quality standard but is evolutionary. It evolves from existing and widely used quality standards.

ISO 9000 can be traced back to the initial military quality standard developed in 1963. It evolved as well from the NATO quality standard, and the British quality standard, BS 5750. By the late 1970's, several European countries had developed quality standards that followed the NATO model. The British Standards Institute published their national quality standard BS 5750 in 1979. Anticipating the importance of a shrinking global marketplace, the need for across-border transparency and harmonised global quality standards, ISO formed a technical committee to develop an international series of quality standards. The committee gathered representatives from various ISO member nations to identify and develop quality criteria that would be acceptable and useful by all countries. The task was not to develop a national quality prize like the Malcolm Baldrige National Quality Award in United States, which signifies world-class quality by high-scoring companies, the goal was to develop a sufficiently high hurdle that most companies could exceed. It was almost a lowest common denominator of existing quality standards and one that would provide customer assurance of product quality.

The International Standards in ISO 9000 series is a quality assurance standard, consisting of ISO 9000, 9001, 9002, 9003 and 9004 (ISO 9000 series, 1994); it was issued and published in 1987. Since the publication of these five standards, they have been adopted as national standards in most of the countries. They have become the basis of quality system requirements for product conformity assessment in the global marketplace. These standards are based on the idea that certain minimum characteristics of quality management system could be usefully standardised, giving mutual benefit to suppliers and customers alike. This ISO 9000 series consists of independent quality system standards dealing with quality that can be used for external quality assurance and internal quality management purposes. These are the generic standards containing the minimum requirements for establishing and maintaining a documented quality system to keep the confidence of customers that the intended products or services will meet their requirements.

ISO 9001 is the most comprehensive standard including all activities at all stages, namely design, development, production, installation and services. It is emphasised that the quality system requirements specified in ISO 9002 and ISO 9003 are complementary to the technical specified requirements. It is intended that these International Standards will normally be adopted in their present form, but on occasions they may need to be tailored for specified contractual situations. ISO 9000 series provides guidance on such tailoring as well as selection of the appropriate quality assurance model.

From the beginning of its publication, the adoption of the standards was well received. The European Community ruled that anyone doing business with them requires ISO 9000 certification. Most other countries like USA, Canada and Japan followed. The number of organisations receiving ISO 9000 certification increases tremendously. The standards provide some good models of quality management systems; third party audit and registration systems are established in most of the countries to provide a mechanism for contractual assurance of a good quality management system required by the customers.

These International Standards specify quality system requirements for use where a contract between two parties requires the demonstration of a supplier's capability to design and supply product. The requirements specified in the International Standards are aimed primarily at preventing nonconformity at all stages from design through to service.

As mentioned by Tummala et al. (Tummala et al., 1994), conformance is the corner stone of the ISO 9001 standard. Management must always establish and maintain an effective documented quality system to provide confidence to customers in producing goods and services that satisfy the specific requirements. Proper corrective actions are required in investigating the root causes of nonconformity by analysis of the procedures, system, work instructions, customer feedback to find a solution to prevent reoccurrence.

The ISO Standards address some 20 areas of business activity, and encompass most aspects of the manufacturing enterprise, from product design, through production, to field service and support.

The detail elements of ISO 9001 quality standards are:

1. Management Responsibility
2. Quality System
3. Contract Review
4. Design Control
5. Document and Data Control
6. Purchasing
7. Control of Customer-supplied Product
8. Product Identification and Traceability
9. Process Control
10. Inspection and Testing
11. Control of Inspection, Measuring and Test Equipment
12. Inspection and Test Status
13. Control of Non-conforming Product
14. Corrective and Preventive Action
15. Handling, Storage, Packaging, Preservation and Delivery
16. Control of Quality Records
17. Internal Quality Audits
18. Training
19. Servicing
20. Statistical Techniques

Liebman (Liebman, 1993), Bradley (Bradley, 1994) and Tummala et al. (Tummala et al., 1994) presented various frameworks and core concepts of the ISO 9001 quality standards that help to establish and maintain a proper documented quality system.

## **2.2 Total Quality Management System**

### **2.2.1 Introduction**

In the 1920's, the concept of quality management was used assisting industrial development in the United States. At that time, quality control was intended simply to control and to limit the number of defective items created during industrial processes; then, numerous refinements occurred. Shewhart, Deming, Juran, Feigenbaum, Crosby and others indicated that better ways to approach the quality control concept existed. The effective management philosophy was focused on actions to prevent a defective product from ever being created, rather than simply screening it out.

Shewhart applied statistics to industrial processes in the World War I era, using statistical process management methods that could provide an early warning and allowed the process to be adjusted prior to producing a defective product. Deming and Juran, based on Shewhart's concept of using statistics to control processes, limited variation and thereby improved quality. Deming's quality management philosophies were developed in the years prior to World War II. Deming believed that responsibility for quality should be shared by everyone in an organisation. Then, MacArthur brought Deming to Japan to serve as a management consultant to the Japanese as they rebuilt their industrial base. The Japanese made additional contributions to the Total Quality Management (TQM) philosophy, mostly in the areas of variability reduction, problem solving, teamwork and defining and satisfying customer expectations. Taguchi and Ishikawa contributed heavily to these disciplines.

The TQM concept was developed under the guidance and teachings of Feigenbaum, Deming, Juran and others. Crosby later promoted the 'Zero Defects' concept, emphasising adherence to requirements and employee motivation. All these persons contributed to what is known as TQM that has continued to emerge as a predominant management philosophy.

TQM emerged as a new management style and philosophy in 1990's, which helps to improve the business effectiveness, flexibility, competitiveness as well as ways that

things are being done. TQM emphasises the proper use of resources, application of quantitative and analytical tools and techniques for improving the materials, processes and services received and provided by a company. One of the major TQM goals of a company is to satisfy the needs of the customer now and in the future. TQM also helps to identify, understand and review the requirements of customers and satisfy these requirements.

TQM is a continuous improvement process that integrates different management skills and quality improvement tools making use of the Deming wheel (Plan, Do, Check and Act) for improvement. In Deming's wheel the 'plan' defines the process that ensures documentation and sets measurable objectives against it. The 'do' executes the process and collects the information required. The 'check' analyses the information in a suitable format. The 'act' obtains corrective action using TQM techniques and methods and assesses future plans. At the end of each cycle the process is either standardised or adjusted based on the analysis and the cycle then continues (Kanji et al., 1993).

TQM addresses the quality of management and the management of quality. It involves everyone in an organisation to develop processes that are customer-oriented, flexible and constantly improving in quality. TQM is a means through which an organisation creates and maintains a culture committed to continuous improvement. Under TQM, an organisation will create a positive and dynamic working environment and teamwork. All employees focus their efforts to better understand and meet internal and external customer needs, thereby, continuously increasing customer satisfaction.

TQM philosophy provides a comprehensive way to improve the organisation's performance and quality by examining each process through which work is done in a systematic, integrated, consistent manner. It includes understanding the idea of variation and its implications for process improvement. TQM addresses all forms of work and applies equally to every person in the organisation, including top management, sales, engineers, departmental managers, designers and production workers.

### **2.2.2 Understanding of Total Quality Management**

There are many definitions of TQM published; Mann et al. (Mann et al., 1994) present TQM as:

- A strategic approach with the objective of producing the best product and service as possible through constant innovation.
- A way of managing the effectiveness, flexibility and competitiveness of business as a whole.
- A system of activities to ensure products and services of the quality required by the customers are produced and delivered economically.
- One that embraces the whole cycle of customer satisfaction from the interpretation of the requirements prior to the ordering stage, through to the supply of a product or service at an economical price and on to the perception of the product after that has been used over a period of time.
- An approach for continuously improving the quality of goods and services delivered through the participation of all levels and functions of the organisation.

TQM is a management philosophy that builds a customer-driven learning organisation dedicated to total customer satisfaction with continuous improvement in the effectiveness and efficiency of the organisation and its processes. According to Corrigan (Corrigan, 1994), TQM resembles a house that requires continual care and upkeep to remain viable. Therefore, a 'house of TQM' is one in which each function continuously improves the effectiveness and efficiency of its processes, based on customers' needs and expectations. Each function works to improve the key work or business processes that move toward the goal of achieving world-class performance.

### **2.2.3 Components of Total Quality Management**

There are a number of key elements that help an organisation produce a TQM environment: (Mann et al., 1994)

- a strong framework to retain order and control
- the continuous striving for improvement
- the adaptability to change to ensure the organisation responds to customer requirements



A supplier or customer relationship is forged whenever a business purchases goods or services from another and each time a person asks another to undertake an activity. There are two main categories of customers, internal and external customers. In a large business, there is a great interaction between internal and external customers. Each of these customers may influence the decision to purchase goods or services. It is important to understand the requirements of all the groups within the customer's organisation who influence purchasing decision.

An effective quality management system is a key building block for TQM. It describes a controlled, documented system of procedures, designed to ensure that only conforming products or services are released to customers. An effective quality management system should ensure that the activities of the business are controlled and documented. This enables everyone to know what he or she is doing and how to do it. Consequently, inefficiencies and waste may be targeted and eliminated. A quality management system focuses on continuous quality improvement of various activities:

*a) Management commitment*

Having recognised the need for quality improvement, the first objective is to secure management commitment to the new company culture, focusing on preventing errors, rather than fixing them once they have arisen. It is necessary to gain the support and commitment of the entire work force. The attitudes and actions of employees are generally determined by what they believe management wants of them. It is therefore essential that management define clearly and unambiguously its requirements in relation to quality.

*b) Employee involvement*

Employees are a company's most valuable resource. They are empowered to make decisions, pursue ideas and take risks so that they can experience pride of workmanship and independence. Therefore, employees at all levels are empowered to improve outputs by coming together in new and flexible work structures to solve problems, improve processes and satisfy customers. Besides, the more people understand the business, the greater the role they can play in the

quality management process. People must be encouraged to manage and improve the process within their ability and responsibility.

*c) Education and training*

Quality is based on the skills of every employee and their understanding of what is required. Education and training of all employees provides the information they need on the mission, vision, direction and strategy of the organisation and also the skills they need to secure quality improvement and resolve problems. Hence, the company should provide the right level of education and training to employees to ensure that they have a general awareness of which quality management concepts, skills and attitudes are appropriate and suited to the continuous improvement philosophy. Additional training on benchmarking, statistics, and other techniques is required to pursue and achieve complete customer satisfaction.

*d) Teamwork*

Teamwork can provide an opportunity for people working together in pursuit of TQM in ways that they have not worked together before. By bringing people together in teams with a common goal, quality improvement becomes easier by better communication within departments. Teamwork can provide a focus for a group of people looking at cross-functional problems and solving them, thus allowing them to identify and adopt new ways of doing things. This can be very effective, making significant changes part of TQM process and moving towards inter-departmental teams to define and solve problems. The organisation will be able to use the power of the team to suggest changes and then to implement the changes in areas and at a pace that would previously have been impossible.

*e) Measurement*

Measurement enables management and employees to focus attention on areas of weakness and monitor progress. Since all departments are involved in meeting customer requirements and in generating and fixing errors, all departments should be involved in the continuous improvement process, and all departments need to introduce appropriate measures to enable performance to be monitored.

Then, measurements can be used to highlight opportunities for improvement and also to monitor the success of the continuous improvement process.

*f) Error prevention*

Prevention requires everyone within the company to believe that errors are not an inevitable part of working life; that correct systems, training, equipment, materials and personal attitudes, can prevent errors occurring. This belief is summarised in the Zero Defects concept. The fundamental principle underlying the Zero Defects concept is that it is possible to do all operations right at the first time. Zero Defects does not mean that everything has to be gold plated or the place has to be crawling with inspection. It simply means that everyone should believe that it is possible to carry out activities without error. If errors are not expected to occur and preventive actions are introduced to eliminate problems, then errors will not happen. Therefore, a lasting and continuous improvement in quality can be achieved only by directing organisational efforts towards preventing problems occurring. A prevention-based system can improve product and service quality and increase productivity by placing the emphasis on product and process design and process control. Quality is created in the design stage and not in the control stage; the majority of quality-related problems are caused by poor or improper designs. In the prevention approach, there is recognition of the process as defined by its input of people, machines, materials, method, management and environment. (Dale, 1993)

*g) Communications*

Communication among management, employees, customers and suppliers is vital to all business. A simple but effective company-wide communication network is essential for building trust throughout the layers of an organisation. Vision, purpose and goals must be shared with all employees; free-flowing communication without fear is critical. (Nadkarni, 1995)

*h) Recognition*

Most employees want to get more out of a job than just their wages or salary. Job satisfaction and whether they feel their efforts are appreciated, can be just as

important. The recognition system increases the involvement of all employees in their work, and gives them say in how their job can be done more effectively. This system can have a significant contribution to quality improvement.

In summary, management commitment and employee involvement is essential from the early stages for implementing TQM. The TQM programmes employ teamwork to facilitate improved communication and problem solving. Some quality management tools such as total quality control (TQC) and the Zero Defects approach, should be studied to achieve quality.

In order to develop quality as a strategic issue, a new definition of quality, which takes account of its emergent role as a competitive weapon centred on customer needs, is needed. It is known that characteristics of the quality strategy of an organisation can be divided into improvement, customers, facts, involvement and commitment.

The quality strategies, which are essential for TQM, can be characterised as follows:

- excellence in all managerial, operational and administrative activities
- a culture of continuous quality improvement
- the creation of customer and supplier relationships
- involvement of all employees
- market-orientated organisational practices

In general, TQM can be used as a strategic variable, which helps an organisation to:

- understand what business to be in
- compete in that business
- develop short-term and long-term plans
- implement the process for continuous improvement

#### **2.2.4 Implementation of Total Quality Management**

A practical method of developing a TQM approach is to identify the basic problems affecting the organisation's activities. This first stage of activities will not only serve as a significant goal but also help to moderate necessary improvement of the

organisation. In the current industrial environment, the implementation of the TQM process is one of the most complex projects that a company can undertake because of the need for all employees, including top management, to accept cultural change.

TQM requires and assumes that an effective quality assurance system exists and is followed. Unfortunately, this is not always a valid assumption. Any organisation starting a TQM effort should assess the adequacy of its underlying quality system. It becomes a baseline from which to start quality improvement activities. Using an ISO 9000 standard for this assessment would provide excellent measurement criteria and a structured approach to periodic evaluation of the quality system. ISO 9000 starts the ball rolling but it is necessary to keep it going to reach TQM. TQM helps to streamline things from start to finish. The TQM effort will continuously force change in the quality system. This advantage could become a long-term critical success factor.

The process of implementing TQM in an organisation can be developed in the following four stages: - (Kanji et al., 1993)

*Identification and preparation*

- identifying and collecting information about the organisation in the prime areas where improvement will have most impact on the organisation's performance
- preparing the detailed basic work for the improvement of all the organisation's activities

*Management understanding and commitment*

- making sure that the management understands the objective and methodology of TQM and are prepared to adopt them all the time

*Scheme for improvement*

- identifying and resolving quality issues by involving all management and supervision in a proper scheme of training and communication

*New initiative, new target and critical examination*

- starting new initiatives with new targets and taking the complete improvement process to everyone, indicating supplier and customer links in the quality chain
- obtaining information about progress and consolidating success

There is no model built for TQM implementation. Many companies start to implement ISO 9000 standard first. This is because the initial investment for implementing an ISO system is lower than that for implementing TQM and the time frame is much shorter. To implement an ISO system takes months rather than years for TQM. The ISO system is the building block for TQM. It first improves operational efficiency and the consistency of a company's products and services. This approach provides a company with a strong quality assurance foundation from which TQM efforts can be built (Bradley, 1994).

The key factors for TQM implementation includes (Drensek et al., 1995):

- Visible and active commitment from top leadership is essential to success
- Top leadership commitment must be used to rally middle management
- The process must be led by management without the option of opting out
- The process must be understood and accepted by management before employees are involved
- Involve employees because, as a rule, they should be involved
- Substantial inflow of resources
- Effective measurement techniques

The implementation of TQM is very much based on general understanding and common sense. The challenge of this depends heavily on the morale and physical will of the organisation to carry it through. A TQM philosophy must be driven throughout the entire organisation, as it requires major change in the way companies operate. The common barriers to implementation of TQM are (Corrigan, 1995):

- Lack of constancy of purpose
- Lack of a structured strategy

- Lack of employee understanding and involvement
- Lack of proper training
- Lack of adequate leadership

### **2.2.5 Importance of TQM and Benefits**

The driving force for companies to develop and adopt a TQM programme is commercial. It has been said that in an organisation quality is meeting the needs of their customers. In the marketplace, quality is meeting those looks for better products or service at a lower cost. However, the implementation of TQM principles in an organisation would lead to expanding market share, increased revenues, high staff morale, high employee involvement etc., (Caldwell et al., 1994).

The benefits of TQM implementation include (Goh & Ridgway, 1994):

- Increased revenue
- High staff morale
- Increased the focus on the needs of customers
- Having more advanced ability to compete in the world market
- Adequate training provided to give better knowledge of jobs and quality systems
- Reduction in cross-functional barriers.
- Increased customer awareness
- Involvement in company
- Improving efficiency and productivity
- Increasing reliability of products or services
- Enhanced relationships with suppliers

## **2.3 Philosophies of Principal Quality Gurus**

As mentioned in Chapter 1, most quality management theories can be traced back to the ideas and philosophies of a group of quality gurus because they form a corner stone of quality management theory and culture. A brief review of the philosophies of these leading gurus is presented below:

### **2.3.1 Dr. W. Edwards Deming**

About 40 years ago, Dr. W. Edwards Deming started a revolution of improvement with a simple theory: "Business survival is dependent on an unbending commitment to continuing quality improvement" (Deming, 1982). He further urged top management to change and constantly innovate and commit resources to support innovation and continuous improvement (Deming, 1986). Today, it is essential that companies will have the wish to establish the critical linkage between Dr. Deming's theory and a literal cultural transformation. The transformation is based on the understanding that quality alone can simultaneously lower cost, increase customer satisfaction and ensure survival in the face of mounting global competition.

Deming is the most renowned quality guru. He stated: "Everyone doing his best is not the answer. It is necessary that people know what to do. Drastic changes are required. The responsibility for changes rests on management." Thus, Deming put the responsibility for continuous improvement of products and services to meet customer needs and to stay ahead of competition on management. Deming's major philosophy is that quality improvement is achieved through the statistical control of all processes (not just those involved with the product) and the reduction in variability of these processes. He emphasises that this can only happen if management allows it to happen by encouraging employee participation and if employees are able to contribute through understanding processes and how they can be improved.

Deming suggested to Japanese industries the use of statistical information systems to obtain solutions. He reckoned that most industries try to get things done but never make use of the information for better process improvement, tracing the errors back to their sources for better quality improvement.

Deming spent 30 years contributing to and leading the Japanese economy out of the devastation of the war to become the dominant industrial power of the 1980's. He was, and still is, a national hero in Japan. The most prestigious national quality award is still the Deming Prize.



Deming had proposed fourteen points to guide an organisation's transformation to total quality. His philosophy is as much about quality management style and leadership as about the practices of quality itself. Through his fourteen points of management obligations and management commitment, he removed the major roadblocks to quality improvement and eventually to total quality management. Deming's fourteen points of quality management are:

#### Deming's fourteen points

1. Create constancy of purpose to improve product and service.
2. Adopt new philosophy. Management must accept responsibility and lead.
3. Cease dependence on inspection; build quality into the product.
4. End the awarding of business on price. Instead minimise total cost of service.
5. Improve constantly and forever the system of production and service.
6. Institute training on the job.
7. Institute leadership and supervision of workers.
8. Drive out fear to improve the effectiveness of all employees.
9. Break down barriers between departments, all departments must work together to achieve results.
10. Eliminate slogans, exhortations and numerical targets.
11. Eliminate quotas or work standards and management by objectives or numerical goals.
12. Remove barriers that rob people of their right to pride of workmanship.
13. Institute a vigorous education and self-improvement program.
14. Put everyone in the company to work to accomplish the change in how the company works.

#### Deming's deadly diseases

1. A lack of constancy of purpose.
2. Emphasis on short-term goals.
3. Evaluation of performance, merit rating or annual review.
4. Mobility of management.
5. Management only by the use of visible figures with no consideration for unknown figures.

### **2.3.2 Dr. Joseph M. Juran**

Dr. Joseph M. Juran presented his quality management seminar in Japan in 1954. He emphasised that quality control is an integral part of management control. He reiterated that quality control is a tool for management that ensures the establishment of total quality control.

Juran advocated an impressive managerial process for top management that is called the Juran Trilogy: quality planning, quality control and quality improvement that can be used effectively for managing of quality (Juran, 1989). The whole process begins with quality planning, that is, design for quality, meeting the needs of customers. It then goes further in developing processes responding to these needs. He then emphasised the significance of quality improvement by introducing the concept of cost of poor quality. Quality improvement should be aimed at reducing continuously the costs of poor quality. He believes that the quality improvement is to reduce the defects to zero and hence reduce all the waste. Thus quality of the products and services would be improved (Juran, 1989).

Juran recommended ten steps to quality improvement for an organisation for self-improvement in order to meet their current and future needs.

#### Juran's ten steps to quality improvement

1. Ensure all employees are aware of the need for quality improvement. This requires management leadership.
2. Set specific goals for the continuous improvement of quality in all activities.
3. Establish an organisation to ensure goals are set and a process for achieving them is established.
4. Ensure all employees are trained to understand their role in quality improvement.
5. Ensure problems preventing quality improvement are eliminated by setting up problem-solving project teams.
6. Ensure quality improvement progress is monitored.
7. Ensure outstanding contributions to quality improvement are recognised.
8. Ensure progress and outstanding contributions are publicised.

9. Measure all processes and improvements.
10. Make sure the continuous improvement of quality and the setting of new quality goals is incorporated into the management systems of the organisation. Make sure rewards are based on the results achieved.

Juran emphasised quality is 'fitness for use', that should be different from both user's and manufacturer's view points. He stressed the requirements for improvement through training and hands-on leadership by top management. Since the early 1950's the very high profile of quality in Japan has contributed directly to the nation's success in exporting high quality goods world-wide.

### **2.3.3 Dr. Philip B. Crosby**

Dr. Philip B. Crosby stated that effective quality management must be practical and achievable and must start at the top (Crosby, 1989). He defined quality as 'conformance to requirements'; any products or services consistently produced meeting the original design specifications are of high quality. He emphasised the management of cultural change of an organisation for quality improvement: doing things right the first time, defect prevention over detection, organisation-wide involvement to develop quality improvement strategies. He also stated that zero defects should be the management goals, if quality is improved, then the total costs will fall, which led to his famous claim that "Quality is free" (Tummala et al., 1994).

Crosby uses a disciplined and highly structured approach that is not solely product-oriented, but is based entirely on 'prevention' and is readily applicable to any enterprise. With his concept of quality management, Crosby provides a well-defined road map for attaining a new management commitment and culture program. A well-structured approach, which demonstrates how the culture can be changed and a person improved, is provided by the fourteen steps quality improvement process (Crosby, 1989). Because of his focus on changing the management culture, Crosby's approach is clearly a top-down process (Smith et al., 1995).

Crosby recommended fourteen steps that any organisation can follow to achieve continuous quality improvement.

Crosby's fourteen steps

1. Management commitment.
2. Quality improvement team to pilot the improvement process.
3. Measurement of quality throughout the organisation.
4. Cost of quality analysis throughout the organisation.
5. Quality awareness of all employees.
6. Corrective action implementation.
7. Zero Defects program planning to plan the commitment to Zero Defects.
8. Employee education.
9. Zero Defects day to make the Zero Defects commitment.
10. Goal setting to target improvements.
11. Error-cause removal to highlight and fix problems causing non-conformance.
12. Recognition of those who make an outstanding contribution.
13. Quality councils to co-ordinate improvement and share ideas across sites or divisions.
14. Do it all over again.

#### **2.3.4 Dr. Armand V. Feigenbaum**

Dr. Armand V. Feigenbaum believes that for quality programs to be maintained and progressed, they must comprise a systematic group of quality disciplines. He started introducing total quality control (TQC), in the 1950's by integrating the quality deployment, quality maintenance, and quality improvement efforts of the organisations to enable different groups of people at the most economical levels that will meet customer satisfaction.

Thus, according to him, quality control is considered as a business method rather than technical and he believes that quality has become the single most important force leading to organisational success and growth. TQC requires effective ways to integrate the efforts of large numbers of people, with large numbers of machines and

large quantities of information (Tummula et al., 1994). Feigenbaum recommended some steps to meet fully customer satisfaction.

Feigenbaum's core concepts of quality management are:

Feigenbaum's steps

1. Quality leadership
2. Company-wide introduction
3. Continuous motivation
4. Education
5. Measurement

### 2.3.5 Dr. Kaoru Ishikawa

Dr. Kaoru Ishikawa has further intensified the concept of TQC in advancing the Japanese approach to total quality control. His methodology includes the involvement of all employees in all stages of decision making; the use of quality circles for problem solving and extensive use of statistics and quality control at all stages. He has long been considered one of the foremost authorities on quality control.

Ishikawa developed the 'seven quality tools' to solve the problems generated in companies. The seven quality tools of Ishikawa are *Pareto chart, Cause-effect diagram, Histogram, Check sheet, Scatter diagram, Flow chart, Control chart*.

Ishikawa's quality philosophy

1. Quality begins with education and ends with education
2. To know the needs of customers first
3. Inspection is no longer necessary
4. Remove the root cause and not the symptoms
5. Quality control is the responsibility of all workers and all divisions
6. Do not confuse the means with the objectives
7. Put quality first and set sights on long-term profits
8. Marketing is the entrance and exit of quality

9. Top management must not show anger when facts are presented by subordinates
10. Seven tools of quality control can be used to solve the problems

Ishikawa states fourteen points of difference between Japanese experience and Western experience. Although Japan adopts ISO 9000 in the 1990's, they use their quality methods. He shows how the Japanese management style has proved more effective and successful than its Western counterparts.

Ishikawa's fourteen points of Japanese management styles are:

1. Professionalism Barrier
2. Vertical Social Structure
3. Labour Unions
4. Taylor Absenteeism
5. Class Consciousness
6. Motivation Reward
7. Lifetime Employment System
8. Writing System Culture
9. Communication
10. Education
11. Religion Attitudes
12. Subconscious-suppliers
13. Demography of Capital
14. Government Policy Stimulation

## **2.4 Conclusion**

Although quality gurus have different approaches in their TQM philosophies for continuous improvement, their emphasis on applications and objectives are quite similar. It relates to the continuous improvement of the work, by removing any unwanted variations or improving the underlying work processes.

The ISO quality standards provide some good models of quality management systems. Third party audit and registration systems are established in most of the

countries to provide a mechanism for contractual assurance of a good quality management system required by the customers. This provides a requirement for quality management. Although the system in place does not necessarily guarantee that the products and services will meet the customers' requirement, it is perhaps preferable to *start Total Quality Management from ISO 9000*.

The philosophies of the Western quality gurus on TQM are mainly focused on the change of organisation culture, management commitment and policies, technological changes, and customer satisfaction. There were many successful TQM stories being reported. On the other hand, those unsuccessful cases always blame the difficulties of getting organisation cultural change, poor management commitment and policies, reluctance to accept changes such as new technology, etc. Most of these issues are related to the people and system rather the techniques and technology. To get the TQM issue off the ground, it would be more advantageous to seek changes from the individual behaviours and attitudes within organisations. The next few Chapters will discuss what and how TQM implementation is being effected in East Asian countries, in particular Hong Kong.

## **Chapter 3    Understanding of the use of Quality Function Deployment (QFD) Methodology in Quality Management and Business Strategic Planning**

### **3.1    Quality Improvement Framework and Quality Improvement Tools**

Quality improvement activities can be treated as process improvement activities. The process improvement framework suggested by Straker (Straker, 1995) provides a general context in which the applications for quality improvement can be identified. The process improvement framework is self-repeating; however, there are several situations where stages of the framework may need to be self-repeated as well. The basic stages of the quality improvement framework may be presented as:

1. **Identify:**     Identify and select the quality process to be improved.
2. **Define:**     Resource projects, set the objectives and plan future stages.
3. **Problem:**    Gain a detailed understanding of the quality process and identify specific problems to be addressed.
4. **Cause:**      Identify and verify the major cause of specific quality problems.
5. **Solution:**    Identify and verify alternative solutions to key causes.
6. **Implement:**  Implement identified quality solution.
7. **Review:**     Check on success of the quality project.
8. **Follow-up:**  Action on findings of review, including standardisation of success, following up on failures and identifying further improvement.

This quality improvement framework is based on what is often called the PDCA Deming Cycle originated by Shewart. The cycle is a process improvement where incremental actions are measured and compared with the desired expectations. The PDCA Cycle in the process improvement framework is having the Plan (Identify, Define, Problem, Cause, Solution), Do (Implement), Check (Review) and Act (Follow-up) cycle repeated and self-repeated at each of the stages for improvement.

Within this quality improvement framework, the activities of collecting, organising, interpreting information in various forms appear very frequently, reflecting the



general requirements of using whatever information and data available for decision making and action. These activities are further expanded to identify activities for any specific application of quality improvement tools.

A wide range of quality improvement tools and techniques are available to assist management in the TQM implementation. These tools may help organisations to improve performance in the following key areas: -

- Statistical Process Control for managing processes
- Benchmarking for achievement of world-class performance
- Quality Function Deployment for applying customer requirements to product specification and design
- Taguchi Methods for monitoring and managing processes
- Problem Solving for elimination of problems

A number of quality improvement tools are selected for detail discussion. They are:

*a) Statistical Process Control (SPC)*

It is the use of statistical techniques such as control charts to analyse a process. Based on the output, appropriate actions will be taken in order to achieve and maintain a state of statistical control; thereby achieving the improvement objectives.

*b) Benchmarking*

It is a method of evaluating one organisation's systems against those of another organisation. Benchmarking helps to maintain awareness and to gain knowledge of how the best systems operate.

*c) Quality Function Deployment*

It is a system for translating consumer requirements into appropriate company requirements at every stage, from research, through product design and development, to manufacture, distribution, installation and marketing, sales and service. (ASI, 1987)

*d) Taguchi Methods*

These methods are used for the process of quality improvement and depend heavily on statistical concepts and tools; especially statistically designed experiments are often used on 'robust design' projects.

*e) Problem Solving*

Its activities include methods such as the Pareto analysis, the Fishbone diagram technique and the Plan-Do-Check-Act procedure. Problem solving activities recognise problems, identify those of most concern and find a solution. Individuals or teams can use these activities.

Quality tools can be classified as pictorial and non-pictorial tools, and numeric and non-numeric tools. In selecting quality tools, it is essential to understand their applications in depth for best choice and effective use of the tools. The first seven tools for problem solving are quality programmes in general; they help organise complex ideas and relationships between ideas and events. Some of the problem-solving tools used in total quality programmes are *Cause and effect analysis, Pareto analysis, Check sheet, Scatter diagram, Process flow chart, Graphics histogram and Control chart.*

The second seven tools help people analyse data pertaining to events that have already occurred. These tools help people understand the processes that shaped those events and are especially useful for data analysis, cause and effect analysis, and process management. They are the *Relations diagram, Affinity diagram, Tree diagram, Matrix diagram, Matrix data analysis chart, Process decision program chart and Activity network.* Besides, there are some other special tools like *Taguchi Techniques and Quality Function Deployment (QFD).*

### **3.2 Quality Function Deployment (QFD) Methodology for Product Improvement**

The earliest use of quality function deployment methodology or QFD can be traced back to the Kobe shipyard, Mitsubishi Heavy Industries Ltd., of Japan in 1972. In the 1990's, there were many successful examples from various industries (Halbleib

et al., 1993) (Eriksson et al., 1993) (Hauser et al., 1988) (Stubbs et al., 1994) using the QFD quality tool extensively. Their results were encouraging and impressive.

QFD is an engineering method for converting customer demands into quality characteristics and for developing a product design by systematically deploying the relationships of customer demands and product characteristics. The QFD methodology is broken into numerous analytical steps, most of which are documented as charts. It can best be understood as a three-step process: quality design, detailed design and process deployment. It is the development of an operating mechanism to transform customers' expectations into specific design and manufacturing requirements (Straker, 1995).

QFD employs mathematical analysis using a series of matrices, which depend on functional relationships, to arrive at the highest level of quality in producing a product. Through the analyses of the various relationships of functional components, one is able to quantify quality and establish priorities. It is also commonly known as a process that provides structure to the development cycle and helps an organisation plan for the effective use of the other technical tools to support and complement each other and address priority issues. Also, it can pinpoint the areas of customer concern where the specialised tools can have benefit. Actually, QFD is not just a tool but also a planning process.

The term 'Quality Function Deployment' was translated by Kanji characters that the Japanese used to describe the QFD process. It should be better defined as a 'customer-driven planning process'. It causes an organisation to stop developing products and services based solely on its own impression of what was required and to turn its attention to what customers require. QFD as defined by Dr. Yoji Akao as (Mallon et al., 1993):

*Converting the customers' demands into quality characteristics' and developing a design quality for the finished product by systematically deploying the relationships between the demands and the characteristics, starting with the quality of each functional component and extending the deployment to the quality of each part and*

*process. The overall quality of the product will be formed through this network of relationships.*

QFD integrates matrices and charts into a system to realise customer requirements, functions, quality requirements, parts definition, break-through methods and manufacturing methods. QFD uses matrices to identify and prioritise elements relating to intersecting concepts of customer requirement or quality characteristics, quality requirement/cost, function/reliability, and so forth.

QFD also shows all the information to the project that helps the organisation set the target or determines the priority of action needed to be taken. Also, the matrix compares the product or service with other competitive products or services so that the organisation can make improvements in the previous stage of design. The main goal of QFD is to increase customers' satisfaction by improving their own quality and also by exciting the customer through innovation.

QFD helps an organisation plan for effective application of its quality tools by directing the application toward issues of importance to customers. Organisations should use the QFD process as one of their principal planning tools in their TQM effort.

The selection of priority items for increased customer satisfaction provides a company with a distinct product focus. These customer requirements that are currently satisfactory to customers can be handled using existing procedures and processes. Also, the QFD process causes the company to focus on customer requirements that for which the products are not currently competitive. This effective application tool should be combined with TQM.

The voice of customer is the input of the QFD process. The output of the QFD process is the selection of key priority items to improve customer satisfaction (Hunter et al., 1994). These items should be carefully explored. Tools of the TQM concept should be used to study the product concepts and to provide assurance that quality will be achieved. Statistical Process Control (SPC) should be used on these

product concepts to sustain quality in production, thus assuring that the customers' requirements have been met. Follow-up surveys should be conducted to help the organisation measure the success of its QFD effort. The result can be used as feedback information to strengthen subsequent efforts.

The voice of customer plays an important role in the QFD planning matrix. Companies that decide to use the QFD process must first talk with and listen to their customers to determine their requirements. The result of this experience is that the company develops a deeper understanding of its customers' requirements. The new products it brings to the market can be designed to satisfy these customer requirements.

The purpose of QFD is in three parts: it allows people to get higher quality product to market faster and at a lower cost. Secondly, it helps achieve customer driven product design and thirdly it provides a tracking system for future design or process improvements. While QFD was developed for use in manufacturing industry in the US and then Europe, and is now widely used in the automobile industry, its use has now extended into other industries, including the service sector.

In general manufacturing engineering and product design & engineering, QFD helps:

- Improve quality;
- Increase customer satisfaction;
- Improve company performance;
- Improve time to market;
- Lower costs in design and manufacture;
- Reduce design changes or problems;
- Improve product reliability;
- Reduce decision or planning time;
- Improve communication;
- Reduce warranty claims;
- Improve marketing opportunities;
- Improve decision-making;

- Improve documentation;
- have a more customer-oriented work force; and
- Increase opportunity and profitability.

In the management aspects, QFD also helps:

- Identify and prioritise customer needs obtained from every possible source;
- Analyse the details of design and process improvement meeting the needs of engineers;
- Stimulate continuous improvement;
- Encourage communication and build teamwork within an organisation;
- Reduce lead-time, optimise engineering resources and improve quality; and
- Build partnerships with customers' participation.

QFD maintains customer ideas and requirements throughout the process that in turn leads to customer satisfaction. A further customer expectation is for the next purchase to be a better product. However, this is identified at no extra cost. When the satisfaction is not achieved, a competitor's product is likely to be chosen.

QFD is a powerful technique that enables companies to anticipate and prioritise customer needs in their totality and to incorporate them effectively into the product and service provided for the end-user (Wasserman, 1993).

The importance of QFD is to:

- provide a framework for up front planning and product development;
- use multi-functional teams to balance design and improve communication of design decisions;
- promote teamwork; and
- translate the voice of the customers into product specifications and process requirements.

There are different types of customers, each with their unique needs and wants - internal, intermediate and external (Guinta et al., 1987). Internal customers are those

who in the organisation are next in line to receive the product or services. Intermediate customers are often distributors or middle persons. They buy the product and sell it to retailers. External customers are the consumers of the product or service.

The effects of the selected priority items drive the company to take action based on the customers' requirements. There is an increase of focus on customers and an increased awareness of what they want. Because of this focus, the process leads to improved customer understanding and increased customer satisfaction.

### **3.3 Quality Function Deployment Methodology in Quality Management**

Levinson in his book "The Way of Strategy" (Levinson, 1996) shows the essences of Deming's 14 points and their underlying themes. Out of the 14 Deming's points, only 4 of them involve statistics or engineering methods. The others emphasize the corporate culture, organisational structure, leadership, people (human resources), and policies. Ishikawa's points on quality management have a strong emphasis on social culture, social effect and impact as well as the national policy.

In this research project, in order to understand better the gurus' philosophies, QFD methodology was used to compare the gurus' points with general TQM parameters and the details are shown in **Exhibit 3-1**. The Exhibit brought out the following points:

- The Quality Gurus' philosophies have a number of similarities and differences. It was shown that the quality gurus' points are generally focused on corporate culture, organisational structure, leadership, people (human resources), policies and technology, and with less emphasis on social effect and impact, social culture and national policy. Out of the nine TQM essential parameters presented, the Exhibit shows that out of the 14 Deming's points, 9 of them are related to the corporate culture, 1 to organisational structure, 6 to leadership, 2 to people, 2 to policies and 4 to technology and none to social effect and impact, social culture and national policy. A similar pattern of results was also arrived at for the other quality gurus on these nine TQM

parameters, except for Ishikawa who has a strong emphasis on social effect and impact, social culture and national policy.

- All gurus put emphasis on management responsibility and commitment, people and the culture of organisation. Although different gurus have a different emphasis on the TQM essential parameters, the top 5 parameters are quite close to each other; leadership (21%), people (18%), corporate culture (16%), policy (14%) and technology (13%). This result supports the fact that for successful implementation of the TQM in an organisation, these five are the main barriers.

Traditionally companies have operated on the basis of management by results, which is a behavioural science. Typical management will establish objectives. Then the objectives will be evaluated by measuring the performance and the results; that is objective management. The top management is only interested in the end of quality improvement, the results only. The methods, systems or resources needed to achieve results are usually left to the ingenuity of the middle management or engineers. Policy management, therefore, is a strategy to ensure results by focusing on the means as opposed to measuring performance after the fact (Sullivan, 1988). Policy management will take the form of a business plan to overlay existing systems and transform management focus from results to the means of achieving the results. Policy management is structured as a method to achieve company business or policy objectives. The means to achieve becomes the primary focus and results measure only how well policy management was carried out (Sullivan, 1988). Organisations can apply QFD as a strategic planning tool (Maddux et al., 1991).

### **3.4 Self-evaluation of the Requirements for the ISO 9000 Quality System in Strategic Planning**

Smith et al. (Smith et al., 1995) compare the requirements of the International Quality Assurance System Standard ISO 9000 with the detail philosophies of the five leading gurus: Crosby, Deming, Feigenbaum, Ishikawa and Juran. A quality function deployment (QFD) methodology is used with the 20 elements of ISO 9000 identified as the 'Whats' on the vertical axis, and the main points of the five gurus as



the horizontal 'Hows' axis. The relationships are studied in the body of the QFD matrix. The roof of the 'house of quality' is used to analyse the correlation between the philosophies of the gurus. Consideration is then given as to how the model presented can be customised to allow companies using this approach to develop their own total quality management strategic plan.

The QFD methodology used to demonstrate the relationships between the requirements of ISO 9000 and the philosophies of the quality gurus were investigated. The three factors that dictate how a total quality organisation is perceived are people or culture, system and tools or techniques for quality improvement. The ISO 9000 quality management system is to be the 'system' that requires implementation, review, and assessment. The philosophy of the gurus is to be the 'people or culture' that combines the company values, management style, employee attitudes and reactions. The 'tool' being used is the QFD methodology that helps decision making and strategy formulation. To meet individual organisation's requirements, *different rating or customisation is allowed catering for the needs and differences in organisations.*

The QFD methodology (Exhibit 3.2) comparing the requirements of the ISO 9000 with the gurus' points lead to the conclusion of objectivity (Smith et al., 1995):

- Not one of the five gurus covers all ISO requirements (All the Hows do not fully satisfy the Whats)
- Not all the gurus' points are covered by the ISO Standard (Some of the Hows are not necessary to satisfy the Whats)
- Some gurus' points are more related to the ISO requirement than the others (Prioritise the Hows in relation with the Whats)
- The most important ISO requirements stressed by the gurus leading to success of a quality business are identified (Identify or prioritise the essential Whats in relation to the Hows)

The work of Smith et al. (Smith et al., 1995) has been modified incorporating customised ratings on the ISO 9000 requirements. **Exhibit 3-2** shows the evaluation

of the detail elements of ISO 9000 quality system in strategic planning using QFD methodology.

The Exhibit incorporates the author's customised ratings of the 20 detail elements that are ranked from 1 to 10 points with a total of 100 points. Other organisations may apply different ratings based on their perceptions of the relative importance of the elements. The QFD methodology helps organisations implementing the ISO 9000 quality system and prioritises the relative importance of the twenty ISO 9000 elements. It is shown that out of the twenty detailed elements, management responsibility, statistical techniques and training are the three most essential ones that require special attention in both customised and non-customised situations. Furthermore, the Exhibit also demonstrates that although the quality system in the ISO system has been ranked the same as management responsibility, the relative ranking out of the 20 elements has only stepped up by 2 positions from 6 to 4 when comparing with customised situations. This result shows that the gurus' TQM philosophies focus not only on the quality system in place but also on quality system implementation and other considerations. The Exhibit also demonstrates that different gurus' TQM philosophies have a different effect on ISO quality system implementation.

Different organisations will have their own unique quality requirements and possible customisation of the QFD model to suit their needs is therefore essential. Different ratings on the ISO elements reflect different organisations' situation. Different ratings can be used by different organisations to suit their internal needs. The model presented will help management making their decisions prioritising resources for further improvement with the quality gurus' philosophies as a means of goal setting or reference. Decisions that have traditionally been based on qualitative judgement can now be replaced by a systematic method with certain degree of objectivity.

### **3.5 Total Quality Management Parameters Incorporating Dimension of Culture**

From Chapter 2, the main philosophies of the five major Western quality gurus had been presented and discussed. Furthermore, as presented in the previous sections of

the Chapter, total quality management philosophies of the five quality gurus had been used in the QFD methodology, evaluating the ISO quality management strategic plan of the companies.

Researchers in the process of implementing TQM in various organisations have reported that one of the major barriers to overcome during the process is to change the quality concept of the people and culture of the organisation. The TQM concepts based on the Western gurus' thinking might not be totally accepted by those organisations, in particular those in the East. Those countries in the East have a historical background, history of economic development and economic structure that are significantly different from the West.

Taking TQM implementation in Japan as an example, Ishikawa's TQM philosophy has incorporated those essences of culture and national policy parameters etc., in their TQM concept for implementation. The life-time employment philosophy in Japanese organisations is one of the main TQM concepts of Ishikawa. This serves as a good example to illustrate the difference of TQM concepts based on cultural difference from the other gurus of the West. The TQM philosophy of Japan, KAIZEN, and Neo-Confucian in the East that will be presented in Chapter 5 illustrate the link of culture to the economic phenomenon and their rapid economic development. The success of KAIZEN philosophy to a certain extent bears a strong relationship of management style to the Japanese culture; Bushido and Neo-Confucian thinking. It is therefore beneficial to add a new dimension of TQM philosophy to the Western gurus' TQM philosophies taking care of country differences as well as cultural differences.

As illustrated in the previous Exhibit 3.1, the five quality gurus do have different focus and emphases on TQM principles. The analysis did show some major differences, in particular the social, culture and national policy consideration.

To bring in line the situation, after some further research and studies, a new TQM model somehow similar, but which has consolidated the majority views of the gurus' concepts, has been proposed. Since this TQM model comes from the Western

quality gurus' philosophies, it is therefore conveniently called **Western Quality Gurus TQM Philosophy**. As discussed in Chapter 2, some of the elements of the model are the essential activities of a quality management system focused on continuous quality improvement.

QFD methodology is again being used to compare (the Whats with the Hows) the philosophies of the five quality gurus with the proposed **Western Quality Gurus' TQM Philosophy**. The **Exhibit 3.3** leads to the possible conclusions that:

- The 14 points of the Western quality gurus' TQM philosophy generally cover existing Western quality gurus' philosophies.
- Ishikawa of Japan has the main contributions to the social effect, social impact and social culture issues.
- Some quality gurus may not make any contributions to some of the elements.
- Management commitment is still the most common element among them all; that is, a great emphasis is placed by nearly all gurus on this.
- Western quality gurus' TQM philosophy includes social issues, government issues as the elements.
- Western quality gurus' TQM philosophy model is quite in line with the criteria of the national Awards published lately incorporating social issues as their criteria.

Therefore, in summarising, the Western Quality Gurus' TQM Philosophy consists of:

1. Management commitment
2. Employee's involvement
3. Education and training
4. Customers' satisfaction
5. Performance measurement
6. Error prevention
7. Communication
8. Goals and target setting
9. Quality document system
10. Recognition

11. External and social relationship
12. Continuous improvement
13. Social effect, impact and social culture
14. Government social policy

### 3.6 Conclusion

#### *a) Use of QFD methodology in the ISO 9000 quality management system planning*

Quality function deployment (QFD) methodology has been proposed and used with the 20 elements of ISO 9000 quality management system being identified as the 'Whats' on the vertical axis, and the main points of the five gurus as the horizontal 'Hows' axis. The relationships were studied in the body of the QFD matrix. The methodology presented could incorporate different rankings on each of the 20 ISO elements allowing customisation to meet individual companies' requirements and emphases. This self-evaluation process helps an individual company to prioritise the resources for subsequent improvement. It also helps to identify those mismatches of company policies with the gurus' philosophies; thus helping the companies prepare for total quality management.

#### *b) Use of QFD methodology in total quality management strategic planning*

The methodology allows companies using this approach to develop their own total quality management strategic plan. The requirements for TQM or criteria for world-class excellence performance in business could be identified as the 'Whats' on the vertical axis, and the gurus' philosophies, if necessary consolidated views of experts, as the horizontal 'Hows' axis, for example, the Western Quality Gurus' TQM Philosophies. Thus, this methodology will help companies to develop their own total quality management strategic plan, customising for their specific requirements and own situations.

#### *c) Use of QFD methodology in the business and management strategic planning*

This QFD methodology can also be extended to business and management strategic planning besides the TQM strategic planning. The requirements for business and management strategic planning can be identified as the 'Whats' on the vertical axis, and the best practices and strategies or philosophies of

renowned strategists could be identified as the horizontal 'Hows' axis. Thus the QFD matrix will give the relationships and priorities of the company's strategic planning based on different company situations. The uses of QFD methodology in total quality management strategic planning as well as business and management strategic planning will be further discussed and presented in the next few Chapters.

Exhibit 3.1 Comparison of five leading quality gurus' philosophies with the Strategic Total Quality Management (STQM) Essential Parameters

		Strategic Total Quality Management Parameters											
		1	2	3	4	5	6	7	8	9			
Quality Gurus	Number	How											
		What	Corporate culture	Organizational structure	Leadership	People	Policies	Technology	Social effect and impact	Social culture	National policy	Rating	
Juran	1	Awareness of improvement	1		1	1						3	15%
	2	Set goals for improvement	1		1							2	10%
	3	Organization for goals				1	1					2	10%
	4	Provide training			1	1						2	10%
	5	Problem solving project			1	1		1				3	15%
	6	Report on progress		1								1	5%
	7	Communicate result		1								1	5%
	8	Keep program record				1		1				2	10%
	9	Maintain momentum			1			1				2	10%
	10	Give recognition	1		1							2	10%
		Sub-total	3	2	6	5	2	2	0	0	0	20	
		%	15%	10%	30%	25%	10%	10%	0%	0%	0%		
Ishikawa	1	Professional						1				1	4%
	2	Vertical social structure							1	1		2	8%
	3	Labour unions				1			1	1		3	12%
	4	Taylor absenteeism	1			1				1		3	12%
	5	Class consciousness							1	1		2	8%
	6	Motivation reward			1		1					2	8%
	7	Life-time employment system							1	1		2	8%
	8	Writing system culture								1		1	4%
	9	Communications		1		1						2	8%
	10	Education			1	1				1		3	12%
	11	Religion attitude								1		1	4%
	12	Subconscious supplier				1		1				2	8%
	13	Demography of capital									1	1	4%
	14	Government policy stimulation									1	1	4%
		Sub-total	1	1	3	4	2	1	4	8	2	26	
		%	4%	4%	12%	15%	8%	4%	15%	31%	8%		
Feigenbaum	1	Total quality system	1		1	1	1					4	19%
	2	Control of actions		1				1	1			3	14%
	3	Commitment	1		1	1						3	14%
	4	Marketing people				1						1	5%
	5	Design & establish specification					1	1				2	10%
	6	Quality discipline			1							3	14%
	7	Program with customers	1	1				1	1			2	10%
	8	Integrate quality operations			1			1	1			3	14%
		Sub-total	3	3	3	3	4	5	0	0	0	21	
		%	14%	14%	14%	14%	19%	24%	0%	0%	0%		
Deming	1	Constancy of purpose	1		1							2	8%
	2	Adopt of the new philosophy	1									1	4%
	3	Cease dependent on inspection	1					1				2	8%
	4	End low tender control					1	1				2	8%
	5	Improve every procedures	1									1	4%
	6	Institute training						1	1			1	4%
	7	Institute leadership			1	1						2	8%
	8	Drive out fear	1		1							2	8%
	9	Break down barrier	1	1								2	8%
	10	Eliminate slogans	1		1							2	8%
	11	Eliminate all numerical target					1	1				2	8%
	12	Permit pride with ownership	1									1	4%
	13	Encourage education			1	1						2	8%
	14	Top management commitment	1		1							2	8%
		Sub-total	9	1	6	2	2	4	0	0	0	24	
		%	38%	4%	25%	8%	8%	17%	0%	0%	0%		
Crosby	1	Management commitment	1		1							2	6%
	2	Quality improvement team			1	1	1					3	9%
	3	Quality measurement				1		1				2	6%
	4	Cost of quality evaluation				1		1				2	6%
	5	Quality awareness	1		1	1						3	9%
	6	Corrective action					1	1				2	6%
	7	Zero defect planning			1	1	1					3	9%
	8	Quality education			1	1						2	6%
	9	Zero defect day				1	1					2	6%
	10	Goals setting			1		1					2	6%
	11	Error cause remedy					1	1				2	6%
	12	Recognition	1		1	1						3	9%
	13	Quality counsels		1	1							2	6%
	14	Do it all over again	1				1					2	6%
		Sub-total	4	1	8	8	7	4	0	0	0	32	
		%	13%	3%	25%	25%	22%	13%	0%	0%	0%		
		Total	20	8	26	22	17	16	4	8	2	123	
		%	16%	7%	21%	18%	14%	13%	3%	7%	2%		
		Top five ranking of importance	3		1	2	4	5					





Row Sum on ISO 9000 Detailed Elements											
Non Customised					Customised					Difference	
Row Sum	Percentage % (B)	Relative Importance	Row Sum	Percentage % (A)	Relative Importance	Row Sum	Percentage % (A)	Relative Importance	% Increased	Rank Improvement	
1	273	26	1	39	1	2730	39	1	13	0	
2	49	5	6	7	4	490	7	4	2	2	
3	26	2	15	2	14	130	2	14	-1	1	
4	36	3	10	3	11	180	3	11	-1	-1	
5	35	3	11	3	8	210	3	8	0	3	
6	29	3	12	1	16	58	1	16	-2	-4	
7	9	1	20	0	19	18	0	19	-1	1	
8	13	1	19	1	17	39	1	17	-1	2	
9	77	7	4	3	6	231	3	6	-4	-2	
10	27	3	14	3	9	189	3	9	0	5	
11	23	2	16	2	18	23	0	18	-2	-2	
12	20	2	17	2	15	100	1	15	0	2	
13	44	4	9	4	7	220	3	7	-1	2	
14	49	5	6	5	12	147	2	12	-3	-6	
15	17	2	18	0	20	17	0	20	-1	-2	
16	46	4	8	4	10	184	3	10	-2	-2	
17	56	5	5	5	5	336	5	5	-1	0	
18	114	11	2	11	2	912	13	2	2	0	
19	29	3	12	3	12	145	2	13	-1	-1	
20	81	8	3	8	3	729	10	3	3	0	
	1053	100		100		7088	100			0	

Number Reference	Ishikawa										Juran														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	8	9	10	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	100																								

11	10	3	9	11	10	12	13	9	9	21	21	9	6	10	3	10	10	11	10	5	22	28	9
154														118									
7	6	2	6	7	6	8	6	6	14	14	6	4	8	3	8	8	9	8	8	4	19	24	8
100														100									
5	7	14	7	5	7	3	3	7	7	1	1	7	13	4	10	4	4	3	4	9	2	1	4

Exhibit 3.3 Comparison of five leading quality gurus' philosophies with the Western Quality Gurus' TQM Philosophies

Quality Gurus	Number	How What	Western Quality Gurus' TQM Philosophies														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
			Management Commitment	Employees' Involvement & team work	Education & Training	Customers' satisfaction	Performance Measurement	Error Prevention	Communications	Goals & Target Setting	Quality Documented System	Recognition	External & social relationship	Continuous Improvement	Social effect, impact and social culture	Government social policy	Rating
Juran	1	Awareness of improvement	1	1		1	1				1	1					6
	2	Set goals for improvement							1	1				1			3
	3	Organization for goals	1	1							1				1		3
	4	Provide training			1												2
	5	Problem solving project		1		1					1				1		3
	6	Report on progress							1						1		2
	7	Communicate result				1			1	1			1				4
	8	Keep program record										1	1				2
	9	Maintain momentum					1							1	1		3
	10	Give recognition									1		1				2
		Sub-total	2	3	1	3	2	3	1	4	2	4	1	4	0	0	30
Ishikawa	1	Professional	1	1			1							1			4
	2	Vertical social structure							1						1		2
	3	Labour unions		1						1			1		1		4
	4	Taylor absenteeism	1						1								2
	5	Class consciousness								1					1		2
	6	Motivation reward				1	1				1						4
	7	Life-time employment system	1	1								1			1		3
	8	Writing system culture										1				1	2
	9	Communications								1							1
	10	Education			1												1
	11	Religion attitude				1										1	2
	12	Subconscious supplier												1			1
	13	Demography of capital														1	2
	14	Government policy stimulation									1						1
		Sub-total	3	3	2	1	2	1	4	2	1	1	2	1	6	2	31
Feigenbaum	1	Total quality system	1	1	1	1					1	1		1			7
	2	Control of actions					1	1									2
	3	Commitment	1														1
	4	Marketing people		1													1
	5	Design & establish specification										1					1
	6	Quality discipline									1				1		2
	7	Program with customers				1			1					1	1		4
	8	Integrate quality operations							1		1		1				3
		Sub-total	2	2	1	2	1	2	1	1	3	1	1	4	0	0	21
Deming	1	Constancy of purpose	1	1						1							3
	2	Adopt of the new philosophy	1	1			1										3
	3	Cease dependent on inspection			1		1										2
	4	End low tender control						1									1
	5	Improve every procedures							1			1		1			3
	6	Institute training			1							1					1
	7	Institute leadership	1														1
	8	Drive out fear								1	1						2
	9	Break down barrier								1			1				2
	10	Eliminate slogans									1						1
	11	Eliminate all numerical target							1		1						2
	12	Permit pride with ownership		1			1	1									3
	13	Encourage education			1								1				2
	14	Top management commitment	1													1	2
		Sub-total	4	3	3	0	3	3	2	4	1	2	1	1	0	1	28
Crosby	1	Management commitment	1			1				1					1		4
	2	Quality improvement team		1	1	1								1			4
	3	Quality measurement					1										1
	4	Cost of quality evaluation					1				1						2
	5	Quality awareness	1	1								1					3
	6	Corrective action					1	1									2
	7	Zero defect planning	1					1									2
	8	Quality education			1										1		2
	9	Zero defect day		1					1						1		3
	10	Goals setting								1							1
	11	Error cause remedy					1	1			1						3
	12	Recognition										1			1		2
	13	Quality counsels			1							1			1		4
	14	Do it all over again	1			1	1				1				1		4
		Sub-total	4	3	3	3	5	4	1	3	3	1	0	7	0	0	37
		Total	15	14	10	9	13	13	9	14	10	9	5	17	6	3	147
		Top five ranking of importance	10.2	9.5	6.8	6.1	8.8	8.8	6.1	9.5	6.8	6.1	3.4	11.6	4.1	2.0	%
			2	4		5	5		3				1				

## **Chapter 4 Understanding of the Meaning of World-Class Business Excellence**

### **4.1 Measurement of World-class Business Performance**

#### **4.1.1 Performance Measure and Strategy**

It is generally believed that the goal of companies is to make money now and in the future. How do companies set their business goal? How do companies measure business performance? What company strategy should be adopted in order to meet the long-term survival of a company, both long term and short term strategy and plan? What internal and external factors should companies consider that might influence the company strategies for world-class excellent business performance? Answers to these questions are varying depending on the companies' strategy and performance measures.

The effects of setting goals when performing a task were found to be higher in specific and challenging goals than the easy goals, "do your best" or "no goals" (Locke et al., 1981). Locke et al. cited and quoted, 'goals affect performance by directing attention, mobilising effort, increasing persistence, and motivating strategy development'. 'Goal setting is most likely to improve task performance when the goals are specific and sufficiently challenging, the subjects have sufficient ability, and feedback is provided to show progress in relation to the goal. Rewards such as money are given for goal attainment, the experimenter or manager is supportive, and assigned goals are accepted by individual.' However, the rewards of money or other profits given for goal attainment are too materialistic and sometimes improper. There are some other non-financial rewards such as proper recognition of contributions or provision of staff development programmes etc.; therefore the use of intrinsic motivation rather extrinsic motivation would be most appropriate.

Firms are driven by intensified competition and attempts are made to improve product quality and lower the costs seeking strong competitive advantage. Quality improvement is now a highly desired objective in the fiercely competitive international business world. But how do the companies measure the performance?

Most producers regard quality as more important than ever before in their manufacturing, service and purchasing strategies. The concept of TQM is increasingly being adopted by organisations as the means of satisfying the needs and expectations of their customers. The major Japanese manufacturing companies for the last 30 to 40 years have practised TQM. Their commitment to continuous and company-wide quality improvement has provided them with a good foundation to capture markets of the world (Lascelles et al., 1996). In the next Chapter, the influence of Japanese culture and continuous improvement strategy, sometimes called KAIZEN, in business management strategy will be discussed.

Reference to the publications 'Aiming for world-class manufacturing' from UK as part of *the Managing into 1990's* programme reveals that the changing outside influences were grouped under some six main headings: economic factors, demographic trends, environmental factors, technology, suppliers and competitions (DTI, 1991). All these factors carry threats to the industries, but all those threats can become opportunities if the business strategy is right. The *Managing into 1990's* programme was an attempt to offer a practical introduction to the issues facing industry as the countries move towards 2000. For maintaining competitiveness, it is necessary to understand the fundamental changes that are taking place in the world.

The publication produced (DTI, 1991) also attempts to give a definition of world-class manufacturing as "it essentially entails having the right production capability to make money from totally satisfying the customer, with high quality services and products at the right price, delivered at the right time". It means operating at standards equal to the best in the world, but it is not relevant only to companies that export - it is just as relevant to companies facing overseas competition, and that is just about everyone. The pursuit of the ideas of world-class manufacturing is fundamental. It is a main aim at which other manufacturing techniques - like Just in Time, Manufacturing Resources Planning, Total Quality Management and so on - are contributory parts. As part of the recommendations from the DTI report, world-class manufacturers should continuously look for *better products, better factories, better organisation, better management and better information.*

Garvin (Garvin, 1993) cites that existing manufacturing strategy provides a powerful framework for creating and sustaining competitive advantage. Manufacturing is meshed with business need rather than viewed as an isolated function, and operating policies are screened for competitive impact. Such an approach is invaluable for long-term planning but is less helpful for daily decision making. Short-term improvement programmes sometimes lack clear direction because there are few criteria for choosing among projects. What is needed is a more dynamic framework that supplements the current model of manufacturing strategy with insight from strategic planning.

Bradbury, (Bradbury, 1992) writing on the measures for organisation improvements, reports on the survey carried out by Boston University Manufacturing Roundtable in 1988 of high flyers' companies in Japan, Europe and United States asking each of the companies to state and rank their top 10 measures of performance. Japan and United States successful companies listed non-financial measures whereas European companies were still concentrating on financial measures. Referring to Bradley's paper, Maskell (Maskell, 1989) studies the *performance measures* used by world-class manufacturing companies and concluded that they had the following characteristics in common:

- They were directly related to the company's manufacturing strategy;
- They incorporated non-financial measures;
- They used different measurements for different areas of the company;
- They were changed over time to reflect changes in strategy and operation;
- They were simple and easy to use;
- They gave fast feedback to operators and managers and
- They were intended to teach rather to monitor and control.

Adam (Adam, 1994) in his research attempts to relate quality improvement approaches and productivity improvement approaches to actual operating and financial performance. The results indicate a strong relationship between quality improvement approach and performance quality. The relationship between a quality improvement approach and operating and financial performance is weaker, but significant. Productivity improvement approaches also help predict quality,

operating, and financial performance. The research reveals that the profile of quality and productivity improvement approach should vary, depending upon whether the firm is most interested in performance quality, operating improvement, or financial performance.

Dumond (Dumond, 1994) cites that it is important that management provide goals, performance measures, and feedback. Without them, there is no focus and decisions are erratic. On the other hand, the provision of too many measures or measures that are not mutually reinforcing can create confusion and erratic performance. Management needs to analyse the situation and the organisation's goals and use performance measures that will encourage the desired behaviour.

Schmenner (Schmenner, 1994) has investigated the techniques of performance measures in manufacturing organisations. It is a waste for companies putting in considerable resources into some areas that was wrongly measured. There are 12 items being suggested where improvements are commonly sought: *employee involvement, quality, labour efficiency, machine efficiency, volume flexibility, new product introduction, process throughout times, integration with customers, direct cost reduction, overhead cost reduction, computer systems, customer satisfaction*. The research has identified that *direct cost reduction, machine efficiency, and labour efficiency* are almost universally emphasised well beyond their importance. On the other hand, items such as *new product introduction, customer satisfaction, and employee involvement* are frequently related as gaps, e.g. more emphasis could be placed on them.

Neely et al. (Neely et al., 1994) have conducted research investigating the extent to which small and medium sized firms in UK seek to influence the realisation of their manufacturing strategies through their performance measuring system. The results tend to suggest that those firms that compete primarily on quality or time place most emphasis on performance measures that match their strategies; those that compete on price do not.

DuBois et al. (DuBois et al., 1993) discuss manufacturing strategies in an international sense that a multi-national company should consider before making decisions. A conceptual framework for international manufacturing strategies was developed and hypotheses were proposed and tested in industrial sectors. These strategies may range from home country production with limited or extensive export; autonomous “regional” plants designed to serve the needs of specific foreign markets; combination regional or global focus strategies involving local or regional assembly of globally procured parts and components; and co-ordinated global focus configurations involving international dispersal of stages of the production process to low cost regions with final assembly taking place at different locations.

#### **4.1.2 Criteria for a World-Class Performance Company**

Research has shown that the top business performance companies are those companies that demonstrate consistent, measurable positive results based on the philosophies of continuous improvement and the ability to face constant change.

Lascelle and Peacock, in their book ‘Self-Assessment for Business Excellence’ (Lascelle et al., 1996) outline a typical profile of world-class performers based on other independent studies which includes the following characteristics:

- Strong leadership
- Motivated employees
- Extremely high customer satisfaction ratings
- A strong and/or rapidly growing market share
- Highly admired by peer group companies and society at large
- Business results that put it in the upper quartile of shareholder value

To achieve the world-class business performance objectives, companies have to learn that their continuous improvement processes form an integral part of the overall business strategies of the companies. Having given the direction to business objectives, a company would see how effective the development of people’s skill, time, effort and know-how are; how appropriate financial, marketing and operating strategies are and how effective use of all resources to reduce the costs and waste are. These inter-related considerations would contribute eventually to the overall

efficiency of the processes being managed to achieve the business objectives and create values. The result would be having a motivated and satisfied work force, a reasonably good sales volume, with growth and continuity as well as making some good contributions to the development of the community. The companies will then make good profit and gain good return on their capital investment.

While business excellence is very much based on the principles and philosophies of total quality and total quality management, its scope should be much wider covering all people working and involved in the organisation, management and organisational systems as well as use of quality improvement tools, including strategic and management tools.

In the 1980's, a lot of emphasis was placed on the certification of ISO 9000 and improvement techniques such as statistical process control. In the 1990's companies tend to use the ISO 9000 quality system as the first step to TQM. It is quite clear now that in the future years of 2000's, TQM will become a framework for companies achieving the world-class business excellence performance.

Japan's success in capturing world business market in the past 20 to 30 years was partly because of their use of TQM in manufacturing and business for a number of years. However, researchers also believe that cultural differences may also contribute to the success of different countries.

In recent years, the Malcolm Baldrige National Quality Award (MBNQA) and the European Quality Award (EQA) have fuelled the interest in TQM. These awards, based on TQM models, are being used by organisations for self-assessment no matter whether they will eventually go for the Awards or not, but with the objective of business improvement.

## **4.2 Business Excellence Models**

### **4.2.1 The European Business Excellence Model as a Strategic Planning Guide**

The formulation of a company's policy and strategy is essential in an ongoing process of defining, prioritising, organising, achieving and reviewing world-class



targets of business performance. To do this, management teams must focus on those areas critical to success by listening to the company's stakeholders and identifying the performance levels that affect their satisfaction. Excellent companies perform well (*Business results*) in terms of sales growth, profit margins, return on invested capital and cash flow but are not obsessed solely with financial measures. They are equally obsessed with the apparently less tangible measures of *customer satisfaction, people's satisfaction and impact on society*, recognising that these are increasingly the real drivers of corporate success over the middle to long term (Lascelles et al., 1996).

Lascelles et al. propose a business performance improvement strategy by adapting the framework into the European Business Excellence Model for creating stakeholder value. It will help managers better understand the strengths and weaknesses for improvement. However, this form of analysis does not, on its own, target the priorities for an action plan. The causes of different *business results, customer satisfaction, people's satisfaction and impact on society* need to be identified, quantified and prioritised for appropriate action feeding back for resetting the business improvement strategy. That will in turn initiate improvement activities for relevant process improvement, either in *Leadership, Policy and strategy, People management or Resources*.

#### 4.2.2 The European Quality Award

The European Quality Award launched in October 1991, jointly sponsored by the European Commission; the European Foundation for Quality Management and the European Organisation of Quality, was to be awarded in 1992. The award is intended to meet three fundamental objectives:

- To focus attention on business excellence in a dramatic way;
- To provide a further stimulus to companies and individuals to develop business improvement initiatives and
- To demonstrate the results achievable in all aspects of an organisation's business activity.

The European model of the award is based on nine criteria with an equal split on the enablers and results. (Lascelles et al., 1996)

**Enablers (50%)**

1. Leadership (10%)
2. People management (9%)
3. Policy and strategy (8%)
4. Resources (9%)
5. Processes (14%)

**Results (50%)**

6. People satisfaction (9%)
7. Customer satisfaction (20%)
8. Impact on society (6%)
9. Business results (15%)

#### **4.2.3 The Malcolm Baldrige National Quality Award**

The Malcolm Baldrige National Quality Improvement Act signed by the President of United States of America in 1987, established an annual quality award. In 1988 for the first time, the Award was presented to three major US companies. The purpose of the Award is to promote quality awareness, to recognise the quality achievements of US companies and to publicise successful quality management and improvement strategies. Companies may publicise and advertise their award provided that they agree to share information about their successful quality management and improvement strategies with other US organisations.

The MBNQA self-assessment guide is a comprehensive document and sometimes used by companies for training, self-assessment, quality information about other companies, and as a common language in which to communicate. Furthermore, it helps people understand the Baldrige award criteria's framework, the document also expresses values and concepts in seven categories. The seven categories are subdivided into various examination items and corresponding point values and every Award application is evaluated in the seven major categories with a maximum total score of 1000 points (Lascelles et al., 1996).

1. Leadership
2. Information and Analysis
3. Strategic planning
4. Human resource development and management
5. Process Management
6. Business results
7. Customer focus and satisfaction

#### **4.2.4 The Deming Prize**

The Union of Japanese Scientists and Engineers (JUSE) instituted the Deming Prize in 1951 in recognition of Dr. Deming's contribution to the development of the industrial quality control in Japan. The Deming Application Prize is for enterprises that achieve the most distinctive improvements in performance through the implementation of company-wide quality control based on statistical quality control, and which are likely to maintain in the future. There is also a Deming International Award for Overseas Companies. The items and particulars of the Deming Application Prize are given below (Lascelles et al., 1996):

1. Company policy and planning
2. Organisation and its management
3. Quality control education and dissemination
4. Collection, transmission and utilisation of information on quality
5. Analysis
6. Standardisation
7. Control
8. Quality Assurance
9. Effects
10. Future plans

#### **4.2.5 Analysis and comparison of different quality management systems**

The Deming Prize was launched, with the declared purpose of improving statistical quality control techniques. The MBNQA was introduced mainly because of the competition from the Pacific Rim. Both awards have the declared purpose of increase quality awareness. Zink et al. (Zink et al., 1994) mentioned that through the

first successful announcement of the European Quality Award (EQA) of the European Foundation for Quality Award (EFQA) in 1992, the Europeans have also attempted to stimulate interest in comprehensive quality concepts. Parallel to the discussion of TQM in Europe, there has been an increasing trend towards what may be described as “Certification of quality systems on the basis of EN 29 000” which proves the compliance with the requirement of these standards.

The Malcolm Baldrige Criteria has been refined and modified considerably since 1988. There has been a shift of emphasis in meaning and relative scoring weights. There are categories that used to have a defined quality bias have shifted towards a wider definition of business excellence. This may signal a gradual change in emphasis for Baldrige from a TQM system model to a business excellence model akin to the European Quality Award (Lascelles et al., 1996).

### **4.3 Total Quality Management Strategic Planning using Quality Function Deployment (QFD) Methodology**

#### **4.3.1 Self-evaluation of the criteria for Malcolm Baldrige National Quality Award with the Philosophies of the Five Leading Quality Gurus using QFD Methodology**

The work of self-evaluation is further extended to include criteria of total quality management. The Malcolm Baldrige National Quality Award has the criteria that would help those organisations going for TQM strategic planning. Comparison of the criteria of Malcolm Baldrige National Quality Award with the quality gurus’ philosophies in Exhibit 4.1 shows that:

1. None of the quality gurus cover all Malcolm Baldrige National Quality Award criteria.
2. According to the total rating of the five gurus, it is shown that Ishikawa, Crosby and Deming’s are mostly related to the Malcolm Baldrige National Quality Award criteria because of their higher points scored.
3. By comparing the seven criteria with the gurus’ TQM philosophies, if the Award’s rating being excluded (non-customised), leadership and strategic planning are the two highest contributors. However, when the Award criteria percentages (customised) are considered, leadership and customers focus and

satisfaction then take the lead. This result shows that customers focus and satisfaction is highly important in the overall Award, with 25 % being given in the overall rating.

4. Business results are very low in the ranking positioning despite the fact that 25% has been allocated in the Award rating. This result concludes that the five quality gurus' TQM philosophies have less or no consideration of business results during the time when an individual guru's philosophy was prepared.

A good and powerful leadership is definitely beneficial to the organisation. A leadership focused on setting visions, general commitment and relating to the soft skill between staffs is most important. Management commitment is important to carry out the process of quality improvement. Organisations that are embarked on the TQM road can make use of the proposed QFD methodology to carry out some self-assessment so as to identify their own priorities of continuous improvement. Different units, sections and departments can carry their own self-assessment process to prioritise their resource commitment and identify their strengths and weaknesses.

#### **4.3.2 Self-evaluation of the criteria of European Quality Award for Business Excellence with the Philosophies of the Five Leading Quality Gurus using QFD Methodology**

The work in the previous section is further extended to include the criteria for Total Quality Management with the European Quality Award for business excellence that has been established and implemented in the Europe. The criteria of the award published in 1996 are used for organisations' TQM strategic planning purposes. Comparison of the criteria of European Quality Award for business excellence with the philosophies of the five quality gurus as shown in **Exhibit 4.2** gives the results:

1. None of the five quality gurus covers all the criteria of European Quality Award for business excellence.
2. According to the total rating of the five gurus, it is shown that Ishikawa, Crosby and Deming's are mostly related to the European Quality Award criteria because of their higher points scored.

3. By comparing the nine criteria with the gurus' TQM philosophies, if the Award's criteria weightings are excluded (non-customised), leadership and policy and strategy are the two highest contributors. However, when the Award criteria percentages (rating) are included, leadership and policy and strategy are still in the lead. Customer satisfaction ranking has stepped forward by two, as customer satisfaction is highly important in the overall Award, with the 20 % being given in the overall rating.
4. People satisfaction, impact on society and business results come out to be the last three criteria in the ranking positions despite the fact that 15% has been allocated in the Award rating on business results. This result concludes that the five quality gurus' TQM philosophies have less or no consideration on these issues during the time when an individual guru's philosophy was prepared.

#### **4.4 Conclusion**

Judging business success purely on companies' financial performance is not acceptable, in particular for world-class business excellence. But how do companies measure their performance? The criteria set by the Awards seem to provide a quite objective methodology measuring business performance.

The use of QFD methodology to evaluate the actual performance of the organisation based on the criteria of Malcolm Baldrige National Quality Award or European Quality Award against some quality management strategic planning parameters has been most encouraging. The Western gurus' TQM philosophies as presented in Chapter 2 will be used as the quality management parameters for the evaluation of business management strategies.



		Row Sum on MBQNA Criteria										Non Customised			Customised(MBQNA)			Difference														
												Percentage % (B)		Relative Importance		Row Sum			Percentage % (A)		Relative Importance		% Increased		Rank Improvement							
	Row Sum											75	8	4	7	6	18.81	18	2	103	100	18	2	9	10	3	0	10	0			
	913											263	29	1	1	1	23.68	23	1													
												90	10	4	4		6.76	7	7													
												222	24	2	2		17.21	12	5													
												179	14	3	3		18.08	18	2													
												94	10	4	4		13.18	13	4													
												39	4	7	7		9.81	10	4													
												75	8	6	6		18.81	18	2													

Number Reference	Rating	Ishikawa										Juran													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	8	9	10
1	9.0%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	7.5%	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
3	5.5%	9	3	9	3	1	3	3	9	3	3	9	3	3	9	3	3	3	3	3	1	1	9	9	9
4	14.0%	1	3			9	9	9	3	9					3	3	3				1	3			
5	14.0%					1									3	3	3					3			
6	25.0%														9	3	3								
7	25.0%														9	3	3								

21	13	3	18	12	13	13	12	21	12	12	12	12	9	21	24	19	7	12	9	7	3	5	1	18	18
204																									
10	6	1	9	6	6	6	6	10	6	6	4	10	12	19	7	12	9	7	3	5	1	18	18		
100																									
2	6	14	5	6	6	6	2	6	6	13	2	1	1	6	4	5	6	9	8	10	2	2	2	2	2
3	7	14	6	8	8	2	8	3	12	8	13	3	1	1	6	4	5	6	9	8	10	2	2	2	2
-1	-1	0	-1	-2	-2	4	-2	-1	-6	-2	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0



Exhibit 4-2 Evaluation of the Criteria of the European Business Excellence Assessment of European Quality Award (1996) in strategic planning using QFD based on five quality gurus philosophies

Number Reference	How What	Western Quality Gurus																																				
		Crosby							Denning							Feigenbaum																						
	Rating	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8							
1	Leadership	10.0%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
2	Policy and Strategy	8.0%	9	9	3	3	9	9	3	3	3	3	3	3	3	9	9	3	3	3	3	3	3	9	9	3	3	3	3	3	3							
3	People Management	9.0%	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
4	Resources	9.0%	9	1	9	3	3	3	3	3	3	3	3	3	3	9	9	3	3	3	3	3	3	9	9	3	3	3	3	3	3							
5	Process	14.0%	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
6	Customer-Satisfaction	20.0%	3	9	9	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							
7	People Satisfaction	9.0%	9	3	3	3	3	3	3	3	3	3	3	3	3	9	9	3	3	3	3	3	3	9	9	3	3	3	3	3	3							
8	Impact on Society	6.0%																																				
9	Business Results	15.0%																																				
		100.0%	36	42	28	18	24	6	21	18	15	10	12	24	12	7	34	18	16	6	9	18	13	6	12	12	18	18	6	27	45	18	27	6	6	3	16	23
Individual Sum Total			273														213														144							
Percentage Total			100														100														100							
Relative Importance			2	1	3	7	4	14	6	7	9	10	10	4	10	13	1	3	3	12	11	3	8	12	8	8	3	3	12	2	1	4	2	6	6	8	5	3

Row Sum on EQA Criteria											
Non Customised					Customised (EQA)					Difference	
Row Sum	Percentage % (B)	Relative Importance	Row Sum	Percentage % (A)	Relative Importance	Row Sum	Percentage % (A)	Relative Importance	% Increased	Rank Improvement	
263	26	1	263	25	1	263	25	1	-1	0	
221	22	2	17.68	17	2	17.68	17	2	-5	0	
128	13	3	11.52	11	3	11.52	11	3	-2	0	
92	9	4	8.28	8	6	8.28	8	6	-1	-2	
94	9	4	13.16	13	5	13.16	13	5	3	-1	
74	7	6	14.8	14	4	14.8	14	4	7	2	
56	6	7	5.04	5	9	5.04	5	9	-1	-2	
35	3	9	2.1	2	8	2.1	2	8	-2	1	
42	4	8	6.3	6	7	6.3	6	7	0	1	
1005	100	100	105	100	100	105	100	100	0	0	

Number Reference	Ishikawa										Juran													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	8	9	10
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
3	9	3	9	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	3	1	3			1	3	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
7	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	21	16	6	18	15	13	22	15	21	12	15	9	21	27	19	7	12	9	7	3	5	1	18	18
	231										99													
	9	7	3	8	6	10	6	9	5	6	4	9	12	19	7	12	9	7	3	5	1	18	18	
	100										100													
	3	7	14	6	8	8	2	8	3	12	8	13	3	1	1	6	4	5	6	9	8	10	2	2

## **Chapter 5 Understanding the Philosophy of Chinese Philosopher Confucius and how this relates to Quality Management Strategy**

### **5.1 Western Management Theory and Eastern Culture**

There were a great number of economic reports and business data published on the high annual economic growth rate of the East Asian countries during the past two decades. The countries in the East, like Japan and some other countries being called the 'Five Dragons', lead in their economic performance with high annual growth rates over a number of years, out-performing the developed countries in the West. To explain the situation, research programmes were launched to investigate the nature and efficacy of the phenomenon. There seems to be some concerns that management practice in the East, in particular Japan, is having an important impact on management thinking and practices in the world. It is quite confused from both theoretical development and empirical findings whether or not the Japanese and, therefore, other East Asian's, are becoming more like the West or vice versa (Dollinger, 1988). Understanding of the ethics and society culture, philosophical and historical roots become the primary concern. Dollinger's paper entitled 'Confucian ethics and Japanese management practices' highlights that one of the major sources of Japanese ethical tradition, *The Analects of Confucius*, has a great contribution in the context of Japanese managerial and industrial practices.

#### **5.1.1 Management Philosophies in East Asian Countries and Japanisation**

Study of the book that was written by Sheldrake (Sheldrake, 1996) on 'Western management theory from the late nineteenth century Taylorism to the present day Japanisation', reveals that there is little incorporation of management philosophies of East Asian countries in the thinking. Johnson and Ouchi's paper entitled 'Made in America under Japanese management' in the *Harvard Business Review* (Johnson et al., 1974) have the view that there are certain aspects of Japanese management which are inseparable from their culture and therefore cannot be used in other Western countries like America. However, having made due consideration for their similarities and distinctions, they outline five key management areas that can be equally applicable in general. They emphasise on initiatives that are bottom-up, top management acts as facilitator in decision making, middle management are the shaper

of problems, decision-making be consensus, and employees are well taken care of. Keys and Miller (Keys et al., 1984) also consolidate three major Japanese management practices: namely long-term planning, commitment of lifetime employment and collective responsibility.

However, Ouchi and Jaeger (Ouchi et al., 1978) view that the advent of the factory system of production and the rapid rate of technological changes produced a high rate of urbanisation, mobility and society problems. These forces weaken the community, family, church and friendship ties of society. Social workers put these as the basic causes of alcoholism, divorce, crime and other symptoms of mental illness at the social level (Dollinger, 1988). Ouchi and Jaeger also believe that the success of Japanese companies sprang from the total inclusion of the employees into the work organisations. The organisations concern about the personal life and family life of their subordinates; a collective, non-individual approach to work and responsibility; and extremely high identification of the individuals within the organisation. This is characterised by the lifetime employment system operated in large organisations in Japan. Ouchi (Ouchi, 1981) in his best selling management book 'Theory Z: How American Business Can Meet the Japanese Challenge' describes that Theory Z is a consent culture, a community of equals who co-operate with one other to reach the common goals. Rather than relying exclusively upon hierarchy and monitoring to direct behaviour, it relies also upon commitment and trust. Therefore, the type Z organisation works better because of avoiding hierarchy and bureaucracy and achieving a high state of consistency in the internal culture (Sheldrake, 1996).

On the contrary views, as Sheldrake (Sheldrake, 1996) put it: England (England, 1983) questions whether Theory Z is relevant to the organisations in the America, given the self-evident difference in the cultures of America and Japan. Sullivan (Sullivan, 1983) also holds the views that Ouchi has not provided an accurate account of what actually took place in Japanese organisations. Keys and Miller (Keys et al., 1984) support these criticisms and conclude that existing research fails to capture adequately the essence of Japanese effectiveness. Oliver and Wilkinson (Oliver et al., 1992) put it that Japanisation entails the successful management of the conditions generated by a 'low waste' production system. Japanisation is a complex but

logically coherent process, with social and political as well as technical dimensions and to consider Japanisation as simply involving the transferability (or otherwise) of Japanese management practices is insufficient. They further reiterated if there is a 'secret' to Japan's success, they suggest that it lies in the synergy generated by a whole system, and not, as some have suggested, in specific parts of the system.

Sheldrake (Sheldrake, 1996) in his concluding remark critiques that Ouchi's thinking of higher productivity will be generated merely through greater worker involvement in the organisation is contentious. Ouchi's insistence on emphasising the human factors in Japanese management at the expense of the technical elements will render the analysis simplistic. However, Ouchi's works do provide a number of useful insights, not least the importance he gives to the concept of trust. Kagono, Nonaka, Sakakibara and Okumura (Kagono et al., 1985) have critiqued that models that posit culture as the single cause of managerial behaviour and practices are seen as insufficient to explain all Japanese phenomenon.

Despite the different views on Japanisation of which different aspects of culture are attached, the empirical question of whether or not Confucian society differs more among themselves than with the West has not been resolved. There is no reason why society cannot change in some ways while retaining the underlying tradition. This is exactly the Japanese experience as reflected in one of the Japan's most famous slogans of modernisation era: "*Eastern ethics, Western science*". As explained by Dollinger, it is improper to subsume all managerial phenomena under a cultural imperative model. Culture is not the only determinant of managerial behaviour, a mixing or merging of philosophies and culture based on local experiences may be more advantageous. Hong Kong's prosperity and her economical success during the past century present a good example of Western science and East Asian ethics together producing an economic miracle.

### **5.1.2 Japanese Culture and KAIZEN Strategy**

#### *a) Martial History of Japan and Culture*

Western countries always complained about the attitude of people in the East toward international and business relations and the ways and strategies they use in

business and negotiations. The critic contended that even as the Eastern country claims it is misunderstood, they do not try to make themselves understood. The mysterious Eastern or the inscrutable oriental cultures are inherently difficult for the Western countries to understand in particular the Japanese culture.

The best way of understanding the culture of a nation should start from their history. The martial history of Japan started from the ascendancy of some Japanese clans over others in the early centuries to its unconditional surrender to the Allies in 1945. The veil of mystery is the arts of war that permeate Japanese political, cultural, and social life. Cleary in his book 'The Japanese Art of War, Understanding The Culture of Strategy' (Cleary, 1991) wrote, "For the better understanding of the Japanese culture, there is no way except looking into the military rule and martial culture that have dominated Japan for many centuries." He further added, "The way of the warrior has been embedded in the deepest strata of the individual and collective unconscious that reflect in their manners and mentality." In the tenth and eleventh centuries, Japan faced a severe internal division of power and there was a lack of central direction of policies. The warriors competed among themselves for land, power and wealth. The strong military presence marking internal Japanese history has imprinted certain elements of warrior ethos onto important areas of Japanese thought and society.

*b) Influences of Zen Buddhism and Neo-Confucianism on Japan Culture*

He further wrote, "During the thirteenth century, the new samurai leaders of Japan again looked to China for inspiration. Now Zen Buddhism and Neo-Confucianism, by that time well established in China as dominant ways of thinking, drew the attention of the Japanese. The military authorities patronised Zen masters from China, including Japanese pilgrims who had studied Zen in China and Chinese immigrants who were fleeing the invading Mongol conquerors. This patronage ushered in a new epoch in Japanese civilisation, in which the warriors superseded the old aristocracy in both political and cultural leadership. Over the centuries certain aspects of Zen and Neo-Confucianism were espoused by the samurai, influencing the development of *Bushido* and Japanese ethics". It is crucial in understanding Japanese psychology and behaviour that an

assessment of the influence of centuries of military rule is done. The development of economic, political, social, and educational structures of Japan reflects this influence. It was ingrained into the nation through the elevation of the samurai caste into political and moral elite over a period of hundreds of years (Cleary, 1991).

Japan's *Bushido*, the way of the warrior, is the way of leadership and management and lives on in the corporate culture of many Japanese companies. The employees are the retainers, and the managers and owners are the lords. There is a code of mutual loyalty and duty between them. Such an organisation has an inherent strength that makes it virtually invincible (Levinson, 1996). It is also known that Japanese military thought and strategies have tremendous influence on Japanese management practices. The best evidence that they have used military strategies in their business practice is the way they conquered the world markets of business. Many of their strategies in entering and conquering the markets in the world very much resemble the art of war strategies originated in China.

c) *KAIZEN Management Practices and Strategies*

Nowadays the KAIZEN concept has been widely accepted and adopted in Japan. It is believed to have inherited concepts from Japan's *Bushido*. Imai in his book 'KAIZEN. The Key to Japan's Competitive Success' (Imai, 1996) shows that the key to Japan's competitive success is KAIZEN. He also explains how by introducing KAIZEN practices into the workplace that productivity may increase by a large percentage without major capital investment. He also shows how KAIZEN can lower the break-even point, enables a company to seize competitive opportunities quickly, in either a slow-growth or fast-growth economy. He also says why KAIZEN can work in any culture not just Japan.

KAIZEN means gradual, unending improvement, doing "little things" better; setting and achieving ever-higher standards. Imai described KAIZEN as the truth behind Japan's economic miracle and the real reason that the Japanese have become the masters of "flexible manufacturing" technology. Flexible manufacturing is described as the ability to adapt manufacturing processes to

changing customers' and market requirements. In Imai's book he explains how the sixteen KAIZEN management practices were implemented at work in Japan through company success stories and case studies. He examines step by step all the roles KAIZEN plays.

These management practices are:

1. Profit planning
2. Customer satisfaction
3. Total quality control programs
4. Suggestion systems
5. Small-group activities
6. Just-in-time production
7. Just-in-time information processing
8. Systems improvement
9. Cross-functional management
10. Policy deployment
11. Quality deployment
12. Total productive maintenance
13. Supplier relations
14. Top management commitment
15. Corporate culture
16. Problem solving in such areas as labour-management relations

KAIZEN means improvement. Moreover it means continuing improvement in *personal life, home life, social life, and working life*. When applied to workplace, KAIZEN means continuing improvement involving all managers and workers. Workplace improvement, as a part of successful KAIZEN strategy, goes beyond the dictionary definition of the word. Improvement is linked to maintaining and improving standards. In a broader sense, improvement can be defined as KAIZEN and innovation. KAIZEN strategy maintains and improves the working standard through small, gradual improvements, and innovation calls for radical improvements as a result of large investments in technology and equipment. A successful KAIZEN



strategy clearly delineates responsibility for maintaining standards to the worker, with management's role being the improvement of standards.

The KAIZEN concept is crucial to understanding the differences between the Japanese and Western approaches to management. *Their main difference is between the Japanese KAIZEN and its process-oriented way of thinking and the West's innovation and result-oriented way of thinking.* KAIZEN is one of the most commonly used words in Japan. KAIZEN has been so deeply ingrained in the minds of everyone's life that they often do not even realise they are thinking KAIZEN.

All the management efforts for KAIZEN boil down to two words: customer satisfaction. However, it is not easy to measure and define customer satisfaction. In KAIZEN, customer satisfaction is measured in such terms as quality cost, and scheduling. It is the management's job to establish priorities among these goals and deploy the goals down throughout the organisation. Total Quality Management, as corporate strategy must deal with the people. The net results are more productive workers, more efficient managers, improved communication, and more effective organisation. Better product and service must come from better people and better management, and not vice versa.

Creating a co-operative atmosphere and corporate culture has been an indivisible part of KAIZEN programs. In implementation of KAIZEN strategy, the following points are worth considering:

1. KAIZEN is a humanistic approach, because it expects everybody to participate in it. It is believed that every human being can contribute to improve the workplace.
2. KAIZEN makes the business more competitive and profitable. Japanese management follows the policy of continuing improvement for over 30 years without officially calling it KAIZEN.
3. KAIZEN strategy strives to give individual attention to both process and result. Proper rewards should be given to worker and management in recognition of their effort in process improvement. This is different from the recognition of the results.

4. KAIZEN strategy calls for both top-down and bottom-up approaches. The top-down management style usually calls for a design approach and bottom-up management style for an analytical approach. Therefore the design tools (for example, policy deployment, quality deployment) and analytical tools (for example, statistical processes control, control charts) are most useful.

The five-step KAIZEN movement or the 5-S movement takes its name from the initials of five Japanese words that start with s: *seiri*, *seiton*, *seiso*, *seiketsu*, and *shitsuke*. They are usually used as part of the visual management of an overall program; signs that repeat the steps are often posted in workshop.

1. *seiri* (straighten up)
2. *seiton* (put things in order)
3. *seiso* (clean up)
4. *seiketsu* (personal cleanliness)
5. *shitsuke* (discipline)

It is well known that the initial concepts of statistical quality control and its management implications were brought to Japan by such pioneers as Deming and Juran in the post-war years. However, most new concepts, systems and tools that are widely used in Japan today have subsequently been developed in Japan. These also represent qualitative improvements like the statistical quality control and total quality control in the 1960s. These are the perfect examples showing how the Japanese have been extremely successful in adapting and perfecting others' work.

Japanese ingenuity in adapting and perfecting the work of others includes work improvement teams, job rotation and on the job training. In entering the business world, Japan had been characterised by the "5 Is" strategies that can best be illustrated in product development and manufacturing processes. These five steps of the "5 Is" are: (Wee et al., 1995)

1. *Imitators*

Initial stage of Japanese entering into world market

## 2. *Improvements*

Japanese develop manufacturing with minor improvement, upgrading the quality while maintaining a low price strategy.

## 3. *Improving*

More improvements were made and it marked the beginning of local ingenuity in making better products with distinctive features and quality.

## 4. *Innovating*

Their products' superiority began to show over many other similar products made by the West.

## 5. *Inventions*

This is characterised by their quest to develop super-computers, artificial intelligence and biotechnology--an insurmountable lead over the rest of the world

Turning back to the management and quality management, Japan is well known by the fact that they are very successful in improving their product quality. However, it is quite ironic to say that it was Deming and Juran who introduced the concept of statistical techniques to Japan after the World War II. Japan even publicly acknowledges the works of the two gurus and names the highest award in Japan after Deming.

### *d) Summary of KAIZEN Management Strategy*

The previous Chapter focuses on the philosophies of the five leading quality gurus and a model summarising the majority of these philosophies is proposed. The model provides guidance for quality management or proposes some useful management framework to management satisfying customers' needs. However, some other important issues and factors are missing and are worth consideration. For TQM to be successful as a corporate strategy, it must deal with people. In implementing TQM in different countries or nations, the culture of that nation must be taken into consideration as well.

Wee, Lee and Bambang in their book 'Sun Tzu, War & Management' (Wee et al., 1995) present the seemingly unstoppable successes of the Japanese up to now

have begun not only to trouble many Western countries but has also puzzled many scholars. The conventional school of thought that the standard rules of the free market would apply and Japan would gradually evolve into an open economy did not seem to work. An argument rejects the Western tenet that capitalism and democracy are fundamentally similar everywhere. Western people argue that Japan operates on a different set of economic and political imperatives and their main objectives are to make Japan dominate the economic power in the world and are less concerned with following the market rules. Japan argues that American pride is too strong to the point of arrogance so they ignore the different culture in Japan and elsewhere in Asia.

The scholars generally believed that over the centuries, certain aspects of Zen Buddhism and Neo-Confucianism influenced the development of *Bushido* and Japanese ethics. Thus this Japanese culture affects their management practices and business strategies.

Mandu et al., (Mandu et al., 1994) includes an action-implementation process with a conceptual map of Deming's PDCA cycle and KAIZEN theory incorporated, illustrating how to manage TQM transformation. The system transformation process includes *management by policy* (Plan), *management by process* (Do), *management by fact* (Check) and *management by KAIZEN* (Act).

## **5.2 Cultural Link to an Economic Phenomenon and Confucian Dynamism**

### **5.2.1 Different Cultures Differ along Four Dimensions**

The most widely known research in the attempt to compare national culture in terms of broad value differences is the pioneering work of Greet Hofstede. Hofstede and Bond (Hofstede et al., 1988) conducted a cross-cultural survey called IBM survey that covered 72 countries. They further reduced the number of different cultures for comparison down to 53. The survey focuses on investigating the patterns of values and beliefs that distinguish countries from each other. Values, according to Hofstede's definition, are 'a broad tendency to prefer certain states of affairs over others' (Hoecklin, 1995). The study revealed that cultures differed mainly along four dimensions: *Power Distance*, *Individualism verses its opposite Collectivism*,

*Masculinity verses its opposite Femininity, and Uncertainty Avoidance* (Hofstede et al., 1988) (Hofstede, 1991) (Hofstede, 1993).

- a) Power Distance - that is, the extent to which the less powerful members of organisations and institutions (like the family) accept and expect that power is distributed equally. In organisations, it would condition the extent to which employees accept that their boss has more power than they have and the extent to which they accept that their boss's opinions and decisions are right because he or she is the boss. In the larger power distance culture, supervisors and subordinates consider each other as unequal (Hoecklin, 1995). The survey shows this dimension is positive. All societies are basically unequal but some are more unequal than the others (Hofstede et al., 1988).
- b) Individualism verses its opposite Collectivism - Individualism is a concern for yourself as an individual as opposed to concern for the priorities and rules of the group to which you belong (Hoecklin, 1995). This describes the degree to which individuals are integrated into groups. On the individualist side, everyone is expected to look after himself or herself and the immediate family. On the collectivist side, people from birth onward are integrated into strong, cohesive in-groups; often their extended family continue protecting them in exchange for unquestioning loyalty (Hofstede et al., 1988).
- c) Masculinity verses its opposite Femininity - the distribution of roles between the sexes in any society.
- d) Uncertainty Avoidance - this refers not to social behaviour but to man's search for truth. It indicates to what extent a culture programmes its members to feel either uncomfortable or comfortable in an unstructured situation. 'Unstructured Situation' is defined as novel, unknown, surprising, or different from usual. Uncertainty-avoidance cultures try to minimise the possibility of such situations by adhering to strict laws and rules, safety and security measures, and a belief of absolute truth. Uncertainty-avoidance features in business areas are: more worry about the future, more emotional resistance to change, tendency to stay with the

same employer, loyalty to employer, less risk-taking, rules should not be broken (Hoecklin, 1995).

The first three dimensions described the three types of expected social behaviour: behaviour toward people higher or lower in rank (Power Distance), behaviour toward the group (Individualism and Collectivism) and behaviour according to one's sex (Masculinity and Femininity). Hofstede's survey also shows those Neo-Confucian countries generally score fairly high in Power Distance, low on Individualism and mid-range on Masculinity and Femininity. People in Uncertainty-avoiding countries are more emotional and are motivated by inner nervous energy. Uncertainty-accepting cultures are more tolerant of behaviour and opinions that differ from their own; they try to have few rules as possible. They are more phlegmatic and contemplative. Their environment does not expect them to express emotions (Hofstede et al., 1988).

Hofstede and Bond (Hofstede et al., 1988) also proposed two scenarios of **Domain of Culture** that accounts for the effect.

- a) First, the quality of management depends on the qualities of the people to be managed;
- b) Second, the quality of management explanation begs the question of how an entire nation can collectively produce better management than another nation.

These two scenarios of domain of culture conclude that there is a *clear link between the economic growth and development of a nation with their cultures*. For the real explanation of the economic growth, researchers labelled the cultures of the East Asian countries 'Neo-Confucian' that is, rooted in the teachings of Confucius. Hofstede and Bond saw themselves as 'culturists' holding their views that specific nations have specific cultures that are rather sticky and difficult to change in any basic fashion, although they can often be modified. They defined culture as a collective programming of the mind that distinguishes the members of one category of people from those of another. This definition applies well to national as well as corporate level. The Neo-Confucian hypothesis is that the East Asian countries have common cultural roots going far back into history. During the past 40 years this

cultural inheritance has constituted a competitive advantage for successful business activities under the world market conditions.

Hofstede and Bond also stress that the cultural inheritances are not genetically transferred; they can be in principle acquired by any human being that is at the right place at the right time. People will receive the mental programming called culture from the day a person is born. Evidence has shown that different researchers from different countries were brought up under different cultures and will have different mental programming, in effect leading to different concepts of management philosophies. That also explains why, to some extent different gurus of different cultures may have different focus in their own philosophies.

### **5.2.2 Fifth Dimension of ‘Confucian Dynamism’**

Another Chinese Value Survey (CVS) was also conducted (Hofstede & Bond, 1988) based on the basic values of Chinese people that showed identical results in the first three dimensions, but less identifiable in the fourth. Nevertheless, a fifth dimension called *Confucian Dynamism* was revealed which showed how the culture deals with a choice from Confucius’ ideas. The CVS survey shows that the country scores on Confucian Dynamism are strongly associated with those countries’ economic growths. The shared culture of societies, greater *Collectivism and Confucian roots*, may have given them particular advantages in increasingly complex and dynamic markets (Hoecklin, 1995). Thus the survey concluded that there is *a cultural link to an economic phenomenon*.

The first three dimensions (Power Distance, Individualism and Collectivism, Masculinity and Femininity) show the differences between Western and Eastern minds. The fourth one (Uncertainty Avoidance) uniquely is a Western dimension and the fifth one (Confucian Dynamism) is an Eastern dimension. Hofstede and Bond believed that since Eastern thinking is synthetic whereas Western thinking is analytical (Hofstede et al., 1988), the success of the Eastern society in this period could be partially due to cultural preferences (Hoecklin, 1995).

### 5.3 Chinese Philosopher Confucius and Chinese Culture

Confucius was born about 2500 years ago. The Confucius of whom to be discussed here refers to *The Analects of Confucius*. The Analects of Confucius (Lun Yu, the Chinese equivalent of the Analects) is a collection of the 'selected sayings' of the Master and was compiled after his death by the Master's disciples. The Analects contain 20 books and came from different sources, on different dates. The Analects of Confucius translated and annotated by Waley (Waley, 1989) serves as a good reference of the Analects.

Hofstede and Bond as well as many other authors wrote articles and books on the Analects outlining the key principles of Confucian teaching (Hofstede et al., 1988) as:

1. The stability of society is based on unequal relationships between people.
2. The family is the prototype of all social organisations.
3. Virtuous behaviour toward others consists of treating others as one would like to be treated oneself: a basic human benevolence.
4. Virtue with regard to one's task in life consists of trying to acquire skills and education, working hard, not spending more than necessary, being patient, and persevering.

Confucius suggested that there are **five relationships between people**: *ruler and subject, father and son, older brother and younger brother, husband and wife, and older friend and younger friend*. These relationships are based on mutual, complementary obligations. The senior should take care of the junior and the younger should respect the older. As an individual, one should try to cultivate individual behaviours and ethics. Moreover, a person is not primarily an individual; rather he or she is a member of the family. Being the elder or senior member in the family, he or she should maintain harmony in the family. Harmony would give people dignity, respect and prestige. Among all the essential virtues 'filial piety' is recognised to be the most important one to observe. Family members are expected to integrate into a strong and cohesive group that extends to extended families. The family chief (usually the one with the most senior level in terms of ancestors in the family) looked after the families' members, and protected them. All family members



were expected to be loyal to the family, respect the senior and eldest and take care of those who are junior and younger in the family.

Among all the virtuous behaviours, Confucius reckoned that *benevolence* is the most essential one. Benevolence (ren' in Chinese writing) in Chinese is made up of two Chinese words: 'two' and 'people'. It accounts for the relationship between two or more people and deals with one's kind-heartedness, mercy and humanity.

### **5.3.1 Global Total Quality Management Strategy (GTQMS) Adds New Dimension To Total Quality Management**

The study of the five Western quality gurus' philosophies in Chapter 3 illustrated that these philosophies can be amalgamated into fourteen criteria that include: *Management commitment, Employee's involvement and teamwork, Education and training, Customers' satisfaction, Performance measurement, Error prevention, Communications, Goals and target setting, Quality document system, Recognition, External and social relationship, Continuous improvement, Social effect, impact and social culture, and Government and social policy.* They are conveniently being called the **Western Quality Gurus' TQM Philosophy** showing their sources of origin. On the other hand, they represent the hard side of the global TQM strategy taking care of the quality management aspects of the organisations.

A survey on the general beliefs of Confucian virtues and characters on business management in Chinese based society Hong Kong was conducted, the results of the returns which is shown in the latter Chapter were very encouraging. The research leads to the conclusion of adding a new dimension to the TQM concept that has a cultural phenomenon will be useful. The twenty-four self-cultivation behaviours and characters based on Confucian virtues and teachings were incorporated and become self-cultivation and improvement business management strategies. Since its origin is from Confucianism, it is therefore conveniently called **Eastern Guru's Philosophy** in business management. They also represent the soft side of the global TQM strategy taking care of the individual behaviours and ethics. This merged **Global Total Quality Management Strategy (GTQMS)** has a new dimension of cultural

difference to be added to the Western TQM philosophy that fills a gap in knowledge. Thus it gives rise to new thought in total quality management concepts.

### **5.3.2 Confucius Principles of Learning, Self-Cultivation and Social Relationship**

Confucius had set up eight remarkable principles of learning, self-cultivation and social relationships (Tsai, 1995):

1. To investigate things;
2. To expand our knowledge;
3. To be sincere;
4. To rectify one's mind;
5. To cultivate oneself;
6. To harmonise or regulate one's family;
7. To manage the state;
8. To bring peace to the world.

Confucius said, "All things in nature have their own states and phenomena. All matters in the society have their starting and ending. If one can appreciate these underlying principles, then I believe one is having a good understanding of the basic phenomena". The principles are further iterated as follows:

- Investigate the things and study the phenomena of nature in order to acquire knowledge and study the nature of things.
- Acquire the knowledge and study the nature of things in order to be in good faith, honest and sincere.
- Achieve good faith, honesty and sincerity in order to have proper and wholehearted wishes and intentions.
- Have proper and whole-hearted wishes and intentions in order to cultivate one's behaviours and ethics.
- Cultivate one's behaviour and ethics in order to regulate and harmonise one's family.
- Regulate and harmonise one's family in order to manage the state.
- Manage the state in order to rule the whole country and bring peace to the world.

In Confucius's philosophies, the cultivation of individual behaviour and ethics is the most important element in order to regulate and harmonise an individual's family and subsequently manage the state and rule the country.

Confucius also suggested that one should proceed to learn *the rites, music, archery, horsemanship, history and mathematics*, in order to reach the three virtues of *wisdom, benevolence and courage*. Confucius divided his teachings into four stages:

1. To set one's mind on the way;
2. To base oneself on virtue;
3. To rely on benevolence for support; and
4. To seek recreation in the arts.

On his list of priorities, *conduct* is the first requirement; *speech* comes second, *government matters* third and *literature* the last one. To be successful in meeting these fundamental principles of learning, self-cultivation and social relationship, people should demonstrate and practise daily these principles.

Confucius' basic principles to cultivate one's behaviours and ethics, regulate and harmonise one's family, manage the state and rule the whole country and bring peace to the world was studied. Appendix A shows the attempt of identifying the special behaviours and characters from various Books and Chapters of the Analects of Confucius that are related to the basic principles.

The related behaviours and characters are described as follows. Cultivation of individual behaviours includes 'learn', 'trust', 'moral conduct', 'wisdom' and 'words and deeds'. Cultivation of individual ethics includes 'benevolence', 'righteousness', 'courtesy' and 'question and forgive'. Regulate and harmonise a family include 'filial piety', 'sincerity', 'thrift', 'reception' and 'respect'. Manage the state include 'govern', 'communication', 'loyal', 'team effort' and 'reward and punishment'. Rule the whole country and bring peace to the world include 'integrity', 'honest and clean', 'observe regulation' and 'proper title'.

Appendix A shows the themes of Confucius' teaching related to the twenty-four individual behaviours and characters in various Books and Chapters of the Analects of Confucius. These tables help to give quick reference to the individual behaviours and characters described by the Analects of Confucius. The purpose of this is to build up core philosophies of these twenty-four behaviours and characters that relate to Confucius' philosophy. In these various Chapters, some of them are commonly used Chinese idioms that had been ingrained in the people's minds since their childhood. The search for the best-suited idioms was carried out through literature, dictionaries and CD ROMs. The most commonly used Chinese idioms for good practices that are related to individual behaviours and characters were identified.

### 5.3.3 Confucius' Philosophies in Business Environment

Confucius' philosophies have been so deeply ingrained in Chinese people's mind that they formed the major ingredients of the Chinese culture. The principles of Confucius' philosophies can be adopted and mapped into the business environment:

#### **Confucian Philosophies**

Cultivate one's behaviours

Cultivate one's ethics

Regulate and harmonise  
one's family

Manage the state

Rule the whole country

#### **Business Environment**

Cultivate one's behaviours in business

Cultivate one's professional ethics

Manage a section or department in  
an organisation

Manage the organisation

Manage a corporation, multi-national  
corporation

While Confucius' philosophies originally applied to the development of the individuals, these fundamental principles equally apply to business. The following are his philosophies expressed in a business context:

- Investigate the things, study the skills and techniques in the business field in order to acquire knowledge and understand the fundamental concept of the business field.
- Acquire knowledge and understand the fundamental concept of the business field in order to be in good faith, honest and sincere in the business field.

- Behave in good faith, honesty and sincerity in the business field in order to have proper and wholehearted wishes and intentions working in the business field.
- Have proper and wholehearted wishes and intentions working in the business field in order to cultivate one's behaviours and have occupational ethics in business field.
- Cultivate one's behaviour and have occupational ethics in the business field in order to manage and harmonise one's section or department in an organisation.
- Manage and harmonise one's section and department in an organisation in order to manage the whole organisation properly.
- Manage the whole organisation properly in order to manage the whole corporation to world-class business performance excellence.

Confucius' teaching requests individuals to have the behaviours of 'learn', 'trust', 'moral conduct', 'wisdom' and 'words and deeds'. All these things are the essential elements for a person working in life. The individual professional ethics include the behaviours of 'benevolence', 'righteousness', 'courtesy', 'question' and 'forgive'. This is absolutely true that for any profession the individuals should try to maintain these proper behaviours and attitudes in order to fulfil their jobs' prescriptions. These two criteria of behaviours will give the best people for the given job. Moreover, a well-managed department and company or even a multinational company would depend on the people's quality and the abilities of the managers and the organisation to achieve the goals. These scenarios conform to the domain of culture proposed by Hofstede and Bond that better quality of management occurs because of the better qualities of the people being managed. Also the better management of the entire nation is because of good leadership and policy management of the nation. Thus, the Confucius' philosophies for business management strategies therefore become:

### **Behaviours & Characters**

### **Best Performance in Business Environment**

#### **Cultivation of Individual Behaviours**

- |          |                                  |
|----------|----------------------------------|
| 1. Learn | Study for purpose of application |
| 2. Trust | Keep a promise                   |

- |                    |   |
|--------------------|---|
| 3. Moral conduct   | Be of noble character and high prestige |
| 4. Wisdom          | Make a sensible selection               |
| 5. Words and deeds | Suit the action to the word             |

#### **Cultivation of Professional Ethics**

- |                  |   |
|------------------|---|
| 1. Benevolence   | Be benevolent and see benevolence         |
| 2. Righteousness | Speak out sternly from a sense of justice |
| 3. Courtesy      | Treat people with due respect             |
| 4. Question      | Do not feel ashamed to ask and learn      |
| 5. Forgive       | Forgive someone                           |

#### **Manage a Section or Department in an Organisation**

- |                 |                                      |
|-----------------|--------------------------------------|
| 1. Filial piety | Show filial obedience                |
| 2. Sincerity    | Express earnestly & sincerely        |
| 3. Thrift       | Be economical with one's money       |
| 4. Reception    | Reception and Hospitality            |
| 5. Respect      | Respect senior generation and eldest |

#### **Manage an Organisation**

- |                          |   |
|--------------------------|---|
| 1. Govern                | Rule the state well, give people peace and security |
| 2. Communication         | Well communication between senior and junior        |
| 3. Loyal                 | Be loyal and devoted to work                        |
| 4. Team effort           | Plan and work jointly and co-operatively            |
| 5. Reward and punishment | Proper incentives and punishment                    |

#### **Manage and Operate a Corporation**

- |                       |   |
|-----------------------|---|
| 1. Integrity          | Maintain integrity even under severe and desperate conditions |
| 2. Honest and clean   | Be honest and clean in performing duties                      |
| 3. Observe regulation | Observe rules and regulations                                 |
| 4. Proper title       | Be perfectly justifiable                                      |

These Confucian philosophies in business and management will be used as survey questionnaires to investigate the general acceptance of these ingrained cultures in the Chinese business environment. Further discussions on the design of the questionnaire will be presented in Chapter 8.

#### 5.4 Conclusion

Researchers in the process of implementation of TQM in various organisations reported that one of the major barriers to overcome is to change the quality concept of the people and culture of the organisation. Reinforcing the TQM concepts based on the Western gurus' thinking might not be totally acceptable to some organisations from the East Asian countries having an entire different historical background, history of economic development and economic structure that are significantly different from the West. There is no reason why these countries while adapting TQM philosophies as the Western science cannot change and modify in some way retaining their underlying traditions or cultures. Taking TQM implementation in Japan as an example, Ishikawa's TQM philosophy has incorporated those essences of Japanese culture and national policy parameters etc., in the TQM concept. As illustrated, the lifetime employment is one of the major TQM concepts of Ishikawa. Hofstede (Hofstede, 1993) holds the view that 'management' has different meanings to a larger or smaller extent from one country to the other, and it takes considerable historical and cultural insight into local conditions to understand its processes, philosophies, and problems. Looking into a Chinese based society like Hong Kong that is heavily influenced by Western science and technology, the TQM philosophies with an added local culture would be desirable and advantageous.

The survey as conducted will be discussed in Chapter 8 and 9 looking into the general beliefs of Confucian virtues and characters as business management strategies in the Chinese based society of Hong Kong. This research may lead to the conclusion that adding a new dimension to the TQM concept as a cultural link to the economic phenomenon is advantageous. The twenty-four self-cultivation behaviours and characters based on Confucian virtues and teachings were incorporated and become self-cultivation and improvement business management strategies. Since its origin is from Confucianism, it is therefore conveniently called **Eastern Guru's Philosophy**

in business management. The merged **Global Total Quality Management Strategy (GTQMS)** having both hard-side TQM concepts and soft-side behaviours thinking gives rise to new thought in TQM philosophy. It has a new dimension of cultural difference to be added to the Western TQM philosophy that fills the gap in knowledge of management thinking.

Confucius set the tone and introduced the major themes of Chinese philosophy. Previously, the focus of discussion on Confucius has been on the ethical aspect. The most important theme in Confucius' teaching is humanism and it is generally agreed that the dominant theme is self-cultivation and moral preaching. Confucius put emphasis on human nature and the value of developing oneself through learning. The teachings of Confucius have been used primarily to propose a concept of wisdom as the unity of truth and goodness, which provided a framework for understanding the relationships among individual behaviours and ethics, harmonise the family, rule the state and govern the whole country. Above all, Confucius put learning and self-cultivation as the most essential elements for individuals in order to achieve some level of perfection.

The study showed that prevalent TQM theory and practice are dehumanising because it is dominated by corporate and business interests. Genuinely humanising TQM processes ought to embody and promote the concepts of wisdom originated and inherited from the cultures of each nation. Confucianism is a humanistic philosophy and the human being is regarded with dignity and respect. The philosophy also emphasises values of harmony as well as loyalty, group and family identification. Righteousness and acts of righteous individuals are within the framework of loyalty.



## **Chapter 6 Philosophies of Chinese Philosopher Sun Tzu's The Art of War, The Chinese Thirty-six Strategy Influence on Business and Management Strategy**

### **6.1 The Philosophies of Sun Tzu's The Art of War in Business and Management Strategic Planning**

#### **6.1.1 Introduction**

Recent decades have witnessed an explosive growth of interest in the Far East. In the 1980's, Japanese management practices had gained tremendous popularity focusing on corporate welfare and theory of strategy, including Asian practices and their underlying philosophies. In Chapter 5, the management philosophies of East Asian countries and Japan indicated that there are certain aspects of management, which are inseparable from their cultures. And for those Neo-Confucian countries, *the Analects of Confucius* have great influence in the context of managerial and industrial practices and some links to economic development. Moreover, as explained by Dollinger, it would be improper to subsume all managerial phenomena under a cultural imperative model that is not the only determinant of managerial behaviour; a mixing or merging of philosophies and culture based on local experiences may be advantageous.

Sun Tzu's *The Art of War*, the ancient Chinese military theorist, is the most famous work on military operation in ancient China and the books have been repeatedly translated, investigated and discussed. Management books with thoughts that originated from Sun Tzu were published instructing companies the business and management strategies.

As mentioned in Chapter 1, Sun Tzu is the oldest military treatise in the world and one of the greatest cultural legacies of the Chinese nation. In some other famous Chinese military classic, *Annals of the Three Kingdoms*, there were many strategies that mirrored those advocated by Sun Tzu. The great Chinese warlord Cao Cao carefully annotated a text on military strategies that was a compilation of Sun Tzu's thought. Cao Cao had been very successful in battle and he eventually united the whole of China. There were a lot of successful military leaders in Chinese history

that had attributed their victories to Sun Tzu's principles (Krause, 1996). Today, Sun Tzu's *The Art of War* remains a compulsory text in major military schools around the world and its influences on the twentieth century military thinking is undisputed. Also include in the very recent times, the use of the military strategies in business context is increasing.

Levinson (Levinson, 1994) wrote, "Having read the book, I'd go further. I would apply these requirements to all representatives, senators, and the president. This book would have changed history, if the right people had read it.... The second chapter would have told Lyndon Johnson exactly what he was doing wrong in Vietnam. Sun Tzu spent half the chapter warning his readers against fighting protracted wars. It cost the United States 57,000 lives to rediscover what Sun Tzu wrote 2500 years ago." Levinson also gave examples of Napoleon Bonaparte who used many of Sun Tzu's principles to conquer most of Europe. He lost only when he did not heed Sun Tzu's guidance. France had the first translation of Sun Tzu's work in 1772 where English and German versions were available only in 1905 (Krause 1996). Levinson wrote, "In 1937, a Japanese writer published an essay on *The Art of War* in German. It was commented that fortunately neither Hitler nor the Nazis have seen Sun Tzu's articles, otherwise the Nazis might have won the Second World War." Sun Tzu did warn the sovereign not to interfere with his generals. Levinson further commented that Hitler's interference with his generals cost at least 500,000 persons at Stalingrad and that was only one of many incidents that help people understand Sun Tzu's *The Art of War* and his profound strategies.

### **6.1.2 Sun Tzu's *The Art of War* and Japanese Business Strategies**

Sun Tzu's *The Art of War* was introduced to Japan around 716 AD to 735 AD and applied successfully in Japanese battlefields as early as the 16th century (Wee et al., 1995). Nowadays, it is known that Japanese military thought and strategies had tremendous influence on their management practices. Sun Tzu's *The Art of War* is one of the many selective Chinese classics recommended to Japanese chief executives for reading. The military influence on Japanese business practices extends beyond the reading of books. Most significantly, Japanese companies are well known for conducting sessions for internal management meetings for different

levels of employees. The best evidence that the Japanese have used military strategies in their business practices is the way they capture the world markets in many different products. It may be that the Sun Tzu's *The Art of War* made inspiration for much of Japan's economic success in the world trade markets. They have traditionally been known for their skills in perfecting someone else's efforts. Their perfecting skills could have been extended to the work of Sun Tzu.

It seems that the Japanese approaches to world market are well planned. Everything happens at the right time and fits their national ability and needs, as well as the demand of the world market. However, it is a fact that Sun Tzu's *The Art of War* was already known to them since the 8th century, and they mastered it at least 1,000 years earlier than the Western world. Given these long historical perspectives and the Japanese skills in perfecting other's ideas and works, it is conceivable that Sun Tzu's *The Art of War* has significant influence on the ways the Japanese conducts their businesses that results in their successes today.

### **6.1.3 Sun Tzu's The Art of War and Flow Chart Structure**

There are a number of papers and books; both in Chinese and English or even some other languages, published on the Sun Tzu's *The Art of War* applying the war strategies in business and management environments. Many of them talk about Sun Tzu's philosophies or strategies and in some cases successful stories using the strategies. However, there are only a few presentations with strategic models. Of these models presented, there is no clear methodology proposed showing how systematically Sun Tzu's strategies could be identified, implemented, reviewed and acted under different situations and conditions.

Wee, Lee and Bambang (Wee et al., 1995) present Sun Tzu's *The Art of War* comprehensive model for strategies that has the following process: *Situation Appraisal, Formulation of Goals, Formulation of Strategies, Evaluation of Strategies, Implementation of Strategies (Human factor), Implementation of Strategies (Operational factor), and Strategic Controls*. The structure of the model itself resembles Deming's PDCA cycle for continuous strategic planning and

improvement. However, the model has not included much of the details of Sun Tzu's philosophies.

Sun Tzu's *The Art of War* was written and presented in the most logical manner, with the detail planning and other essential situation considerations put in the early books. The other considerations or decisive factors, such as current environmental factors, competitor's situations, survival strategies and detail information of the situations etc., are highly essential and therefore presented. In order to retain the Sun Tzu's logical flow of all considerations and essential decision factors, framework structure follows the thirteen books sequence in the flow chart format is presented in Appendix B which modified from Ngai's tables (Ngai, 1994). This framework structure of Sun Tzu's *The Art of War* helps appreciate the philosophies and apply these strategies in the most logical flow manner under different situations and factor considerations. The Chinese-English translation is based on "Sun Tzu's *The Art of War* 100 Elements" by Luo (Luo,1994).

The main themes of the thirteen books were based on Liu (Liu, 1992) forming the structure with equivalent business management strategies formulated to become the questionnaires for a survey. Details of the main themes and the equivalent business management strategies selected for questionnaire are presented in Chapter 8. The result of the survey verifying the impact, usefulness and acceptance of the philosophies as business management strategies in the Hong Kong situation are then presented in Chapter 9.

Table 6.1, therefore, shows the links of the Sun Tzu's thirteen books, the main themes of the books and their relevant business management strategies.

Sun Tzu's *The Art of War* was written in classical Chinese, the words and philosophies are difficult to understand and comprehend. Wee et al., (Wee et al., 1995) quotes Griffith's (Griffith, 1963) works that gave some different Sun Tzu's translated titles from Griffith in 1963, Giles in 1910 and Cheng Lin in 1969. Sawyer (Sawyer, 1994) also gives slightly different translation of the titles of the Sun Tzu's thirteen books. However, Wee's translation of the titles are more related to the

present business and management situations, and therefore they are adopted in this thesis. Thus, the thirteen books' titles are:

1. Situation Appraisal
2. Waging War
3. Strategic Attacks
4. Disposition of the Army
5. Forces
6. Opportunism
7. Manoeuvres
8. The Nine Variations
9. Marches
10. Terrain
11. The Nine Types of Battlegrounds
12. Attacking with fire
13. Espionage

Sun Tzu's The Art of War was written over two thousands years ago and so it is always difficult to appreciate the situations and constraints at that time. However, the use of the flow-chart format described would help formulate details of thoughts and philosophies of strategies and thus make structuring and designing an expert system for quality management strategy easier.

#### **6.1.4 The Sun Tzu's Principles for Business Management Strategies**

The idea of relating management philosophies and organisation behaviours to the strategies of Sun Tzu by looking into the principles advocated by him and the situation of top management seems to be unrealistic. However, the differences between ancient and modern times and also between military and business operations are considered. His wise counsel on waging war in ancient China shed some light on strategic management in today's corporations. The objective is to emulate the model set by Sun Tzu, presenting the essence in organising for strategy. Organisations should have their strategic plans constantly reviewed, continuously shaped and positioned in the struggle of an often-hostile environment in which it must win against business competitors.

Having understood the philosophies of Sun Tzu's *The Art of War*, it is essential to identify how and in what ways these philosophies could be applied in business strategies. Krause (Krause, 1996) presents a summary of Sun Tzu's principles for business success. Namely, these major business principles are *Learn to fight, Show the Way, Do it right, Know the facts, Expect the worst, Seize the day, Burn the bridges, Do it better, Pull together, and Keep them guessing*. These ten principles become and form the foundation for the future competitive success. People in the organisation have to face all kinds of competition. Competition may come from organisations as well as individuals. Winning or losing in battle is very much based on how effectively they manipulate perceptions and opinions. Nowadays, competition is very much information competition. Those who have the most accurate and up-to-date information will win. Information will help in the analysis process and decision making. The wisdom for the traditional competition can equally apply to competition for information.

With reference to Wee et al. (Wee et al., 1995) and Krause (Krause, 1996) strategies for the *Sun Tzu's Business Management Competitive Strategies* were devised. These thirteen business management strategic criteria form the bases of the business excellence performance evaluation using QFD methodology.

<u><i>Sun Tzu's 13 books</i></u>	<u><i>Sun Tzu's Business Management Competitive Strategies</i></u>
1. Planning	Planning of Strategies, Estimation & Leadership
2. Competitive Actions	Resources & Competitive Actions
3. Competitive Strategy	Competitive Strategy & Wisdom
4. Positioning	Positioning & Targeting, Strengths & Weaknesses Estimation
5. Opportunity & Timing	Opportunity, Timing & Management Structure
6. Control	Control of Market Situations & Climate
7. Managing Direct Conflict	Management of Conflict & Avoid Confrontation
8. Flexibility	Flexibility & Adaptability
9. Manoeuvring	Observing & Manoeuvring

10. Types of Competitive Situations & Causes of Failure	Competitive Situations & Causes of Failure
11. Competitive Conditions & Offensive Strategy	Competitive Conditions & Offensive Strategy, Alliance & Vision
12. Destroying Reputation	Destroying & Decision
13. Gathering Intelligence	Intelligence & Information

## 6.2 The Thirty-six Strategies

Together with the Sun Tzu's The Art of War, the Thirty-six Strategies have become part of the collective unconscious of most educated Chinese. They have learned all these strategies in schools, literature, and even in some television series. In most business negotiation, the strategies and tactics being used are very much related to the Sun Tzu's The Art of War principles and the Thirty-six Strategies sayings.

Cleary (Cleary, 1991) in his book 'The Japanese Art of War: Understanding the Culture of Strategy' outlines the thirty-six strategies used by Japanese in business and negotiations. Brahm (Brahm, 1995) in his book 'Negotiating in China 36 Strategies' also presents the thirty-six strategies that he expects Western investors should be acquainted with when doing business in China. These two presentations are identical in meaning with slightly different translations of these proverbs. These thirty-six strategies are then further categorised into six major strategies.

- |                                      |                     |
|--------------------------------------|---------------------|
| 1. Strategy for Ensuring Win         | (Strategy 1 to 6)   |
| 2. Strategy for Planning Opportunism | (Strategy 7 to 12)  |
| 3. Strategy for Waging War           | (Strategy 13 to 18) |
| 4. Strategy for Confusing Enemy      | (Strategy 19 to 24) |
| 5. Strategy for Alliances            | (Strategy 25 to 30) |
| 6. Strategy for Defeating            | (Strategy 31 to 36) |

These thirty-six strategies used as a questionnaire are presented in Chapter 8 and the result of the survey verifying the usefulness and acceptance of them as business management strategies in the Hong Kong situation are then presented in Chapter 9.

### 6.3 Conclusion

The objective of the research is to study how management philosophy can be related to the prescriptions of Sun Tzu, by drawing parallels between the principles underlying behaviour advocated by him and the situation of top management. The differences between ancient and modern times and between military and business operations are considered.

To gain some insights into these highly complex phenomena of strategy processes in business and management, the research begins by exploring the organisational attributes inherent in strategic planning processes and their understanding and applicability of Sun Tzu's philosophies in current practices. An understanding of these may help better to appreciate how to structure planning activities. These attributes include the organisation of strategic planning, its inherent bureaucracy, the different facets of the process operating at corporate and divisional levels and the structural attributes, etc. In the last section the main themes of Sun Tzu's The Art of War and their parallel philosophies for business management and best practices are identified.

Sun Tzu's The Art of War placed an emphasis that *"Winning a victory and subduing the enemy without fighting is the highest excellence"* and *"The best policy for the military operations is to gain victory by means of strategy."* It is always in the Chinese mind that the best strategy to win is by strategy. Also the Thirty-six Strategies was the consolidation of the Chinese experiences and strategies commonly used in the last thousands of years. There are a number of characteristics and specialities about these strategies:

War and competition have their rules and regulations, strategies should therefore have rules and regulations to follow and work under them as well. Throughout The Art of War, Sun Tzu emphasised the critical role of people in determining the success of military warfare and the same would apply to business. According to Sun Tzu, it is crucial for the commander, prior to engagement in any war to know of the geography. Parallel in business is a good understanding of the market situations.



Sun Tzu, in *The Art of War*, placed great emphasis on laying plans, method and discipline involving the organisation, and intelligence. In all cases, the use of resources was clearly involved. In using different strategies, care should be taken in understanding the positions of self and enemy, never underestimating the situations that could cause disaster. Sun Tzu's *The Art of War* said, "*If you know both the enemy and yourself, you will fight a hundred battles without danger of defeat.*" Also if there is no confidence in winning, one should retreat at once, reserving energy and resources for the next opportunity.

Sun Tzu's *The Art of War* could be applied to emphasise the strategic approach in managing corporations. His rationale for implementing a strategic planning system within organisations would be to increase the probability of beating competition by forecasting as far as possible relative strengths and weaknesses, and so anticipating outcomes when competition is entered. The ultimate purpose for implementing systematic, rational and strategic approaches in management is *to win and keep on winning*. For the top management of major corporations, this means continued prosperity through profitable ventures, often in increasingly competitive and capturing markets (Foo et al., 1994).

Environmental factors are critical to the appropriate design of a strategic planning process within an organisation. One of the key roles of strategic planning processes is to ensure that organisations respond effectively to changing external situations. The citation from *The Art of War* shows that this was recognised by Sun Tzu in medieval times. To do so effectively, the planning process requires adequate means of monitoring the environment, of understanding likely changes and responding to them.

As part of business war, the top management needs to formulate strategies in the understanding of both the favourable and unfavourable developments in the external environments. When the external factors are favourable, they should exploit them for organisational purposes. If there are unfavourable trends, they must also act to minimise the negative impacts. From *The Art of War*, Sun Tzu was obviously instructing the generals to plan their strategies to take into account anticipated and

actual external environmental conditions but to be adaptive in their implementation. It is important to understand the army's capability in adapting their strategies and tactics to changes in the external environment. Such a capability is equally essential in modern business organisations.

Sun Tzu saw clearly that direct confrontation between armies can involve heavy losses on both sides and that the deployment of means to subdue the enemy without battle was preferable and therefore more skilful. In today's business parallel, in an increasingly global and contested marketplace, it is the use of means of gaining dominance without mutually destructive price wars that is to be preferred. Traditionally, competition tended to be thought of as involving action and reaction in the areas of price and promotion, and this still continues to be so to a large extent (Foo et al., 1994).

Table 6.1 shows the links between the Sun Tzu's The Art of War Chapter Framework Structure to the Main Themes of the Thirteen Chapters, Business Strategies Business Strategies of the Thirteen Chapters and Business Strategies Framework which is for Business Performance Excellence Evaluation using QFD Methodology

Chpt	Sun Tzu's Art of War	Link to Chapter ref.	Chpt Ref.	Sun Tzu's Art of War, 13 Chapters Main Themes	Ref page no.
1	Situation Appraisal	1.1	1	1.1 What is war? It may be described as one of the most important affairs to the state.	1
	Strategic plan	1.2	2	1.2 We should analyze and compare the conditions of ourselves and an enemy.	2
	Administrative plan	1.3	6	1.3 Any military operation takes deception as its basic quality.	6
	Tactics plan	1.4	7	1.4 He who plans and prepares carefully will find himself in a favourable position and win victory.	7
	Summary				
2	Waging War	2.1	2	2.1 You have had enough money.	2
	Strategy for employing military (financial)	2.2, 2.3	8	2.2 We have heard of criticism of a hasty campaign, we have never seen the cleverness in prolonging a war.	8
	Strategy for engaging the military at war (at the battlefield)	2.4	9	2.3 He who is adept in military operations never raises an army twice.	9
	Summary	2.5	10	2.4 Hence a wise commander should strive to get provisions in the enemy state.	10
			11	2.5 The more times you defeat the enemy the stronger you will be.	11
			12		12
			13		13
3	Strategic Attacks	3.1	15	3.1 Warning a victory and subduing the enemy without fighting is the highest excellence.	15
	Policy	3.2	16	3.2 The best policy for the military operations is to gain victory by means of strategy.	16
	Strategy for planning offensive	3.3	17	3.3 He must gain complete victory all-under-heaven.	17
	Strategy for attack	3.4	18	3.4 The weaker battles on submissively without taking its strength into account, it will surely be conquered by the stronger.	18
	General's power and authority	3.5	21	3.5 The general assist the ruler in governing a nation.	21
	Victory five main factors	3.6		3.6 If you know both the enemy and yourself, you will fight a hundred battles without danger of defeat.	
	Summary				
4	Disposition of the Army	4.1	22	4.1 One may foretell a victory but cannot be sure to gain victory as one wishes.	22
	Military disposition strategy	4.2	23	4.2 They can, on one hand, protect themselves and, on the other hand, win a complete victory.	23
	Military instruction	4.3	24	4.3 Those skilled in war always defeated the enemy that could easily be conquered.	24
	Military plan and scheme	4.4	24	4.4 They have planned for certainty of their victory and the enemy is already destined to defeat.	24
	Military situation	4.5	24	4.5 He who is adept in military operations always understand the principles of war and adopt the correct policies, so that victory is entirely in his hands.	24
	Summary				
5	Forces	5.1, 5.2	27	5.1 Managing a big army is in principle the same as managing a small one; it is a matter of organization.	27
	Basic philosophies	5.3, 5.4	28	5.2 During a war, the general should adopt the normal way of confronting the enemy, while using special tactics to take the enemy by surprise.	28
	Art of battle	5.5, 5.6	29	5.3 Military formations are not more than the application of special and normal tactics, but their variations and combinations will give rise to an infinite series of maneuvers.	29
	Warfare implementation		30	5.4 A general who is skilled in war can exploit his own vantage position and launch a swift and sharp attack.	30
			31	5.5 He can drive the enemy about with small advantages and waste the enemy in strength.	31
			32	5.6 A general can select the right man and fully exploit the favourable situation.	32
			33		33
6	Opportunism	6.1, 6.2	35	6.1 Appear at the place to which the enemy won't come; attack a place where the enemy does not expect you.	35
	Military tactics	6.3, 6.4	36	6.2 That you are certain to take what you attack, it because the enemy cannot fortify it. That you are certain of success in holding, it what you defend, it because the enemy cannot attack it.	36
	Military plan execution	6.5	37	6.3 The offensive one takes can be so strong that the enemy cannot defend just because one strikes at the enemy's weak point. One can withdraw without being overtaken by the enemy just because one moves so swiftly with it.	37
	Military force disposition	6.6	38	6.4 If we expose the enemy's disposition and hide ours, we can concentrate our troops and divide the enemy's forces.	38
	Battlefield location	6.7	39	6.5 One who has few must take precautions against possible attacks everywhere, one who has many compels the enemy to prepare against his attacks.	39
	Field and day of battle	6.8	40	6.6 If a general knows both the place and the time of a battle to come, he can lead his troops to go even a thousand li away for a decisive battle.	40
	Analysis and investigation	6.9	41	6.7 A victory may be made. Even if the enemy's troops are many, we can find a way to make them unable to fight.	41
	Summary			6.8 The way to defeat the enemy should not follow the beaten track, but change constantly according to the enemy's changing situation.	
				6.9 The way to fight never remain constant and water never flows in the same way.	
7	Maneuvers	7.1	42	7.1 During the whole military process nothing is more difficult than to fight for a favourable position with the enemy.	42
	Essential strategy	7.2	43	7.2 There is not only advantage but also danger in fighting for a favourable position.	43
	Essential tactics	7.3, 7.4	44	7.3 A commander who does not understand the plots and schemes of the prince cannot enter into alliances with them.	44
	Factors affecting military combat	7.5	45	7.4 He who masters the tactics of deviation first will win victory.	45
	Military combat for advantages	7.6	46	7.5 They usually use gongs, drums, flags and banners as instruments to unify the army.	46
	Military combat tactics	7.7	48	7.6 Keep a highly disciplined army to fight the confused enemy army.	48
	Military taboo		49	7.7 Never launch an upward attack on the enemy who occupies high ground.	49

8	The Nine Variations Administer the military troop The wise must contemplate the intermixture of gain and loss. Generals have five dangerous character traits:	8.1 8.2 8.3	The Nine Variations 8.1 The tactical variables which a general or commander should thoroughly understand. Only if he knows them well can he know military operations. 8.2 A wise general must give his consideration to both favourable factors and unfavourable factors. 8.3 There are five fatal weaknesses of a general: brave but not resourceful, cowardly on the eve of a battle, quick-tempered easily provoked, honour be driven to reckless situation, benevolent but hesitant and passive.	51 52 54
9	Marches Site planning for army Considering enemy Employing troops Battlefield general affairs	9.1, 9.2, 9.3 9.4, 9.5, 9.6 9.7, 9.8, 9.9 9.10	9 9.1 Be sure to stay near the valleys when going through mountains, after crossing the river you must stay far away from it. 9.2 Be sure to cross with marches quickly with no delay. 9.3 All commanders prefer to station their troops on high ground rather than on low land. 9.4 If heavy rain falls in the upper reaches of a river and forms torrents rushing down to the lower course, never cross the river but wait until the flood subsides. 9.5 You must have a thorough search to see if there are embankments or spies hiding. 9.6 Birds rising in flight shows there are troops in ambush. 9.7 When the enemy asks for a truce without advance appointment, it means that he must have been plotting. 9.8 When the enemy sees some profit but does not try to obtain it, it is because he has been completely exhausted. 9.9 Disturbance in the enemy's camp means his generals have lost their prestige and authority. 9.10 If orders are observed constantly and conscientiously, both the commander and the soldiers will benefit and trust each other.	55 55 56 57 57 59 60 61 61 65
10	Terrain Terrain and war Terrain and arm Summary	10.1, 10.2, 10.3 10.4, 10.5, 10.6 10.7	10 10.1 If the enemy is unprepared, and you will defeat him. 10.2 If you occupy such a ground that is narrow or constricted, you should block the narrow passes with strong garrisons and wait for the enemy there. 10.3 A general should know six situations that point to the defeat of an army, these situations cannot be attributed to natural disasters, they are the faults of the generals, which are not inevitable. 10.4 Terrain is an important aid to a commander in military operations. 10.5 A great commander advances, without seeking personal fame and gain, retreats without shirking responsibility. 10.6 If the enemy loves his men as he does his own beloved sons, they will be willing to die with him in battle. 10.7 A general who is skilled in military operations moves his troops without losing his direction and purpose and acts with unlimited resources and adaptations.	67 69 71 74 74 75 76
11	The Nine Types of Battlegrounds Classification of terrain Battle within the war boundary Battle outside the war boundary	11.1-11.7 11.8-11.13 11.14-11.17	11 The Nine Types of Battlegrounds 11.1 Ground can be classified into nine geographical positions according to the way of using military operations. 11.2 A position, where three neighbouring states meet, and which whoever first gets control of will gain the support of other neighbouring state. 11.3 Never in a desperate land, fight a last-ditch battle in desperate ground. 11.4 The skilled general would advance when it was to their advantage and halt when situations were unfavourable. 11.5 The essence of military operations is speed, taking advantage of the enemy's unpreparedness, going by routes he does not expect and attacking him where he is not on ground. 11.6 Nourish your men and do not exhaust them; keep them in high morale and conserve their energy. 11.7 If there is no choice but fight a desperate battle, they will cooperate closely and consciously follow your direction. 11.8 Those who are skilled in military operations should be as cautious as the <i>shazhan</i> , the snake of Mount Chang. 11.9 Uniting the soldiers to fight bravely depends on good management and command. 11.10 In commanding an army, a general must have a mind that is serene and unflinching. He must administer his troops in an impartial and upright manner. 11.11 A general who leads his troops to fight a decisive battle should cut off all means of retreat. He should make his troops understand they have no alternatives. 11.12 The way to make war in the enemy's state is as follows: the deeper your troops penetrate into hostile territory, the more they concentrate their spirit to fight. 11.13 Unify the will of your soldiers 11.14 A general who is ignorant of the intention of the neighbouring princes cannot form alliances with them. 11.15 A state with such an invincible army does not need to seek alliances with other states. 11.16 You can command thousands upon thousands of horses and men as if you were leading a single man. 11.17 At first assume the composure of a maiden and when the enemy gives you an opening, attack him as swiftly as running hare.	77 78 79 80 81 82 82 83 83 84 84 84 84 86 87 88 89 91
12	Attaching with fire Incendiary attack Respond to the five changes of fire Important notes for incendiary attack	12.1 12.2, 12.3 12.4, 12.5	12 Attaching with fire 12.1 There are suitable reasons to launch a fire attack and suitable days for starting a fire. 12.2 If you start a fire from up-wind, never launch an attack from down-wind. 12.3 Any army must know about the varying situations under the five ways of fire attack and keep waiting for suitable time. 12.4 To win a battle and capture the spoils but to fail to consolidate such achievement forebode danger. For it is a waste of effort. 12.5 A state that has perished can never revive, nor can a man who has died be brought back to life.	92 93 94 94
13	Espionage Importance of employing spies Methods of using spies Types of spies	13.1, 13.2, 13.3 13.4, 13.5 13.6, 13.7	13 Espionage 13.1 A general enlists to employ spies and is thus ignorant of the enemy's situations, he is, of course, completely devoid of humanity. 13.2 An able general achieves extraordinary accomplishments because they can foresee the development of war. Such fore-knowledge cannot be obtained from ghosts and spirits, it must be obtained from the people who clearly know the enemy's situations. 13.3 When you use the five kinds of secret agents simultaneously, the enemy cannot know the principle of their operation. It is divinely intricate and becomes the greatest magic weapon for the sovereign to defeat the enemy. 13.4 There is no place where espionage is not possible. 13.5 You must know and instruct your spies to investigate names etc. in detail. 13.6 You must ascertain those enemy spies who have been sent to conduct espionage against you. Bribe them, entice and release them to serve you. At last, they will become converted spies and work for you. 13.7 Use the intelligent men as spies and deliver great tanks.	95 95 96 97 98 99 100




<p><b>8. Flexibility &amp; Adaptability</b> Administer the human resources for business The wise executive must contemplate the intermixture of gain and loss. Managers have five dangerous characters</p>	<p>Market conditions should thoroughly be understood. Only if they are known well can business be operated properly. Consider both favourable and unfavourable factors in business. Fatal weakness of management should be understood.</p>
<p><b>9. Observing &amp; Manoeuvring</b> Site planning for business competition Considering the business competitors Employing business workforce Business situations general affairs</p>	<p>Take the best approach during difficult market condition and stay away from difficult situations. Get away from dangerous situation as quickly as possible. Observe competitor's position and plan strategy accordingly and better reaction. Wait until the situation clear before re-entering into market competition. Good and accurate decision makes proper investment in business. Thoroughly understand the market situation to avoid potential problem and identify pitfall. Observe market indicators to identify potential problems. When competition proposes a joint venture without warning, it means that he understands his strategic position. When a competitor does not explore market potential, it means he has not extra resources. When a competitor has low morale, it means their leadership is poor. Prestige and authority of senior management are both essential. If everyone does what they should do diligently both the management and workforce benefit and trust each other and have good relationship.</p>
<p><b>10. Competitive Situations &amp; Causes of Failure</b> Competitive situations and causes of failures Competitive situations and business workforce Summary</p>	<p><b>Gain advantages over the competition when they are unprepared.</b> Attack the competitors when they have little room for manoeuvre. Management should know of their own weakness that could lead to business failure. Market situations help decision making. A good manager take the business advantage without taking personal fame and gain and admitting failure without shirking responsibility. Treat your employees like your family and they will share your vision. A skill manager reallocates his resources without losing his direction and purpose.</p>
<p><b>11. Competitive Conditions and Offensive Strategy, Alliance &amp; Vision</b> Classification of business competitions situations Competition internally Competition externally</p>	<p><b>Market situation can be different according to the way business conducted.</b> Be market allies, stronger market control and strategy will be obtained. Never attack your competitor when your resources is not focused. Awareness of business situation and react speedily using innovative approaches and attacking competitors' weaknesses. Care and look after your people. Make business urgent to ensure co-operation and alignment of vision. Those who are skillful in business should ensure all the resources work together in co-operation. Alignment of the company workforce to the vision depends on good management. The leader of a company should have a mind that is serene and unfathomable. He trust administrate his workforce in an impartial and upright manner. The more successful of business, the more motivated the workforce will be towards their works and make contributions. Align the workforce to the vision of the company. Company who does not understand the intention of potential partner cannot form alliance with them. If a company is strong, it does not need to seek alliance. Unify the thinking of all people and make them work for you. Appear not to be strong, but when opportunities arise, launch the business attack.</p>
<p><b>12. Destroying &amp; Decision</b> Business destroying competitions Respond to the destroying competitions Important notes for destroying competitions</p>	<p>Key to success is recognizing good opportunities Always stay ahead of your competitors. Remains flexible and adapts accordance to the changing situation. Build on past achievement, never sit on the present situation and continuous keep on innovation. A simple mistake could ruin the whole business, because taking everything seriously because company parish cannot revived.</p>
<p><b>13. Intelligence and Information</b> Importance of employing right type of people Methods of using business information Types of intelligence and business information</p>	<p>Ignore of the competitor's situations is danger that may lead to waste resources. Achieve extraordinary accomplishments by good management of people who clearly understand the market situation. Use many ways of gathering information from the market, this will help to hide your intention from competition, help to make wise decision. Information gathering is always possible. Detail information of the market is essential. Recognize and try to recruit talented people to work for your company. Recognize talented people achievement in your company to achieve great task.</p>

## Chapter 7 Quality and Business Management Strategy Evaluation using Quality Function Deployment (QFD) Methodology

### 7.1 Strategic Total Quality Management (STQM) for World-class Business Performance Excellence

*Strategic Total Quality Management (STQM)* is introduced as an extension of Total Quality Management. It defines quality as being driven by customer and environmental needs and looks to identify critical factors that will determine the survivability and competitiveness of an organisation in the future. Madu's paper 'Strategic total quality management-transformation process overview' (Madu et al., 1994) presented this new dimension for quality management. STQM is based on the premise that quality should be determined on the basis of the overall performance of the organisation and not solely on product quality. STQM therefore takes into account criteria such as *product quality, environmental safety and social responsibility*. Manufacturing excellence is often claimed as a means of achieving competitiveness. This can only be achieved by looking into the overall performance of the organisation and its products. It is true that this philosophy of quality emphasises integrity, environmental protection and social responsibility as the key elements of quality management. As suggested by the quality gurus, STQM is a comprehensive and strategic framework linking profitability, business objectives and competitiveness to quality improvement efforts with the aim of harnessing the delivery of customer satisfaction. As Madu et al. (Madu et al., 1994) put integrity, environmental protection and social responsibility in the paper.

Integrity deals with trust. An organisation must instil trust in its customers and it should also understand how the customers perceive the organisations. This is how a customer-focused approach to quality should be developed.

Environmental protection deals with the products that are environmentally safe. Even with the higher product cost, some customers are willing to pay extra to protect the earth from contamination. These 'green' product concepts have already made Japan invest heavily in research and development. On the other hand, products that

are liable to pollute the environment will certainly increase manufacturing costs and generate no good will.

Social responsibility deals with the possibility of expansion of the job base that is essential in the community. The job base will expand if productivity and quality improve. Social responsibility often goes beyond the production of goods and services and reflects an organisation's concern with the social needs of its employees and the society as a whole. A 'caring' organisation should be socially sensitive to the needs, concerns and problems of its major stakeholders such as employees, customers and the community. To build a STQM factory effectively, top management must have a clear mission to be implemented. The new dimensions of STQM outlined complement the focus of TQM. New dimensions are added to allow for a systematic view of quality from the overall performance of the firm.

## **7.2. Global Total Quality Management Strategies (GTQMS) merging the Western Quality Gurus and Eastern Guru philosophies**

As discussed in Chapter 5, Hofstede and Bond (Hofstede et al., 1988) have shown evidence that researchers of different countries with inherently different cultures will have different mental programming which in turn will lead different concepts of management philosophies. That explains why different quality gurus will have a different focus on quality management philosophies. The TQM concepts based on the Western gurus' thinking might not be acceptable to those organisations from the East Asian countries. Apparently these countries have some different historical background, history of economic development and economic structure from the West. Thus, there are differences in TQM concepts based on cultural difference from the Western gurus. Hofstede et al. have shown that management philosophy and Neo-Confucian in the East Asian countries have the link of their cultures to the economic phenomenon and rapid economic development.

The twenty-four criteria of behaviours and characters described in Chapter 5 represent some essential elements of the Eastern Guru's Confucius philosophy in business management. Individual behaviours and professional ethics are the most



essential attributes among all of them. Confucius' philosophies affect individuals' behaviours and working attitudes in general. Organisations with employees having good behaviours and proper working attitudes will care about those inside the organisation, outside customers as well as the community.

To be truly Neo-Confucian, the relationships between people are based on mutual and also complementary obligations. As an individual, one should try to cultivate individual behaviours and ethics. Maintaining harmony within the organisation will give people their dignity, respect and prestige. All staff members are expected to be loyal to the organisation, pay respect to the senior and take care of those who are junior and younger in the organisation.

The incorporation of **Confucius teaching in behaviours and ethics** to the **Western Quality Gurus' TQM philosophy** amalgamating the gurus' philosophies, to create a new dimension in TQM concepts, **Global Total Quality Management Strategy (GTQMS)**. This new dimension in TQM strategy takes into account the traditional and cultural differences of different nations that would help to close the gap in knowledge and give rise to new thoughts in TQM concepts.

### **7.3 Evaluation of Quality Management Strategies for World-class Business Excellence Performance Using Global Total Quality Management Strategy**

Evaluation of ISO quality management system implementation based on the Global Total Quality Management is done. The twenty elements of the ISO 9000 Standards are compared with the **Global Total Quality Management Strategy**. Quality function deployment (QFD) methodology is used to evaluate the situation. **Exhibit 7.1 (ISO)** shows the 20 elements of the ISO 9000 Standards is identified as the 'Whats' on the vertical axis, and the main points of the Western and Eastern gurus as the horizontal 'Hows'. The relationships are studied in the body of the matrix.

Detail analysis of Exhibit 7.1 revealed that Western and Eastern gurus contribute about 54% to 46% respectively in the evaluation. Management responsibility and

purchasing are the two most important elements among the twenty ISO elements. This is obvious because both of them have heavy considerations on individual behaviours and characters, both as a leader of the organisation and purchasing from time to time dealing with money, the person should be clean and honest. Because of the slight emphasis on the quality system and servicing in the customisation, these two elements have been shown with a slightly higher in percentages, i.e. more important than the others. The percentage that is shown in the customisation column is purely arbitrary, however, shifting of the emphasis is identified in the matrix. The incorporation of the Eastern guru's philosophy does have an effect on the overall percentage figures, the management responsibility for both customised and non-customised situation have a much larger percentage increase than the others. As has been mentioned previously, personal behaviour and character do come into the overall analysis and are regarded as essential parameters.

Similarly, QFD methodology is used to illustrate the relationships between the quality management systems requirements: The Malcolm Baldrige Quality National Award (1995) and European Quality Award for Business Excellence (1996) with the **Global Total Quality Management Strategy** as shown in **Exhibit 7.2 (MBNQA)** and **Exhibit 7.3 (EQA)** respectively.

Exhibit 7.2 (MBNQA) and Exhibit 7.3 (EQA) give a similar pattern of results. Both Exhibits show that customer' satisfaction, leadership and business results are the three most important criteria among all. The incorporation of Eastern guru's philosophy emphasising individual behaviour and character make leadership even more important with an increase of about 7 to 8%. The ratings of the criteria given by the two Awards give significantly different results on the customer satisfaction, about 23 to 27%. Business results in both cases show high percentages, as this is the one measure of the performance of the business. For the EQA, the impact on society gives 6% that if added to the business result gives an identical result to the MBNQA.

If the Awards are used for self-assessment purposes looking for self-improvement, the ratings given by the Awards can be altered to suit the individual situation. That

is consideration has been given as to how the models presented can be customised allowing companies using this approach to develop a global total quality management for their own organisation. Different companies can use different ratings for ISO 9000 requirements, for the criteria of Malcolm Baldrige Quality National Award, as well as European Quality Award for Business Excellence.

#### **7.4 Evaluation of Business Management Strategies for World-class Business Excellence Performance Using Sun Tzu's The Art of War for Business Management Strategic Planning**

With reference to Chapter 6, Sun Tzu's Strategic Planning Model for Business Management with thirteen strategies are presented for QFD evaluation. The use of QFD methodology will help senior managers identify, prioritise, and rectify their position and situations quickly.

As discussed in Chapter 4, **The European Business Excellence Assessment Criteria (1996) of European Quality Award and The Malcolm Baldrige National Quality Award Examination Criteria (1995)** have both been revised and incorporate *business results* as one of the examination criteria for the Awards. *Strategic planning* which includes strategy development and strategy deployment is the criteria for Malcolm Baldrige National Quality Award. Whereas in the European Business Excellence Assessment, *policy and strategy* is the newly included criteria for judging the business performance excellence.

QFD methodology employing matrices will be used to evaluate and compare the requirements for achieving the world-class business performance excellence with the Sun Tzu's strategic planning models for business. European Business Excellence Assessment criteria (1996) of European Quality Award and The Malcolm Baldrige National Quality Award examination criteria (1995) as the 'What' with the Sun Tzu's strategic planning model for business as the 'How' are compared. It will help identify the strategic problems, prioritising strategies, and lead to strategy development and policy deployment.

**Exhibit 7.4 (EQA)** shows the evaluation of **The European Business Excellence Assessment criteria (1996)** of European Quality Award with **The Sun Tzu's The Art of War Model for Business Management Strategies** using Quality Function Deployment (QFD) methodology.

Exhibit 7.4 shows the detail of the analysis. The thirteen Sun Tzu's business management strategies were used to evaluate the EQA criteria for business performance excellence. It is quite obvious to say that the thirteen Sun Tzu's strategies more or less have the same importance because they have quite close percentages. This illustrates the fact that Sun Tzu's philosophies have a broad coverage of detail from the planning of strategies to the winning of competitive situations. Among all these strategies, control of market situations and climate, management of conflict to avoid direct confrontation and flexibility and adaptability seem to be the most popular strategies. This is also quite true in today's market situation, *which is highly competitive. For survival in business, avoiding direct confrontation and reserving resources for the next opportunity are highly essential for long term strategic planning.* Furthermore, because of the dynamic situation of the market, people in the organisation should look for continuous self-improvement and learn more skills, equipping themselves for future competition. Policies should be flexible and organisations should be adaptable to the business environment and continuously changing.

Destroying other's reputation is shown to be the least important strategy. Although it is quite true that this strategy does not seem to be so popular, an organisation should be alert to their competitors' action using this kind of strategy.

Use of intelligence including information is also important among these strategies. The executives should always be familiar with the current market situation with the most up-to-date market information, including competitors' information.

Among those EQA criteria, leadership, customer satisfaction and process become the first three essential ones that executives have to consider. As stated in Sun Tzu's

The Art of War, a good leader should be the one who is well respected by people, with good individual behaviour and character, and also good professional ethics as specified by the Confucius philosophies.

**Exhibit 7.5 (MBNQA) shows the evaluation of The Malcolm Baldrige National Quality Award Examination Criteria (1995) with The Sun Tzu's The Art of War Model for Business Management Strategies using Quality Function Deployment (QFD) methodology.**

Exhibit 7.5 shows a similar result to the one in Exhibit 7.6. Similarly among all these thirteen strategies, opportunity and timing, control of market situations and climate, management of conflict to avoid direct confrontation and flexibility and adaptability seem to be the most popular strategies. Similar arguments also hold true for the MBNQA criteria as the EQA criteria. Among the seven criteria for the Award, customer satisfaction, leadership, and business results come out to be the top three in the list.

The objective of these exhibits is to relate the management philosophies to the prescriptions of Sun Tzu, drawing parallels between the principles underlying behaviour advocated by him and the situation of top management at the end of the 20th century for business performance excellence strategies.

### **7.5 Conclusion**

Madu et al. presents a new dimension for management of quality that is based on the philosophy of **Strategic Total Quality Management (STQM)** and was presented in the following top management strategies:

- Awareness of STQM
- Customer-demand focus
- Management philosophies and quality attitude and quality environment
- Organisation vision and mission
- Quality vision
- Organisation mission drives quality
- Organisational communication

- Resources and commitment
- Organisational learning

However, the **Global Total Quality Management Strategy** as presented adds a further cultural dimension that is important for an organisation to survive and remain competitive in the world market and the community. As presented in chapter 5, all employees, including management, will have to do well in the cultivation of behaviour and characters through 'learning', 'trust', 'moral conduct', 'wisdom' and 'words and deeds', cultivation of professional ethics through 'benevolence', 'righteousness', 'courtesy', 'question' and 'forgiveness'. The ways that the managers and top management operate the department or the whole organisation will undoubtedly help to meet the expectations in quality, social and environmental requirements of customers, people, government, and community.

QFD has been successfully applied in quality management strategic planning. As a quality management strategic planning tool, QFD is efficient and effective in prioritising the weakness of an organisation so that it can take effective action for improvement. It prioritises the importance of the activities in the organisation that have most impact on customers' satisfaction.

In business strategic planning the Sun Tzu's strategic planning for business management is proposed for the purposes of evaluation of business management strategies in organisations. Sun Tzu's *The Art of War* could be applied to emphasise the strategic approach in managing corporations. His rationale for implementing a strategic planning system within organisations would be to increase the probability of victory by forecasting as far as possible relative strengths and weaknesses and so anticipating outcomes when battle is entered.









Exhibit 7.4 (EQA) Evaluation of the European Business Excellence Strategy (1996) with Sun Tzu's Business Management Strategies using Quality Deployment Methodology. Chapter 1 2 3 4 5 6 7 8 9 10 11 12 13

Number Reference	What	Percentage	Criteria of The European Business Excellence Assessment (1996)													Score	Score out of 100	With weighting	Priority		
			Planning of Strategies, Estimation & Leadership	Resources & Competitive Actions	Competitive Strategy & Wisdom	Positioning & Targeting, Strengths & Weaknesses Estimation	Opportunity, Timing & Management Structure	Control of Market Situations & Climate	Management of Conflict & Avoid Confrontation	Flexibility & Adaptability	Observing & Manoeuvring	Competitive Situations & Causes of Failure	Competitive Conditions and Offensive Strategy, Alliance & Vision	Destroying & Decision	Intelligence and Information						
1	Leadership	10.0%	9	9	9	9	9	9	9	9	9	9	9	9	3	3	3	93	79	7.9	1
2	Policy and Strategy	8.0%	9	9	9	9	9	3	3	3	3	3	3	3	3	3	3	54	46	3.7	3
3	People Management	9.0%	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	42	36	3.2	7
4	Resources	9.0%	3	9	3	3	3	3	3	3	3	3	3	3	3	1	3	48	41	3.7	5
5	Process	14.0%	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	46	39	5.5	1
6	Customer Satisfaction	20.0%	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	36	31	6.2	1
7	People Satisfaction	9.0%	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	36	31	2.8	8
8	Impact on Society	6.0%	3	3	3	3	3	1	1	1	1	1	1	1	1	1	3	18	15	0.9	9
9	Business Results	15.0%	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	30	26	3.8	4
		49.0%	37	45	39	39	51	55	61	55	43	43	31	31	31	31	39	403			18
		9%	11%	10%	10%	13%	14%	15%	14%	14%	11%	11%	8%	8%	8%	8%	10%				

Exhibit 7.5 (MBA) Evaluation of the European Business Excellence Strategy (1996) with Sun Tzu's Business Management Strategies using Quality Function Deployment Methodology.

Number Reference	What	How													Score	Score out of 100	With weighting	Priority			
		1	2	3	4	5	6	7	8	9	10	11	12	13							
Criteria of Malcolm Baldrige National Quality Award (1995)																					
1	Leadership	9	9	9	9	9	9	9	9	9	9	9	9	9	9	3	3	93	79	71.5	7
2	Information and Analysis	3	9	3	3	3	9	9	9	3	3	3	3	3	1	3	67	57	42.9	6	
3	Strategic Planning	9	9	9	9	9	3	3	3	9	9	3	3	3	3	3	54	46	25.4	7	
4	Human Resource development and	3	3	3	3	3	9	9	9	9	9	3	3	3	3	3	42	36	50.3	5	
5	Process Management	1	3	3	3	3	9	9	9	9	9	3	3	3	3	3	46	39	55.0	4	
6	Business Result	3	3	3	3	3	3	3	3	3	3	3	3	3	3	9	30	26	64.1	7	
7	Customers Focus & Satisfaction	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	36	31	76.9	1	
Total 1000		31	39	33	33	45	51	51	45	39	33	33	19	19	19	33	368				
		8%	11%	9%	9%	12%	14%	14%	12%	11%	9%	5%	5%	5%	5%	9%					

## Chapter 8 Design of Questionnaire for Surveys

This Chapter outlines the methodology and basis of the design of questionnaires for the surveys. A survey is a system for collecting information to describe, compare, or explain knowledge, attitudes, and practices or behaviour (Fink, 1995). Proper questionnaire design would enable proper assessment of the survey results; thus the claims on the impact and usefulness of employing Chinese philosophies in quality management and business strategic planning should be attained.

One of the major objectives of this research project is to review and substantiate the status of implementation of the ISO 9000 quality management system and TQM in Hong Kong. On the other hand, investigations on the significance of impact of Confucius philosophy as quality management strategies, Sun Tzu's The Art of War and The Thirty-six Strategies as business management strategies in Neo-Confucian city like Hong Kong would be advantageous. Therefore five independent surveys were devised and carried out:

1. Survey on ISO 9000 Quality Standards Implementation
2. Survey on Total Quality Management System Implementation
3. Survey on Business Management Strategies Using Confucius' Philosophy
4. Survey on Business Management Strategies Using Sun Tzu's The Art of War
5. Survey on Business Management Strategies Using The Thirty-six Strategies

The Survey on ISO 9000 Quality Standards Implementation would focus on the twenty detail elements of ISO 9000 whereas the Survey on Total Quality Management System Implementation would be based on Deming's fourteen-point TQM philosophy. The objective of these two surveys would be to assess and substantiate the status of quality management system implementation in Hong Kong environment. The Survey on Business Management Strategies Using Confucius' Philosophy would make use of the twenty-four behaviours and characters proposed in Chapter 5 and examine the impact of Confucius' teaching in quality management and business management practices in a neo-Confucian

city like Hong Kong. Furthermore, the business interpretation of the thirteen business management strategies under the Sun Tzu's *The Art of War* and the Thirty-six Strategies were used to form the structure of Surveys 4 and 5.

Surveys 1 and 2 were designed by having a short sentence of the meaning of the ISO or TQM element followed by questions that audited the status of understanding and implementation. The other three Surveys 3, 4 and 5 were designed to elicit the degree of importance that a respondent placed on each element with respect to business performance. Detailed findings from each survey are to be found in the Appendices C, D, E and F.

### 8.1 Design of Questionnaire for the ISO 9000 Quality Standards Survey

The questionnaire design represents the consolidation of views and comments of various quality management experts and companies who were experienced in the implementation of the ISO quality system. Questions on the twenty detail elements of the ISO quality standards were asked to investigate the understanding of the ISO concept and status of implementation. Questions based on Liebesman (Liebesman, 1993), Bradley (Bradley, 1994) and Tummala (Tummala, 1994) comments on the concept and structure of the ISO quality standards were also referenced.

Liebesman (Liebesman, 1993) suggests that the ISO 9000 framework can be subdivided into three major categories: *Management Responsibility, Product Realisation Process and Support Sections*. The numbers inside the square brackets “[ ]” represent the corresponding detail elements of the ISO quality standards. The proposed framework is:

#### 1. Management Responsibility

##### a. Management Responsibility

- Management Responsibility [4.1]
- Quality System [4.2]
- Internal Quality Audit [4.17]
- Training [4.18]

**2. Product Realisation Process****a. Product Definition**

- Contract Review [4.3]
- Design input [4.4.3]

**b. Design and Development**

- Design Control - General [4.4.1]
- Design and Development Planning [4.4.2]
- Design Output [4.4.4]
- Design Verification [4.4.5]
- Design Changes [4.4.6]

**c. Production**

- Process Control [4.9]
- Inspection and Testing [4.10]
- Inspection, Measuring and Test Equipment [4.11]
- Statistical Techniques [4.20]

**3. Support Sections****a. Quality Documentation**

- Document Control [4.5]
- Quality Records [4.16]

**b. Vendor Assurance**

- Purchasing [4.6]
- Purchaser Supplied Product [4.7]
- Receiving Inspection and Testing [4.10.1]

**c. Problem Identification and Correction**

- Control of Non-conforming Product [4.13]
- Corrective Action [4.14]
- Servicing [4.19]

**d. Handling and Delivery**

- Product Identification and Traceability
- Inspection and Test Status [4.12]
- Handling, Storage, Packaging and Delivery [4.15]

Bradley (Bradley, 1994) also suggests that the core elements ISO quality standards can be sub-divided into different sections under *Management's Role, Operation of Major Processes and Control of Processes*.

### **1. Management's Roles**

- Appoint a management representative
- Establish and maintain a documented quality system
- Define responsibility of people who work and manage in the system
- Review the system regularly for suitability and effectiveness
- Make conclusions

### **2. Operation of Major Processes**

- Contract reviews
- Purchasing
- Design
- Product and installation
- Inspection and testing
- Handling, packing, storage and delivery

### **3. Control of Processes**

- Corrective action
- Plan and undertake audits
- Plan and provide training
- Calibration, inspection and testing of equipment
- Statistical techniques

Tummala (Tummala, 1994) also mentions the core concepts of the ISO quality standards that consist of *Conformance, Documentation, Design Quality and Prevention, and Inspection and Testing*:

### **1. Conformance**

- Management must establish and maintain an effective documented quality system.
- Documented procedures should be established for identification, documentation, evaluation, segregation and disposition of non-conforming products.

- Corrective action must be taken to investigate the root causes of non-conformity.

## **2. Documentation**

- A quality manual must be prepared to adequately cover all relevant aspects of the quality system.
- General procedures must be prepared to describe general instructions and job organisation.
- Works instructions must be prepared to cover technical requirements and relevant data.

## **3. Design Quality and Prevention**

- Do the job right at the first time rather than redo until right.
- Building customer requirements into the design.
- Eliminate waste processes and components that do not add value to the product or service.
- Develop innovative procedures and corrective action plans.
- Regular review and verify the design to meet the design requirements.

## **4. Inspection and Testing**

- Ensure and verify that incoming product and goods are inspected and conform to the requirements before use.
- Equipment is properly inspected, maintained and calibrated.
- Proper testing and calibration procedures are used.
- All records of non-conforming products and test equipment are properly documented.

In addition, the importance of leadership, customer focus and fact-based management, which are not strongly advocated in ISO 9000 must be recognised while establishing and maintaining the documented quality system (Tummala, 1994). Furthermore, some questions were also aimed at measuring the companies' general understanding of ISO and what they had learnt during the quality system implementation process. Some questions based on the works of Weston (Weston, 1995), Johnson (Johnson, 1995), Sterud (Sterud, 1992),



McNulty (McNulty, 1994) and Wood (Wood, 1994) are concluded. Some of their ideas are briefly listed below:

- Seeking ISO 9000 registration comes primarily from top management with customers as the motivating factor.
- The main reason for ISO 9000 registration is for long-term strategic planning. Registration is perceived as the necessary ingredient for future business success, meeting both customers' expectations and marketing demand.
- Foreign trade requirement is the major factor for the registration.
- Top management is generally heavily involved in the registration process.
- Most companies do not keep records of the total costs of the process of achieving certification.
- The most common time frame for achieving registration is 1 to 1.5 years.
- The biggest obstacles during the registration process are the misunderstanding of requirements, and poor document control.
- The benefits of having ISO 9000 registration include the establishment of a quality system, consistent documentation methods, and high competitive advantages.
- The lessons learned from the registration process include the importance of teamwork and management of a large-scale project.
- Education and training is quite time-consuming, it is therefore advisable to start training as earlier as possible.

The following sections highlight the basis of the design of questions with the understanding of the twenty detail elements of the ISO quality standards system. The complete questionnaire itself is appended at the end of Appendix C that includes the survey analysis. Arnold (Arnold, 1994) and Clements (Clements, 1993) on their quality manager guide to ISO 9000 also make reference to those questions related to the ISO twenty elements and they are included as questions in the questionnaire.

a) *Management Responsibility (ISO 9000 Standard: Element 4.1)*

Management responsibility is the keystone requirement of ISO 9000 quality standards that covers the major responsibilities of the management in organisations. Their responsibilities focus on the creation, monitoring, and improvement of the quality management system within the organisations by which uniform and high-quality products are produced. The design of questions is based on Weston's study (Weston, 1995) that ISO 9000 registered companies have their top management involved in the management, performance, and verification of quality-related work. The ISO 9000 standards (ISO 9000, 1994) recommend as well as Arnold (Arnold, 1994) and Clements (Clements, 1993) make reference to, that one of the major roles of management responsibility is to review their quality systems regularly, looking for system enhancement and improvement. Bradley (Bradley, 1994) outlines that one of the major management's roles is to review the quality system regularly for suitability and effectiveness. Tummala (Tummala, 1994) also put it that regular review and design verification meeting the design requirements is essential. The questions being asked would tend to investigate the related situations of management responsibilities in Hong Kong.

b) *Quality System (ISO 9000 Standard: Element 4.2)*

Being the major part of management responsibility within the quality management system, management should establish and maintain a proper documented quality system as the means of ensuring product conformance to the specified requirements. Besides, management should also be concerned with the initiation, development, implementation, and maintenance of the quality system. Bradley (Bradley, 1994) suggests that one of management's major roles is to establish and maintain a proper documented quality system. Tummala (Tummala, 1994) also emphasises that for the purpose of conformance, management must establish and maintain an effective documented quality system and procedures for identification, documentation, evaluation, segregation and disposition of those non-conforming products. Arnold (Arnold, 1994) and Clements (Clements, 1993) both remark on the

significance of a proper quality system that must be in place. They also say that quality manuals are essential for a good and effective quality system, however, there is a counter view that traditional quality manuals add little value to an organisation.

*c) Contract Review (ISO 9000 Standard: Element 4.3)*

Contract review is considered a marketing function. It is the task of ensuring customers' needs and expectations will be met. The co-operation and feedback of several other departments, such as engineering, manufacturing, quality control and legal department support this function. Questions were designed based on the works of Arnold (Arnold, 1994), Clements (Clements, 1993) and Batley (Batley, 1994) that most companies collect their customers' opinions through customers' complaints, repeat business and surveys.

*d) Design Control (ISO 9000 Standard: Element 4.4)*

Design control is a lengthy process, which states that if the process used to control the design is effective, and then the design will be consistent. The supplier should establish and maintain procedures to control and verify the design of the product to ensure that the specified requirements are met. Arnold (Arnold, 1994) and Clements (Clements, 1993) comment that some companies believe design control may kill the creativity of designers. Companies should perform periodic design re-qualification to ensure the design is always at a high status of quality. Also, the ISO 9000 quality standards handbook (ISO 9000, 1994) also states that the design verification process should confirm the design output stage with the input. Liebesman (Liebesman, 1993) put design control together with design development and planning, design output, design verification and design changes under the design and development which is one of the major categories within the ISO 9000 quality framework.

*e) Document Control (ISO 9000 Standard: Element 4.5)*

The basic principle of the element is for management to identify quality records and develop procedures to control this quality documentation within

the company. In reality, discipline in issuing and tracking documents can prevent many of the serious problems in bringing a successful product to market. Arnold (Arnold, 1994) and Clements (Clements, 1993) comment that some companies have difficulties in controlling documents and keeping track of the data relating to the ISO 9000 quality system. Other question is based on the comments made by the local quality services agency (HKQAA, 1996) on the difficulties faced by companies in the implementation of ISO 9000 quality system. It mentions that companies usually find problems in controlling photocopying, updating the quality manual, and updating incomplete or incorrect data in documents and unauthorised distribution.

*f) Purchasing (ISO 9000 Standard: Element 4.6)*

In general, this element is intended for the company to establish a system ensuring that it understands the appropriate requirements of the purchase order and the subcontractor before the order is released. The design of the questions is based on the comments made by the local quality services agency on some companies' use of suppliers or subcontractors who are not qualified. Therefore, questions are then set to investigate whether a supplier survey had been performed. Besides, based on the experience of some of the local companies (HKQAA, 1996), it is important to ensure that the purchased products conform to the stated requirements.

*g) Purchaser Supplied Product (ISO 9000 Standard: Element 4.7)*

Purchaser supplied products are related to those goods being sent to the company's own manufacturing plant. It is merely an extension of the element "purchasing" of the previous section. It covers the verification, shipment, storage and maintenance of supplied goods. Arnold (Arnold, 1994) and Clements (Clements, 1993) comment that companies should always record the condition and report when they find that the supplied products are lost, damaged, or unsuitable for use. Tummala (Tummla 1994) believes that it is important to ensure and verify that incoming product and goods are inspected and conform to the requirements before use.

*h) Product Identification & Traceability (ISO 9000 Standard: Element 4.8)*

The ability to identify and trace all materials used in the manufacturing process is critical to assuring that the correct components are used for optimal quality. Arnold (Arnold, 1994) and Clements (Clements, 1993) comment that most companies use identification codes, labels, packaging or physically applied on the components for identifications.

*i) Process Control (ISO 9000 Standard: Element 4.9)*

The element is specifically directed toward activities that must be accomplished for a product to be generated. These activities include paperwork, manufacturing, training, service, installation and design. The design of questions is based on the comments made on process control. Problems are often found in production plans that are either not available or updated. The actual production operations do not conform to the documented instructions. The inspection and test criteria are frequently not properly documented. There is no follow-up action taken to identify the product non-conformance. Also there is not much information on the status of inspection. Besides, the ISO 9000 highlights that control of maintenance processes are needed.

*j) Inspection and Testing (ISO 9000 Standard: Element 4.10)*

It deals with the inspection of goods at receiving, during production, and after production in each phase of the manufacturing cycle. Also, it should be used to gather the data needed to identify the root causes of problems. Arnold (Arnold, 1994) and Clements (Clements, 1993) and local experience (HKQAA, 1996) agree that inspection checklists and test methods should be under the document control system, and acceptance criteria and uncertainties of measurement should be established.

*k) Inspection, Measuring, and Test Equipment (ISO 9000 Standard: Element 4.11)*

The standard requires the company to list the details of, keep track of the changes of, and calibrate every piece of equipment used for measuring,

inspecting, and testing the products being manufactured. Equipment shall be used in a manner, which ensures that measurement uncertainty is known and is consistent with the required measurement capability. According to the experience of some local companies (HKQAA, 1996), they do carry out regular calibration of inspection equipment and all the data from calibration and inspection processes are properly recorded and maintained. Companies do contact their equipment suppliers for maintenance when their equipment is out of order. Bradley (Bradley 1994) believes that calibration, inspection and testing of equipment is one of the main elements of the control of the processes. Tummala (Tummala, 1994) views Inspection and Testing to be the core of the ISO 9001 Standard and that all equipment should be properly inspected, maintained and calibrated.

*l) Inspection and Test Status (ISO 9000 Standard: Element 4.12)*

The purpose of this element is to ensure that product is identified as to whether it has been inspected or whether it is conforming or non-conforming. The identification of inspection and test status shall be maintained throughout production and installation of the product to ensure that only product that has passed the required inspections and tests is dispatched, used, or installed. In general, companies use labels to identify the inspection and test status of their products.

*m) Control of Non-conforming Product (ISO 9000 Standard: Element 4.13)*

The element dictates to a company what must be done to address the identification, segregation, disposition and documentation of the non-conforming product. The purpose is to prevent the rejected product from reaching the customer, identify the presence of problems and remove the root causes. In general, line supervisors are always responsible for reporting non-conforming products, but they sometimes find difficult to writing the report on non-conforming products.

*n) Corrective Actions (ISO 9000 Standard: Element 4.14)*

The unique part of this element is the approach a company takes in problem solving. Once the root causes for defective product are identified, corrective action will be taken to prevent re-occurrence in the future. According to the ISO 9000 quality standards (ISO 9000, 1994), corrective actions refer to the handling of customer complaints or reports of product non-conformities, investigating the root causes of non-conformities and to eliminate these causes. ISO 9000 quality system does not require the prevention of defective product; however, it does require corrective actions.

*o) Handling, Storage, Packaging and Delivery (ISO 9000 Standard: Element 4.15)*

This element is in support of the design and manufacturing elements. The areas covered are associated with protecting the condition of the material from the time it is received from a supplier through the storage, processing, packaging, and delivery stages. It will not guarantee acceptable product, but it will help ensure that good product will not be converted into scrap. Arnold (Arnold, 1994) and Clements (Clements, 1993) mention that customers always expect accurate and safe delivery and good packaging. Besides, according to the local experience (HKQAA, 1996), storage conditions should be defined and subject to proper monitoring and control.

*p) Quality Records (ISO 9000 Standard: Element 4.16)*

In this element, the supplier should establish and maintain procedures for identification, collection, indexing, filing, storage, maintenance and disposition of quality records. Also, it serves three important purposes: verify that the required activities are maintained and followed, the condition of the product at a given time, and a history of a part, process or program is provided. Questions that are related to problems in defining, indexing, damaging or losing of quality records is also included. Arnold (Arnold, 1994) and Clements (Clements, 1993) comment that most companies retain quality records only for record purpose that does not help improve product quality.

*q) Internal Quality Audits (ISO 9000 Standard: Element 4.17)*

The purpose of this requirement is to ensure that the company's management is constantly checking the effectiveness of its management quality system. The company should carry out a comprehensive system of planned and documented internal quality audits to verify whether quality activities comply with planned arrangements and to determine the effectiveness of the quality system. Questions that are related to external audits and selection of auditors are included.

*r) Training (ISO 9000 Standard: Element 4.18)*

The basic premise of this element is for a company to identify the knowledge and skill required for providing the training of all personnel performing activities affecting quality. Also, the training records should be properly maintained. Arnold (Arnold, 1994) and Clements (Clements, 1993) mention that companies always use outside material, magazines, books, videos and courses for training. Some questions are based on the information of local quality services saying that some companies have no or incomplete training records and companies do not usually pay training fees for their employees (HKQAA, 1996).

*s) Servicing (ISO 9000 Standard: Element 4.19)*

Servicing is any contracted service that the company provides after the sale of the product. The purpose of this element is to establish and maintain procedures for performing and verifying that servicing meets the specified requirements. Arnold (Arnold, 1994) and Clements (Clements, 1993) mentions that good service is always determined by customers. The assessment of whether a service is good or bad is entirely decided by the customers.

*t) Statistical Techniques (ISO 9000 Standard: Element 4.20)*

This element is included to ensure that if statistical methods are being used by a company to control processes or production, the methods are accurate and properly applied for verifying the acceptability of process capability and



product characteristics. According to ISO 9000 quality standards (ISO 9000, 1994), an organisation should identify the need for statistical techniques.

Companies were assessed against the quality standards, thereby enabling their products to be more easily sold in both domestic and world markets, particularly when compliance is backed up by certification. However, this does not in any way guarantee the quality of the products. There is widespread and ever growing interest in the practical value of international standards related to quality management systems. This is matched by a corresponding awareness of the commercial and economic significance of standards in general. Standardisation worldwide is undergoing major change. The level of interest in harmonising standards has never been higher. By the same token, there has never been more pressure on national standards bodies to provide an efficient and effective standardisation service to meet the needs of the market place.

## **8.2 Design of Questionnaire for Total Quality Management Survey**

In recent years, there has been growing criticism of the practice of quality management. A flood of more critical findings (Wilkinson et al., 1994) has now replaced the early prescriptive and largely anecdotal success stories. TQM brings in many benefits. Companies large and small, whole sectors of industry, purchasers and consumers, all stand to benefit when TQM is in place. TQM provides that competitive edge which means more business for companies, better prospects for international trade and greater economical growth for the nation. Total Quality Management strategy is growing rapidly and it has become the major business philosophy of the 1990s. TQM teaches companies that the customer is the most important factor in the organisation. It suggests that a company needs to satisfy its customers to remain competitive, that the key to survival in today's highly competitive markets is for the company to know the actual requirements of its customers, and these requirements must be met at the lowest cost (Goh et al., 1994).

TQM requires that quality control and management efforts begin with the product conception at the design stage and are complete only when the customers are

satisfied with the use of the product. Thus, the following activities and functions should be involved in quality control and management processes:

- the marketing group in providing thorough analysis of customer needs for the products,
- the design of the product,
- the vendor and buyers of materials,
- the manufacturing and testing of the products,
- handling, storing, packaging, shipment and delivery of the products,
- the maintenance, durability, reliability and reparability of the products,
- the market analysis of the user's satisfaction with the product, and
- the subsequent design and redesign of new quality-oriented products starting from the beginning.

TQM philosophy remains good only when it is applied in conjunction with other management aspects: leadership, quality awareness, quality responsibility, prevention-oriented quality control activities, doing tasks right the first time, keeping the cost of quality at optimum figures and realising continuous improvement strategies (Jaoko, 1994).

Exhibits 3.1 to 3.3 in Chapter 3 illustrated and compared the gurus' points towards TQM. Crosby and Deming have the great number of similarities in terms of quality management philosophies with the rest of the gurus. They stressed heavily management responsibility and commitment. Generally speaking, many of Juran and Deming's fundamental principles are closely related. In general, Deming provides the philosophy whereas Juran provides the specific structure that can help in the materialisation of the principles. The similar issues in the fundamental principles advocated are:

- the role of top management
- the importance of the customers, both external and internal
- the necessity of quality
- the importance of continuous improvement
- the need for problem-solving tools and techniques

- the importance of training and education
- the need for active participation in the efforts towards the solution of problems

Weston's survey (Weston, 1995) found that the influences of gurus' concepts to companies' quality policy were mainly from Deming's. The survey conducted was to provide an informative analysis of the companies status in engaging TQM programme. It was envisaged that the present status and people's attitudes towards TQM would help to further develop and implement the best quality management and business strategies. To achieve these objectives, the fundamental concepts of Deming's 14 points as described in Chapter 2 were used to develop the questionnaire. The survey comprised pre-coded questions for the ease of respondents to choose their answers (Hague, 1993).

The following sections outline the general understanding of the Deming's philosophy and the basis of the design of questions. The complete questionnaire itself is shown at the end of the Appendix D that contains the survey analysis.

*a) Constancy of Purpose for improvement of quality*

According to Deming's point 1, organisations must develop a long-term strategy and goal in order to stay in business. Resources must be allocated for research, training and education to achieve the goal. Management must demonstrate their commitment to the customers, suppliers and employees constantly. In addition, organisations must measure their management commitment and carry out benchmarking on organisation performance relative to other competitors (Kanji et al., 1994).

Hence, this part of the question helps determine whether the companies have developed their long-term plan for quality improvement. The pre-coded questions asked how customers' feedback was obtained. According to the survey results of Taylor (Taylor, 1995), the most commonly used methods to measure customer satisfaction were customer surveys (34%), customer complaints (12%), repeat business (6%), and sales data (4%). Besides,

questions on how important customer satisfaction and benchmarking are to an organisation should also be asked. According to the criteria of Malcolm Baldrige National Quality Award, both customer satisfaction and benchmarking are very important to an organisation. These factors can affect greatly the result of quality improvement. Hence, establishing and practising constancy of purpose in an organisation would give successful in quality management, business profitability and long-term survival in business.

*b) Adopt new management philosophy*

According to Deming's point 2, top management and everyone must learn or adopt new technology or philosophy. Organisations must seek never-ending improvement and refuse to accept any non-conformance. The organisation must concentrate on defect prevention rather than defect detection. By continuously improving the process, the quality will then be improved and hence the productivity. All people in the organisation must be involved in the quality journey and change their attitude towards quality. Adopting the new management philosophy can help to build up a system for continuous improvement in an organisation (Kanji et al., 1994). This part of the question helps to determine whether the organisations adopt the new philosophy that requires changing both employees and management attitudes. Hence, it helps to enhance systematic planning, problem solving and prevention and continuous improvement of all processes.

*c) Understand the purpose of inspection*

According to Deming's point 3, management must understand that the purpose of inspection should be to improve the process and reduce cost. The mass inspection process is both costly and unreliable. Where appropriate, it should be replaced by modern quality tools such as statistical process control, quality function deployment and design of experiments for quality improvement. This part of the questions helps to determine whether companies used mass inspection, which is a way of life in most business in Hong Kong and the involvement of top management in the defect prevention system. The need for 100% inspection would be eliminated and hence quality

would be built into the processes of production without mass inspection of the end product.

*d) Relationship between organisation and supplier*

According to Deming's point 4, the organisation should stop awarding business based on a lower bid in price because it has no meaning without quality. The goal is to have a single supplier for each item and develop a long-term relationship of loyalty and trust, thereby providing improved products and services. This part of the question helps to determine the kind of relationship companies has with their suppliers. To ensure an efficient communication with the supplier, strong and good relations must be established.

*e) Continuous improvement of every process*

According to Deming's point 5, management should take up the responsibility by becoming actively engaged in enhancing quality and productivity, thus continuously improving quality and lowering costs. The focus should be on preventing problems before they happen. Responsibilities are assigned to different teams to remove the causes of problems and continuously improve processes. The improvement process also requires feedback from customers and suppliers. According to the survey conducted in New Zealand (Bately, 1994), measuring and reporting customer satisfaction were important factors for continuous improvement. Hence, this part of the question helps to determine the level of customer satisfaction.

*f) Training and education*

According to Deming's points 6 and 13, training and education should apply to all levels of the organisation. Management must allocate sufficient resources to train and educate the employees to perform their jobs. From the survey conducted in European industry (Dale, et al., 1993), the five aspects of TQM in which most employees trained were TQM and marketing, quality costs and cost effectiveness of TQM, top management leadership in TQM, integration of quality and business planning and employee involvement in

TQM. Hence, with reference to the Hong Kong situation, this part of the question determines what aspects of quality system training would be mostly concerned and received by employees. It also determines the attitudes of employees towards training since they are expected to take the lead in the quality improvement process. If employees are actively involved in training, it can provide them to better understanding their jobs and hence improvement of their performance and products' quality follows.

*g) Leadership*

According to Deming's point 7, leadership emanates from knowledge, expertise and interpersonal skills but not authority. Also management supports employees in their leadership development and helps them to do a better job so as to achieve quality improvement. Some of the elements of leadership that may influence quality improvement include: personal quality, perceived situation, vision and mission, leader behaviours, performance, use of tradition (Bately, 1994). According to a survey conducted in health care (Lin, 1995), the major leadership styles are team building and participatory. This part of question helps to determine what leadership style is used in companies and whether leadership exists within companies.

*h) Job satisfaction*

According to Deming's point 8, management must encourage open, effective communication and teamwork. Unsatisfactory job performance may be due to lack of job security, ignorance of organisation goals, misunderstanding of the job requirement, poor supervision and so on. Driving fear out of the workplace involves proper management. This part of question helps to determine whether TQM programs had any effect on job satisfaction and employees' attitudes.

*i) Barriers between departments*

According to Deming's point 9, barriers do exist at all levels of management, and within departments. Barriers also exist between the organisations and customers or suppliers. These barriers exist because of poor communication,

ignorance of the organisation's mission, competition, and fear and personal jealousies. To break down the barriers, management needs a long-term perspective. Everyone must work as a team, working toward the good of the team. This part of the question serves to identify whether barriers exist and the most common factors causing them.

*j) Slogans and targets*

According to Deming's point 10, slogans and targets never help employees to do a better job. They leave the employee powerless to achieve the objective, constitute management by fear, and hence should be eliminated. This part of question helps to determine whether companies use slogans and targets for better work and quality.

*k) Goals for management*

According to Deming's point 11, goals should be set at a level that is achievable and committed to the long-term success of the organisation. Also, the management must have a strategy that aims at endless improvement. The goal should also work well with the work force to reflect the new management policies. This part of question helps to determine the company's goals that may embrace some meaningful statements for quality improvement.

*l) Pride in workmanship*

According to Deming's point 12, loss of pride in workmanship does exist in organisations because workers may not be aware of the organisation's mission and they are improperly trained, lack supervision and resources. Restoring pride of workmanship requires a long-term commitment by management. By restoring pride, everyone in the organisation will be working for the common goal. This part of question helps to determine whether the companies create an atmosphere in which productivity and quality can improve and employees can feel proud of their work, and determine the factors that affected the employee's behaviour.

*m) Management transformation*

According to Deming's point 13, management has to accept responsibility for continuous improvement of the processes. It has to create a corporate structure in order to implement the philosophy. An organisational cultural change is required. Top management commitment is required to put everyone in the company working to accomplish this transformation. This transformation is everyone's responsibility. This part of question helps to determine whether the top management desire to change or not. Continuous improvement must need the support of top management, which must feel dissatisfaction with past performance and must have the courage to change.

### **8.3 Design of Questionnaire for Business Management Strategies using Confucius Philosophy**

Cleary (Cleary, 1991) in his book 'The Essential Confucius: The heart of Confucius' teachings in Authentic *I Ching* order' comments "the major obstacle to absorbing the ideas of Confucius is the unsystematic arrangement of the *Analects*. The ancient Chinese would learn the whole collection by memory. Because they were dealing with aphoristic material, and doing so in a manner that required individualised study, they may not have cared very much about the order in which the sayings were written down. But this feature of the book poses a problem to the efficiency-oriented Western mind operating within a more restricted pattern of time."

As Cleary (Cleary, 1991) put it, "Confucius worked for the revitalisation of culture in its role as a means of cultivating human feelings and maintaining the integrity and well-being of a people. He envisioned a social order guided by reasonable, humane, and just sensibilities, not by the passions of individuals arbitrarily empowered by hereditary status, and warned of the social consequences if men in positions of power considered personal profit and advantage over public humanity and justice. Confucius believed in the regeneration of public and private consequence through education and the influence of unifying cultural ideals."



During the question design process, the twenty books of *The Analects of Confucius* were researched and identified with the good characters and behaviours as discussed in Chapter 5. *The Great Learning*, one of the four most prestigious Chinese books like *The Analects of Confucius*, specifies that cultivating individual; harmonising family and governing nations would bring peace to the whole world. The following sections intend to highlight the scenarios of how the questionnaire was designed. The Confucius' sayings being quoted are the most commonly known philosophy to most Chinese people. These sayings become the Chinese idioms that teach people the cultivation of characters and behaviours. They were identified and then applied to the business world as some business management practices and strategies.

The questionnaire was designed and the respondents were asked to rank the orders of importance of these business management practices and strategies under the influences of Confucius philosophy in Hong Kong. These were put on a five-point scale from 1 to 5. The "1" is regarded as not important, "2" below average important, "3" average important, "4" very important and "5" extremely important to business management practice and strategy.

The following sections outline the understanding of the twenty-four characters and behaviours with the best-quoted Confucius' sayings being referenced and the most popular Chinese idioms that form the basis of the questions. The complete questionnaire itself is shown at the end of the Appendix E that also includes the analysis. The quoted references are the reference to the twenty Books of *The Analects of Confucius*.

#### **a) Cultivation of Individual Behaviours**

##### **1. Learn: Study for the purpose of application**

*The Master said, "To learn and at due times to repeat what one has learnt, is that not after all a pleasure? Those friends should come to one from afar, is this not after all delightful? To remain un-soured even though one's merits are unrecognised by others is that not after all what is expected of a gentleman?" (Book 1,1)*

*The Master said, "He who learns but does not think is lost. He who thinks but does not learn is in great danger." (Book 2,15)*

*Tzu-hsi said, "The energy that a man has left over after doing his duty to the State, he should devote to study; the energy that he has left after studying, he should devote to service of the State." (Book 19,13)*

For the cultivation of individual characters and behaviours, people should plan to strengthen and improve themselves continuously. Confucius believed that people should study and learn a variety of subjects so as to deepen the human understanding. Through study and learning processes, people could prepare themselves for a greater social responsibility. The role of this education process was the enhancement of the individuals and eventually the success of the groups - family, community, and nation - to which the individual belonged. The three quoted Confucius' sayings highlight that learning gives pleasure, learning initiates and generates thinking and further thinking, and learning leads to better job prospects and all people should further enhance themselves through learning.

The proper attitude of learning is to study the knowledge and review what was learnt from time to time, and to have an insatiable desire to learn. One can discover ignorance only through learning. Learning is like rowing upstream; if it is not to advance will drop back. Knowledge is infinite; there is no limit to the knowledge. Confucius emphasised the need of knowledge, as evidence in his lifelong commitment to education and mental development. The purpose of acquiring knowledge is in the application to the virtues of humanity, justice, and courtesy. As the business management practice and strategy on Confucius philosophy, people should "study for the purpose of application" in business, industry and all walks of life.

## **2. Trust: Keep a promise**

*The Master said, "I do not see what use a man can be put to, whose word cannot be trusted. How can a wagon be made to go if it has no yoke-bar or a carriage, if it has no collar-bar?" (Book 2, 22)*

*Tzu-hsia said, "A gentleman obtains the confidence of those under him, before putting burdens upon them. If he does so before he has obtained their confidence, they feel that they are being exploited. It is also true that he obtains the confidence (of those above him) before criticising them. If he does so before he has obtained their confidence, they feel that they are being slandered." (Book 19,10)*

For the cultivation of individual characters and behaviours, mutual trust and understanding are essential in dealing with business and that would help building up confidence with each other. In order to achieve that confidence level; “keep a promise” is something absolutely essential. In any organisation, having a mutual trust relationship between the management and employees would generate better understanding, further co-operation and self-initiation, hence provide better quality products and services.

### 3. Moral conduct: Be of noble character and high prestige

*Tzu-chang said, “He who sides with moral force (te) but only to a limited extent, who believes in the Way, but without conviction--how can one count him as with us, how can one count him as not with us?” (Book 19,2)*

*Tzu-hsia said, “So long as in undertakings of great moral import a man does not ‘cross the barrier,’ in undertakings of little moral import he may ‘come out and go in.’” (Book 19,11)*

For the cultivation of individual characters and behaviours, Confucius believed the moral foundation of social order must rest on the primary virtue of humanness or humanity (Cleary, 1991). *The Analects of Confucius*, however, did not provide a clear definition of humanity. Its simplest form may be to love people. People are expected, through cultivation of the individuals, to have moral integrity and moral conduct. Those who are in high position or government officials are expected to rule by virtue and have benevolent rules. They are expected to have noble character and high prestige or enjoy high prestige and command universal respect. Top management is expected to have both ability and integrity. To achieve this high level of moral integrity, people in the community or organisation would be of one heart and one mind, with high team spirit and good contribution to the organisation. As the business management practice and strategy on Confucius’ philosophy, top management should “be of noble character and high prestige”, that would gain tremendous benefit and high respect in the business circle.

### 4. Wisdom: Make a sensible selection

*The Master said, “It is only the very wisest and the very stupidest that cannot change.” (Book 17,3)*

Confucius' disciples asked what did he mean by knowledge. Confucius called it "knowing people", placing it in the context of his field of concern, and seeking to understand human character and the results of individual and collective behaviour in private and public life. In its highest development, knowledge was to become wisdom, able to comprehend particulars through a unified insight (Cleary, 1991). For the cultivation of individual characters and behaviours, Confucius expected people, in particular those in the management and top level, to have both wisdom and virtue so that they could win the people's confidence and trust. As the business management practice and strategy on Confucius' philosophy, top management have the wisdom that enable them to "make a sensible selection", in particular in the competitive business environment.

### 5. Word and deeds: Suit the action to the word

*The Master said, "I have never yet seen a man who was truly steadfast. Someone answered saying, 'Shen Ch'eng.' The Master said, Ch'eng! He is at the mercy of his desires. How can he be called steadfast?" (Book 5,10)*

*Tzu-kung asked about the true gentleman. The Master said, "He does not preach what he practises till he has practised what he preaches." (Book 2,13)*

For the cultivation of individual characters and behaviours, Confucius expected that promises must be kept and action must be resolute. People should always be true in word and resolute in deed. Whenever one speaks; one speaks to the point and true to one's word. One should never exaggerate or overstate the fact and talk about anything frivolously. As the business management practice and strategy on Confucius' philosophy, top management must "suit the action to the word", both to external customers and internal employees. Chinese business people in business are well known for the truth in their words. Once they promise anything, they will treat that as the contract and act on that accordingly.

### b) Cultivation of Professional Ethics

#### 6. Benevolence: Be benevolent and see benevolence

*The Master said, "Without Goodness a man cannot for long endure adversity, cannot for long enjoy prosperity." The Good Man rests content with Goodness; he that is merely wise pursues Goodness in the belief that it pays to do so. (Book 4,2)*

*Yen Hui asked about Goodness. The Master said, " 'He who can himself submit to ritual is Good.' If (a ruler) could for one day 'himself submit to ritual,' everyone under Heaven would*

*respond to his Goodness. For Goodness is something that must have its source in the ruler himself; it cannot be got from others."*

*Yen Hui said, "I beg to ask for the more detailed items of this (submission to ritual)." The Master said, "To look at nothing in defiance of ritual, to listen to nothing in defiance of ritual, never to stir hand or foot in defiance of ritual." Yen Hui said, "I know that I am not clever; but this is a saying that, with your permission, I shall try to put into practice." (Book 12,1)*

*Jan Jung asked about Goodness. The Master said, "Behave when away from home as though you were in the presence of an important guest. Deal with the common people as though you were officiating at an important sacrifice. Do not do to others what you would not like yourself. Then there will be no feelings of opposition to you, whether it is the affairs of a State that you are handling or the affairs of a Family."*

*Jan Yung said, "I know that I am not clever; but this is a saying that, with your permission, I shall try to put into practice." (Book 12,2)*

For the cultivation of individual ethics, Confucius expected benevolent people to be kind, merciful and humane. Benevolence, as Confucius believed, is the moral foundation of virtue in humanity. Humanity, justice and virtue are the moral behaviours of benevolent people. As the business management practice and strategy on Confucius' philosophy, top management should "be benevolent and see benevolence". Companies may wish to consider their impact on the society, the feedback from people both inside and outside for continuous improvement and enhancement.

## **7. Righteousness: Speak out sternly from a sense of justice**

*The Master said, "A gentleman takes as much trouble to discover what is right as lesser men take to discover what will pay." (Book 4,16)*

*The Master said, "The gentleman who takes the right as his material to work upon and ritual as the guide in putting what is right into practice, who is modest in setting out his projects and faithful in carrying them to their conclusion, he indeed is a true gentleman." (Book 15,17)*

For the cultivation of individual ethics, Confucius also emphasised the virtue of justice that might be considered as the principle of the person that could never be moved or distracted by profit and advantage. For those people who are in high positions, they must be righteous and not shirk their duty. As the business management practice and strategy on Confucius' philosophy, people should "speak out sternly from a sense of justice" for any malpractice in business operation such as corruption. Companies should consider the long-term impact to the community; they are duty-bound to reveal the situation otherwise business operations will no longer enjoy the clean and fair business environment that both local and international investors have had for years.

## 8. Courtesy: Treat people with due respect

*Yen Hui asked about Goodness. The Master said, "He who can himself submit to ritual is Good.' If (a ruler) could for one day 'himself submit to ritual,' everyone under Heaven would respond to his Goodness. For Goodness is something that must have its source in the ruler himself; it cannot be got from others."*

*Yen Hui said, "I beg to ask for the more detailed items of this (submission to ritual)." The Master said, "To look at nothing in defiance of ritual, to listen to nothing in defiance of ritual, never to stir hand or foot in defiance of ritual." Yen Hui said, "I know that I am not clever; but this is a saying that, with your permission, I shall try to put into practice." (Book 12,1)*

*The master said, "Ritual, ritual! Does it mean no more than presents of jade and silk? Music, music! Does it mean no more than bells and drums?" (Book 17.11)*

Confucius emphasised the importance of the virtue of etiquette. Etiquette includes mannerly behaviours in daily life, ceremonial attendance, and protocol for business and international relations and courtesy for official occasions. People are expected to be refined and courteous.

As the business management practice and strategy on Confucius' philosophy, people should "treat people with due respect". In business social events, top management should have proper etiquette and any discourtesy would do harm to the image of the organisation. Top management with good social skill should give precedence to people out of courtesy that demands reciprocity. Top management should also be courteous to the wise and condescending to the scholarly that the best-qualified people would serve the organisation. All people work in the organisation should have the sense of propriety, justice, honesty and honour that would bring harmony and co-operation to the organisation.

## 9. Question: Do not feel ashamed to ask and learn

*Yuan Ssu asked about compunction. The Master said, "When a country is ruled according to the Way, (the gentleman) accepts rewards. But when a country is not ruled according to the Way, he shows compunction in regard to rewards." (Book 14,1)*

Confucius encouraged people to ask questions about that they did not understand and that would be regarded as the most appropriate way to learn. As the business management practice and strategy on Confucius' philosophy, people should "not feel ashamed to ask and learn" in particular asking someone who is more junior in ranking. An old Chinese saying said whoever is more knowledgeable than you will be your master.

## 10. Forgive: Forgive someone

*The Master said, "Shen! My Way has one (thread) that runs right through it." Master Tseng said, "Yes." When the Master had gone out, the disciples asked, saying what did he mean? Master Tseng said, "Our Master's Way is simply this: loyalty and consideration." (Book 4,15)*

*Tzu-kung asked saying, "Is there any single saying that one can act upon all day and every day?" The Master said, "Perhaps the saying about consideration: Never do to others what you would not like them to do to you." (Book 15,23)*

Confucius emphasised his simple way in dealing with people was to be loyal and considerate. As the business management practice and strategy on Confucius' philosophy, people should "forgive someone" on whatever was done wrong to them and be considerate. In any organisation, loyalty and consideration with mutual trust and understanding will resolve most of the problem issues, in particular, human relations. *In dealing with business outside the organisation*, more consideration of the business party will further promote co-operation in business.

### c) Regulate and Harmonise a Family

## 11. Filial Piety: Show filial obedience

*Meng I Tzu asked about the treatment of parents. The Master said, "Never disobey!" When Fan Ch'ih was driving his carriage for him, the Master said, "Meng asked me about the treatment of parents and I said, Never disobey!" Fan Ch'ih said, "In what sense did you mean it?" The Master said, "While they are alive, serve them according to ritual. When they die, bury them according to ritual and sacrifice to them according to ritual." (Book 2,5)*

*Master Yu said, "Those who in private life behave well towards their parents and elder brothers, in public life seldom show a disposition to resist the authority of their superiors. And as for such men starting a revolution, no instance of it has ever occurred. It is upon the trunk that a gentleman works. When that is firmly set up, the Way grows. And surely proper behaviour towards parents and elder brothers is the trunk of Goodness?" (Book 1,2)*

Confucius considered that among those hundreds of virtues, filial piety was the most important one. People should treat their parents well in their private life. As the business management practice and strategy on Confucius' philosophy, people should "show filial obedience" and pay respect to their seniors. It does not mean that people should follow what has gone wrong or something improper. To harmonise different departments within organisations, special events should be held regularly with family participation that will enhance the situations.

## 12. Sincerity: Express earnestly and sincerely

*Master K'ung said, "The gentleman has nine cares. In seeing he is careful to see clearly, in hearing he is careful to hear distinctly, in his looks he is careful to be kindly; in his manner to be respectful, in his words to be loyal, in his work to be diligent. When in doubt he is careful to ask for information; when angry he has a care for the consequences, and when he sees a chance of gain, he thinks carefully whether the pursuit of it would be consonant with the Right." (Book 16,10)*

Sincerity, faithfulness and truthfulness are the glues that bind the virtues of humanity, justice, courtesy and wisdom together in Confucius' philosophy. People are expected to show their good faith and sincerity in all their works and review the present situations and positions. As the business management practice and strategy on Confucius' philosophy, people should behave and "express earnestly and sincerely" showing their good faith in business.

## 13. Thrift: Be economical with one's money

*Wealth and rank are what every man desires; but if they can only be retained to the detriment of the Way he professes, he must relinquish them. Poverty and obscurity are what every man detests; but if they can only be avoided to the detriment of the Way he professes, he must accept them. The gentleman who ever parts company with Goodness does not fulfil that name. Never for a moment does a gentleman quit the way of Goodness. He is never so harried but that he cleaves to this; never so tottering but that he cleaves to this. (Book 4,5)*

Thrift is considered to be one of the main reasons for the Chinese having large reserves in the past years. As the business management practice and strategy on Confucius' philosophy, people should "be economical with one's money" and care about spending.

## 14. Reception: Reception and hospitality

*The Master said, "In serving his father and mother a man may gently remonstrate with them. But if he sees that he has failed to change their opinion, he should resume an attitude of deference and not thwart them; he may feel discouraged, but not resentful." (Book 4,18)*

*The Master said, "While father and mother are alive, a good son does not wander far afield; or if he does so, goes only where he has said he was going." (Book 4,19)*

As the business management practice and strategy on Confucius' philosophy, people should show their "reception and hospitality" to other people like treating their own parents.



## 15. Respect: Respect senior generation and eldest

*Of the saying, 'The word "sacrifice" is like the word "present"; one should sacrifice to a spirit as though that spirit was present,' the Master said, 'If I am not present at the sacrifice, it is as though there were no sacrifice. (Book 3,12)*

As the business management practice and strategy on Confucius' philosophy, people should show their respect to others' contributions like showing "respect to their senior generation and eldest".

### d) Manage the State

## 16. Govern: Rule the state well, give people peace and security

*Tzu-chang asked Master K'ung, saying, "What must a man do, that he may thereby be fitted to given the land?" The Master said, "He must pay attention to the Five Lovely Things and put away from him the Four Ugly Things." Tzu-chang said, "What are they, that you call the Five Lovely Things?" The Master said, "A gentleman can be bounteous without extravagance, can get work out of people without arousing resentment, has longings but is never covetous, is proud but never insolent, inspires awe but is never ferocious."*

*Tzu-chang said, "What is meant by being bounteous without extravagance?" The Master said, "If he gives to the people only such advantages as are really advantageous to them, is he not being bounteous without extravagance? If he imposes upon them only such tasks, as they are capable of performing, is he not getting work out of them without arousing resentment? If what he longs for and what he gets is Goodness, who can say that he is covetous? A gentleman, irrespective of whether he is dealing with many persons or with few, with the small or with the great, never presumes to slight them. Is not this indeed being 'proud without insolence'? A gentleman sees to it that his clothes and hat are put on straight, and imparts such dignity to his gaze that he imposes on others. No sooner do they see him from afar than they are in awe. Is not this indeed inspiring awe without ferocity?"*

*Tzu-chang said, "What are they, that you call the Four Ugly Things?" The Master said, "Putting men to death, without having taught them (the Right); that is called savagery. Expecting the completion of tasks, without giving due warning; that is called oppression. To be dilatory about giving orders, but to expect absolute punctuality, that is called being a tormentor. And similarly, though meaning to let a man have something, to be grudging about bringing it out from within, that is called behaving like a petty functionary." (Book 20,2)*

*Tzu-kung asked about government. The Master said, "Sufficient food, sufficient weapons, and the confidence of the common people." Tzu-kung said, "Suppose you had no choice but to dispense with one of these three, which would you go for?" The Master said, "Weapons." Tzu-kung said, "Suppose you were forced to dispense with one of the two that were left, which would you go for?" The Master said, "Food." For from of old death has been the lot of all men; but people that no longer trust its rulers are lost indeed. (Book 12,7)*

As the business management practice and strategy on Confucius' philosophy, management should appreciate how to "rule the state well and give people peace and security" through fully understanding the "five lovely and four ugly things".

### 17. Communication: Good communication between senior and junior

*Duke Ting asked for a precept concerning a ruler's use of his ministers and a minister's service to his ruler. Master K'ung replied saying, "A ruler in employing his ministers should be guided solely by the prescriptions of ritual. Ministers in serving their ruler, solely by devotion to his cause." (Book 3,19)*

As the business management practice and strategy on Confucius' philosophy, people should understand how to maintain "good communication between the senior and junior". The precept is "prescription of ritual and devotion" that will help maintain good communication between them.

### 18. Loyal: Be loyal and devoted to work

*Tzu-chang asked about getting on with people. The Master said, "Be loyal and true to your every word, serious and careful in all you do; and you will get on well enough, even though you find yourself among barbarians. But if you are disloyal and untrustworthy in your speech, frivolous and careless in your acts, even though you are among your own neighbours, how can you hope to get on well? When standing, see these principles ranged before you; in your carriage, see them resting on the yok. Then you may be sure that you will get on." Tzu-chang accordingly inscribed the maxim upon his sash. (Book 15,5)*

As the business management practice and strategy on Confucius' philosophy, people should be "loyal and devoted to work"; that is be loyal and true to every word, serious and careful in all the work done.

### 19. Team effort: Plan and work jointly and co-operatively

*When the Master said, "He who holds no rank in a State does not discuss its policies." Master Tseng said, "A true gentleman, even in his toughest, never departs from what is suitable to his rank." (Book 14,27-28)*

As the business management practice and strategy on Confucius' philosophy, people should "plan and work jointly and co-operatively" in their own positions and capacities.

### 20. Reward and punishment: Proper incentives and punishment

*The Master said, "In serving one's prince one should be intent upon the task, and not bent upon the pay." (Book 15,37)*

As the business management practice and strategy on Confucius' philosophy, people should put serving the organisation well as their first priority and their own prospects as the latter consideration. "Proper incentives and punishment" schemes such as

awards, recognition of contributions should be used for the employees' encouragement purposes.

**e) Rule the Whole Country and Bring Peace to the World**

**21. Integrity: Maintain integrity even under severe and desperate conditions**

*The Master said, "To have faults and to be making no effort to amend them is to have faults indeed!" (Book 15,29)*

As the business management practice and strategy on Confucius' philosophy, people should "maintain integrity even under severe and desperate conditions". To be the top management in the organisation requires high moral principles and integrity with great respect and trust from the business partners, subordinates and employees.

**22. Honest and clean: Be honest and clean in performing duties**

*The Master said, "To assume an outward air of fierceness when inwardly trembling is (to take a comparison from low walks of life) as dishonest as to sneak into places where one has no right to be, by boring a hole or climbing through a gap." (Book 17,12)*

*The Master said, "The knight of the Way who thinks only of sitting quietly at home is not worthy to be called a knight." (Book 14,3)*

*Tzu-lu came to the Master and said indignantly, "Is it right that even gentlemen should be reduced to such straits?" The Master said, "A gentleman can withstand hardships; it is only the small man whom, when submitted to them, is swept off his feet." (Book 15,1)*

As the business management practice and strategy on Confucius' philosophy, people should "be honest and clean in performing duties" even if they have to withstand hardship. Some people who are incapable of carrying out their work should be honest to people and make known the truth. Being honest and clean are the most essential virtues for people at the top management positions.

**23. Observe regulation: Observe rules and regulations**

*The Master said, "If the ruler himself is upright, all will go well even though he does not give orders. But if he himself is not upright, even though he gives orders, they will not be obeyed." (Book 13,6)*

*The Master said, "Only if the right sort of people had charge of a country for a hundred years would it become really possible to stop cruelty and do away with slaughter." How true the saying is! (Book 13,11)*

*Duke Ai asked, "What could I do in order to get the support of the common people?" Master K'ung replied, "If you raise up the straight and set them on top of the crooked, the commoners would support you. But if you raise the crooked and set them on top of the straight, the commoners will not support you." (Book 2,19)*

*The Master said, "Govern the people by regulations, keep order among them by chastisements, and they will flee from you, and lose all self-respect. Govern them by moral force, keep their self-respect and they will come to you of their own accord." (Book 2,3)*

As the business management practice and strategy on Confucius' philosophy, people should "observe rules and regulations". Top management should set an example in following the rules and regulations in the organisations. Good management would help reinforce rules and regulations; however, they should use moral force and keep the people's self-respect.

#### **24. Proper title: Be perfectly justifiable**

*The wife of the ruler of a State is referred to by the ruler as 'That person.' She refers to herself as 'Little Boy.' The people of the country call her 'That person of the Prince's.' When speaking of her to people of another State the ruler calls her 'This lonely one's little prince.' But people of another State likewise call her 'That person of the Prince's.' (Book 16,14)*

As the business management practice and strategy on Confucius' philosophy, people in the organisation should "be given a proper title that is perfectly justifiable". In doing so, top management would give proper recognition to those people who are involved in these works.

### **8.4 Design of Questionnaire for Business Management Strategies using The Sun Tzu's The Art of War and The Thirty-six Strategies**

#### **8.4.1 Sun Tzu's The Art of War Main Themes as Business Management Strategies**

As described in Chapter 6, the thirteen Chapters of *The Sun Tzu's The Art of War* were researched with the equivalent business management strategies being identified. The following sections intend to highlight the scenarios of how these questions were designed. The most relevant Sun Tzu's sayings quoted are most commonly known and used by Chinese people.

This section presents the essential themes of the thirteen Chapters of Sun Tzu's *The Art of War* that are related to business management strategic environment.

The link between the Sun Tzu's flow-charting structure had been discussed in Chapter 6 and illustrated in Table 6.1. The main themes of Sun Tzu's with their equivalent business management strategies were further studied and developed for their applicability in business competitive situations. These equivalent business management strategies were used as questions of the questionnaire. The purpose of the survey was to investigate the understanding and applicability of these Sun Tzu's business management strategies in organisations within the Hong Kong environment.

Based on the titles used in Krause's book "Sun Tzu The Art of War for Executives" (Krause, 1996), the thirteen Sun Tzu's Business Management Strategies were then proposed as shown in Chapter 6.

The details of the main themes of the thirteen chapters and their equivalent business management strategies are presented. These business management strategies were used and quoted in the questionnaire seeking the views of the respondents on their general acceptance. The questionnaire was designed to ask the respondents to rank the order of importance of those business management practices and strategies in Hong Kong. They were put on a five-point scale from 1 to 5, which is the same as those for the questionnaire for business management using Confucius' philosophy in section 8.3.

The Chinese-English translation of the following Sun Tzu's main themes was based on the translation work of Luo (Luo, 1994) "Sun Tzu The Art of War".

*a) Strategy 1: Planning of Strategies, Estimation and Leadership*

The Chapter 1 *Situation Appraisal* of Sun Tzu's The Art of War has the following main themes:

- 1.1 *What is war? It may be described as one of the most important affairs to the state.*
- 1.2 *We should analyse and compare the conditions of an enemy and ourselves.*
- 1.3 *Any military operation takes deception as its basic quality.*
- 1.4 *He who plans and prepares carefully will find himself in a favourable position and win victory.*

The equivalent business and management strategies on “Planning of Strategies, Estimation and Leadership” based on Sun Tzu's The Art of War become:

- 1.1 Understand the actual situation; decide on the plan of actions.
- 1.2 Analyse and compare both parties' conditions, both favourable and unfavourable.
- 1.3 Business is very much related to tactics and strategic planning.
- 1.4 Correct information and proper preparation will help business make a success.

*b) Strategy 2: Resources and Competitive Actions*

The Chapter 2 *Waging War* of Sun Tzu's The Art of War has the following main themes:

- 2.1 *You have had enough money.*
- 2.2 *We have heard of criticism of a hasty campaign, we have never seen the cleverness in prolonging a war.*
- 2.3 *He who is adept in military operations never raises an army twice.*
- 2.4 *Hence a wise commander should strive to get provisions in the enemy state.*
- 2.5 *The more times you defeat the enemy the stronger you will be.*

The equivalent business and management strategies on “Resources and Competitive Actions” based on Sun Tzu's The Art of War become:

- 2.1 Make a good and realistic estimation of the actual expenses before entering into business.
- 2.2 Speed and quick decisions help in business.
- 2.3 Organisation structure should be clear and effective.
- 2.4 Not to add extra burden on the head-office for any new proposal.
- 2.5 Unify other business by co-operation.

*c) Strategy 3: Competitive Strategy and Wisdom*

The Chapter 3 *Strategic Attacks* of Sun Tzu's The Art of War has the following main themes:

- 3.1 *Winning a victory and subduing the enemy without fighting is the highest excellence.*
- 3.2 *The best policy for the military operations is to gain victory by means of strategy.*
- 3.3 *He must gain complete victory all-under-heaven.*
- 3.4 *The weaker battles on stubbornly without taking its strength into account; it will surely be conquered by the stronger.*
- 3.5 *The generals assist the ruler in governing a nation.*

- 3.6 *If you know both the enemy and yourself, you will fight a hundred battles without danger of defeat.*

The equivalent business and management strategies on “Resources and Competitive Actions” based on Sun Tzu's The Art of War become:

- 3.1 Take over business without extra costs.
- 3.2 Understanding strategy helps to win competition.
- 3.3 Use wisdom and best strategy instead of aggressive tactics for success.
- 3.4 Understand the situation and act flexibly.
- 3.5 Decisions should be taken at appropriate company level; more delegation of responsibility.
- 3.6 Understand yourself and your competitor better helps you win.

*d) Strategy 4: Positioning and Targeting, Strengths and Weaknesses Estimation*

The Chapter 4 *Disposition of the Army* of Sun Tzu's The Art of War has the following main themes:

- 4.1 *One may foretell a victory but cannot be sure to gain victory as one wish.*
- 4.2 *They can, on one hand, protect themselves and, on the other hand, win a complete victory.*
- 4.3 *Those skilled in war always defeat the enemy that could easily be conquered.*
- 4.4 *They have planned for certainty of their victory and the enemy is already destined to defeat.*
- 4.5 *He who is adept in military operations always understands the principles of war and adopts the correct policies, so that victory is entirely in his hands.*

The equivalent business and management strategies on “Positioning and Targeting, Strengths and Weaknesses Estimation” based on Sun Tzu's The Art of War become:

- 4.1 Strengthen yourself before entering into competition.
- 4.2 Attack right to the target, defence kept top secret.
- 4.3 Beware of business and situation changes; never be content with your position.
- 4.4 Careful planning of the whole situation enables the business to take control.
- 4.5 Understand the principles of business and help to adopt the correct policies and be successful.

*e) Strategy 5: Opportunity, Timing and Management Structure*

The Chapter 5 *Forces* of Sun Tzu's *The Art of War* has the following main themes:

- 5.1 *Managing a big army is in principle the same as managing a small one; it is a matter of organisation.*
- 5.2 *During a war, the general should adopt the normal way of confronting the enemy, while using special tactics to take the enemy by surprise.*
- 5.3 *Military formations are not more than the application of special and normal tactics, but their variations and combinations will give rise to an infinite series of manoeuvres.*
- 5.4 *A general who is skilled in war can exploit his own vantage position and launch a swift and sharp attack.*
- 5.5 *He can drive the enemy about with small advantages and awaits the enemy in strength.*
- 5.6 *A general can select the right persons and fully exploit the favourable situation.*

The equivalent business and management strategies on “Opportunity, Timing and Management Structure” based on Sun Tzu's *The Art of War* become:

- 5.1 Good organisation helps to define clear job responsibilities.
- 5.2 Business tactics require a flexible managing policy.
- 5.3 Application of special and normal tactics will give rise to an infinite series of business approaches.
- 5.4 Move quickly to explore business opportunities.
- 5.5 Offer some advantages and trap by strategy.
- 5.6 Right person gets the right job.

*f) Strategy 6: Control of Market Situations and Climate*

The Chapter 6 *Opportunism* of Sun Tzu's *The Art of War* has the following main themes:

- 6.1 *Appear at the place to which the enemy will not come; attack a place where the enemy does not expect you.*
- 6.2 *That you are certain to take what you attack is because the enemy cannot fortify it. That you are certain of success in holding what you defend is because the enemy cannot attack it.*
- 6.3 *The offensive one takes can be so strong that the enemy cannot defend just because one strikes at the enemy's weak point. One can withdraw without being overtaken by the enemy just because one moves so swiftly that the enemy cannot pursue.*
- 6.4 *If we expose the enemy's disposition and hide ours, we can concentrate our troops and divide the enemy's forces.*
- 6.5 *One who has few must take precautions against possible attacks everywhere; one who has many compels the enemy to prepare against his attacks.*
- 6.6 *If a general knows both the place and the time of a battle to come, he can lead his troops to go even a thousand 'li' away for a decisive battle.*
- 6.7 *A victory may be made even if the enemy's troops are many. We can find a way to make them unable to fight.*



- 6.8 *The way to defeat the enemy should not follow the beaten track, but change constantly according to the enemy's changing situation.*
- 6.9 *The way to fight never remains constant and water never flows in the same way.*

The equivalent business and management strategies on “Control of Market Situations and Climate” based on Sun Tzu's The Art of War become:

- 6.1 Keep ahead of competition through innovations.
- 6.2 Attack competitors' weak points while building on your strength.
- 6.3 Attack competitors' weak points with full commitment. A company should know when to withdraw from the market to reduce losses by withdrawing from the market at the right time.
- 6.4 Know the competition not allowing them to know you, enabling you to concentrate effectively.
- 6.5 If one over-diversifies, the business can easily be challenged. Concentrate your effort where you are strong.
- 6.6 Know the market well for success.
- 6.7 Even if the competition is keen, we can still win by better understanding the market requirement and prove successful.
- 6.8 Change constantly according to the changing market situation.
- 6.9 Business tactics never remain constant and should take any form.

*g) Strategy 7: Management of Conflict and Avoid Confrontation*

The Chapter 7 *Manoeuvres* of Sun Tzu's The Art of War has the following main themes:

- 7.1 *During the whole military process nothing is more difficult than to fight for a favourable position with the enemy.*
- 7.2 *There is not only disadvantage but also danger in fighting for a favourable position.*
- 7.3 *A commander who does not understand the plots and schemes of the princes cannot enter into alliances with them.*
- 7.4 *He who masters the tactics of deviation first will win victory.*
- 7.5 *They usually use gongs, drums, flags and banners as instruments to unify the army.*
- 7.6 *Keep a highly disciplined army to fight the confused enemy army.*

The equivalent business and management strategies on “Management of Conflict and Avoid Confrontation” based on Sun Tzu's The Art of War become:

- 7.1 Business competition is most difficult when confronting competition head-on.

- 7.2 There is not only disadvantage but also danger in competing for a favourable position. Inadequate preparation will lose business and market share.
- 7.3 Know the potential partner well before entering into joint venture.
- 7.4 Keep the vision while maintaining flexibility for short-term deviation.
- 7.5 Motivate your people for a common goal through good communication.
- 7.6 Strengthen the organisation and plan business strategies.

#### *h) Strategy 8: Flexibility and Adaptability*

The Chapter 8 *The Nine Variations* of Sun Tzu's *The Art of War* has the following main themes:

- 8.1 *Never launch an upward attack on the enemy who occupies high ground.*
- 8.2 *A general or commander should thoroughly understand the tactical variables. Only if he knows them well can he know military operations.*
- 8.3 *A wise general must give his consideration to both favourable factors and unfavourable factors.*
- 8.4 *There are five fatal weaknesses of a general: brave but not resourceful, cowardly on the eve of a battle, quick-tempered easily provoked, honour is driven to reckless situation, benevolent but hesitant and passive.*

The equivalent business and management strategies on “Flexibility and Adaptability” based on Sun Tzu's *The Art of War* are:

- 8.1 Never engage in competition if you are weak.
- 8.2 Market conditions should thoroughly be understood. Only if they are known well can business be operated properly.
- 8.3 Consider both favourable and unfavourable factors in business.
- 8.4 Fatal weakness of management should be understood.

#### *i) Strategy 9: Observing and Manoeuvring*

The Chapter 9 *Marches* of Sun Tzu's *The Art of War* has the following main themes:

- 9.1 *Be sure to stay near the valleys when going through mountains; after crossing the river you must stay far away from it.*
- 9.2 *Be sure to cross salt marshes quickly with no delay.*
- 9.3 *All commanders prefer to station their troops on high ground rather than on low land.*
- 9.4 *If heavy rain falls in the upper reaches of a river and forms torrents rushing down to the lower course, never cross the river but wait until the flood subsides.*
- 9.5 *You must have a thorough search to see if there are ambushes laid or spies hiding.*

- 9.6 *Birds rising in flight show there are troops in ambush.*
- 9.7 *When the enemy asks for a truce without advance appointment, it means that he must have been plotting.*
- 9.8 *When the enemy sees some profit but does not try to obtain it, it is because he has been completely exhausted.*
- 9.9 *Disturbance in the enemy's camp means his generals have lost their prestige and authority.*
- 9.10 *If orders are observed constantly and conscientiously, both the commander and the soldiers will benefit and trust each other.*

The equivalent business and management strategies on “Observing and Manoeuvring” based on Sun Tzu's The Art of War become:

- 9.1 Take the best approach during difficult market conditions and stay away from difficult situations.
- 9.2 Get away from a dangerous situation as quickly as possible.
- 9.3 Observe competitors' position and plan strategy accordingly with better reactions.
- 9.4 Wait until the situation is clear before re-entering into market competition. Good and accurate decisions make proper investments in business.
- 9.5 Thoroughly understand the market situation to avoid potential problems and identify pitfalls.
- 9.6 Observe market indicators to identify potential problems.
- 9.7 When competition proposes a joint venture without warning, it means that he understands his strategic position.
- 9.8 When the competitor does not explore market potential, it means he has no extra resources.
- 9.9 When a competitor has low morale, it means their leadership is poor. Prestige and authority of senior management are both essential.
- 9.10 If everyone does what they should do diligently both the management and workforce benefit and trust each other, and have a good relationship.

*j) Strategy 10: Competitive Situations and Causes of Failure*

The Chapter 10 *Terrain* of Sun Tzu's The Art of War has the following main themes:

- 10.1 *If the enemy is unprepared, you will defeat him.*

- 10.2 *If you occupy such a ground that is narrow or constricted, you should block the narrow passes with strong garrisons and wait for the enemy there.*
- 10.3 *A general should know six situations that point to the defeat of his army, these situations cannot be attributed to natural disasters, and they are the faults of the generals, which are not inevitable.*
- 10.4 *Terrain is an important aid to a commander in military operations.*
- 10.5 *A great commander advances without seeking personal fame and gain, retreats without shirking responsibility.*
- 10.6 *If he dearly loves his persons as he does his own beloved sons, they will be willing to die with him in battle.*
- 10.7 *A general who is skilled in military operations moves his troops without losing his direction and purpose and acts with unlimited resources and adaptations.*

The equivalent business and management strategies on “Competitive Situations and Causes of Failure” based on Sun Tzu's The Art of War become:

- 10.1 Gain advantages over the competition when they are unprepared.
- 10.2 Attack the competitors when they have little room for manoeuvre.
- 10.3 Management should know of their weaknesses that could lead to business failure.
- 10.4 Market situations help decision-making.
- 10.5 A good manager takes the business advantage without taking personal fame and gain and admits failure without shirking responsibility.
- 10.6 Treat your employees like your family and they will share your vision.
- 10.7 A skilled manager reallocates his resources without losing his direction and purpose.

*k) Strategy 11: Competitive Conditions and Offensive, Alliance and Vision Strategy*

The Chapter 11 *The Nine Types of Battlegrounds* of Sun Tzu's The Art of War has the following main themes:

- 11.1 *Ground can be classified into nine geographical positions according to the way of using military operations.*
- 11.2 *In a position where the three neighbouring states meet, and whoever first gets control of one will gain the support of other neighbouring state.*
- 11.3 *Never in a dispersive land; fight a last-ditch battle in desperate ground.*
- 11.4 *The skilled generals would advance when it was to their advantage and halt when situations were unfavourable.*
- 11.5 *The essence of military operations is speed, taking advantage of the enemy's unpreparedness, going by routes he does not expect and attacking him where he is not on guard.*
- 11.6 *Nourish your persons and do not exhaust them; keep them in high morale and conserve their energy.*
- 11.7 *If there is no choice but to fight a desperate battle, they will co-operate closely and consciously follow your direction.*

- 11.8 *Those who are skilled in military operations should be as dextrous as the shuairan, the snake of Mount Chang.*
- 11.9 *Uniting the soldiers to fight bravely depends on good management and command.*
- 11.10 *In commanding an army, a general must have a mind that is serene and unfathomable. He must administrate his troops in an impartial and upright manner.*
- 11.11 *A general who leads his troops to fight a decisive battle should cut off all means of retreat. He should make his troops understand they have no alternatives.*
- 11.12 *The way to make war in the enemy's state is as follows: the deeper your troops penetrate into hostile territory, the more they concentrate their spirit to fight.*
- 11.13 *Unify the will of your soldiers.*
- 11.14 *A general who is ignorant of the intention of the neighbouring princes cannot form alliances with them.*
- 11.15 *A state with such an invincible army does not need to seek alliances with other states.*
- 11.16 *You can command thousands upon thousands of horses and persons as if you were leading a single man.*
- 11.17 *At first assume the coyness of a maiden and when the enemy gives you an opening, attack him as swiftly as running hare.*

The equivalent business and management strategies on “Competitive Conditions and Offensive Strategy, Alliance and Vision” based on Sun Tzu's The Art of War become:

- 11.1 Competitive situations can be different according to the way business is conducted.
- 11.2 By making a market alliances, stronger market control and strategy will be obtained.
- 11.3 Never attack your competitor when your resources are not focused.
- 11.4 The skilled managers would advance when it was to their advantage and halt when situations were unfavourable.
- 11.5 Be Aware of the business situation and react speedily using innovative approaches and attack competitors’ weaknesses.
- 11.6 Care and look after your people.
- 11.7 Make business urgent to ensure co-operation and alignment of vision.
- 11.8 Those who are skilful in business should ensure all the resources work together in co-operation.
- 11.9 Alignment of the company workforce to the vision depends on good management.
- 11.10 The leader of a company should have a mind that is serene and unfathomable. He must administrate his workforce in an impartial and upright manner.
- 11.11 The leader of a company should demonstrate his commitment to the workforce and remain true to this commitment in all he does.

- 11.12 The more successful the business, the more motivated the workforce will be towards their work and make contributions.
- 11.13 Align the workforce to the vision of the company.
- 11.14 A company that does not understand the intention of potential partners cannot form alliances with them.
- 11.15 If a company is strong, it does not need to seek alliances.
- 11.16 Unify the thinking of all people and make them work for you.
- 11.17 Appear not to be strong, but when opportunities arise, launch the business attack.

*l) Strategy 12: Destroying and Decision*

The Chapter 12 *Attacking with fire* of Sun Tzu's *The Art of War* has the following main themes:

- 12.1 *There are suitable seasons to launch a fire attack and suitable days for starting a fire.*
- 12.2 *If you start a fire from up-wind, never launch an attack from down-wind.*
- 12.3 *Any army must know about the varying situations under the five ways of fire attack and keep waiting for a suitable time.*
- 12.4 *To win a battle and capture the spoils but to fail to consolidate such achievements forebode danger. For it is a waste of effort.*
- 12.5 *A state that has perished can never revive, nor can a person who has died be brought back to life.*

The equivalent business and management strategies on “Destroying & Decision” based on Sun Tzu's *The Art of War* become:

- 12.1 Key to success is recognising good opportunities.
- 12.2 Always stay ahead of your competitors.
- 12.3 Remain flexible and adapt in accordance with the changing situation.
- 12.4 Build on past achievement. Never sit on the present situation and continuously innovate.
- 12.5 A simple mistake could ruin the whole business; take everything seriously because once a company has perished, it cannot be revived.

*m) Strategy 13: Intelligence and Information*

The Chapter 12 *Intelligence and Information* of Sun Tzu's *The Art of War* has the following main themes:

- 13.1 *A general is ignorant of the enemy situation; he may waste resources and be devoid of humanity. He should employ spies.*
- 13.2 *An able general achieves extraordinary accomplishments because they can foresee the development of war. Such foreknowledge cannot be obtained from ghosts and spirits; it must be obtained from the people who clearly know the enemy's situations.*
- 13.3 *When you use the five kinds of secret agents simultaneously, the enemy cannot know the principle of their operation. It is divinely intricate and becomes the greatest magic weapon for the sovereign to defeat the enemy.*
- 13.4 *There is no place where espionage is impossible.*
- 13.5 *You must know and instruct your spies to investigate names, etc., in detail.*
- 13.6 *You must ascertain those enemy spies who have been sent to conduct espionage against you. Bribe them, exhort and release them to serve you. At last, they will become converted spies and work for you.*
- 13.7 *Use the intelligent persons as spies and achieve great tasks.*

The equivalent business management strategies on “Intelligence and Information” based on Sun Tzu's The Art of War become:

- 13.1 Ignorance of the competitor's situation is an ignorance danger that may lead to wasted resources.
- 13.2 Achieve extraordinary accomplishments by good management of people who clearly understand the market situation.
- 13.3 Use many ways of gathering information from the market, this will help to hide your intention from competition, and helps to make wise decisions.
- 13.4 Information gathering is always possible.
- 13.5 Detailed information of the market is essential.
- 13.6 Recognise and try to recruit talented people to work for your company.
- 13.7 Recognise talented people's achievement in your company to achieve great tasks.

#### **8.4.2 The Thirty-six Strategies as Business Management Strategies**

Cleary (Cleary, 1991) in his book “The Japanese Art of War: Understanding the Culture of Strategy” outlines the Thirty-six strategies used by Japanese in business and negotiations. Brahm (Brahm, 1995) in his book “Negotiating in China 36 Strategies” also presented the Thirty-six strategies that Western investors should be acquainted with when doing business in China. These two presentations are identical in meaning with different translations of these proverbs.

1. Strategy for Ensuring Win (From strategy 1 to 6)

- |                                      |                          |
|--------------------------------------|--------------------------|
| 2. Strategy for Planning Opportunism | (From strategy 7 to 12)  |
| 3. Strategy for Waging War           | (From strategy 13 to 18) |
| 4. Strategy for Confusing Enemy      | (From strategy 19 to 24) |
| 5. Strategy for Alliances            | (From strategy 25 to 30) |
| 6. Strategy for Defeating            | (From strategy 31 to 36) |

These business and management strategies based on The Thirty-six Strategies were then used and quoted in the questionnaire seeking the views of the respondents on this general acceptance. The same five-point scale from “1” to “5” is used similar to the previous Confucius' and Sun Tzu's Surveys. Cleary and Brahm give two slightly different Chinese-English translations of The Thirty-six Strategies.

Brahm (Brahm, 1995) in his book 'Negotiating in China 36 Strategies' presents the thirty-six strategies and translates as follows.

*a) Strategy for Ensuring Win*

1. Cross the sea by deceiving the sky
  - To hide secrets in the obvious to avoid detection.
2. Besiege Wei to rescue Zhao
  - To attack an adversary's weakest point, divide and rule.
3. Kill with a borrowed knife
  - To make use of someone else's resources to do your job.
4. Relax and wait for the adversary to tire himself out.
  - To use patience to wear down the adversary
5. Loot a burning house.
  - To exploit and capitalise on an opportunity at the expense of your adversary's chaotic situation.
6. Make a feint to the east while attacking in the west.
  - To confuse your adversary's command, and mislead your adversary.

*b) Strategy for Planning Opportunism*

7. Create something out of nothing.
  - Turn something that was not sustained into reality.



8. Pretend to advance down one.
  - To distract the enemy by making a deliberate gesture to attack in one direction while attacking in another where the enemy does not defend.
9. Watch the fire burning from across the river.
  - To allow your adversaries to fight the enemy themselves while you rest and observe, and defeat the exhausted survivor.
10. Conceal a dagger in a smile.
  - To make your adversary relax and unaware of your enmity, hide hostility under friendliness.
11. Sacrifice the plum for the peach.
  - If need be, sacrifice the less important in order to preserve the vital; *substitute one thing for another.*
12. Take a goat in passing.
  - To capitalise on your adversary's negligence or incompetence when the choice is right.

*c) Strategy for Waging War*

13. Beat the grass to startle the snake.
  - Do not tip off your adversary
14. Raise a corpse from the dead.
  - To use something dead to achieve your own ends.
15. Lure the tiger out of the mountain.
  - To have your adversaries deploy their strongest element away from their defence base.
16. Let the adversary off in order to snare him.
  - Do not arouse your adversary's spirit to fight back.
17. Cast a brick to attack a jade.
  - To use a bait to catch something big.
18. To catch bandits, nab their ringleader first.
  - Shoot at the horse first in order to shoot the rider.

*d) Strategy for Confusing Enemy*

19. Remove the fire from under the cauldron.
  - To wear down your adversary's resources first before attacking him; get radical measures, effect a permanent cure.
20. Catching fishes from troubled water.

- Fish feel lost and disillusioned in troubled waters; therefore, they become easy prey. Create a chaotic and panicky situation, the adversary can neither think nor see clearly to respond to the pressing situation.
21. The cicada sheds its shells.
    - When escaping, do so secretly without making it public. Develop a false stronghold to deter the adversary from attacking, then secretly leaving an empty nest.
  22. Fasten the door to catch a thief.
    - To destroy a weak adversary completely, leave no loophole for escape; to use total encirclement. If you allow a weak adversary to escape, *he may make a comeback in the future.*
  23. Be friend a distant state while attacking a neighbouring state.
    - Adversaries at a distance can be a temporal ally. Do not attempt to take on too many enemies at any one time. Another similar idiom states that a far away supply is no good in saving a nearby fire. The immediate danger needs to be taken care of first. If there is no short term, there is no longer term to consider.
  24. Borrow a safe passage to conquer the Kingdom of Guo.
    - Help the weak when the weak is not threatening so as to win over their support. Mere talk will not save the weak; action speaks louder than words.

*e) Strategy for Alliances*

25. Steal the beams and pillars and replace them with rotten timber.
  - To sabotage, incapacitate, or destroy your adversary by removing his key support.
26. Point at the mulberry but causes the locust.
  - To make use of a subject as a pretext to express one's objections.
27. Play dumb.
  - To let your adversary underestimate your capabilities.
28. Remove the ladder after your ascent.
  - To lure an adversary into a trap, and then cut him off.
29. Decorate the tree with fake blossoms.
  - To exaggerate in order to mislead your adversary, letting him believe that you are very strong.
30. Turn yourself into a host from being a guest.
  - To exchange place/ position; reverse the situation.

*f) Strategy for Defeating*

31. Use a beauty to ensnare a man.
  - To intoxicate or indulge your adversary with a time/ energy adsorbing activities thereby diminishing his spirit to fight.
32. Open the gate of an un-defended city.
  - To generate doubts in adversary's camp by presenting something that is really simple; let the adversary overestimate your capabilities.
33. Use adversary's spies to sow disorder in your adversary's camp.
  - To spread wrong information; sow distrust or dissension among your adversaries; sow distrust or discord among one's enemies through one's counterespionage.
34. Inflict pain on oneself in order to infiltrate adversary's camp and win the confidence of the enemy.
  - To absorb loss in order to win trust; inflicting an injury on oneself to win confidence.
35. Lead your adversary to China together with worships.
  - To turn your adversary's strength into weakness; lead your adversary on until they fall by their pride; now also means, a set of interlocking stratagem (series of stratagems) leading your adversary to defeat.
36. Retreat is the best option.
  - Opting out; not participating / not playing the game that your adversary wants you to play.

Cleary (Cleary, 1991) in his book 'The Japanese Art of War: Understanding the culture of strategy' outlines the thirty-six strategies and translates as follows:

1. Sneak across the ocean in broad daylight.
  - This means to create a front that eventually becomes imbued with an atmosphere or impression of familiarity, within which the strategist may manoeuvre unseen while all eyes are trained to see obvious familiarities.
2. Surround one state to save another.
  - When a strong group is about to take over a weaker group, a third part can "have its cake and eat it too," gaining a good reputation by attacking the aggressor in apparent behalf of the defender, and also eventually absorb the weakened defender to boot, without incurring the same opprobrium that would be levelled at outright aggression.

3. Borrow a sword to kill another.
  - When one side in a conflict is weakening, it may draw its own friends into battle, thus delivering a blow to its enemy while conserving its own strength.
4. Face the weary in a condition of ease.
  - You force others to expend energy while you preserve yours. You tire opponents out by sending them on wild goose chases or by making them come to you from away while you stand your ground.
5. Plunge into a fire to pull off a robbery.
  - You use others' troubles as opportunities to gain something for yourself.
6. Feint east, strike west.
  - You spread misleading information about your intentions, or make false suggestions, in order to induce the opponent to concentrate his defences on one front and thereby leave another front vulnerable to attack.
7. Make something from nothing.
  - You create a false idea in the mind of the opponent, and fix it in his mind as a reality. In particular, this means that you convey the impression that you have what you do not, to the end that you may appear formidable and thus actually obtain a security that you had not enjoyed there.
8. Cross the pass in the dark.
  - You set up a false front, then penetrate the opponent's territory on other fronts while they are distracted by your false front.
9. Watch the fire from the opposite bank of the river.
  - You calmly look on when adversaries experience internal troubles, waiting for them to destroy themselves.
10. Hide a sword in a smile.
  - You ingratiate yourself with enemies, including them to trust you. When you have their confidence, you can move against them in secret.
11. One tree falls for another.
  - Individual sacrifices may have to make to achieve a greater goal.
12. Take the sheep in hand as you go along.
  - You take advantage of any opportunity, however small, and avail yourself of any profit, however light. This comes from that story of a destitute traveller walking on a road. As he went along, he came across a flock of sheep; making his way through them, when he emerged from their midst he had a sheep with him. He behaved

so calmly and naturally, as if he had been leading his own sheep to market all along, that the shepherd never noticed him.

13. Beat the grass to startle the snakes.
  - When opponents are reserved and unfathomable, you create some sort of stir to see how they will react.
14. Borrow a corpse to bring back a spirit.
  - You don't use what everyone else is using, but use what others aren't using. This can mean reviving something that has dropped out of use through neglect, or finding uses for things that had hitherto been ignored or considered useless.
15. Train a tiger to leave the mountains.
  - You don't go into the fastness of powerful opponents' territory, but induce them to come out of their stronghold.
16. When you want to take captives, leave them on the loose for a while.
  - Fleeing enemies may turn again and strike desperately if pursued too hotly. If they are given room to run, on the other hand, they scatter and lose their energy. Then they can be taken captive without further violence.
17. Toss out a glazed tile to draw a jade.
  - You present something of superficial or apparent worth to induce another party to produce something of real worth.
18. To capture the brigands, capture their king.
  - When confronted with a massive opposition, you take aim at its central leadership.
19. Take the firewood out from under the pot.
  - When you cannot handle an adversary in a head-on confrontation, you can still win by undermining the enemy's resources and morale.
20. Stir up the waters to catch fish.
  - You use confusion to your advantage, to take what you want. It may specifically mean taking advantages of a general or particular loss of direction in order to gather followers from among the uncommitted or disenfranchised.
21. The gold cicada molts its shell.
  - This means leaving behind false appearances created for strategic purposes. Like the cicada shell, the facade remains intact, but the real action is now elsewhere.
22. Lock the gates to catch the bandits.
  - You catch invading predators by not letting them get away. You don't let them get back to their homeland with what they can get

from you. If they escape, you don't chase them, because you will thereby fall prey to the enemy's plot to wear you down.

23. Make allies at a distance, attack nearby.
  - When you are more vulnerable to that close by than you are to those far away, you can defend yourself by keeping those around you off balance, in the meantime cutting off their field of manoeuvre by securing a broader ring of alliances surrounding them.
24. Borrow the right of way to attack the neighbour.
  - You secure the temporary use of another party's facilities in order to move against a mutual enemy. After having used these facilities to prevail over the enemy, you then turn and use them against the party from whom you borrow them.
25. Steal a beam to replace a pillar.
  - You try to recruit top talent from among allies, including them to join your concern.
26. Point at one to scold another.
  - You criticise indirectly, getting your point across without confrontation.
27. Feign ignorance without going crazy.
  - You pretend to be stupid and ignorant, but avoid talking loosely.
28. Let them climb the roof, then take away the ladder.
  - You manoeuvre enemies into a point of no return by baiting them with what look like advantages and opportunities.
29. Make flowers bloom on a tree.
  - You dazzle and deceive the eyes of opponents by showy displays.
30. Turn the guest into the host.
  - This is when a business is taken over by one of its own clients or consultants.
31. Scheme with beauties
  - This refers to using the charms of women to influence key figures in an adversary organisation.
32. Scheme with an empty castle.
  - You appear weaker than you really are, so that opponents may defeat themselves by one of the three reactions to your supposed weakness: they may become conceited and complacent, leading to their downfall; they may become arrogant and aggressive, leading to their destruction; or they may assume you are setting up an ambush, leading them to flee of their own accord.

33. Scheme with double agents.
  - You compromise insiders of other organisations to get them to work for you.
34. Scheme with self-inflicted wounds.
  - This technique is particularly powerful for undercover agents: you make yourself look like a victim of your own people, in order to win the sympathy and confidence of enemies.
35. Scheme with continuous circles
  - When facing a more powerful enemy, you don't oppose by force, and don't concentrate all your resources on only one avenue of strategy; you keep different plans operating simultaneously in an overall scheme.
36. It is best to run.
  - When overwhelmed, you don't fight; you surrender, compromise, or flee. Surrender is complete defeat, compromise is half defeat, and flight is not defeat. As long as you are not defeated, you may have another chance to win.

## 8.5 Conclusion

The reasons for the high level of interest in quality standards, quality management have arisen because of the continued growth in world trade and the need for an ever-increasing strategy of countries to have free access to world markets. The far-reaching political changes in many countries, coupled with the transition to free market economies and the desire to become players in the global market place contribute well to the interest. On the other hand, the recognition that some international standards are fundamental in crucial technical fields such as world-wide communications, information technology and environmental protection leads also to this standardisation in quality management.

This Chapter outlines the methodologies and bases used in the design of questionnaires for the investigation of what quality management philosophies and business management strategies employed. The surveys themselves would assess the state of development of quality management aspects and identify the business management strategies that suit the needs in Hong Kong. Detail analyses of the survey returns are presented in Chapter 9.

The design of these questions in the questionnaires was based on the people's thinking, concepts or philosophies of the published ISO quality standards, Deming's TQM theory, Confucius' teaching and Chinese idioms, Sun Tzu's strategies in the Art of War and the famous Thirty-Six Strategies. The amalgamation of these useful thoughts, concepts and philosophies should help in developing some quality management and business management strategies that will lead to world-class business performance.



## **Chapter 9 Demonstrate the Impact of Incorporating Chinese Philosophies in Hong Kong Company Business Improvement Programmes**

### **9.1 Review of the Surveys and Statistical Analysis**

Quality management revolution has successfully occurred in the past decades and quality improvement programmes are now in the mind of every entrepreneur. Public sectors that have traditionally been viewed as not caring about the quality of their products and services are now aggressively pursuing quality improvement programmes. In the past, customer and consumer simply accepted the *inherent* quality of the available products in the market. Nowadays they will no longer accept whatever is offered. For a product to satisfy the needs and taste of the modern consumer it must exhibit a high level of quality. Only those products and services with high quality can survive the market competition nowadays.

As part of the research project was to investigate the impact and implementation status of the ISO 9000 quality system and TQM in Hong Kong, the earlier chapters illustrate the impact of cultures to economic development and the use of Chinese philosophies in quality management and business management strategies. It is true that Western management philosophies in the past had very little incorporation of the Chinese philosophies that had great influence in the development of East Asian countries' cultures and their management practices. As discussed in Chapter 5, research had demonstrated that the cultures of different countries, in particular those East Asian countries, have some link to their economic development. The previous Chapter 8 discusses the basis of design of those questionnaires in the surveys and this Chapter tends to summarise the essence of the survey findings. Five major surveys were carried out.

- Survey on ISO 9000 Quality Standards Implementation
- Survey on Total Quality Management System Implementation
- Survey on Business Management Strategies Using Confucius' Philosophy
- Survey on Business Management Strategies Using The Sun Tzu's The Art of War

- Survey on Business Management Strategies Using The Thirty-six Strategies

### 9.1.1 Survey Methodology and Surveys

Since there are frequently too many disappointments in postal surveys, the questionnaires were sent out with a return envelope including postage for better response. Statistical analysis techniques were used in the survey analysis and reporting. Computation work was carried out by the SAS package for statistical analysis. The findings of the surveys were presented in detail in the Appendices C, D, E and F. Appendix G shows the statistical analysis technique t-test that compares the significant difference of a specific subject between two populations. A null hypothesis is set for no significant difference between the two populations, and it will be accepted if the calculated *p-value* is equal to or greater than a specified significant level. For a general testing of significant difference, a *p-value* of 0.05 for a two-tail test is recommended.

#### a. Survey on ISO 9000 Quality Standards Implementation and Survey on Total Quality Management Implementation

The previous Chapter 8 described the questionnaires based on the twenty elements of ISO 9000 quality standards and the Deming's quality management philosophies. The designed questionnaires were targeted at two groups of people. The first group was for industrial people whose working companies had already registered with ISO 9000 quality standards. The other group was for engineering people who are in supervisory level with a technical background. The main differences between these two groups of respondents were their positions and companies' status in quality management system implementation. The vast majority of the companies of the technical group did not obtain ISO certification, while the other management group had. Hence, the viewpoints from these two groups were compared and analysed. The combined findings would represent a general view of ISO and TQM implementation in Hong Kong. Moreover, the general coverage of various kinds of sectors from both groups of people leads to a more global view of quality management status in Hong Kong.

Through the Hong Kong Quality Assurance Association (HKQAA), a list of 333 ISO 9000 registered companies was obtained. Out of these questionnaires, a total of 68 returned. Although only 58 responses were identified as valid, the response rate of 17% was still high. Through the Manufacturing Engineering Department in Hong Kong Technical College (Tsing Yi), 70 part-time students studying Higher Diploma in Engineering Management course were selected and a total of 44 questionnaires were returned. Out of these returns, there were 8 questionnaires returned uncompleted. Therefore, there were 36 valid responses (51%).

**b. Survey on Business Management Strategies Using Confucius' Philosophy**

The survey was conducted to explore the status of quality and business management system implementation under the influence of Chinese philosophy and culture in Hong Kong. The responses provided insights to both local and foreign companies in determining their corporate strategies for the 1990s' challenges in Asian Pacific region. A survey was carried out requesting respondents to rank the level of importance of the selected behaviours and characters criteria from the *Analects of Confucius*. As mentioned in Chapter 5, the most popular Chinese idioms for good business and management practices that are related to these criteria were used for survey purpose.

The designed questionnaires as described in Chapter 8 were targeted at various kinds of industrial sectors so a better representative result of general quality and business management in Hong Kong could be obtained. Through the Hong Kong Business and Trade Directory, a list of 800 companies with large capital investment was identified with a total of 123 questionnaires returned. Out of these returned questionnaires, 120 responses were identified as valid (15%). As the respondents of the 120 questionnaires were from a managerial level, the questionnaire was also distributed to the same 70 part-time students studying Higher Diploma in Engineering Management course as well to broaden the opinions on the importance of the *Analects of Confucius* in quality management. Out of these 70 questionnaires, 66 responses were identified as valid (94%).

**c. Survey on Business Management Strategies Using Sun Tzu's The Art of War and Survey on Business Management Strategies Using The Thirty-six Strategies**

Both surveys required the respondents to rank the level of importance of the selected themes from the thirteen books of the Sun Tzu's The Art of War and the Thirty-six Strategies for the purpose of understanding the business management strategies in Hong Kong.

The designed questionnaires as described in Chapter 8 were targeted at the companies that have a well-developed and organised management system so a representative result of management situation in Hong Kong could be obtained. Similar to the surveys for the ISO quality standards and TQM philosophies, questionnaires were sent out with a return envelope plus postage. Since the questions asked require an in-depth knowledge and good understanding of companies' policy and business management strategies, those companies that responded to the ISO9000 and TQM implementation survey was further investigated. About 75 companies were sent questionnaires again targeting their top management. A total of 25 questionnaires were returned. Out of these, 23 responses are identified as valid returns (31%). The response rate looks very encouraging. The returns were mainly from top management who were either involved in corporate strategic planning or business management strategies. Some of them had indicated that they are interested in receiving the result of the survey in the future. From the general ranking of the use of Sun Tzu's philosophy and the Thirty-six Strategies as business management strategies, the returns showed that the respondents had some good understandings of the philosophies. It is therefore possible to state with some confidence that these responses from the top management represents a good picture of the usefulness of Sun Tzu's philosophy in business management strategies. The responses from the Thirty-six Strategies were a bit general because, ethically, they are less favourable and acceptable by people.

## **9.2 Survey Findings on ISO 9000 Quality Standards Implementation**

The survey shown in Appendix C consists of two parts; the detail survey findings with statistical analysis and the questionnaire itself. The following sections summarise these findings under each sub-heading, the reference numbers inside the square brackets “[ ]” correspond to the appendix and respective findings in the survey.

### *a) Management Responsibility*

The survey revealed that majority of the top management in the companies was involved in the management, performance, and verification of quality-related work [C 1]. However, the survey also showed that the other personnel of the ISO 9000 registered companies had much more participation in the quality-related work than the non-ISO ones [C 2]. These results highlighted the difference between the ISO registered and non-registered companies that they had more staff involvement, more resources commitment and greater quality awareness than the other companies. Moreover, for the purpose of maintaining an effective quality system and meeting the auditing requirements, most of the quality assurance systems had their system reviewed at least annually [C 3]. From these three findings, therefore, it can be concluded that the ISO 9000 quality standards system helps the introduction and understanding the importance of the management responsibility concepts.

### *b) Quality System*

The survey revealed that the vast majority of the departments in the ISO 9000 registered companies had copies of quality manuals, while the situation was significantly different in the non-registered companies. Their quality manual, if there was any, was only distributed to some departments and the most likely ones receiving it were the quality department only [C 4]. Most ISO 9000 registered companies tended to review their quality manual more regularly if and when necessary while the non-registered companies had the annual review only [C 6]. Although the main goal of the quality plan in most companies was fulfilling customer requirements, however, non-registered companies would rate the

increase of quality as equally important [C 5]. From these three findings, therefore, it can be concluded that the ISO 9000 quality standards system helps to improve the overall quality system in organisations and at the same time brings in the concept of satisfying and meeting customers' needs as the primarily objective of quality systems as well.

*c) Contract Review*

The survey revealed that customer complaints were used as the major source of collecting customers' opinions and feedback in most companies in Hong Kong. This result showed the passive attitude and the lack of concern about customers' satisfaction that might eventually lead to losing business in the long run. Nevertheless, some ISO 9000 registered companies had carried out surveys as well for the purpose of better understanding the customers' requirements [C 9]. Although contract review was one of the ISO 9000 requirements, only about half of respondents reported that their working companies had this practice. In fact companies could develop a better relationship and understand the customer requirements better through the contract review process. The result indicates an inadequate understanding of quality and insufficient customer communication [C 8]. In co-ordinating and maintaining a contract review process, many managers including top management were involved, but the most likely person would be the quality manager [C 7]. From these three findings, therefore, it can be concluded that the ISO 9000 quality standards system does not guarantee the exact implementation of the requirements as specified.

*d) Design Control*

From the return of the survey, only slightly over half of the companies believed that consistent and disciplined design control approaches were useful. A large majority of ISO registered companies disagreed that following specific steps during design of a product would reduce the creativity of designers [C 12]. Moreover, over half of the companies believed that they could ensure the design output meeting the input requirements by providing preliminary design with full instruction [C 10]. What they probably missed out was the consequences of

unclear instructions given in the initial design stage and misinterpretation of information. Even worse, the survey also revealed that most companies did not have the periodic design re-qualification process, and mainly relied on the designers' output performance [C 11]. This result implied that companies did not pay much attention to design control. From these three findings, therefore, it can be concluded that the ISO 9000 quality standards system does not necessarily guarantee proper design control as specified.

*e) Document Control*

The survey results revealed that most ISO 9000 registered companies tended to have more document control than the non-registered companies. Moreover, they had more document control related to operation procedures rather than the record document [C 15]. Also most companies had regular document review and employee training [C 13]. Most companies had difficulties in keeping up-to-date records and controlling photocopying. Outdated quality manuals can be easily located in some companies, and this showed poor document control [C 14]. From these three findings, therefore, it can be concluded that most of the companies had difficulties in up-keep of their documents and controlling data. Again the ISO 9000 quality standards system does not necessarily guarantee good document control if there is no proper documentation system and people do not implement and follow the system.

*f) Purchasing*

Almost all respondents confirmed that their purchased items conformed to the stated requirements. If there were any non-conformance to their requirement, their companies would source the items from other suppliers' [C 16]. Generally, supplier survey was not common even with the ISO registered companies. For those companies who had conducted a supplier survey, they all mentioned that there were problems both from long-term and newly qualified suppliers [C 17]. From these two findings, therefore, it can be concluded that most companies should improve their relationships with their suppliers and have better communication with them. Again the ISO 9000 quality standards system does

not necessarily guarantee that a good purchasing system is in place. Mutual trust, honesty and integrity are the essential ingredients that people should have for helping to improve relationships with suppliers.

*g) Purchaser Supplied Product*

It was not common that companies used parts from customers in their process [C 18]. When the supplied products were lost, damaged or unsuitable for use, companies would record the situation and report for rejects of the product. However, this practice tends to be more common in those ISO registered companies than the non-registered ones [C 19]. These two findings revealed that ISO registered companies have a better system than the non-registered ones. However, the number of high “no response” in the ISO registered companies indicated their uncertainty in taking action when quality problems were identified. People should have a more positive view on quality requirements.

*h) Product Identification & Traceability*

Almost all companies agreed on the usefulness of traceability in product identification [C 20]. It was found that identification codes were normally placed on labels or packaging [C 21]. From these two findings, therefore, it can be concluded that product identification and traceability helps in quality control and management.

*i) Process Control*

Most companies had regular machine maintenance and the respondents were quite satisfied with the schedule. Thus, equipment seemed to be well-controlled [C 24]. The main problem was in the actual process operation. Although there were supervisors normally working in the production line, operations sometimes did not conform to given instructions [C 22, C 23]. From these three findings, therefore, it can be concluded that the ISO 9000 quality standards system does not necessarily guarantee good process control if there is no proper control system in place and people do not implement and follow them. Again, human behaviours are the major barriers in the ISO system implementation.



*j) Inspection and Testing*

Garbage-in garbage-out was a well-known concept so only a few non-ISO companies had no incoming inspection procedure [C 25]. Moreover, proper quality plans that identified and scheduled which, when and where tests and inspections would take place were established only in most of the ISO registered companies [C 27]. Besides, an inspection team was commonly used and responsible for product inspection, testing and identifying according to a quality plan or documented procedure [C 26][C 28].

*k) Inspection, Measuring, and Test Equipment*

Most companies had a calibration schedule for all inspection, measuring and test equipment. The schedule was found to be dependent on the equipment necessity [C 29]. For any equipment failure, some companies would contact the relevant suppliers for maintenance. However, some ISO 9000 registered companies would tend to buy new equipment or repair them by themselves, but some non-ISO 9000 registered companies would continue using improper equipment [C 30]. From these two findings, therefore, it can be concluded that the ISO 9000 quality standards system helps the installation of a proper inspection, measuring, and test equipment system but does not necessarily guarantee that the maintenance system is properly implemented and functioning.

*l) Inspection and Test Status*

In order to identify the inspection and test status of a product, most companies would refer to their inspection records or the product labels [C 31]. Although most companies had provided the operator an inspection instruction, the survey revealed that the ISO 9000 registered companies were better implemented than the non-registered ones [C 32]. Inspection instructions in the ISO 9000 registered companies were widely accepted and 80 to 100% workers reported to follow the instructions. For the non-ISO 9000 registered companies, about half of respondents thought that the instructions useful and this might be the reason why only 40 to 60% workers actually followed the instructions [C 33]. From

these three findings, it can be concluded that different quality instructions and different employees' attitude towards quality give very different quality results.

*m) Control of Non-conforming Product*

The production line was the main area where non-conforming products were found. So it was very appropriate to note that line supervisors were commonly responsible for reporting the non-conformities in most companies [C 34]. However, respondents' results indicated that it was easier to handle the report writing of the non-conformities in ISO 9000 registered companies than in the others [C 35]. *From these two findings, it can be concluded that the ISO quality standards system may help in formulating reporting procedures.*

*n) Corrective Actions*

Line operators were the people most familiar with the working environment and knew what was actually happening. Most respondents reported that they would first ask the line operators directly to identify the root causes of any defect [C 38]. In order to measure the effectiveness of the corrective actions; the most commonly used method was by counting the number of defects [C 36]. All these corrective actions were recorded and kept for future improvement exercises [C 37]. From these three findings, it can be concluded that ISO quality standards system may help formulating corrective actions and procedures, including keeping proper records. It also noted that any improvement exercise should be bottom-up for the best understanding of the problems.

*o) Handling, Storage, Packaging and Delivery*

From the survey response, most companies had devised certain methods to prevent the product being damaged. The majority of the respondents were satisfied with the existing material handling methods [C 39]. In order to minimise any damage, storage containers used in the companies were designed and manufactured internally and sometimes purchased from outside [C 40]. All these material handling methods were quite effective and most customers were satisfied with them, especially those from ISO 9000 registered companies [C 41,

C 42]. From these four findings, it can be concluded that material handling methods including handling; storage, packaging and delivery were properly handled and effective with most customer satisfaction. The ISO 9000 quality standard system implemented in some companies helps to improve and provide detail procedures.

*p) Quality Records*

Most companies found problems in incompletely defined or missing indexing quality records [C 43]. Moreover, damage or loss of quality records was serious in the ISO 9000 registered companies, but less so in the other companies. This interesting result might be due to less concern and control of quality records in the non-registered companies. However, quality records, if there are any, were normally kept over one year in most companies [C 46]. Besides, few workers in the ISO 9000 registered companies tended to make the same mistake or error that they had before. However, that was not the case in the non-registered companies' [C 44]. The most likely remedial action was to provide re-training for the workers [C 45]. From these four findings, it can be concluded that ISO 9000 registered companies were better in using the quality records and provided suitable training to avoid repeating the same error. Moreover, the employees in ISO 9000 registered companies were more co-operative in quality improvement. Hence, the ISO 9000 quality standards system implemented in some companies helps the up-keep of quality records.

*q) Internal Quality Audits*

To maintain and improve the effectiveness of the management system, ISO 9000 standards require regular auditing in companies. Thus, all ISO 9000 registered companies had performed internal audits but most of them had external audit as well [C 47]. Similar activities were found in the non-ISO 9000 registered companies, internal audits were also common in most companies but much fewer companies had external audits [C 47, C 48]. According to the report, the most essential criteria in selecting auditors were their training and experience, competence and skills, and education and professional qualification [C 49].

From these three findings, it can be concluded that quality auditing helps ensure that the quality system is in place and the ISO 9000 quality standards system provides the proper procedures.

*r) Training*

Looking into the general training policy, the ISO 9000 registered companies had more concern on the training of their employees than the non-registered ones. They not only paid the course fees, but also allowed them to receive training during working hours. For the non-registered companies, the company may reimburse the course fees but employees had to attend training sessions in their own time [C 50]. Moreover, regular training programs about technical and computer knowledge were commonly provided in many companies. The most popular training program organised in the ISO 9000 registered companies was quality knowledge [C 52]. Although all respondents tended to be satisfied with the training they received, staff development plans in the ISO 9000 registered companies were reported to be better organised than in the non-registered ones [C 51, C53].

*s) Servicing*

From the survey responses, ISO 9000 registered companies had much better servicing than the non-registered ones. In general, response time to customers' orders was between 1 and 3 days. However, ISO 9000 registered companies tended to respond faster [C 54]. Moreover, customer complaints were seldom received in ISO 9000 registered companies [C 55]. Most companies claimed that they had enough equipment and well-trained people available to give timely service, and customers were quite satisfied with their service [C 56].

*t) Statistical Techniques*

Most companies agreed that statistical techniques were useful in improving product quality and had good experience in ensuring process capability [C 57, C 59]. The most commonly used technique was Statistical Process Control (SPC) [C 58].

As identified in the survey, the initial reason for companies' registration to ISO 9000 quality standards was purely for foreign trade and business. However, due to business competition, the need for continuous quality improvement and marketing were also other important objectives. One of the major obstacles was the understanding of ISO standards and requirements. Once they were registered, the other most difficult task for them was to change the quality culture of the whole company. People tended to be reluctant to change. Moreover, because of the lack of resources, staff development at all levels for improvement look difficult. However, the major benefits resulting from registration were having a formal quality system framework, a well-documented system and better understanding of processes and well-defined responsibilities. Through the registration process, they learned the importance of teamwork and total commitment.

### **9.3 Survey Findings on Total Quality Management Implementation**

As described in Chapter 8, the survey on TQM implementation would help to provide an analysis of the companies status engaging in a TQM program. The fundamental concept of Deming's 14 points was used to develop the questionnaire and the following shows the summaries of the findings. In the following sections, references were made under the square brackets “[ ]” to where relevant survey and findings were identified in the Appendix D.

#### *a) Create constancy of purpose to improve product and service (Deming's point 1)*

This part of the questionnaire was to determine whether the companies have developed their long-term plan for quality improvement and had constancy of purpose. Questions that related to a long-term plan for quality improvement such as customer feedback, customer satisfaction and benchmarking were included.

From the survey, it was revealed that about 70% of the companies use customer complaints as their main source of customer feedback. Companies with an ISO 9000 quality system in place had more means of obtaining customer feedback than the other companies. However, using this method as a means of obtaining

customers' feedback was considered to be passive. On the other hand, a customer survey was the other commonly used method. The result also revealed the lack of concern about customers' satisfaction. Companies were simply waiting for things to happen rather than preventing things getting worse. This finding was quite similar to the result of Taylor's (Taylor, 1995). [D 1]

On questions related to employees' responses in accepting new knowledge, the survey revealed that Hong Kong's employees prefer to follow the current working practice, with less interest in accepting new knowledge and technology. Only about 50% of the managerial responses showed employment in accepting new knowledge. However the situation was worse for the technical responses which was about 20%. Managerial respondents had a more positive result than technical respondents did. The difference could be identified because of their different educational background. Technical respondents seemed to be more passive and they just followed the companies' policy or instruction. However, very few respondents disliked new knowledge. Hence, top management should have some policy to encourage staff development and promote the importance of acquiring new knowledge or innovation. [D 2]

Benchmarking was generally agreed in its importance. About 30% of managerial responses declared making use of it, compared to about 70% in the technical responses. Referring to the findings, there were significant differences in the use of benchmarking between the two groups of respondents. The reason might be due to the nature of their jobs. Managerial levels tended to consider problems within a whole system, which was not easy to compare, while benchmarking was a common tool used in the technical level. Those who claimed to use benchmarking considered that it was a quite important tool. From the finding, generally it was found that benchmarking was important to quality improvement. Hong Kong companies had realised the importance and benefit of benchmarking which allows firms to identify and incorporate the best industry practices meeting the customer satisfaction and motivating employees towards continuous improvement and enhanced products' quality (Boone et al., 1995). [D 3]

*b) Adopt new philosophy. Management must accept responsibility and leadership  
(Deming's point 2)*

The survey revealed that over 80% of the responses replied that their top management had a clearly defined company vision for the employees. This result was encouraging and positive. This indicated that companies had a long term perspective and direction in all planning. [D 4]

Over 75% of the responses believed that quality planning and quality management were regarded as the most important elements of management. Their opinions reflected the quality awareness in today's market trend. [D 5]

After implementing TQM, there should be changes in management attitude but over 50% of responses reported that they could not identify those changes. Owing to the fact that most companies had not implemented TQM, there were few responses. The notified changes were the recognition of customer feedback and improving quality accordingly. However, over half of the respondents could not identify any change in management attitude after implementing TQM, the reason for which may be the lack of understanding of TQM philosophies. [D 6]

*c) Cease dependence on inspection; build quality into the product (Deming's point 3)*

Top management involvement was the key element in quality improvement. Over 75% of the ISO registered companies reported that their top management were involved in quality improvement and problem solving, while there was only a few from the non-registered companies that reported similarly. Due to the different quality management systems used, top management of the ISO registered companies were very much more involved in identifying and supporting employees in problem solving than those in the non-registered companies. Statistical analysis also showed that there were significant differences between these two groups of companies on the involvement of top management in quality improvement and problem solving. This also revealed that technical staffs in the non-ISO registered companies might think that top

management was not participating in the daily problem solving and quality improvement program with them. This result also highlighted that the commitment of top management in quality system development was important and that a lot of effort had to be put in for the development of quality systems that suit their companies. [D 7]

*d) End the awarding of business on price. Instead minimise total cost of service (Deming's point 4)*

From the survey, it was revealed that quality of products or services and pricing policy remained as the main selection criteria of suppliers. However, there were responses of non-ISO registered companies reporting that they would consider the suppliers' image. According to Dr. Deming, pricing policy should not be solely based on prices; quality of the products should be the major consideration. The respondents of the ISO registered companies were very consistent with this philosophy. On the contrary, non-ISO registered companies seemed to follow their current practices with no special consideration in supplier selection. Statistical analysis also showed that there were significant differences between these two groups of companies on supplier selection that could affect quality severely. Non-ISO registered companies should put more emphasis on product's or service's quality rather than company image, for example. This may also be due to the respondents being at working level and tending to look at things from a simpler angle. [D 8]

Over 55% of responses recognised the importance of having a partnership with key suppliers. This observation indicated that in the long run the awareness of the products' quality and the good relationship between suppliers and companies could promote continuous improvement of quality. [D 9]

93% of the ISO registered companies replied that customer's expectation and satisfaction were usually translated into supplier requirements, while only 64% of non-registered companies had the same practice. It was revealed that the majority of the companies had translated their customers' expectation and



satisfaction into supplier's requirements, especially for the ISO registered companies. With the non-ISO registered companies, customer satisfaction would enhance the overall quality improvement system. Generally speaking, customers' satisfaction was an important factor in quality management. [D 10]

*e) Improve constantly and forever the system of production and service (Deming's point 5)*

Measurement of customer satisfaction was generally included in company strategic planning and 65% of the respondents replied that such measurement was quite important. Because of the market trend in quality, most companies realised the importance of customer satisfaction, so it was included in the planning. This could enhance the design of processes and continuously work towards the best of quality. The finding indicated that similar result was also observed in the survey conducted in New Zealand (Bately, 1994), which proved that measurement of customer satisfaction is important to quality improvement. [D 11]

*f) Institute training on the job (Deming's point 6) and Institute a vigorous education and self-improvement program (Deming's point 13)*

Only one-third of respondents mentioned that there was training on TQM in their companies. This indicated that Hong Kong companies had a low awareness of quality concepts or TQM philosophies. If TQM training was organised, the speakers were mainly from the internal staff of the companies. As TQM was not that popular in Hong Kong industry and probably had some barriers in implementation, staff would most likely have less experience and understanding. [D 12]

Middle management, front-line supervisors and quality staff were the major groups of people who received TQM training. All these people were in high positions. Most companies tended to target the training to more senior position personnel. This showed the misunderstanding of TQM concept; instead all staff in the organisation should be involved in the TQM transformation process. Generally the supporting staff and general workers were mostly being

overlooked. The result would be that the general awareness of TQM as a company quality culture was less significant. Statistical analysis also showed that there were significant differences between these two groups of companies on the type of person receiving TQM training. Much higher percentages of people receiving the training were identified who were at middle management, quality staff and operative levels. [D 13]

The major areas of training identified were ISO 9000 guidelines & criteria, quality system auditing, statistical process control and leadership. However, the importance of quality concepts was overlooked. The differences in responses between the two groups were obvious. Those ISO-registered companies that had the certification for a few years looked for further training on the ISO 9000 standard and auditing, that was quite different from the non-registered group. Other than the ISO training, the low responses on the other training areas from both groups were also identified. This also explained why ISO certification was mainly for satisfying the documentation requirements and having less emphasis on overall TQM philosophies. Basically, the ISO 9000 standard is a guideline on how to set-up and document a quality system; there is less concern about the quality improvement concept. Therefore, there should be more training on total quality management so as to improve the employees' perception of quality. [D 14]

*g) Institute leadership and supervision of workers (Deming's point 7)*

About 50% of responses believed that team building was commonly applied in leadership. Although the responses were not high, it indicated that team building was also used in Hong Kong. Through team building, employees could enjoy participation in various activities and have effective communication at all levels, thereby creating a harmonised working environment. The analysis indicated that team building was the main leadership style in most Hong Kong companies. It also confirmed that leadership in an organisation was extremely important (Zairi, 1994). Good leadership could mean vision, cheerleading, love, trust, consistency, and creating heroes at all levels. [D 15]

Top management was involved in encouraging employees to participate in continuous improvement in about 70% of ISO registered companies, while this occurred only 20% of non-ISO registered companies. Top management of the ISO registered companies was more involved in employee's encouragement for continuous improvement than the non-ISO registered companies. This result implied that the attitude and commitment of top management were the essential factors in implementing a successful quality management system. Statistical analysis also showed that there was significant difference between these two groups of companies on top management involvement encouraging employees to participate in continuous improvement. [D 16]

About 86% of the responses of the ISO registered companies indicated that the organisation could trust the employees having their ownership of work. However, only 64% of the responses from the non-ISO registered companies believed that this was so. The ISO registered companies were found to have higher confidence in the trust of the employees having their ownership of work than the non-ISO registered companies. Statistical analysis also showed that there was significant difference between these two groups of companies on this issue. The problem on the ownership of work could be resolved through discussion and communication between employers and employees. A well-developed quality management system should promote ownership of work that could give better job satisfaction. The higher response rate from the management group than the technical group also revealed that the former group had a higher level of confidence in the companies than the latter one. [D 17]

*h) Drive out fear to improve the effectiveness of all employees (Deming's point 8)*

The concerns of job security were different depending on their position in the companies. Managerial respondents were highly concerned about their opportunity for advancement and job stability in the company, whereas the technical respondents considered that the job stability and co-operation between employees were their major concerns. From the results, technical respondents tended to be concerned much more about their peer-to-peer relationship, job

stability and present workload. On the other hand, managerial respondents would think more broadly and their consideration was for the longer-term. [D 18]

Relating to the enjoyment of working in an organisation's environment, over 80% of the responses of the managerial respondents from the ISO registered companies replied that they enjoyed working in the current environment, whereas there were only 31% of the technical respondents from the non-ISO registered companies who had the same feelings. A large majority of the respondents (44%) from the non-ISO registered companies group felt that it was neither enjoyable nor not enjoyable working in the current environment. Statistical analysis also showed that there were significant differences between these two groups of respondents on this issue. The vast majority of the managerial respondents from the ISO registered companies who replied that they enjoyed working in the current environment might be explained because of their senior positions with good salary and proper recognition of their work and contribution in the companies. The managerial respondents tended to be more aggressive, while the technical respondents tended to be rather passive and follow what was being told. Staff development programmes like training and education would help employees to enhance their skills and knowledge. Proper care from the management would also promote working morale and co-operation. Proper recognition and award for contributions would promote ownership and further contributions from employees as well. [D 19]

Relating to staff complaints, over 95% of the ISO registered companies provided communication channels for employees to air their dissatisfaction or any grievances to management, whereas the situation was different for non-ISO registered companies, with slightly less than 70% of the companies having the proper channels. Statistical analysis also revealed that there was significant difference between these two groups of companies on the provision of proper communication channels for making grievances. However, the communication channels being used were still traditional and passive. The Chinese tend to talk to their superiors about their complaints and grievances first, instead of making

them public. They listen to their superiors' advice and respect them. Therefore, making complaints through their supervisors is not uncommon in Chinese society. Managerial respondents replied that making complaints through meetings was quite normal. In doing so, they were seen to be open in policy and ready to accept comments and suggestions from their staff. However, most junior staff refuses to make complaints openly in meetings because they think that it would be embarrassing to the management and therefore improper to do so. It was, therefore recommended to provide more channels for employees to make their views known to management, in particular any grievances. To a certain extent, quality circles provide the opportunities for all employees to make suggestions, which are useful and constructive. [D 20]

*i) Break down barriers between departments, all departments must work together to achieve results (Deming's point 9)*

Poor communication, lack of motivation, poor relationships and different management styles were the main factors causing restrictions and barriers among departments. All these problems could be summarised as personnel management, which greatly depends on the work cultures and work practices and human relationships. [D 21]

*j) Eliminate slogans, exhortations and numerical targets (Deming's point 10)*

Different from the Western culture or Japanese style, slogans for quality improvement were not so commonly used in Chinese organisations. Most organisations did not promote the use of slogans of quality management to encourage employees participating in quality improvement programs. On the other hand, some of the commonly used slogans in the respondents' companies were selected. [D 22]

- *Good quality,*
- *Reliability is our priority,*
- *Progress towards perfection,*
- *Zero defects, customer total satisfaction,*
- *Quality is all,*

- *Quality first,*
- *Right first time, right every time,*
- *6σ specification,*
- *Japanese 5S,*
- *Reach ISO 9000 standard,*

Relating to setting and enforcing targets on quality improvement, 55% of the ISO registered company had set their target for quality improvement, while only 26% of the non-ISO registered company had done that. The survey result revealed that most companies had not set targets for quality improvement, especially those non-ISO registered companies. For those companies with replies, their targets were meeting customer requirements, outgoing quality maintained at 99.5% or above etc. These targets were supposed to be for the long term rather than the short term. [D 23]

*k) Eliminate quotas or work standards and management by objectives or numerical goals (Deming's point 11)*

Goals setting for quality improvement was about 60% in the ISO registered companies and 30% in the non-ISO ones. Apparently the goals set for quality improvement from the latter group was less well defined. These goals could be for zero defect, high efficiency, high productivity, or high quality. The reason for large portion of undefined goals might be due to communication barriers, or being unclear about their goals. [D 24]

About 55% and 35% of the responses of ISO and non-ISO registered companies agreed that goals should be set for key results such as customers' satisfaction and quality rather than goals for activities minimising production costs. These results indicated that different groups of people in an organisation had different concerns in the goal setting. [D 25]

*l) Remove barriers that rob people of their right to pride of workmanship  
(Deming's point 12)*

Performance of employees in their work was the major consideration factor in advancing salary or promotion. [D 26]

Apart from job security and leadership style, salary might be the greatest influencing factor on job satisfaction; about a third of the responses believed so. [D 27]

After implementing a quality system, over 45% of the responses realised that there was an increase in responsibility for employees. This implied that responsibility was delegated from the top down to the actual operating level. [D 28]

*m) Put everyone in the company to work to accomplish the change in how the company works (Deming's point 14)*

Over 80% of the ISO 9000 registered companies claimed that they were ready to commit to years of support for quality system implementation. On the other hand, there were only about 60% of the non-ISO registered companies that said the same. Statistical analysis also showed that there was significant difference between these two groups of companies on their commitment for quality system implementation. [D 29]

Over 70% of the ISO registered companies had their employees understand that management changes were essential, while about 40% of the non-ISO registered companies had the same understanding. In general, communication and training would be better in those registered ISO companies than those not registered. Moreover, both groups of respondents reported that the understanding was from seminars and talks. Statistical analysis also showed that there was significant difference between these two groups of companies on having management change and way of thinking. [D 30]

*n) Other General Comments of the TQM Survey*

Most companies had steering groups established to co-ordinate, identify and prioritise critical processes for TQM implementation. The steering groups were composed of different levels of staff including top management. Generally there were not many people involved in the TQM implementation process. This probably explained why TQM commitment was still low in Hong Kong. Most companies said they were committed to TQM, however, they might all have a different understanding of what TQM processes are. It was, therefore, believed that most companies would commit to *quality improvement but not TQM at this stage.*

With the establishing of the ISO 9000 system in most respondents' working companies, all people are observed to be aware of the customer satisfaction and quality concerns. However, TQM is something rather new to Hong Kong industry. TQM means that quality control and management efforts begin with the product conception and design stages, and are complete only with the customer's satisfied use of the product. From the survey results, companies in Hong Kong seemed to be not ready to achieve such a level of system. Even though some companies claimed that they had established a TQM system, such system would most unlikely to be classified as a real and properly functioning TQM system. Companies are observed to have no long-term plan for improving or achieving quality management. The critical problem might be the inadequate commitment and understanding of quality at the management level. Those people or areas not directly related to quality were overlooked. Therefore, people aim at achieving quality, but their behaviours and attitudes are not aiming for the same goals.

However, with the registration of ISO quality standards, companies registered were observed to have cultural change and better quality perception. Thus, the ISO quality standard can actually benefit Hong Kong and provide a good foundation for quality system advancement and development to TQM.



#### **9.4 Survey Findings on Business Management Strategies Using Confucius' Philosophy**

*The Great Learning*, another Confucian classic, said that self-cultivation is the primary responsibility of the individual to the society, because the ability to contribute to the well being of the society is greater or lesser in proportion to personal development. Those who had cultivated themselves well would harmonise the family. Those who had harmonised the family well would bring order to the nations. And those who had brought order to the nations would eventually demonstrate the ability to the world. While Confucius' philosophies originally applied to the development of the individuals, these fundamental principles equally apply to business.

While Chapter 8 presents the scenario of the twenty-four Chinese idioms for business management strategies based on Confucius' teaching, the following sections summarise the survey returns. In general, both responses from the management group and technical group reported that the selected idioms from *The Analects of Confucius* were useful as business management strategies. Appendix E shows the detailed information on the survey and responses.

##### *a) Cultivation of Individual Behaviours*

Statistical analysis revealed that there was no significant difference of views between the two groups of respondents on their general acceptance of Confucius' teaching of self-cultivation as business management strategy that was analogous to *Cultivation of Individual Behaviours*. To explain some of the minor differences, analysis of the survey returns of each individual virtue revealed that there were many more management people who ranked the two virtues 'trust' and 'moral conduct' as most important in business and management. Equally speaking, there were fewer management people who ranked 'wisdom' as less important in business management than the technical group. In general, comparing the average rankings from both groups showed that the management people group in general considered individual behaviours of 'learn', 'trust',

'moral conduct', 'wisdom', and 'words & deeds' were more important virtues to cultivate.

*b) Cultivation of Professional Ethics*

Statistical analysis revealed that there was no significant difference of views between the two groups of respondents on their general acceptance of Confucius' teaching of self-cultivation of ethics as business management strategy that was analogous to *Cultivation of Professional Ethics*. In general, the average rankings from both groups showed that the management group considered professional ethics of 'benevolence', 'righteousness', 'courtesy', 'question' and 'forgive' were the more important virtues to cultivate. This can be explained by the fact that the management group had more industrial experiences than the technical group and they felt more strongly on the importance of professional ethics in business and management.

*c) Manage a Section or Department*

Statistical analysis revealed that there was no significant difference of views between the two groups of respondents on their general acceptance of Confucius' teaching of harmonising a family as business management strategy that was analogous to *Manage a Section or Department*. Further analysis of the survey returns revealed that there were many management people who believed that the two-virtue 'sincerity' and 'reception' are most important in business and management. The survey also revealed that the management group in general considered individual behaviours of 'sincerity', 'thrift', and 'reception' are more important to cultivate whereas 'filial piety' and 'respect' are less important compared to the views of the technical group. To explain these differences, because of their posts in the organisation, management people would tend to be concerned with more general issues, public image, business relationship etc., whereas the technical people were concerned more about individual feelings, performance and behaviours. This phenomenon is quite logical and natural.

*d) Manage an Organisation*

Statistical analysis revealed that there was no significant difference of views between the two groups of respondents on their general acceptance of Confucius' teaching of managing a state as business management strategy that was analogous to *Manage an Organisation*. Analysis of the survey returns revealed that management people were more concerned about and gave higher ranking to the 'govern', 'communication', 'loyal' and 'team effort' aspects whereas technical people were more concerned with 'reward and punishment'. Among those individual aspects, 'communication', 'loyal' showed the statistical difference between the views of the two groups where the management group considered these as most important and the technical group as important. To explain these differences, because of their posts in the organisation, management people would emphasise 'loyal', 'communication' and 'team effort' in the organisation structure whereas the technical people were concerned about the returns mainly based on 'rewards and punishment'. This phenomenon is quite logical and natural.

*e) Manage and Operate a Multi-national Organisation*

Statistical analysis revealed that there was no significant difference of views between the two groups of respondents in their general acceptance of Confucius' teaching of ruling a country as business management strategy that was analogous to *Manage and Operate a Multi-national Organisation*. In general, the average rankings from both groups were so close that views from both management and technical groups agreed well that 'integrity', 'honest & clean', 'observe regulations' and 'proper title' were the essential characteristics a good leader or senior top management should have. Senior top management should show and demonstrate their leadership abilities, administrative capabilities, moral integrity, as well as business vision before being accepted in general by all people, both internal and external.

## **9.5 Survey on Business Management Strategies Using The Sun Tzu's The Art of War and The Thirty-six Strategies**

### **9.5.1 Survey on Business Management Strategies Using The Sun Tzu's The Art of War**

Under the well-known Sun Tzu's philosophy, a survey on its implementation in Hong Kong business environment was conducted. One of the main objectives is to research and assess the usefulness and influences of these philosophies and strategies in the Hong Kong business environment. The responses provide insight to both local and foreign companies in understanding the corporate strategies and behaviours for the challenges in the Asian Pacific region as well as global business competition in the next century.

The business management strategies for each of the thirteen books based on Sun Tzu's The Art of War scored 3.6 on average which is in between the "average important" and the "very important" ranking positions. This high ranking is highly encouraging because it implies that Sun Tzu's wisdom is widely used and adopted as Chinese business and management strategies. The findings of the survey in each of the thirteen Chapters of Sun Tzu's The Art of War are listed in Appendix F. Further references to Krause's book "Sun Tzu The Art of War for Executive" (Krause, 1996) and Liu (Liu, 1992) have the following business management strategies based on Sun Tzu's philosophies further discussed and expanded:

#### *a) Strategy 1: Planning of Strategies, Estimation and Leadership*

The mean score for Strategy 1 is 3.9, which is very close to the "very important" ranking position. This ranking implies that Sun Tzu's wisdom in the "**Planning of strategies, Estimation and Leadership**" is widely accepted in the Chinese based society like Hong Kong as their business management strategies.

In order to maintain the competitiveness in business, management should know their business environment and situations well. Having a good understanding of the actual situation would then help management decide on the detailed plan of action. Sun Tzu's philosophies could be applied to emphasise the strategic

approach in managing corporations. The rationale for implementing a strategic planning system within organisations would be to increase the probability of winning by forecasting as far as possible relative strengths and weaknesses of organisations and so anticipating outcomes when competition is entered (Foo et al., 1994). Therefore competition is of vital importance to the top management and executives in business. The ultimate purpose for implementing systematic, rational and strategic approaches in management is *to win and keep on winning*. From the point of view of manufacturing, it is to improve and continue improving (Foo et al., 1994). Sun Tzu reduced the Art of War to appraise plans for competition using five basic factors: they are the company policy (way), environment (heaven), place (earth), leadership (generals) and regulations (law). Every executive should make the best use of these five factors; those who master them well will be successful and those who do not will fail. They all involve systematic, rational and objective processes, in contra-distinction to the heavy emphasis on the subjective and intuitive, in much of the recent literature on strategy (Foo et al., 1994).

Knowing the strengths and weaknesses of the company and its competitors is essential for the winning in the market competition. In comparing their strengths and weaknesses, they should focus on their management system, market shares, regulations, staff, general policy as well as incentive schemes and reward systems. Through continuous review and improvement, the company itself would then be improving and performing better.

It is essential that executives should analyse and compare both parties' situations, both favourable and unfavourable. When considering competitive strategy, executives should carefully assess the plans, gather information and ask questions. Those questions may be on which executive practices leadership according to the Sun Tzu's seven principles? Whose top management has shown good character and virtues? Who is more popular to employees and people? Which executive creates enthusiasm and co-operation among employees and associates? Which executive has demonstrated professional leadership and

ability? Who has gained the favourable business climate and seeks opportunity and advantageous situations? Which company is more favourable by the current political climate and economic policies and conditions? Whose company policies, disciplines and regulations are more thoroughly observed and implemented? Whose employees are more competent in their work and stronger? Which company has the better-trained staff? Whose rewards and punishments are fairer, clearer and properly acknowledged by the employees? Which executive and company reward merit, encourage staff development and personal growth? The top management should take advice and use the right person for the job.

Business is very much related to strategic, administrative and tactics planning. An executive must create plans for competitive actions, which allow the executive to leverage the strengths of the individuals as well as the company in the marketplace. Sun Tzu's philosophy on military operation takes deception as its basic quality. However in business and management, all competitive advantages are based on effective execution of plans. Continuously seeking new methods, new approaches and new market segments would bring in new ideas that maintain the leading position in the marketplace and demonstrate the ability to adapt changes. In circumstances where the competitor is strong, develop innovative products and services. When the competitor is arrogant, please be humble and ask for advice. Feedback from the customers may help identify the competitor's weakness. Executives must understand how and when to launch proper business strategies and tactics where competitors are unprepared, and unexpected. Correct information and proper preparation will help business to be successful. Executives who plan and prepare carefully will be in a favourable position and win the business competition. Thus, better understanding of the situations would definitely help planning and estimating the situation. Management can then react to the competition situation quicker and prepare for future and further competition.

*b) Strategy 2: Resources and Competitive Actions*

The mean score for Strategy 2 is 3.6, which is close to the “very important” ranking position. This ranking implies that Sun Tzu’s wisdom in the “**Resources and Competitive Actions**” were accepted in the Chinese based society like Hong Kong as their business management strategies.

Running a business requires competing with other business competitors. In order to win the business situation and have a market share, a company and its employees are under great pressure and require financial support. Long term competition is harmful to companies, thus, the faster the one becomes the winner, and more benefits can result.

Sun Tzu, in *The Art of War*, placed great emphasis on laying plans, method and discipline involving the organisation, and intelligence. In all cases, the use of resources was clearly involved. The executive needs to devote time and energy for environmental scanning, understanding and planning both the appropriate responses to competitive moves and the appropriate disposition of the resources at their disposal. Within this context, the provision of adequate financial, human and technological resources for strategic planning becomes important (Foo et al., 1994).

The executive should make a good and realistic estimation of the actual expenses before entering into business competitive moves. The organisation resources must support competitive actions and that must be available before any plan of action. Among those resources full commitment and innovative ideas from employees are the most valuable. It is vital to realise that when creativity is dulled, commitment dampened, enthusiasm drained, financing depleted; competitors will take advantage of a weak position. For the best control of the situation without unnecessary delay, speed and quick decisions will help in business. Quick and successful business return is the overall objective of any competitive action. In business negotiations, speedy decisions are essential for overall success. Prolonged discussion may bring harm to the overall situation, in

particular when control of the actual situation is difficult. When competitive actions are prolonged, resources will become scarce and desperate. Strategies that waste time and exhaust resources will never work.

External factors are critical to the appropriate design of a strategic planning process within an organisation. One of the key roles of a strategic planning process is to ensure that organisations respond effectively to changing external situations. Executives who cannot balance risk with opportunity cannot profit in today's business environment, in particular in this information technology age. Speed and innovation with accurate information are the keys to success.

Throughout *The Art of War*, Sun Tzu emphasised the critical role of the ordinary troops and people in determining the success of military warfare. Sun Tzu saw the symbiotic relationship between motivated troops and informed co-ordinated, involved and strategically aware managers. Effective implementation in war or business involves sharing the strategies or plans across and down hierarchical levels. The nature of participation of 'people' in strategic planning is explored. These range from those at the top to those at the lowest rank in an organisation hierarchy (Foo et al., 1994).

A skilful executive should have a simple and effective organisational structure for well-defined management objectives, quick decision making, less extravagant spending and proper use of resources. Large and multinational corporations should let the subsidiaries and remote plants use their local resources and people and not to over-burden the head office.

Timely, proper and accurate information is the key to successful competition. However, expensive information would waste resources. In this connection and because of the fast growing information technology nowadays, it is therefore essential to be aware of the usefulness of some expensive capital investment that may be out of date. A wise executive would harvest timely information from his business partners and competitors.



Unify other business into the corporation and become more competitive in the marketplace; taking over or unifying business with competitors is not uncommon. Proper use of the existing expertise and human resource will further strengthen the foundation of the corporation for future competition. A skilful executive will build the strongest possible team from the people in the company and corporation.

To capture the spirit of employees, executives must give them clearly defined and valuable rewards. It could be a group award or individual merit of achievement. It is sometimes useful to reward someone openly and use that as an example of meaningful rewards for excellence. To be a caring organisation, management should treat the employees well and provide proper training and development for them. In some open competitions or events, an individual achievement would represent the overall success of the whole company. Executives must understand how to excite the employees and dominate a marketplace with quick results and not prolonged activity.

c) *Strategy 3: Competitive Strategy and Wisdom*

The mean score for Strategy 3 is 3.6, which is close to “very important” ranking position. This ranking implies that Sun Tzu’s wisdom in the “**Competitive Strategy and Wisdom**” is accepted in the Chinese based society like Hong Kong as their business management strategies.

This strategy intends to develop winning strategy in accordance with the individual and company characteristics that are essential in business management. It is regarded that the best survival technique is winning without real confrontation. By understanding the strengths and weaknesses of the company itself and the competitors, management should develop strategies to increase the power and control of the market share.

Sun Tzu realised clearly that direct confrontation between armies can involve heavy losses on both sides and that the deployment of means to subdue the

enemy without battle was preferable and therefore more skilful. In today's business parallel as well as in an increasingly global and contested marketplace, it is the use of means of gaining dominance without mutually destructive price wars that is to be preferred (Foo et al., 1994). For example, a wise executive would take over business without extra cost.

Traditionally, competition tended to be thought of as involving action and reaction in the areas of price and promotion, and this still continues to be so to a large extent. The stress has moved to distinctive competencies, which differentiate a company from its competitor, and allow it to dominate its market niche. The heavy emphases on distinctive quality, customer service, and a strong corporate image and culture are all hallmarks of this approach. This distinctiveness may, in turn, rest on a strength in the product or process technology, giving innovative products, lower costs, or preferably both (Foo et al., 1994). Capturing a market is achieved by providing better service and better new products. To capture competitors by tactics rather than destruction will be the best strategy as destructive tactics should only be used as the last resort. If at all possible, to win the entire business market without competitive battle is the ultimate goal because competition through head on competition is very much a waste of resources. It is therefore essential to understand strategy that helps to win.

To be able to maintain good market share, bringing in new products continuously will be a good strategy. However, it must be followed by proper marketing. To attack competitor's products and reputation is the worst strategy since a destructive competition may end up self-defeating. It is therefore vital to use wisdom and best strategy instead of aggressive tactics for success. A skilful executive should pay attention in the meeting of new demands through continuous innovation, satisfying customers' satisfaction and eventually having a bigger market share.

Preserving resources by not having a prolonged campaign and head on competition would become the art of effective competitive strategy. A wise executive should understand the situation well and act flexibly. In considering the available resources, the executive should estimate the possible outcome before entering the real competition. However, the executive must be optimistic and always consider the worst scenario and plan accordingly. For the weaker side in competition, be prepared to leave in favour of some other more profitable business partners that can dominate.

In organisations, the executives are leaders that can determine or affect the survival and growth of themselves and the organisation. Decisions should be taken at the appropriate company level, that is, more delegation of responsibility. It is important to note that a senior executive can cause a lot of trouble in a number of ways; such as causing trouble by acting out of ignorance, focusing on rules rather than customers and providing no flexibility, promoting someone with no skills and ability etc. Employees may be confused and de-motivated by the action of the senior executive, and then competition will be not to the advantage of the company.

What makes an executive successful in an organisation? An executive is the one who understands the strengths and weaknesses of self and competitors and who knows when to attack and when to retreat. The executive who knows how to best use the available resources under all circumstances, manages to gain the best support from the customers, employees and management and has made the best possible preparation with the most up-to-date information and waits for opportunity. An efficient organisation should delegate the appropriate authority to each level and the executive can make the best use of the authorities given without interference. If someone knows the business partners, the competitors, the strategies and oneself well will win hundreds of times. A better understanding of self and competitors' situations will help to win business competition.

*d) Strategy 4: Positioning and Targeting, Strengths and Weaknesses Estimation*

The mean score for Strategy 4 is 3.8, which is very close to the “very important” ranking position. This ranking implies that Sun Tzu’s wisdom in the “**Positioning and Targeting, Strengths and Weaknesses Estimation**” is widely accepted in the Chinese based society like Hong Kong as their business management strategies.

In organisations, executives should plan to strengthen their competitiveness before entering into real competition. They position themselves and their companies in situations where they will survive, even when facing severe economic downfall or keen competition. They should also try to equip themselves and the companies with the most up-to-date technology and be ready for continuous innovation. It is vital to realise that survival in the world market competition depends on a careful and well-prepared defence. They should position themselves strongly wherever possible for defence first and launch an attack right to the target while the defence still keeps the top secret. Excellent business returns and results come mainly from taking the initiative in well equipping and acting at the right moment.

An effective executive should be aware of business and situation changes and never be content with the present position and try to bring in new ideas and introduce new markets and products. The most dangerous situation is one that is content with the existing situation and never steps forward. Some careful planning of the situation would enable the business to take control.

It is not necessary for effective executives to be well known to everybody or capable in all aspects. However, they must have the ability to see the importance and capture those sure wins first. They are not the people with infinite wisdom and reckless courage. Effective executives have competitive strategies and will never be in a loose situation. They will defend from the positions that can never be attacked. They create the situation of winning first before taking positive action or initiating attack and try to win those that seem easy.

Effective executives cultivate themselves on their characters and professional ethics. It is highly essential that for business excellence performance an organisation should be responsible to the public and the people concerned. The detailed elements of strategies include strategy identification, fact-finding and gathering, strategy analysis, alternative strategy consideration, strategy checking and judging, and taking strategic action. They also demonstrate their momentum and initiative at work. They make good preparation, judgement and wait for opportunities created by others, and act at the right time. They are those who are competent in market analysis, resources estimation, manpower and market share calculations, comparison of strengths and weaknesses of self and competitors as well as analysing and foreseeing the chance of success and failure. Better understanding the principles of business would help to adopt the correct policies for business excellence.

This strategy of Sun Tzu's philosophies indicates that self-improvement and better strategies on business management are reckoned to be the best survival strategy. It is agreed that self-improving and development is the long-term strategy for competitiveness. On the other hand, executives should cultivate themselves on their characters and professional ethics with a strong commitment and responsible organisation to all people concerned including the public; that is vital for business excellence.

e) *Strategy 5: Opportunity, Timing and Management Structure*

The mean score for Strategy 5 is 3.3, which is close to the "average important" ranking positions. This ranking implies that Sun Tzu's wisdom in the "Opportunity, Timing and Management Structure" is generally accepted in the Chinese based society like Hong Kong as their business management strategies.

The success of this strategy is based on a good organisational structure that helps employees understand their responsibilities and have delegation of authority. A good organisation structure will help to define clearly job responsibility, irrespective of the size of the organisation. A successful and effective business

competition relies on the proper organisation and good communications at all levels.

The use of business tactics requires flexible managing policy. There are two types of business tactics, normal and special tactics. The use of these tactics will give rise to a great number of business approaches for both defence and attack positions. Normal tactics are used to confront opponents, whereas special tactics are used to win situations that are unexpected. Winning situations will help to realise the strengths and weaknesses of competitors. Effective executives win competitive situations because of their good tactics and appropriate timing and these tactics will create a great number of alternative situations. The actual situations of both parties whether they are in apparent disorder or proper organisation depend on the management structure.

Move quickly to explore more business opportunities. Wise executives get control of the situation through their own initiative and offer some advantages and win by strategy. Also the wise executives will select the most appropriate person for the job, the right person gets the right job.

*f) Strategy 6: Control of Market Situation and Climate*

The mean score for Strategy 6 is 3.5, which is in between the “average important” and “very important” ranking positions. This ranking implies that Sun Tzu’s wisdom in the “Control of Market Situation and Climate” is accepted in the Chinese based society like Hong Kong as their business management strategies.

The main theme of this Strategy is that the way to control and increase the market share is by continuous innovation of new products and introduction of strategy avoiding any direct competition. That will make the overall business situation under control. Executives should always know in advance the strategy of their competitors and focus on their weaknesses. Every company has its own strategic planning. Thus, focusing on the weaknesses of the competitors and promoting

the company's strengths are the effective way to control and increase the market share.

To stay ahead of technology and keep ahead of competition through continuous innovation are the key factors of success in business. An effective executive should take charge of the competitive situation, overseeing the market change and distribution and preparing to react promptly and quickly to the changing needs, staying ahead of the competition.

During competition, one should keep the rivals on the move and in the dark and appear where the competitors must rush to defend. As a strategy, consider attacking competitors' weak points while building on one's own strength. Attack those weak points that cannot be defended; and defend those strong points that cannot be attacked; that would lead to the situation where competitors do not know which point to defend or attack and where the moves always succeed and are never attacked. A company should know when to withdraw from the market in order to reduce losses at the right time. To control the situation, executives should lead the competition while retaining flexibility; divide the competition while remaining intact; distract the competition while retaining focus. Hence they should pressurise those weak points and create overwhelming leverage.

Competitors will be weakened in certain areas if resources are to be spread out in order to meet new challenges. If the business has to over-diversify, the business can easily be challenged, it is therefore essential to concentrate the effort where business is strong.

Any organisation should know the market well for success; they should lead the market and not let competitors lead. Be able to control the time and place of competition so that good and detailed preparation can be carried out without risking failure, hence taking control of the situation. Even though the competition is keen, people can still win by better understanding the market requirement. Knowing all the details and analysing the strengths and weaknesses

of both sides gives a better control of the competition. Change strategy constantly according to the market's dynamic situation. Effective executives should continuously review the strategy, compare the strengths and weaknesses and look for sufficiency of resources. Business strategy should never remain constant and should take any form as good strategy takes no special form and is invisible.

*g) Strategy 7: Management of Conflict & Avoidance of Confrontation*

The mean score for Strategy 7 is 3.7, which is very close to the “very important” ranking position. This ranking implies that Sun Tzu's wisdom in the “**Management of Conflict and Avoidance of Confrontation**” is widely accepted in the Chinese based society like Hong Kong as their business management strategies.

This Strategy highlights the important roles of management in seeking larger market share, getting more accurate market information, and managing the company as well as preparing for more severe market competition. Sufficient resources should always be available to meet these challenges. As the market situation varies all the time, management should lead the company and make necessary decisions and responses. Management is no doubt the key to future success. On the other hand, a good management should prepare themselves for different situations, adverse situation or disasters. Only with this attitude can they make the company successful against any kind or different degrees of competition. Moreover, positive management attitude can motivate employees and act as a good reference for them receiving challenges.

Business competition is difficult when confronting competition head-on. To manage the situation avoiding conflict, a wise executive should try to understand the need and take on competition by gathering information and necessary resources, organise them properly and bring them all under control. Correct timing and use of information will help to win the situation. Prolonged meetings without any decisions will be a waste of time and resources. It also creates



grievances among employees. Proper decisions should be made at the right time after knowing all the details.

There are not only disadvantages but also danger in competing for an unfavourable position. Inadequate preparation will lose business and market share. Moving the business into a difficult conflict situation without good preparation will leave little chance of success, efforts scattered, resources wasted and motivation destroyed.

For a business partnership, it is important to know the potential partners well before entering into joint venture. If it is necessary, financial resources are required to employ inside informants and consultants to find out the strengths and weaknesses of competitors and propose successful plans. Nevertheless, the executive should keep the strategy secret and change the form constantly, keeping the vision while maintaining flexibility for short-term deviation.

The effective executives who master the tactic and make a complicated route simple will win. So the whole company business should be as swift as strong wind while taking action, as stable and ordered as a forest while executing plans, as fierce and violent as fire while attacking business; and as firm as a mountain while carrying out policies and strategies.

Motivate the people for a common goal through good communication and effort. Improper communication and order will generate employees' emotion. A wise executive should unify employees' plan of action using clear instructions and good communication skill. The next step is to strengthen the organisation and plan business strategies properly. Good mastery of morale and emotions, good grasp of the tactics and information, and good control of the strengths and weaknesses of the organisation will certainly help to win. If the situation is unfavourable, it is advisable not to challenge a well-prepared and well-organised competitor, time the action accordingly and wait for any opportunity that arises and any change of situation.

*h) Strategy 8: Flexibility and Adaptability*

The mean score for Strategy 8 is 3.6, which is close to the “very important” ranking position. This ranking implies that Sun Tzu’s wisdom in the “**Flexibility and Adaptability**” is accepted in the Chinese based society like Hong Kong as their business management strategies.

This Strategy relates the flexibility and adaptability of different strategies of the management. Even though the company is operating smoothly and the market situation is stable, the management should prepare for any unexpected competition.

In order to maintain flexibility in business, it is essential not to engage in any competition if the situations are weak and cannot be defended. To have good control of the situations, it is dangerous to set up a position that is remote from the resources where help cannot be obtained easily. In forming alliances with partners’, in particular offshore partners, it is vital to communicate with them for information and mutual support. It is unwise to engage in competition with strong competitors who can challenge the existing position. Sometimes it is important to be alert and not to take any advantage from the competitors because that could be bait.

As a good practice, an effective business should never try to take over a defeated business entirely, and to win the situation completely. It is moral to leave a chance of survival to the competitor. An executive should be flexible in strategy and adaptable to changes in all circumstances, for the best possible management of resources. Market conditions should thoroughly be understood and they should be known well before business can be operated properly.

There are some plans that should not be followed completely; only the situation that is advantageous to the company. There are some competitors that should not be attacked; business that should not be captured; markets that should not be seized and decisions from the management that should not be taken entirely.

Consider both the favourable and unfavourable factors in business, then the gains and losses in strategic calculations will be obvious. By considering both the gains and losses, the strategic plans can be trusted for maximising profits and foreseeing problems. In launching a strategic attack in business, it is vital to make the competitors lose by constraining them, keeping them busy or occupied by giving them some benefits.

Fatal weaknesses of management should be clearly understood and avoided. Recklessness will result in wasting of resources, cowardliness will result in usurping by competitors, bad-temper will result in reckless decisions, and self-importance will result in flattering actions.

*i) Strategy 9: Observing and Maneuvering*

The mean score for Strategy 9 is 3.8, which is very close to the “very important” ranking position. This ranking implies that Sun Tzu’s wisdom in the “**Observing and Maneuvering**” is widely accepted in the Chinese based society like Hong Kong as their business management strategies.

In order to survive in the business market, management has to be aware of the market trend and needs, thereby having a quick response to the market demand. Moreover, management should promote the business to increase the opportunities. Inside the company, top management has to develop an effective and efficient system and co-operate with the employees to overcome any difficulties. The market situation varies from time to time. Management has to understand the market needs and respond accordingly. Moreover, good marketing strategy should increase business opportunities and promote the business. The more flexible the company reacts to the change of market situation, the more chance of success in business.

During the time when there are problems in the business market, it is preferable to stay away from these difficulties and problems. Try to take the market first by

adequate resources, then face the challenge when a stable organisation structure is maintained. To ensure winning a competition, it is advantageous to challenge competitors when they are halfway through their re-organisation process.

Being an efficient organisation, it must keep administrative matters simple and clear and perform all matters in the most easy and well-understandable ways. Operations have to be kept simple, efficient and effective. Different tactics in different situations can be used for success. However, the organisation should try to maintain stability, as people feel more comfortable with the methods and processes that they understand.

During business competition, the organisation should move away from dangerous situations as quickly as possible to ensure safe operations. Executives should position the company in the most favourable market situations with the most innovative products and market information. Besides, executives should be alert for the environment that is uncertain and incomplete of understanding, and observe the competitor's position and plan strategy accordingly.

Wait until the situation is clear before re-entering into market competition. Good and accurate decisions make proper investment in business. Stay away from the unfavourable and dangerous situations and let the competitors get near to them.

Thoroughly understand the market situation to avoid potential problems and identify pitfalls. Observe market indicators to identify potential problems. When the competition proposes a joint venture without warning, it means that he understands his strategic position. When the competitor does not explore market potential, it means he has no extra resources. When the competitor sees the obvious advantage but does not approach it, it means that he is tired and passive. When the competitor uses the last available resources, it means that he is in desperate situation. When the competitor has low morale, it means their leadership is poor. Prestige and authority of senior management are both

important to the final success. When the competitor hands out excessive rewards, it means that he has difficulty motivating his people.

If everyone does what he or she should do diligently, then both the management and workforce would benefit from that. They trust each other and have a good relationship.

Advantage in having more resources does not give absolute superiority. Organisation must not get into the market recklessly. Proper assessment of the entire market potential is essential.

*j) Strategy 10: Competitive Situations and Causes of Failure*

The mean score for Strategy 10 is 3.5, which is in between the “average important” and the “very important” ranking positions. This ranking implies that Sun Tzu’s wisdom in the “**Competitive Situations and Causes of Failure**” is generally accepted in the Chinese based society like Hong Kong as their business management strategies.

This Strategy highlights the importance of management in appreciation of the pros and cons of competitive business situations and identifying the possible causes of failure in business competition. Depending on the actual situation that might be rather complex and complicated, top management should prepare themselves for direct competition, still maintaining orderly and smooth running of policy within the organisation. It is essential that companies maintain high performance, good morale and loyalty to the companies. Sun Tzu did provide some good layouts of different competing situations that management should be aware of and should maintain the employees’ spirits to face the difficulties.

During competition, advantage would be gained over the competition when the competitors are unprepared. An attack on the competition can be launched when they have little room for manoeuvre. The next step is to review the business position and decide the plan of action.

Competitive situations can be described as accessible, ensnaring, inconclusive, restricted, difficult, and speculative that are equivalent to the description of terrain as accessible, ensnaring, suspending, narrow, mountainous, and remote respectively. Determination of whether moving resources into the competitive situations requires great understanding and careful examination of the plan in light of these situations.

Management should know of their internal weaknesses that could lead to business failure. Competitive operations can be failure due to lack of resources, lack of direction, lack of performance, lack of discipline, lack of order, and lack of competence; these are mainly the management faults.

Market situations help decision-making. Effective executives understand business partners, competitors and themselves well. They should estimate the resource requirements, the difficulty of all possible alternative strategies, assess the factors and their priorities requiring immediate or later attention. They should also know the strengths and weaknesses of both sides. Understanding these details and applying them properly will result in a win.

A good executive competes for business advantage without taking personal fame and gain and admitting failure without shirking responsibility. An executive whose only goal is to benefit the business partners and organisation is the company's precious asset.

Treat the employees like the members of the family and they will share the vision. However, one must be careful not to spoil the employees. An executive may be too generous and cannot use them effectively, too kind and not train them properly, too disordered and not discipline them correctly. A skilful manager reallocates his resources without losing his direction and purpose. If an effective executive knows well his people, his opponent's ability, and the resources and competitive situations he will be ever victorious.

*k) Strategy 11: Competitive Conditions and Offensive Strategy, Alliance and Vision*

The mean score for Strategy 11 is 3.8, which is very close to the “very important” ranking position. This ranking implies that Sun Tzu’s wisdom in the **“Competitive Conditions and Offensive Strategy, Alliance and Vision”** is widely accepted in the Chinese based society like Hong Kong as their business management strategies.

Good management should identify the competitive situations and react to those situations. Moreover, management should plan and lead the employees to have their work done effectively and efficiently. This strategy could be considered to be a summary of the previous three strategies. In order to survive in the various market competitions, management should have enough ability to lead the employees and develop robust strategies to overcome all the difficulties.

Competitive situations can be different according to the way business is conducted. By making a market alliance, stronger market control and strategy will be generated. However, one must bear in mind not to attack one’s competitor when resources are not focused. Proper application of the principles of offensive strategy requires analysis of the competitive situations. The competitive situation determines what following on action has to be taken, whether it is more advantageous to advance or retreat, and what resources have to be examined carefully. Resources include technical, financial and organisational aspects and they should be adequate.

When a business market competition started where the situation is dominated, people become less concentrated and over-confident. Then they are in a scattered or dispersed situation. Immediate actions are to avoid further competition, unify the will of all people, and consolidate the available resources for future competition.

When organisations are attempting the competitors’ market, they tend to be less committed to their allocated resources. They are in an uncommitted or frontier

situation where they can pull out easily and quickly. Immediate actions are to keep resources focused on the goal, strengthen the planning and observe the details of change.

When either side attempt to occupy the same business market that will be to their advantages, both sides may pump in heavier resources in order to win. Then they are in a conflict or contentious situation. Immediate actions are to keep still, approach from the less obvious side, and create an advantageous situation before expending resources to win.

When either side can advance to and retreat from the business market comfortably, both sides are free and open to operate. They are in an accessible or open situation. Immediate actions are to keep on guard and strengthen defences.

When the business market falls to several business partners, whoever first dominates the share will get the others support. They are in intersecting or focal situation. Immediate action is to consider forming strong alliances and sharing benefits.

When they have already committed heavy resources and are involved deeply in the business market where they are not the major business partners, they are in a critical and serious situation. Immediate action is to look for adequate resources ensuring continuous flow of provision.

When there are many barriers including technical, financial and organisational challenges that they have to overcome in the business market, they are in a block or difficult situation. Immediate action is to overcome these barriers quickly and press forward swiftly.

When they have already committed heavy resources and no easy way out of the business market and competitors are likely to take over from us; they are in a



surrounded or encircled situation. Immediate actions are to eliminate our weaknesses and hinder competitors from attacking business partners.

When they can survive only if they can win the business market quickly, they are in a deadly or desperate situation. Immediate action is to let all employee facing the fact that there is no choice but react urgently or the business may not survive. In managing competitive actions, effective executives would advance when it was to their advantage and halt when situations were unfavourable. Effective executives would make the situations difficult to competitors and their people. They should be aware of the business situation and prepared to act speedily using innovative approaches and attacking competitors' weaknesses.

Care and look after the people in the organisation. Competitive actions will succeed only if all people in the organisation are committed to the same goal and have a unified objective. Make sure that all employees are in excellent condition. Keep them in good health, good spirit and good morale. Reserve their energy and never over-load them. Only those companies in these conditions can meet unexpected challenges.

Make business urgent to ensure co-operation and alignment of vision. When the company is fully committed and has no alternative but to struggle for survival, people will stay alert, do without asking them, co-operate without directing them, and follow instructions without ordering them? All rumours should be avoided and there is no suspicion among employees. Winning the business competition will happen soon.

Those who are skilful in business should ensure all the resources work together in co-operation. Alignment of the company workforce to the vision depends on good management.

Effective executives should create a situation whereby the whole workforce is committed to the same goal. He would then execute the strategic plans

accordingly with clear and distinct orders. The leader of a company should have a mind that is serene and unfathomable. He must administrate his workforce in an impartial and upright manner. The executive of a company should demonstrate his commitment to the workforce and remain true to this commitment on all he does. The executive should also put the organisation into a position where the highest level of performance is necessary for survival.

The more successful the business, the more motivated and committed the workforce will be towards their work and make contributions. Align the workforce to the vision of the company. A company that does not understand the intention of potential partners cannot form alliances with them.

*Business strategic plans of action cannot be formulated without the full understanding and awareness of the dynamic changes of current market situation and business information.*

If a company is strong, it does not need to seek alliance. Unify the thinking of all people and make them work for you.

Effective executives should lead the company by showing good examples, motivate people by giving out reward, and put them in a desperate position by committing fully or-else failure. Appear not to be strong, but when opportunities arise, launch the business attack.

*1) Strategy 12: Destroying and Decision*

The mean score for Strategy 12 is 3.8, which is very close to the “very important” ranking position. This ranking implies that Sun Tzu’s wisdom in the “**Destroying and Decision**” is widely accepted in the Chinese based society like Hong Kong as their business management strategies.

In order to be a winner, management cannot start competition at its own wishes. Clever management should wait for the suitable opportunities such that it is confident to beat the competitors in a short period.

Destroying a competitor's reputation is the last resort that could possibly be used and is the most dangerous competitive operation. There are five areas of attack of reputation. These include personnel, personal relationships or management structure, organisational products and individual performance, employees and facilities, suppliers and supporters, and capital resources and financial backing. The key to success is recognising good opportunity. Appropriate timing for destroying competitors' reputation is when there are other difficulties present on other political and economic scenes.

Always stay ahead of the competitor. Destroying reputation is a method of permanently defeating competitors. Effective business should remain flexible and adapt in accordance to the changing situation. Good management practices are based on the previous achievements. One must not sit on the present situation and must continuously look for innovation. Defeating a competitor without great benefit is a misfortune. Executives should weigh the gained benefits before launching a challenge. A simple mistake could ruin the whole business. A wise executive should not compete out of emotion. It must be well understood that a destroyed reputation cannot be restored.

*m) Strategy 13: Intelligence and Information*

The mean score for Strategy 13 is 3.2, which is close to the "average important" ranking position. This ranking implies that Sun Tzu's wisdom in the "Intelligence and Information" is generally understood but not widely used in the Chinese based society like Hong Kong as their business management strategies. The result shows that use of spies is uncommon in the society.

This Strategy had a fair response of importance. To be successful, it is essential to have a better understanding of the objectives, resources and activities of the

competitors, customers and business partners. By understanding the competitors' business strategies, companies can avoid direct attacks or prepare for solutions. In knowing the customers' needs, companies can also easily fulfil the requirements and increase the market share.

Ignorance of the competitor's situations is a danger that may lead to wasted resources. Achieve extraordinary accomplishments by good management of people who clearly understand the market situation. A smart executive should try to obtain that critical and useful information about competitors; for instance, their objectives, resources, and activities. He knows the details of the competition and constituencies, and he wins because he confuses the situation by providing some misleading information about his own objectives, resources, and activities.

This critical information or intelligence comes from people who have first hand information or knowledge of the competition. Use many ways of gathering information from the market, this will help to hide your intention from competition, and helps to make wise decisions. Intelligence information may come from different sources: internal sources of information of the competitors, counter-intelligence from both sides and internal intelligence within the company. Information gathering is always possible. Detailed information of the market is essential. Recognise and try to recruit talented people to work for your company. Recognise talented people's achievement in your company to achieve great tasks.

### **9.5.2 Survey on Business Management Strategies Using The Thirty-six Strategies**

The business management strategies based on The "Thirty-six Strategies" are 2.7 in average, which is in between the "below average important" and "average important" ranking positions. This lower ranking compared to the mean of 3.0 implies that the "Thirty-six Strategies" are not widely accepted and adopted as Chinese business management strategies and tactics.

As detailed in Appendix F, only half of the 36 strategies were reported to be useful as business management strategies. They are Statement S2, S6, S8, S11, S15, S16, S17, S18, S19, S20, S21, S22, S25, S26, S27, S30, S35 and S36. All these strategies have a feature in common: that is honour, integrity and righteousness. Comparatively speaking, these are some longer-term solutions or tactics, which are essential for business management.

Similar to the Sun Tzu's philosophies, these strategies stress on effectiveness and efficiency. For winning strategies in competitions, winning avoiding head-on competition would be most advantageous for long-term and overall situations. Whatever actions to be taken should be confidential until the final release so that the opportunity would not be lost. Again, it is essential to avoid direct competition with the competitors on their strengths but focus on their weaknesses. Once competition started, the actions have to be fast, and unpredictable. Moreover, self-improvement and maintain a motivated working environment are essential to minimise attack by the competitors. Besides, the management should also have a longer-term vision in running a business.

*a) Strategies for Ensuring Win*

During business competition situations, people may try to create an atmosphere or impression of familiarity with the situation to their competitors, within which they are actually manoeuvring, which is different to the real situation. However, this practice gives people feelings of dishonesty and immorality [*Strategy 1. Cross the sea by deceiving the sky.*] When a stronger company is about to take over a weaker company, a third company can gain a good reputation by attacking the aggressor, apparently behaving as the defender. That company also eventually takes over the weakened defender, without incurring the same opprobrium that would be levelled at outright aggression. [*Strategy 2. Besiege Wei to rescue Zhao.*] When a company in a business conflict is weakening, that company may draw some other companies into the competition, thus delivering a fight back while conserving own strength. Eventually the enemy may be defeated and destroyed. Then that company may take over the whole business.

The practice is not benevolent [*Strategy 3. Kill with a borrowed knife*]. Before starting any business competition, the company tries to preserve the energy while the opponents are carrying out some things else of no importance hoping that the opponent's energy is exhausted. This approach is shameful because of defeating someone in an unfair situation [*Strategy 4. Relax and wait for the adversary to tire himself out.*]. Some companies may use other companies' troubles as opportunities to gain something. This practice is immoral and shameful. On the other hand that company should try to help the opponent first and gain reputation and trust for the company [*Strategy 5. Loot a burning house.*]. During a competitive situation, a company spreads misleading information about intentions, or makes false suggestions, in order to induce the opponent to concentrate his defences on one front and thereby leave another front vulnerable to attack [*Strategy 6. Make a feint to the East while attacking in the West.*]

*b) Strategies for Planning Opportunism*

During business competition, a false idea is created or is conveyed in the mind of the opponent as a reality. In fact the company does not have what it does. This strategy gives people the impression of creating something out of nothing is rather improper and dishonest [*Strategy 7. Create something out of nothing*]. In business operations, a company sets up a false situation distracting the opponent's attention, then penetrates the opponent's market without notice [*Strategy 8. Pretend to advance down one*]. In business competition, a company calmly looks on when adversaries' experience troubles, waiting for them to be out of business without offering any help. This strategy is immoral and not righteous. Most of the people believed that although engaging in business war, offering help to the competitors today may eventually receive help from them in the future [*Strategy 9. Watch the fire burning from across the river*]. In business competition, companies ingratiate with competitors, with the objective of gaining their trust and confidence. Once their objectives are achieved, they move against them in secret. The disagreement on this strategy in business revealed that it is immoral and not righteous. Chinese business and management practices believe in words and deeds, sincerity and co-operation. Nevertheless, business

competitors should always be alert of those people who might use some improper tricks in doing business [*Strategy 10. Conceal a dagger in a smile*]. In business operations, some companies may have to sacrifice in order to achieve a greater goal. Most of the business people reckon honesty is vital and important in business. For whatever reasons, it is improper to substitute one thing for another unless the products or services to be replaced are far superior to the original one. In that case the customers will believe that the replacement was an improvement of what had been provided previously [*Strategy 11. Sacrifice the plum for the peach*]. In business, some companies take advantage of any opportunity, however small, and involve themselves of any profit, however light. They behaved so calmly and naturally, as though they had been doing a normal and proper thing, that their competitors never noticed them. Again it is improper to take advantage of others it is; both immoral and discourteous [*Strategy 12. Take a goat in passing*].

c) *Strategies for Waging War*

In business competition situations, when opponents are reserved and unfathomable, companies create some sort of stir to see how they will react. In reality, business strategy should be kept secret and not alert the competitors [*Strategy 13. Beat the grass to startle the snakes*]. Most companies do not use what everyone else is using, but use what others are not using. This can mean reviving something that has dropped out of use through neglect, or finding uses for things that had hitherto been ignored or considered useless. Most people believed that to use what others do not use might interfere with quality and therefore considered improper [*Strategy 14. Raise a corpse from the dead*]. The companies do not go into the fastness of powerful opponents' territory, but induce them to come out of their stronghold [*Strategy 15. Lure the tiger out of the mountain*]. The defeated opponents may become good partners and extremely useful to the future development of the company. On the other hand, if the situation is not handled properly, they may turn back again and strike desperately. After they scatter and lose their energy, then they can be taken captive without further violence. It is important to show the executive's wisdom,

benevolence and sincerity in handling the situation [*Strategy 16. Let the adversary off in order to snare him*]. Companies present something of superficial or apparent worth to induce opponents to produce something of real worth. In business operations, it is important to show initiatives and positive actions demonstrating the ability and potential of the company. To be able to attract profits would be the added advantage [*Strategy 17. Cast a brick to attack a jade*]. The companies confronted with a massive opposition take aim at its central leadership. In business operations, it is important to have business focus and vision; otherwise it may lose attention easily [*Strategy 18. To catch bandits, nab their ringleader first*].

d) *Strategies for Confusing Enemy*

During business competitive situations, companies cannot handle an adversary in head-on competition. They can still win by undermining the opponents' resources and morale. This strategy impresses people and demonstrates the good strategic planning and determination of the executive [*Strategy 19. Remove the fire from under the cauldron*]. The strategy also shows that the opponents were confused about their direction and goal of their business; then other companies may take this opportunity and get advantage. It may mean taking over uncommitted or disenfranchised business. This strategy demonstrates the flexibility in policy, speedy and positive action of the companies [*Strategy 20. Catching fishes from troubled water*]. During a competitive situation, companies might have to leave behind false appearances created for strategic purposes. Like the cicada shell, the facade remains intact, but the real action is now elsewhere. The strategy impresses people and confuses them without causing harm to their opponents [*Strategy 21. The cicada sheds its shells*]. Companies might catch invading predators by not letting them get away. You do not let them get back to their homeland with what they can get from you. If they escape, do not chase them, because someone will thereby fall prey to the enemy's plot to wear you [*Strategy 22. Fasten the door to catch a thief*]. Companies might need to employ business management strategies for alliances making allies at a distance, attacking nearby. When they are more vulnerable to that close by than those far



away, they can defend themselves by keeping the opponents around them off balance. In the meantime they can cut off their field of manoeuvre by securing a broader ring of alliances surrounding them. This strategy can also be interpreted, as the immediate problems should be attended first than those of longer term. The high percentage of disagreement with this strategy for alliances reflects the situation that attacking nearby neighbours in Hong Kong is rather uncommon. To the contrary, Hong Kong business in the past enjoyed the free market and fair competition from all over the world. Because of the free market situation together with all-fair legislation and policies, Hong Kong becomes one of the most prosperous and economically advanced countries in the world. On the other hand, the alternative interpretation of the strategy of solving the most urgent and immediately problem first would lead to a fair and good strategy. That would give people a proper guide and helps prioritise their business problems accordingly [*Strategy 23. Be friend a distant state while attacking a neighbouring state*]. During a business competitive situation, companies might use the opportunity of borrowing the right of way of a weak party to attack the strong neighbour. They secure the temporary use of another party's facilities in order to move against a mutual enemy. After having used these facilities to prevail over the enemy, they then turn and use them against the party from whom they borrow them. The high percentage of respondents disagreed with this strategy for alliances reflects the situation that alliance and then attacking in Hong Kong business is rather uncommon. However, there is still a substantiate percentage of respondents who agreed on this strategy [*Strategy 24. Borrow a safe passage to conquer the Kingdom of Guo*].

e) *Strategies for Alliances*

During business competitive situations, companies might try to recruit top talented people among allies, include them to join the companies as well. Most people agreed with the strategy for alliances reflect the situation of recruiting the best talented people to work for the companies is quite proper. Companies should be alert all the time to the competitors' situations even though they are in alliances [*Strategy 25. Steal the beams and pillars and replace them with rotten*

*timber*]. From time to time, companies might criticise the competitors indirectly, getting the points across without confrontation. It also shows that using some power would beat the competition. Most people agreed with this strategy for alliances and reflect the situation that people do prefer to win the business through fair competition but not indirect tactics [*Strategy 26. Point at the mulberry but causes the locust*]. During competitive situations, companies might pretend to be stupid and ignorant, and let the adversary underestimate their capabilities. The very high ranking of this strategy probably it gives people the impression of a strategy confusing the enemy without causing harm to their opponents [*Strategy 27. Play dumb*]. From time to time, companies might manoeuvre enemies into a point of no return by baiting them with what look like advantages and opportunities. Most people believed that it is immoral and not righteous to use this strategy [*Strategy 28. Remove the ladder after your ascent*]. Companies might dazzle and deceive the eyes of opponents using showy business results for the purposes of business alliances, co-operation or manoeuvres. People agreed with this strategy for alliances although this is not a proper strategy reflecting the common situation in Hong Kong business [*Strategy 29. Decorate the tree with fake blossoms*]. Sometimes, companies' business might be taken over by one of its partners purely for business decisions. This taking over of business might be due to the merging or expansion of business or change of business strategies. Senior management agreed with this strategy and considered it important which reflects a common situation in Hong Kong that merging or expansion of business are purely business decisions based on the profitability and future prospect of the business and nothing else [*Strategy 30. Turn yourself into a host from being a guest*].

*f) Strategies for Defeating*

During business competitive situations, companies in the state of defeat use the charms of women or offer advantage to influence key figures in an adversary organisation making their decisions. Most senior management disagreed with this strategy reflects the situation that offering advantage in order to influence decision making is not common, at least at senior management level. Hong

Kong in the past twenty years has been very successful in fighting against corruption. The message of anti-bribery is well spread, and most people know the consequences of giving or taking a bribe. The result also reflects the situation that dishonesty, immoral behaviour, and the behaviour of being corrupt is not generally accepted in the society [*Strategy 31. Use a beauty to ensnare a man*]. Companies in the state of defeat pretend to be weaker than they really are. Their opponents may defeat themselves or be misled by one of the three reactions to the supposed weakness. Their opponents may become conceited and complacent, leading to downfall. They may become arrogant and aggressive, leading to destruction. They may assume the companies are setting up an ambush, leading to flight. Disagreement with this strategy reflects the situation that most people thought this strategy is rather passive and less innovative [*Strategy 32. Open the gate of an undefended city*]. Companies in the state of defeat should consider use of improper information to mislead their opponents or spies for inside information. Most people still neglect the importance of market information in business competition [*Strategy 33. Use adversary's spies to sow disorder in your adversary's camp*]. Use the scheme with self-inflicted wounds and make them look like a victim as well in order to win the sympathy and confidence of opponents. The majority of the people disagreed on this strategy because people should have confidence on their own and struggle for success [*Strategy 34. Inflict pain on oneself in order to infiltrate adversary's camp and win the confidence of the enemy*]. Companies in the state of defeat when they face powerful competitors should not confront head-on. They should not concentrate all their resources on only one avenue. They should keep different plans operating simultaneously in an overall scheme. This strategy demonstrates the good strategic planning in the use of resources and determination of the executive [*Strategy 35. Scheme with Continuous Circles*]. If the situation and environment is unfavourable to carry on, executives should consider a retreat strategy and reserve the resources for the future. Surrender is complete defeat, compromise is half defeat, and retreat is not defeat [*Strategy 36. Retreat is the best option*].

## **9.6 Conclusions**

Hong Kong has been extremely successful in her economic development during the past century; however, the city has been greatly influenced by the culture and the science and technology from the West. Looking back to history, the majority of the people in the older generation are people who were immigrated from China in the 1950's and their thinking and culture are very much neo-Confucian. These people have been working very hard and contributing well to the development of the community. They have been able to turn Hong Kong into a world-class commercial centre and financial centre as well as one of the most prosperous cities in the world. That is nothing but a miracle, bearing in mind that Hong Kong has no other natural resources except the people.

The initial intention for the ISO 9000 quality standards system registration in most companies was purely for foreign trade and business. However, due to business competition, the need for continuous quality improvement and marketing were also other important objectives that companies need to fulfil. Quality is unquestionably a key factor for achieving long-term success in today's global competitive market. As the ISO quality standards system does not necessarily guarantee quality product or service, the system may result in wasting of resources, in particular if management aims at registration only but not the required quality. The ISO quality system is certainly a good starting point for quality efforts, as the standards ensure that a quality system is in place and is being followed. It provides the foundation for a total quality management program by concentrating on the fundamental aspects of implementing quality control, documenting the various processes and procedures that affect product or service quality, and ensuring that the appropriate quality emphasis is established and followed by everyone in the organisation.

Barriers between departments, change of individual behaviours and attitudes, lack of in-depth TQM understanding, reluctance to change were the most difficult factors in TQM implementation. In other words, the main problems were the TQM understanding, individual behaviours and attitudes, organisational cultural change the quality management.

Most researchers in the process of implementation of TQM in various organisations agreed reported one of the major barriers to overcome is to change the quality concept of the people and culture of the organisation. The TQM concepts based on the Western gurus' thinking might not be totally acceptable to some organisations from the East Asian countries having an entire different historical background, history of economic development and economic structure that are significantly different from the West. There is no reason why these countries while adapting TQM philosophies as the Western science cannot change and modify in some way retaining their underlying traditions or cultures.

Confucius set the tone and introduced the major themes of Chinese philosophy. Previously, the focus of discussion on Confucius has been on the ethical aspect. The most important theme in Confucius' teaching is humanism and it is generally agreed that the dominant theme is self-cultivation and moral preaching. Confucius put human nature and the value of developing oneself through learning. The teachings of Confucius have been used primarily to propose a concept of wisdom as the unity of truth and goodness which provided a framework for understanding the relationships among cultivation of individual behaviours and ethics, harmonise the family, rule the state and govern the whole country. Confucius put learning and self-cultivation as the most essential elements among all. The perfectibility of human beings and the need for constant renovation of the spirit are essential in order to achieve that perfection.

Prevalent TQM theory and practice are dehumanising because it is dominated by corporate and business interests. Genuinely humanising TQM processes ought to embody and promote the concepts of wisdom originated and inherited from their cultures of each nation. Confucianism is a humanistic philosophy and the human being is regarded with dignity and respect. The philosophy also emphasises values of harmony as well as loyalty, group and family identification. Righteousness and acts of righteous individuals are within the framework of loyalty. The survey returns proved to be highly acceptable to Chinese people in Hong Kong as business management strategies.

On the other hand, the nature of business is quite like a war. The market is the modern battlefield and its situation varies from time to time. Success also depends on the effectiveness and efficiency in using limited resources. From the survey of ranking, all responses provided a high acceptance of the Sun Tzu's the Art of War and confirmed the usefulness and importance in application to the business management strategies. Through Sun Tzu's philosophy, business executives would develop correct strategic principles in handling business nowadays. Thus, the well-known philosophy, Sun Tzu's Art of War, would be useful not only to the military officers, but also to business executives.

Different from the Sun Tzu's Philosophy, the other famous Thirty-six Strategies was not highly appreciated. Although the thirty-six strategies are very useful in handling problems, some of them are not honourable and are temporary strategies. Therefore, they are not that useful and applicable in the business world in which creditability is very much of concern.

## Chapter 10 Conclusions

Sun Tzu said,

*“So it is said that if you know both the enemy and yourself, you will fight a hundred battles without danger of defeat; if you are ignorant of the enemy but only know yourself, your chances of winning and losing are equal; if you know neither the enemy nor yourself, you will certainly be defeated in every battle.”*

Sun Tzu said,

*“You should be as swift as strong wind while taking action. You should be, as stable as silent forests which the wind cannot shake while you move slowly. You should be as fierce and violent as raging flames while raiding the enemy's state. You should be as firm as high mountains while being stationed there. You should be as inscrutable as something should behind the clouds. You should strike as suddenly as a thunderclap.”*

The influence of Sun Tzu's philosophies on the twentieth century business management strategies is undisputed. The principle of the execution of war strategies is equally applied in business management. The Sun Tzu's philosophies on business management strategies presented in Chapter 6, 8 and 9 with a detailed flow charting structure gives an easy and better understanding of the principles, and the result of the survey on the understanding and implementation of the Sun Tzu's philosophies on business management had been very encouraging.

Confucius had set up eight remarkable principles of learning, self-cultivation and social relationships. As discussed in Chapter 5 and 8 and 9, Confucius' philosophies of learning focus on a good understanding of basic phenomena of all things. Among them all, the cultivation of individual behaviours and ethics are the most important elements in order to regulate and harmonise an individual's family and subsequently manage the state and rule the country. While Confucius' philosophies apply in business, these fundamental principles are equally true and conform.

The influence of Confucius' philosophies on the culture of China and other Neo-Confucian countries in the East Asian countries is undisputed. The effect of the high annual economic growth rate in these countries, in particular the Pacific Rim countries has proved to have something to do with their cultures. The Confucius' philosophies are equally applied well in a business management environment. Again, the survey has also indicated that the use of Confucius' philosophies in business management has been encouraging.

The gap in knowledge set the scene and direction of the research. The gap in knowledge in current thinking is:

- The lack of integration of Chinese philosophies into organisational development towards world-class business excellence
- The lack of understanding how Chinese values or thinking can assist achievement of world-class business excellence.

Chapter 2 concluded that the importance of competing in a global market place, with increasing quality demands and price-sensitive competition have led to a fast-paced race for quality improvement as a means of achieving a competitive advantage. The two quality systems are Total Quality Management (TQM) and the ISO 9000 Standards. The ISO 9000 Standards certification provides a road map to the future TQM system.

In Chapter 3, quality function deployment (QFD) methodology has been used and studied in the body of the QFD matrix. The methodology presented could also be customised to allow companies using this approach to develop their own total quality management strategic planning for competitiveness. The criteria of total quality strategy for world-class business excellence performance like the Deming Award, MBNQA and EQA could be identified as the 'Whats' on the vertical axis, and the quality gurus' philosophies as the horizontal axis 'Hows'. Thus this methodology will help companies in developing their total quality management strategic plan, customising for any specific requirements.



QFD methodology could also be used in business management strategic planning besides the TQM strategic planning. The criteria could be identified as the 'Whats' on the vertical axis, and the best practices and strategies or philosophies of renowned strategists could be identified as the horizontal axis 'Hows'. Thus the QFD matrix would provide the relationships and priorities for the company' strategies based on different company situations.

Chapter 4 investigated on the Western quality gurus' philosophies. To help in the future development of the quality management strategies, the gurus' points were compared and grouped. The Western quality gurus' TQM philosophy had basically fourteen points summarising their importance and significance, with great commonalties. As discussed, these philosophies of the Western quality gurus on TQM philosophies were mainly focused on the change of organisation culture, management commitment and policies, technological changes, and customer satisfaction. There were many successful TQM cases reported, however, those unsuccessful ones always blamed the difficulties of getting organisational culture change, poor management commitment and policies, reluctance to changes such as acceptance of new technology, etc. Many of these problems are more people as well as system related rather than the technical aspects. To make TQM successful and achieve business excellence performance, fundamental change of individual behaviours and working attitudes within organisations would be preferred.

Chapter 5 looked for the development of the twenty-four criteria based on Confucius' teaching on best business and management practices. That would help to improve individual behaviours and working ethics, and hence properly manage a department, enhance business results of an organisation, and eventually manage the corporation. A well-managed department and organisation or even a multinational organisation would very much depend on the peoples' quality and the abilities of the managers for achieving the organisational goals. These scenarios confirmed the domain of culture proposed by Hofstede and Bond that better quality of management occurred because of the better qualities of the people being managed. It also confirmed the saying that the better management of the entire nation was because of good leadership and policy management of the nation. To quantify the impact of these twenty-four Confucius' philosophies in

business and management, these criteria were used as survey questionnaires investigating the general acceptance of this ingrained culture.

Chapter 6 has presented a clear view of Sun Tzu's military strategies and the use of these strategies in a business and management environment. Sun Tzu placed an emphasis that "Winning one hundred victories in one hundred battles is not real excellence, winning a victory and subduing the enemy without fighting is the highest excellence." and "The best policy for the military operations is to gain victory by means of strategy." It is always in the Chinese people's mind that the best strategy is to win by strategy. The Sun Tzu's and The Thirty-six Strategies were the consolidated views of the Chinese who had experienced and used them for the past thousands of years.

Chapter 7 presented the development of the new Global Total Quality Management Strategy (GTQMS) based on the amalgam of the fourteen essential parameters of Western quality gurus' TQM philosophies and the five main principles of Eastern guru Confucius philosophy on business management with the twenty-four behaviours and working attitudes. This Eastern guru' thinking on behaviours and ethics adds a new dimension of criteria onto the existing business and quality management philosophies. This would help to close the gap in knowledge of the relationship between Western TQM philosophies and Eastern cultural value in quality and business management.

The criteria of the ISO 9000 Standards, the Malcolm Baldrige Quality National Award (1995) and the European Quality Award for Business Excellence (1996) were evaluated with the **Global Total Quality Management Strategy** amalgamating both Western and Eastern gurus' philosophies.

Chapter 8 presented the design of the questionnaires of the surveys that had been used as the tools to qualify the usefulness and impact of the Chinese philosophies in quality management and business management strategies. The bases of the design of questions were discussed in the relevant sections in the Chapter.

Chapter 9 presented the surveys findings showing the usefulness and impact of Chinese culture in quality management and business management strategies. The use of Confucius philosophies and Sun Tzu's the Art of War in business management strategies would certainly help achieve world class business excellence performance.

The surveys' results as presented in Chapter 9 with further details in the appendices were very encouraging. The following sections discussed the main findings of the surveys and their relationships to the main themes of the research.

The surveys as conducted and reported set the scene of the situation of implementation of ISO 9000 quality system and TQM systems in Hong Kong environment. Hong Kong seems to have similar situations as compared with the other countries. Some respondents did report some degrees of success for their quality management programmes in particular the ISO quality issues. This is, of course, not surprising, as the main impact of quality management is to increase the awareness of quality issues, which can easily be seen as some improvement.

Quality is unquestionably a key factor to achieving success in today's competitive market. ISO 9000's main strength and one of the reasons for being adopted widely is that customers could be assured of suppliers having a basic quality system in place that is based on the same standard used by other suppliers world-wide. This unified at least some basic understanding of quality issues and possibly eliminated having different standards for different nations.

Through the survey, it was revealed that most ISO registered companies were quite satisfied with the system. With the ISO 9000 quality system in place, the effectiveness and efficiency of these organisations' performance were improved. However, there were some other areas identified for further improvement. Contract review was not common in Hong Kong and management had not put in sufficient effort in its implementation. Though most things were documented, some employees, in particular those at junior level, had not followed the written instructions. Thus, more training programmes and monitoring should be in place to change or rectify the people's perception of quality and

quality culture. In addition, those problems related to the plants in China were different from the Hong Kong office. Difference in educational background, values, quality culture and knowledge of quality etc., were the fundamental issues that had to be resolved.

ISO 9000 is a starting place for quality effort, because the standards ensure that a quality system is in place and is being followed. It provides the foundation for a total quality management program by concentrating on three fundamental aspects: implementing quality control, documenting the various processes and procedures that affect product or service quality, and ensuring that the appropriate quality emphasis is established and followed by everyone in the organisation (Laura, 1996).

Although business survival now depends upon quality and quality management, until now, Hong Kong has not developed some unique issues of quality management. In most of the situations, the implementation phase was late. Quality circles emerged from Japan in the 1960's, but not until the 1980's did they occur in Hong Kong. The BS 5750 standard was already implemented in the UK in 1979, but the ISO standard adopted from it was not popular in Hong Kong until the mid-1980. Hong Kong being an international city for many years, organisations usually implement a quality system based on Western technology and culture. The question that arises is how the Chinese cultures affect TQM system implementation, in particular under the influence of the Western management philosophies.

Quality is a fast growing issue and becoming one of the most competitive ones in this decade. The pressure on quality enhancement has become intense, for both large and small organisations. In Hong Kong, government agencies and industrial associates actively promote and educate the quality consciousness amongst the companies. Thus, there is now a shift towards better quality management to survive in the fiercely competitive market.

Although most people were observed to be aware of customer satisfaction and quality concerns, TQM is still a rather new Western philosophy to Hong Kong industry. From the result of the survey, companies in Hong Kong seemed to be not ready to achieve such a level of system. Even though some companies claimed that they had established a TQM system in their organisations, nevertheless such systems would be most unlikely to be classified as a real functional TQM system. The critical problem might be the inadequate commitment and understanding of quality at the management level. Those people or areas not directly related to quality were overlooked. People always aim at achieving quality, but their behaviour can lead to the opposite direction. However, it was seen to have gradual improvement.

With the registration of ISO 9000, companies really gained the benefit of raising the quality concern in every employee. This provides Hong Kong companies with a foundation to improve and develop their system if the top management really desired and became involved in the implementation.

Through the Analects of Confucius, the corresponding questions to explore the Chinese management in depth were developed. Employees were very responsible for their companies and they were happy in learning new things. These are essentials to successful quality management. Although different employees behave differently, they have some ethics and perceptions in their mind under the Chinese growing environment. If the top management can provide proper training and communication, the employees can be secured and work towards the same goal in achieving a qualified management. From the survey, all responses provided a general acceptance of the Analects of Confucius and confirmed the usefulness and importance in application in business management.

In general, the nature of business is quite like a war and the situation varies. Their successes also depend on the effectiveness and efficiency in using limited resources. Thus, Sun Tzu's philosophy could be applied not only to the military and war situations, but also to business and for business executives.

From the surveys' rankings, all responses provided a general acceptance of the Sun Tzu's The Art of War and confirmed the usefulness and importance in application in the business management. Through Sun Tzu's philosophy, business executives would develop correct strategic principles in handling business today.

Different from the Sun Tzu's Philosophy, the other famous Thirty-six Strategies were not highly appreciated. Although the Thirty-six strategies are very useful in handling problems, some of them are not honourable and are temporary tactics only.

### **General Conclusions**

The conclusions of these surveys indicated that the incorporation of Chinese philosophies would enhance the Western TQM and gurus' philosophies, which is useful and applicable to the Eastern countries and Neo-Confucius countries like Hong Kong. On the other hand, the Sun Tzu's The Art of War would definitely be useful in achieving the best-performed criteria for business excellence strategy. The use of the QFD methodology as a quality management and business improvement strategic tool is recommended. In the QFD matrix, the criteria of quality awards is for the 'Whats' axis and the newly introduced TQM and strategic plan criteria based on Chinese philosophers is for the 'Hows' axis would help business organisations prioritise resources and plans after the self-evaluation process.

The initial intention of developing an expert system for achieving world-class business performance through continuous process improvement requires a better knowledge base incorporating the Chinese philosophies into the Western TQM concepts.

**To summarise, this research has helped to identify that:**

- Traditional approaches and methods in changing an organisation towards business excellence are difficult.
- Western quality gurus' philosophies on management and practices focus on organisational culture, leadership and people. Incorporation of Chinese philosophies

from Confucius and Sun Tzu would enhance the knowledge base through individual cultivation of behaviours and ethics.

- Indicators of quality and business excellence performance, such as those drawn from the Deming Award, Malcolm Baldrige National Quality Award and European Quality Award for Business Excellence Model could be used as an indicator and be assessed by organisations desiring to enter a continuous improvement process.

This research also helps to achieve the following objectives:

- Review the philosophies of the quality gurus, total quality management principles and detailed elements of the ISO 9000 quality management system,
- Review the quality management improvement tools, in particular the Quality Function Deployment (QFD) methodology for quality management and business strategic planning.
- Understand the meaning of world-class business excellence by reviewing the quality awards, in particular the Malcolm Baldrige National Quality Award and The European Business Excellence Model. The European Business Excellence Model defines the framework of United Kingdom Award and The European Quality Award.
- Devise an instrument or methodology helping organisations that wish to go for world-class business excellence programmes carrying out self-assessment and identifying the priorities of an improvement programme.
- Understand the philosophy of Chinese Philosopher Confucius and how this relates to quality management strategy and the economic influences.
- Understand the philosophy of Chinese philosopher Sun Tzu's The Art of War and The Thirty-six Strategies and how these relate to modern business and management strategies.
- Identify the gap in knowledge, which is the lack of incorporation of Chinese philosophy in the Western quality gurus' quality and management philosophy.
- Assist organisations in self-evaluation of their quality and business management strategies using Quality Function Deployment (QFD) methodology.
- Substantiate the hypothesis of the Eastern gurus in quality management and strategic planning by carrying out a number of surveys verifying the claim.

- Summarise the findings of the research and make further recommendations for further research works.

### **Contributions of Research**

The aim of this research is to determine the impact of apply Chinese philosophies to organisational change which helps to achieve world-class business excellence in Hong Kong companies. This research looks into some very old solutions and provides answers that have existed for thousands of years. A lot of today's competitive improvements are the rediscoveries of the ancient sayings and philosophies as well as the way of strategies. These ancient philosophies and strategies are the art and science of managing organisations in a competitive environment to achieve world- class business excellence.

Achieving Global Total Quality Management Strategies (GTQMS) using both Western quality gurus and Eastern guru Confucius philosophies adds a new dimension to Strategic Total Quality Management. On the other hand, business excellence strategies evaluation employing Sun Tzu's The Art of War and The Thirty-six Strategies for the business excellence models were devised.



## **Chapter 11 Recommendation for Further Research**

### **11.1 Contributions to the Development of Quality Management and Business Strategies based on other philosophies**

This research project is being developed based on the philosophies of Confucius and Sun Tzu. It is quite obvious that the culture and the history of some of the countries in the East have been deeply affected by these philosophers and their thinking. However, modern societies have their own judgement on the values, the behaviours, the ethics and the attitudes of how things are being done.

It is true that Confucian philosophy has a great effect on the Chinese cultures for a few thousands of years in the long history of ancient China. It is also true that Confucian philosophy may have the greatest effect on the culture of the Chinese people. On the other hand, since China has a relatively long history compared with other countries, the cultures in different parts of China may be different. For the purpose of further research, the other famous philosophies of China affecting different periods of time in Chinese history like Taoism, Makism, Luism as well as Buddhism may certainly be very interesting for Eastern culture thinking. Confucian philosophies represent only one of the major branches of philosophical thinking in the long history of China.

To break the barrier of cultural differences in different countries, the new dimension of culture to be added to the Western TQM philosophy that is related to their own cultures and backgrounds for best practices and ethics should be considered.

### **11.2 Contributions to the Development of Expert System on Quality Management and Business Strategies**

As mentioned in the introductory Chapter, an expert system on quality management and business strategies incorporating Chinese philosophies together with an appropriate database is undergoing development in parallel with the research project. The system so developed will make use of the knowledge base of the system, providing recommendations to its users as to what quality management remedial

actions, quality strategic plans or business and management strategies might be taken. The user's quality or specific management problems would be initially identified. The system will assist users to achieve continuous improvement in their business performance by using different quality management tools and techniques, gurus' management philosophies and business and management strategies.

While expert systems are sometimes misused, misapplied, and overly hyped, one cannot and should not dismiss them as either unimportant or a passing fad. The methodology of expert systems is definitely here to stay, and it will play an increasingly important role in future decision making. One could attempt to learn all of the aspects on one's own or turn to human experts for assistance. Anyone who has dealt with such human experts recognises that: expertise is expensive and scarce, levels of expertise can vary widely and judgement, intuition, and experience play a key role in such expertise.

As such, another alternative would be to turn to expert systems for assistance. If such systems compare favourably in terms of their knowledge and are less expensive, they should certainly be attractive and in demand, and this is one reason for the intense interest in the expert systems concept in the commercial sector. Yet another reason for the consideration of expert systems is that of competition. In most endeavours, competition with others, including firms or other countries is not uncommon. The employment of expert systems has already been shown to provide, for those using them, a competitive advantage. Thus, simply to remain competitive, the employment of expert systems may well become a necessity. In fact, this will ultimately become the major factor behind the growth and acceptance of expert systems.

The name expert systems were derived from the term knowledge-based expert systems. An expert system is a system that employs human knowledge captured in a computer to solve problems that ordinarily require human expertise. Well-designed systems imitate the reasoning processes experts use to solve specific problems. Non-experts to improve their problem-solving capabilities can use such systems. Experts as knowledgeable assistants can also use expert systems. They are used to propagate

scarce knowledge resources for improved and consistent results. Ultimately, such systems could function better than could any single human expert in making judgements in a specific, usually narrow area of expertise. This possibility may have a significant impact both on advisory professionals and on organisations and their management.

Expert Systems are computer programs that emulate the behaviour of human experts. They have proven useful in many areas from medicine to engineering design. Their greatest potential, however, lies in their ability to better manage industrial processes. They are well-suited to assist in automation, especially in automating complex procedures and controls, and in supporting computer integrated manufacturing environments (Barun, 1990).

The following sections review the use of computer systems and expert systems on quality management. It has been shown that the use of computers in quality management and quality management activities has been increasing. Because of the advances of computer capability and its technology, expert systems facilitate the applications not just in engineering applications but also in management fields, helping the managers to make management decisions.

Incorporating quality considerations of the product and process along with more traditional computer-aided tools will fully realise its potential benefits. In an integrated framework, the inspection process runs simultaneously with the actual manufacturing process. Thus the results from measurement correct the manufacturing process in real time. A framework similar to advanced numerical control serves as the logical mechanism for automating the inspection process.

Development of computer systems for quality control and management aspects can be identified as three categories: *Computer-Aided Quality Control Systems*, *Expert Systems for Quality Control Functions* and *Expert Systems for Total Quality Management*.

### 11.2.1 Expert Systems for Total Quality Management

Interest in the design and implementation of TQM programs to enhance productivity and quality has increased greatly in a wide variety of organisations. Although there is general agreement on the need of top management support for quality improvement activities, few mechanisms have existed to assist management in providing inputs into the development of such programmes. Apart from seeking help from external consultants, decision support systems with an embedded expert system assisting managers, or a managerial team, in both assessing targets for improvement and in selecting TQM tools and techniques that are appropriate for an organisation has been proposed (Franz et al. 1992).

Assessment of the current state of quality in an organisation can be accomplished by isolating the components of quality. Indicators of quality, such as drawn from the Malcolm Baldrige National Quality Award and European Quality Award are used as the indicator assessing the organisations' success in their TQM improvement processes. The choices of tools and techniques accomplishing these improvement goals are constrained by organisational resources, characteristics, and commitment to TQM. The list of potential tools and approaches to address specific organisational needs could range from CAD/CAM, Statistical Processes Control techniques to behavioural techniques such as quality circles and job enrichment.

A means is needed to facilitate management participation in setting TQM policy. Managers need to understand the nature of their quality problems and be actively involved in the determination of which quality techniques may be useful in solving the problems. The expert system provides a mechanism for both determining the current and desired state of quality in the firm, as well as providing limited information with respect to tools and techniques. The decision support component of the expert system will automate a self-assessment questionnaire that would help the decision-maker determine where improvement is most needed in the organisation. The expert system components will aid the decision-maker in choosing an appropriate quality management approach best suited to the organisation's environment and strategies.

After management responds to the assessment with respect to the desired future position of the company, scores are computed to highlight the characteristics where improvement is most needed with priorities. Analysis is then performed which recommends techniques to accomplish the improvements desired by management. The system does not provide insight into the selection of the techniques; it merely lists appropriate techniques and assesses their potential with respect to the characteristic where improvement is desired. A logic tree can be designed which demonstrates the techniques, which are particularly applicable to certain circumstances.

The expert system, which assists managers in designing TQM programmes, will enhance the quality and productivity of the organisation. A decision support and expert system would be developed to provide a means for management to understand quality problems and to explore and determine which quality techniques may be useful in improving quality. Little has been done to specifically focus on the process of assessing needs and designing TQM improvement strategies to address those needs. It provides a first step toward the development and evaluation of a TQM implementation paradigm.

Further study must combine research with anecdotal knowledge about when to apply techniques, and expand the knowledge base to include rules about resource availability, integration of implementation effort with previous training and quality activities, and interaction effects of tools, techniques and improvement goals (Franz et al. 1992).

### **11.2.2 Roadblocks of Quality Management Expert System**

Some of the tentative reasons for the slow uptake in applying expert systems in TQM are (Crossfield 1991):

- Senior management have diverted their main attention to putting TQM into place and changing organisational behaviour, attitudes and values from a

detection culture to one based on prevention. Little effort has been placed on advanced planning and prevention techniques such as expert systems.

- Senior management is not familiar with the concept of expert systems. Technical specialists who are steeped in expert system are not aware of the full scope of TQM.
- Despite the high profile which product and service quality has received, some production people still view quality as a necessary evil.
- It is generally accepted that TQM is more dependent upon people than techniques, systems and automation, and consequently some managers have minds which are relatively closed to the potential of expert systems.
- There is a somewhat misinformed view that expert systems can never be as capable as the human expert can.

### 11.2.3 Benefits of Quality Management Expert Systems

TQM is still viewed with suspicion by many people and it is no surprise that 'champions and heroes of quality' are created in organisations. The problem arises that these champions of quality are in great demand. They are overworked and always short of time and resources. TQM is very much dependent upon the quality expertise of key staff. A solution to this problem is to make the quality knowledge used by the champions available to all who may need it by way of encapsulating the expert's knowledge and storing it on a computer in the form of an expert system (Crossfield 1991).

How to integrate the concept of TQM with manufacturing concepts such as CAD, CAM, CIM, FMS, CAPM etc. is a key aspect in most engineering companies. Technical specialists and their managers see their priorities in the use of such advanced manufacturing technology and often become involved in what they perceive as the more mundane simple concept of TQM. The use of expert systems in quality may help to 'light the TQM fuses' of more engineers.

It should also be pointed out that once expert systems have been installed, their use helps to ensure effective maintenance of quality related data, procedures and systems

and, if strategically integrated with current activities, can facilitate continuous and never-ending improvement.

In summary, the benefits of making quality-related knowledge readily available by way of expert systems on a more company-wide basis, include:

- All levels of personnel can more easily access complex systems and procedures.
- More efficient use is made of experts.
- The expert's job satisfaction is increased.
- A greater adherence to company procedures.
- Employees will feel more comfortable with quality assurance procedures and make more effective use of them.
- The thought processes of people using an expert system can be analysed in some detail. This should provide some useful data in helping to design more robust procedures and systems.
- Quality assurance and related training and expertise can be offered 'on the job'.

Widespread use of PCs throughout industry has provided an ideal network for disseminating quality systems knowledge via expert systems.

#### **11.2.4 Expert System Applications in Quality Management**

Well-designed expert systems invariably help enhance quality and the automation of routine procedures that, in turn, reflect on the quality issues that are associated with every job in industry. Because most current expert systems are reactive, however, they achieve success only in a small segment of the quality control domain. With the growth in the perceived importance in manufacturing quality control and the rise of quality-oriented methods for product and process design, the current reactive orientation for expert system development must be augmented by a proactive counterpart.

Crossfield proposes that the applications of expert systems in TQM or industrial situations could be divided into 5 broad categories (Crossfield, 1991):

- generic artificial intelligence and logic programming
- generic expert system
- general expert system application
- specific expert system application
- mechanics of expert systems

The use of expert systems in *total quality management comes under the specific expert system application*. There is little reported on the use of expert systems in this field, apart from those relating to plant and equipment process control and reliability diagnostic systems.

In the past years, there has been a great interest in the use of expert systems or knowledge-based systems in a lot of applications. Research in this field and publications of articles are so much that there are a lot of applications being published. However, the publication of expert systems in TQM and business strategies has been minimal probably because it is extremely difficult to build a proper human knowledge base which involves a lot of human decisions and intervention.

The importance of quality management to business is undeniable. The details of the management process are, however, often repetitive and well defined. This makes quality management a fertile field for the emerging expert systems technology.

The stated goal of expert systems is to provide a computer assistant so that the user can act like an expert. There is, however, more to it than that. Often, even the human expert, for a variety of emotional or physical reasons, does not perform up to expert standards. The expert's logic may be clouded, his access to the usual sources of data limited, or his intuition can override his thinking. Thus, an expert system can also be a tool for the expert. This is especially true when the knowledge base is a composite of several experts.



However, caution should be exercised with regard to expectations that the expert system will be the equal of the expert. The current state of the art almost always fails to fully capture the rules, heuristics, and inferential thinking process of the human expert. The human brain is so complex and mysterious that even though the most thorough proper (knowledge engineer) and the most patient human expert cannot get it all down. Consequently, an expert system will not provide the expert solution in all cases, nor should it be expected to do so.

Put these cautionary words aside, expert systems can and do exist as an intelligent tool to assist in problem solving. Quality management involves analysis of large amounts of data, but these analysis techniques are well understood. This makes it an ideal candidate for expert systems application.

#### **11.2.5 Quality Management System Expert System Design and Implementation**

The objective of the system is *to develop a knowledge-based expert system to enable achievement of world class business performance through continuous process improvement.*

The expert system so developed would have the following objectives:

- Contribute towards ISO 9000 quality system improvement through self-evaluation process using QFD methodology.
- Help to provide the ISO 9000 quality system as a first step towards Total Quality Management continuous process improvement.
- Help in the understanding of the ISO 9000 specification.
- Help in the preparation of quality manual and instruction manuals as a step towards accreditation.
- Help in the understanding of ISO 9000 system through self-training and education.
- Help in finding proper quality tools for quality management problem and in understanding usage and self-enhancement.

- Use Quality Function Deployment (QFD) methodology for Quality Management System Evaluation.
- Include the philosophies of the Analects of Confucius incorporating this new dimension to the Western guru's TQM philosophies.
- Help understanding of quality management problems leading to the study of the philosophies of The Analects of Confucius in cultivation of individual behaviours and ethics, management of department, organisation and multinational business.
- Incorporate Sun Tzu's The Art of War strategies and framework in the strategy planning and implementing processes

### 11.3 Christian Virtues and Character

The relevant behaviours and characters of the Confucius philosophies related to the books of the New Testament of Bible were studied. The teaching of the Bible since the birth of the Jesus Christ nearly two thousands years ago has great influence on and value to people in the Western culture. **Table 11.1** shows the twenty-four relevant behaviours and characters based on the Bible that were comparable to the twenty-four behaviours and ethics based on the philosophies and teaching of Confucius. It is shown that all these behaviours and ethics in Confucian philosophy are covered by the Bible. **Table 11.2** shows the further general coverage of Confucius values and Christian virtues and characters. Some of the Christian virtues and characters that are related to Bible do not appear in Confucius philosophies. It also lists out the Christian virtues and characters together with the relevant books in the New Testament that some of them are not covered by the Confucian philosophies. Further research could take a similar direction to that contained in this thesis to examine how Christian values could be related to TQM philosophies in business and management. For a multinational society, this could be further expanded to other religious values. The hypothesis of this further research would be that religious principles should help to remove the barriers to achieve a TQM environment in business and management to ultimately achieve world-class performance excellence.

Table 11.1 Shows The Relationships of Confucius Values and Christian Virtues and Characters.

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- Harmonize family, Rule the States and Govern Country.
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- B Trust
- C Moral Conduct
- D Wisdom
- E Words & Deeds
- F Benevolent
- G Righteousness
- H Courtesy
- I Question
- J Forgive
- K Filial Piety
- L Sincerity
- M Thrift
- N Reception
- O Respect
- P Govern
- Q Communication
- R Loyal
- S Team Effort
- T Reward & Punishment
- U Integrity
- V Honest & Clean
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The Analects of Confucius: Reference for various Books

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C Moral Conduct	C 10	A 17	E 22	C 25	C 1	C 4	A 21	C 11	A 22	G 11	A 21	C 21	C 22	C 8	C 8	E 5	C 2	E 7	C 2	
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E Words & Deeds	E 7	D 9	H 4	E 9	C 9	C 11	B 24	C 19	C 6	G 16	A 24	E 12	F 19	C 13	C 16	G 11	C 6	P 1	C 23	
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G Righteousness	G 13	E 13	H 6	E 23	C 15	C 26	C 5	E 7	C 10	H 3	C 8	F 1	G 18	C 17	C 19	I 10	C 17	P 9	C 25	
H Courtesy	H 9	E 18	H 8	F 2	C 16	C 27	C 6	F 10	C 17	H 4	C 15	F 2	I 10	C 18	C 24	L 8	C 18	P 10	E 22	
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The Analects of Confucius Reference for various books

Cultivation of Behaviours and Ethic Harmonize Family, Rule States and Govern Country.	Book 1	Book 2	Book 3	Book 4	Book 5	Book 6	Book 7	Book 8	Book 9	Book 10	Book 11	Book 12	Book 13	Book 14	Book 15	Book 16	Book 17	Book 18	Book 19	Book 20	
A Learn	A 1	A 2		A 8	A 22	A 2	A 2	A 17	A 7		A 6	A 15	A 5	A 25	A 2	A 9	A 8				
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H Courtesy	H 9	H 23	H 4		H 13	H 23	H 9	H 2	H 9	H 2	H 1						H 4				
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S Team Effort	S 4				S 15				S 11	S 26							
T Reward & Punishment																	
U Integrity	U 14				U 16												
V Honest & Clean					V 3						V 3	V 1	V 24				
W Observe Regulation											V 12						
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## **Sun Tsu's The Art of War**

Initial Estimation Book Number 1

Waging War Book Number 2

Strategic Attacks Book Number 3

Disposition of the Army Book Number 4

Forces Book Number 5

Opportunism Book Number 6

Maneuvers Book Number 7

The Nine Variations Book Number 8

Marches Book Number 9

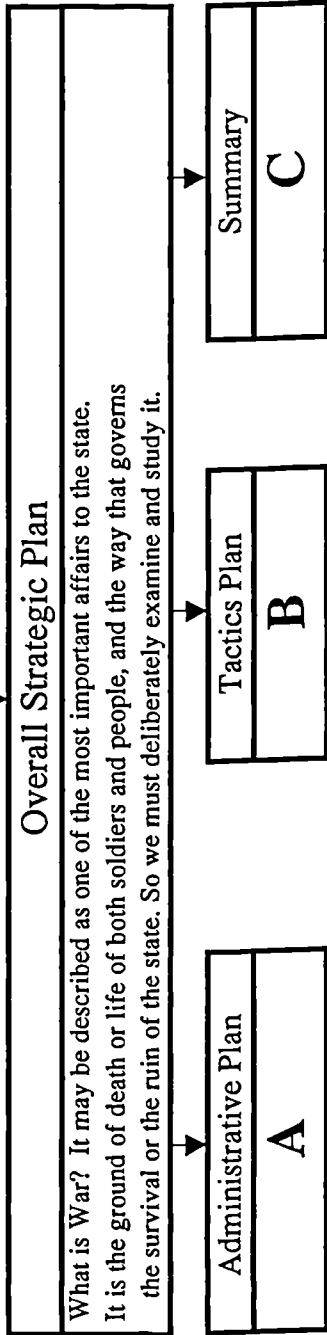
Terrain Book Number 10

The Nine Types of Battlegrounds Book No. 11

Attacking with fire Book Number 12

Espionage Book Number 13

**Sun Tzu's The Art of War  
Initial Estimation Book Number 1**



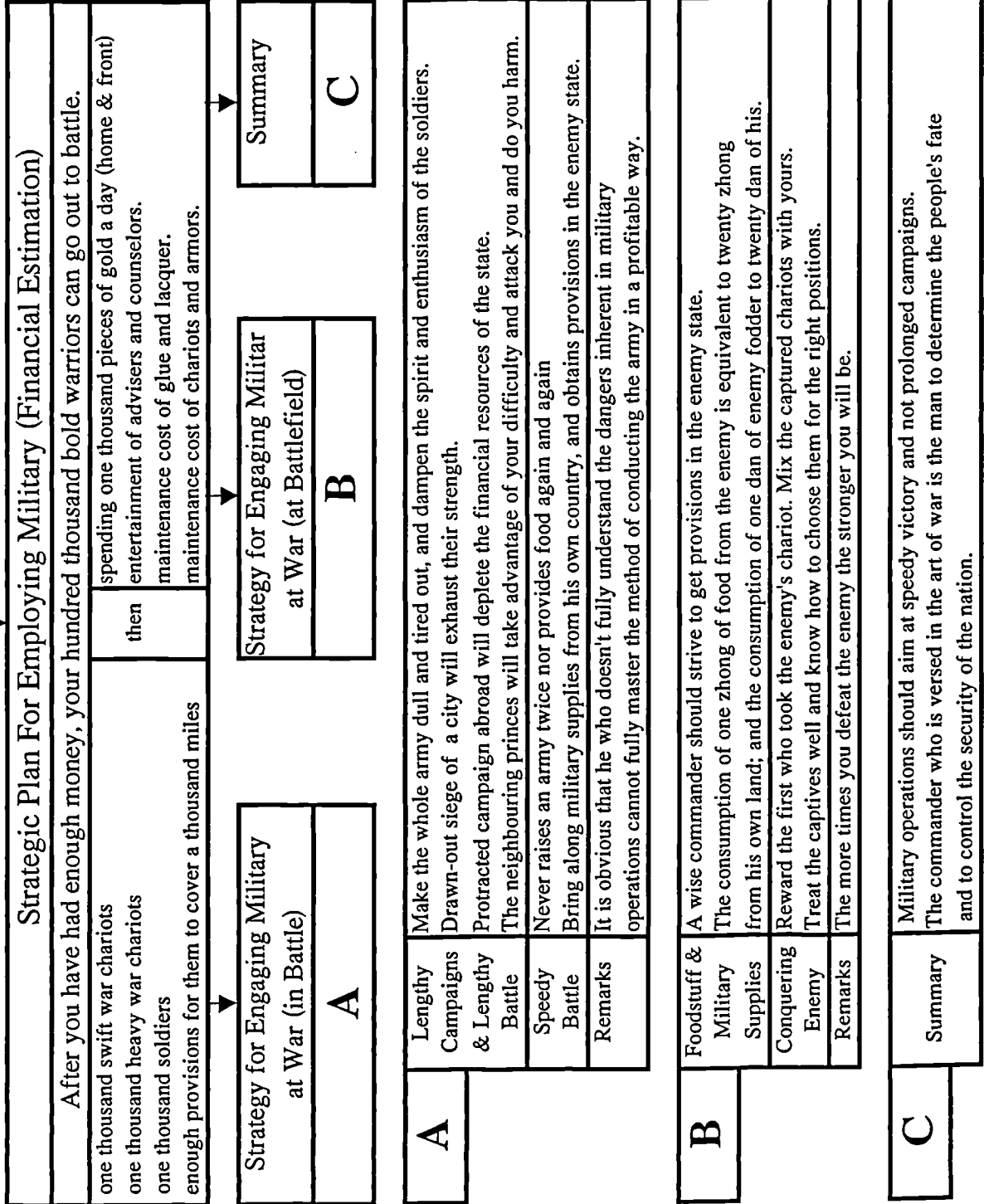
<b>A</b>			<p>The way may make the people in complete accord with their ruler in their goals and cause them to share weal and woe fearlessly during the war.</p> <p>The heaven means day and night, cold and heat, and the sequence of the seasons.</p> <p>Whether the battleground is distant or near ?</p> <p>Whether the terrain is strategically difficult or secure, vast or narrow ?</p> <p>Whether conditions are favourable or unfavourable to the survival ?</p> <p>The general or commander may be one who is a high-ranking military officer with five virtues: intelligence, trustworthiness, benevolence, courage and sternness.</p> <p>The law refers to the military establishment, the assignment of officers at all levels, and the allocation and use of military supplies.</p>
	Way		
	Heaven		
Five Factors	Earth		
	General		
	Law		
Seven Comparative Evaluations			<p>Which ruler is the one who is popular with the people?</p> <p>Which general is the one who has ability?</p> <p>Which side has the more favourable climate and the advantageous terrain?</p> <p>Whose discipline is more effective?</p> <p>Which side possesses military superiority?</p> <p>Which side has soldiers and officers that are better trained?</p> <p>Whose system of rewards and punishments is fairer and clearer?</p>

<b>A</b> Continue	Appointment of People	The general who adopts my schemes or stratagems will surely win while commanding at the front, and will surely retain his general's position. If he does not adopt my advice, he will certainly suffer defeat at the front, and will not keep his post.
	War Time Practices	The general, having paid attention to my useful schemes or stratagems, must establish his force which will help him realize his plan. What is force? It means that a general should formulate his tactics according to what is expedient.

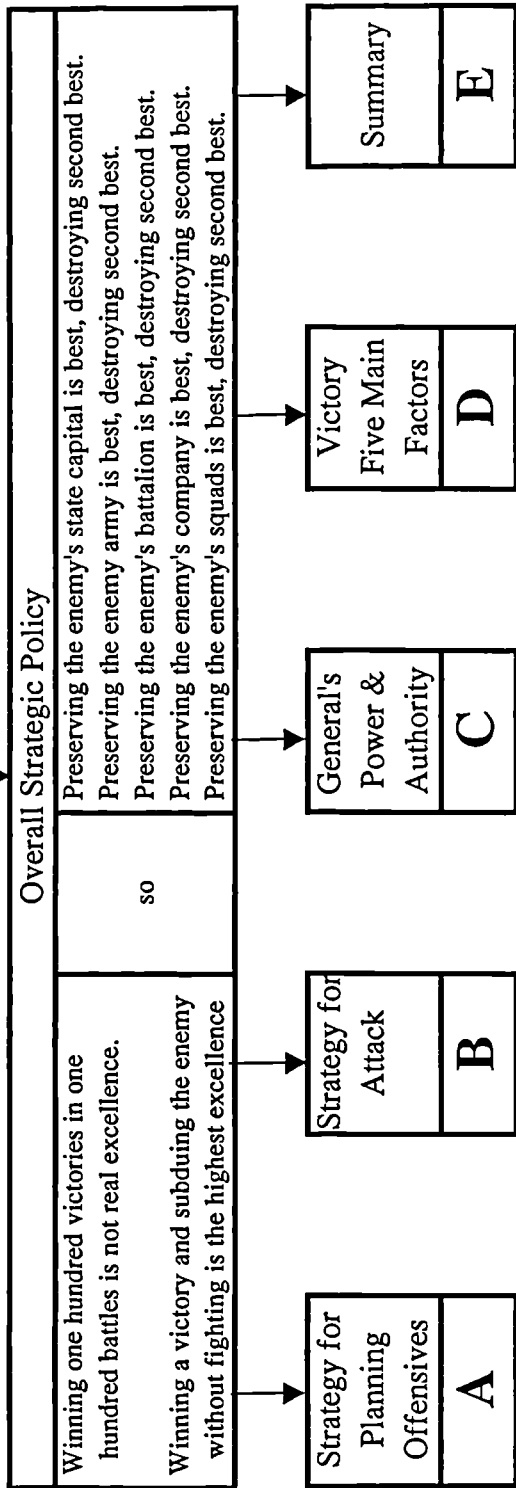
<b>B</b>	Deceive your enemy if they are:	Capable Active Nearby Far	Competent should pretend to be incompetent. Ready to use military force should pretend to delay action. Troops draw near should make it seem as if his troop were still far away. Troops far away should let the enemy believe he is drawing in.
	Seize opportunity when your enemy is:	Enticeable Disordered Substantial Strong Angry Deferent Rested United	Offer a bait to allure the enemy who covets small advantages. Capture the enemy when he is in disorder. Take precautions against the enemy who has good preparation and strength. Evade for a time the enemy while he is strong. Enrage the enemy who is hot-tempered. Pretend to be weak in order to make the enemy arrogant or haughty. Wear the enemy out if he has taken a good rest. Set one party against another within the enemy if they are united.
	Attack your enemy when	Unprepared Unexpected	Understand how to attack where the enemy is unprepared. Hit when it is unexpected.

<b>C</b>	Be Victorious or Defeated?	Victorious Factors Defeated Factors	Greater advantage to win to make military decisions in the temple even before fighting a battle. Less advantage if he makes no military decision in the temple before doing battle.
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Sun Tzu's The Art of War  
Waging War Book Number 2



**Sun Tzu's The Art of War  
Strategic Attacks Book Number 3**



<b>A</b>	Principles	The principles of winning victories by way of stratagem is to triumph without wearing out the troop. Gain complete victory of all-under-heaven
	Strategy for Planning Offensives	The best policy for the military operations is to gain victory by means of strategy. Next best policy is to disintegrate the enemy's alliances by means of diplomacy.
	Strategy for Planning Offensives	Well versed in military operations makes the enemy surrender without fighting. Captures the enemy's city without storming it. Destroys the enemy's state without protracted military operations

<b>B</b>	Principles	If the weaker battles on stubbornly without taking its strengths into account, it will surely be conquered by the stronger.
	Strategy for Attack (enemy)	The inferior way is to launch an attack onto the enemy. Surround the enemy when your strength is ten times his; Storm the enemy when your strength is five times. Attack the enemy from two sides when you are twice as strong. Resist him if you are equal to your enemy. Know the way of retreat if you are less strong; Avoid the enemy if you are much weaker.

<b>B</b>	Principles	If the commander cannot control his impatience and order his soldiers to swarm up the city wall like ants, the results will be that one-third of them will be killed while the city remains un-taken. This is the fact, the calamity of attacking cities.	
	Strategy for Attack (city)	The worse way is to storm cities and seize territory.	Make mantels and shielded vehicles ready. Prepare the necessary arms and equipment. Pile up earthen mounds against the city walls.

<b>C</b>	Principle	The general assists the ruler in governing a nation. If he assists the ruler to govern the nation well, the nation will surely be powerful; If he does not assist the ruler to govern the nation well, it will certainly be weak.	
	A ruler may bring great misfortune upon his army in three ways.	Entangling the army	If he orders an advance not knowing that his army cannot go forward, or orders a retreat while being ignorant that his army cannot fall back, his orders will, of course, tie down the army.
		Confusing the army	If he interferes with the administration of the army without understanding the internal affairs of it, his action will, of course, baffle his officers and soldiers.
		Raising doubts in the army	When he interferes with the direction of the army without knowing the principles of military stratagem, it will, of course, raise doubts and misgivings in the minds of the officers and soldiers
	Conclusion	The princes will take the advantage of it and rise in revolt. This is what is meant by saying, throwing his own army into confusion and paving the way for the enemy's victory.	

<b>D</b>	Victory Five Main Factors	One who knows when he may fight and when he may not will win. One who knows how to adopt the appropriate military art according to the number of his own troops and his enemy's will win. One whose general and soldiers can fight with one heart and mind will win. One who is well prepared while his enemy is unprepared will win. One who is a wise and able general and whom the sovereign does not interfere with will win.
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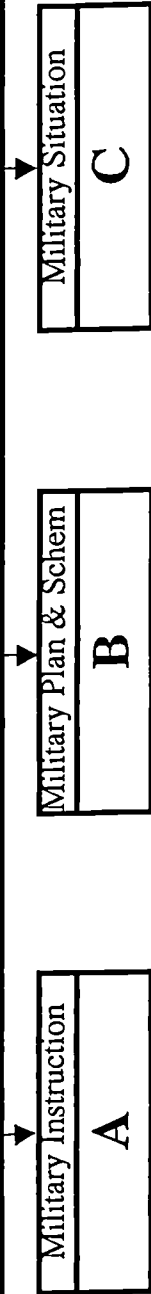
<b>E</b>	Summary	If you know both the enemy and yourself, you will fight a hundred battles without danger of defeat. If you are ignorant of the enemy but only know yourself, your chances of winning and losing are equal. If you know neither the enemy nor yourself, you will certainly be defeated in every battle.
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**Sun Tzu's The Art of War  
Disposition of the Army Book Number 4**

**Strategy For Military Disposition**

The skilful warriors first free themselves from defeat by the enemy  
Await opportunities to destroy the enemy.

Invincibility depends on one's initiative.  
To defeat the enemy depends on the enemy's errors.



<b>A</b>	Visible Battle	Defensive	When there is no chance of winning, assume a defensive position.
	Invisible battle	Offensive	When there is a chance of victory, launch an attack.
		Principle of Excellence	A foresight of victory that does not exceed ordinary people's common sense, is not the acme of excellence.
Conclusion	The acme of excellence	Those skilled in war and win victories have neither the reputation for their wisdom nor the merit for their valour.	Lifting a very light hair is not the one with unusual strength. Seeing both the sun and the moon is not the one with keen sight. Hearing a thunderclap is not the one with acute hearing. Skilled in war always defeat the enemy that could be conquered. They have planned for the certainty of their victory. The enemy is already destined to defeat.
	He who is skilled in war always finds himself in an invincible position and, at the same time, he will be sure to miss no military opportunities to conquer the enemy.	So, for this reason	The victorious army first realizes their conditions for victory and then seeks to engage in battle. The vanquished army fights first, then seek victory.

**B**

How to analyse and assess the terrain according to the physical features of a battlefield.  
How to calculate the manpower and material resources of both his side and the enemy according to the topographic analysis and survey.  
How to calculate the numerical strengths of both sides according to the manpower and material resources.  
How to compare the military strengths of his side and the enemy according to the numerical strength.  
How to estimate the outcome, win or lose, according to the military strengths of the opposing sides.

**C**

Victory  
A victorious army is like one *yi* balanced against one *zhu*. A general who will certainly win commands his men to fight with a force like the bursting of pent-up waters pouring down from a stream ten thousand feet high.  
This is the disposition of actual military strength.

Defeat  
A defeated army is like one *zhu* balanced against one *yi*.



Sun Tzu's The Art of War  
Forces Book Number 5

Basic Principle		
The general should adopt the normal way of confronting the enemy, while using special tactics to take the enemy by surprise.		
Managing a big army is in principle the same as a small one, Directing a large army is the same as directing a small troop, What makes the whole army under attack not suffer defeat? Troops thrown against the enemy like a grindstone against eggs,	It is a matter of	organisation. strict and impartial command. adopting normal and special tactics. staying clear of the enemy's main forces and striking at his weak points.

Art of Battle  
A

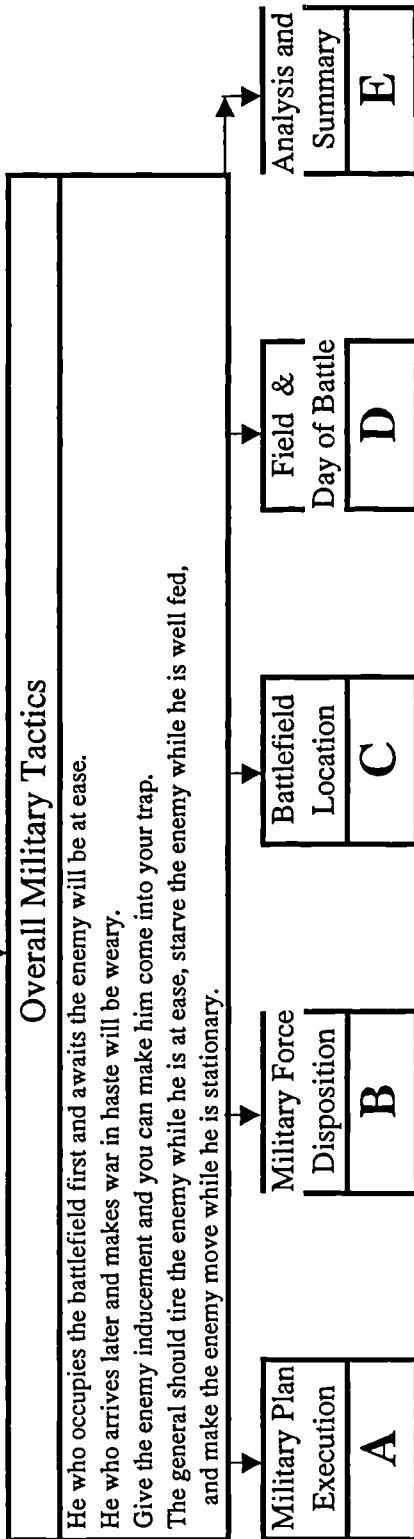
warfare Implementatio  
B

A	Principle	He who is adept in such tactics can apply them as ways as infinite as heaven and earth and as the never-ending flow of rivers. They terminate, but soon begin again, like the sun and moon in motion; they die away, but then regenerate like the seasons in sequence. Their varied combinations bring about melodies more pleasing and wonderful than ever heard. Their variations and blending produce colours more beautiful and splendid than ever seen. Their mixture yields flavours more delicious and savoury than ever tasted. In the tumult of battle your army should stay clam. In the chaos of war, where there is no sense of direction, your men should appear to be milling about in circles but remain invulnerable.
	Five musical notes Five basic colours Five cardinal tastes then	
	Power ( <i>shih</i> )	A torrent that flows swiftly can float heavy boulders, It is because of the strong momentum of the water. A general who is skilled in war can exploit his own vantage position and launch a swift and sharp attack.
	Constraints	A hawk that flies as quickly as it strikes can destroy its prey. It is because of the timeless and speediness of its strike. His potential is like a crossbow that is fully drawn, and his swiftness is like a shaft that is shot off.

<b>A</b>	Disorder comes from order Cowardice stems from courage Weakness is born of strength	He can lure the enemy with something profitable, which the enemy is certain to take. He can drive the enemy about with small advantages and awaits the enemy in strength.
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<b>B</b>	Principle	The general who is skilled in war always capitalizes on the situation of war and never makes excessive demand on his subordinates.
	Situation	Therefore such a general can select the right men and fully exploit the favourable situation. He who is skilled in exploiting the situation directs his men in battles like rolling logs or rocks.
	Resulting	Rocks will remain unmoved if the ground is flat. Rocks will roll forward if the ground is slanting. Rocks will stop there if they are square. Rocks will roll forward if they are round. The force of the skilful general is just like the momentum of a round rock rolling down a mountain of ten thousands feet high. This is the meaning of potential.

Sun Tzu's The Art of War  
Opportunism Book Number 6



<b>A</b>	Principles	Appear at the place to which the enemy won't come; attack a place where the enemy does not expect you.
	Travel	If you can lead your troops to march a thousand <i>li</i> and without fatigue, it is because you march in the area where the enemy has not set up defenses.
	Attack	That you are certain to take what you attack is because the enemy cannot fortify it.
	Defense	The enemy does not know where and how to defend.
	Advance	That you are certain of success in holding what you defend is because the enemy cannot attack it.
	Retreat	The enemy does not know where and how to attack.
		The offensive one takes can be so strong that the enemy cannot defend just because one strikes at the enemy's weak point.
		One can withdraw without being overtaken by the enemy just because one moves so swiftly that the enemy cannot pursue.
	Conclusions	If we intend to fight, the enemy, though holding fast to his position with ramparts high and ditches deep, is compelled to fight with us because we attack where he must succor. If we do not intend to fight with him, even though we set up little defense, the enemy will not intrude upon us because we divert him from going where he wishes.

<b>B</b>	Principle	If we expose the enemy's disposition and hide our, we can concentrate our troops and divide the enemy's forces.
	Conclusions	We are ten to one when we launch an attack on him at one place, naturally it will be easy enough for us to deal with, because the enemy there is small and weak.

<b>C</b>	Principles	The spot of our forces intend to attack must not be known to the enemy. In this way, he must take precautions at many places against our attack, because he does not understand where we shall strike	
	Actual Situations	If the enemy takes precautions in the front, his rear will be weak; If he takes precautions in the rear, his front will be fragile. If his left gets strengthened, his right will be weakened; If his right is well prepared, his left will be easily destroyed	If he strengthens everywhere, he will be weak everywhere
	Conclusions	One who has few must take precautions against possible attacks everywhere; one who has many compels the enemy to prepare against his attacks.	

<b>D</b>	Know well	If a general knows both the place and time of a battle to come,	He can lead his troops to go even a thousand <i>li</i> away for a decisive battle.
	Do not Know well	If he knows neither the place nor the time of a battle to come,	His left wing cannot help his right, and his right wing cannot save his left; The troop in the front cannot turn back to help the rear; and the rear cannot go forward to relieve the front. Let alone look after the more distant portions of the troops, tens of <i>li</i> apart and even the nearest several <i>li</i> away.

<b>E</b>	Situation Analysis	If you consider and analyse the enemy's situation and his plan to battle, you can have a clear understanding of his chances of success. If you agitate the enemy, you can know the patterns of his attack and defense. If you lure the enemy, you can find out his vulnerable points. If you count up the number of the enemy's soldiers and horses, you can know his strengths and inadequacies.	
	Situation Investigation	The highest art of the military part of deceiving the enemy is to conceal your dispositions. In this way, the most penetrating spies of the enemy cannot pry in, even the wise man may not conspire against you. Even if you make public that you have won victory by taking appropriate tactics in conformity to the enemy's changing situation, they are still unable to comprehend it. Though everyone knows the tactics by which you have won victory, yet they are unable to know how it was applied to defeat the enemy.	
	Conclusions	Therefore the way to defeat the enemy should not follow the beaten track, but change constantly according to the enemy's changing situation.	

<p><b>F</b></p> <p>Continue</p>	<p>Example of Military tactics</p>	<p>Military tactics are like flowing water.</p>	<p>Flowing water always moves from high to low. Whereas the course of flowing water is decided by the different landforms. Water never flows in the same way.</p>
	<p>Flexibility &amp; Tactics</p>	<p>Military tactics always avoid the enemy's strong points and attack his weak points. The way to win victory in a battle is decided by altering the tactics according to the enemy's changing situation.</p>	
<p>Changing Situations</p>	<p>Wuxing Seasons Days Moon</p>	<p>It is just like Wuxing (the five elements), of which none is forever dominant, and the four seasons, of which none can last forever; and the days, which are, sometimes long and sometimes short; and the moon, which sometimes waxes and sometimes wanes.</p>	
<p>Victory Situation</p>	<p>Whoever can win victory by taking appropriate tactics according to the enemy's situation is one who directs military operations with great skill.</p>		

**Sun Tzu's The Art of War  
Maneuvers Book Number 7**

Essential Strategies	
The general receives his commands from the sovereign. He assembles soldiers to form units. He mobilizes them to confront the enemy.	During the whole process nothing is more difficult than to fight for a favourable position with the enemy.
Essential Tactics	
Make a circuitous route direct. Turn disadvantage into advantage.	He can deceive the enemy by taking a devious route and tempt the enemy with a bait.
Factors Affecting Military Combat <b>A</b>	Military Combat For Advantages <b>B</b>
Military Combat Targets <b>C</b>	Military Taboo <b>D</b>

<b>A</b>	If you strive for a favourable position in battle, bringing along the whole impedimenta, naturally, you will be slowed down. If you leave the impedimenta behind, naturally, it will be lost. The army will be defeated by the enemy if it has no impedimenta, food and military provisions.
Armament	After running a hundred <i>li</i> , the main generals of the army will be captured. In this way, only one-tenth of the army will arrive on time.
Armor and equipment	If they run fifty <i>li</i> to pursue a favourable position, the general of the vanguards will suffer setbacks, and only half of the army will arrive there on time.
Alliance	If they run thirty <i>li</i> to fight for a good position, only two-thirds will arrive.
Topography	A commander who does not understand the plots and schemes of the princes cannot enter into alliances with them.
Guide	He who is not familiar with different topographical features of mountains and forests, hazardous defiles, marshes and swamps cannot conduct the march of an army. He who does not hire local guides cannot gain a favourable position for battle.

<b>B</b>	Principle	<p>You may gain victory with military stratagem, you should take action when conditions are favourable, and you may divide or concentrate the army according to circumstances.</p> <p>You should be as swift as strong wind while taking action.</p> <p>You should be as stable as silent forests which the wind cannot shake while you move slowly.</p> <p>You should be as fierce and violent as raging flames while raiding the enemy's state.</p> <p>You should be as firm as high mountains while being stationed there.</p> <p>You should be as inscrutable as something behind the clouds.</p> <p>You should strike as suddenly as thunderclap.</p> <p>You must divide your forces and plunder the enemy's countryside.</p> <p>You must separate them for the defense of the newly captured territory.</p> <p>You must weigh the pros and cons before you move.</p>
	Method for employing large numbers	<p>Use gongs and drums</p> <p>Use flags and banners</p> <p>When the soldiers have been unified, the courageous cannot advance alone, and the cowardly cannot retreat by himself.</p>

<b>C</b>	Morale (way to manipulate chi)	<p>Deflate the enemy's fighting spirit and shake the general's morale.</p> <p>A certain period later, it will decline and slacken.</p> <p>In the final stages of war it will become feeble.</p> <p>The soldiers are in no mood to fight.</p>	<p>Avoid the enemy when his morale is high and irresistible.</p> <p>Attack him when he is slack, tired and reluctant to fight.</p>	Master the soldier's morale.
	Control the Mind	<p>Normally, at the beginning of war the spirit of the enemy is keen and irresistible.</p>	<p>Keep a highly disciplined army to fight the confused enemy army.</p>	
	Control Strength	<p>Takes his troops close to the battlefield to wait for the enemy still coming from afar.</p> <p>Leads his troops that has had a full rest against the exhausted enemy.</p> <p>Brings his well-fed troops upon the enemy soldiers that are hungry.</p>	<p>Confront the clamorous enemy troops with his own troops in serenity.</p>	Has good control of military strength.

<b>D</b>	Things Never Do	<p>The skilful commander never meets a head-on enemy that lines up in good order with banners high, nor attacks an enemy with battle information strong and impressive.</p> <p>This shows that he has a clear understanding of the flexible use of tactics.</p> <p>Never launch an upward attack on the enemy who occupies high ground; nor meet the enemy head-on when there are hills backing him; nor follow on his heels in hot pursuit when he pretends to flee; nor attack troops that are fresh and strong.</p> <p>Never swallow a bait offered by the enemy, nor thwart the enemy that withdraws from the front.</p> <p>To a surrounded enemy you should leave a way for his escape, and do not press too hard the enemy that is in a desperate corner.</p>

**Sun Tzu's The Art of War  
The Nine Variations Book Number 8**

<b>The Military Troop Administration</b>	
<b>Clear understanding of their real values</b>	
If he does not have a clear understanding of their real values, he cannot use a territory to his advantage.	
In leading his troops, do not encamp or station where it is difficult for the army to pass through; ally with the local princes where the highway extends in all directions.	
Do not linger where it is uninhabitable; venture into an enclosed region with shrewdness and stratagem.	
Fight a desperate battle where there is no way to advance or retreat.	
<b>Know the Tactical Variables</b>	
If a general does not know the tactical variables, he will not be able to bring the soldiers' fighting capacity into play.	
There are some roads which should not be followed; some enemy troops which should not be attacked.	
There are some cities which should not be captured, some territories which should not be seized.	
Some orders from the sovereign which need not be obeyed.	
<b>Things Unexpected</b>	
Do not rely on the likelihood of the enemy's not coming	But on your own readiness to meet him.
Do not expect that the enemy may not launch an attack	But count on the fact that has made yourself invincible.

**A. Favourable and Unfavourable Factors**

Principles	A wise general must give his consideration to both favourable and unfavourable factors Only then can he succeed in his plans. Only then can he resolve the difficulties.
All Factors Consideration	If you want to subdue the hostile princes, threaten them with what they fear most. If you want to make them do what you desire, trouble them with the busy work. If you want to lead the enemy by the nose, give them all advantages.

**B. Fatal Weakness of General**

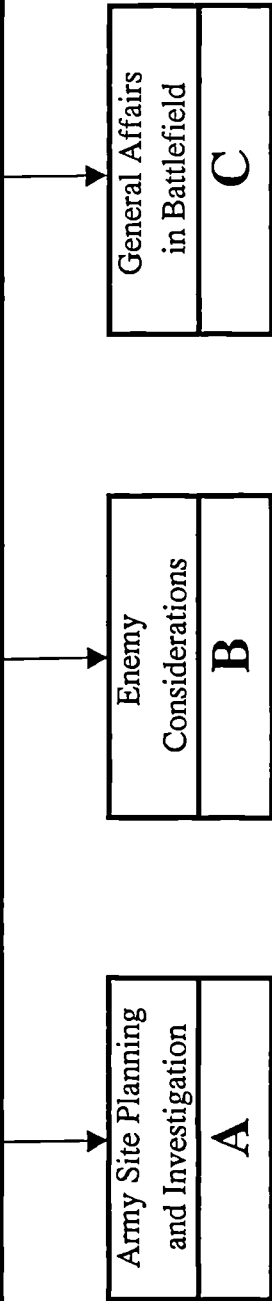
Principles	These five fatal weaknesses are all the general's faults which will be ruinous to military operations. The destruction of the whole army and the slaughter of the commands are the inevitable results of these five fatal weaknesses. Therefore generals must not treat them lightly.
Five Fatal Weaknesses of General	He who is brave but not resourceful and only knows how to put a desperate fight will easily be killed. He who is cowardly on the eve of a battle will easily be captured. He who is quick-tempered will easily be provoked into rash moves. He who has too delicate a sense of honour is liable to be shamed and driven to reckless action. He who is too benevolent and loves his people is liable to become hesitant and passive.



**Sun Tzu's The Art of War  
Marches Book Number 9**

**Employing Troop Strategies**

Having more soldiers in war does not give absolute superiority.  
 Never advance recklessly by sheer force, but concentrate your troops through a correct assessment of the enemy's disposition and you will defeat the enemy.  
 He who lacks careful thought and strategy and underestimates the enemy will surely be captured by the opponent.



<b>A</b>	<p>Mountains</p> <p>Stay near the valleys when going through mountains.                  Select a place on high ground facing the sunlight for the military camps.                  Do not ascend to fight a battle on the ground.</p>
River	<p>After crossing a river you must stay far away from it.                  If the enemy attacks from across the river, do not meet him in the water.                  Instead, it is advantageous to allow half of the enemy's troops to get across and then strike them.                  If you wish to fight with the enemy, do not go to meet him near a river.                  Instead, select a place on high ground facing the sunlight for the camps and never encamp in the lower reaches of a river.</p>
Salt Marshes	<p>Be sure to cross salt marshes quickly with no delay.                  On encountering the enemy's troops in a salt marsh, keep to those places with plenty of grass with trees to the rear.</p>
Plains	<p>Be sure to select an easily accessible place on level ground to pitch camps, with heights to the right and rear.                  The low ground is in front and the high ground behind.</p>
Hygiene	<p>All commanders prefer to station their troops on high ground rather than on low land, in the sunlight rather than in the shade.                  Where food crops can grow and the ground is protected.</p>

A	Continue	<p>When you encounter these dangerous situations, never approach them but avert them quickly.</p> <p>A deep ravine with a violent torrent;</p> <p>A deep gully with dangerous cliffs around;</p> <p>A hemmed-in position as perilous as a prison where it is easy to enter it but difficult to get out;</p> <p>A position which is overgrown with grass and thickets;</p> <p>A low-lying marshy land a narrow pass between two precipitous mountains.</p> <p>Keep away from these positions and let the enemy approach them;</p> <p>face them and cause the enemy to put his back against them.</p> <p>If you find near your camp dangerous defiles, low-lying land overgrown with reeds, or forested mountains with dense tangled undergrowth, you must have a thorough search to see.</p> <p>If you find hills or dikes, you should station your troops on the sunny side, with the hills or dikes at your back.</p> <p>If heavy rain falls in the upper reaches of a river and forms torrents rushing down to the lower course, never cross the river but wait until the flood subsides.</p>
	Special Ground	

B	Terrain	<p>If the enemy's troops are near your camps and yet they remain composed, it is because their position is advantageous to them.</p> <p>If they are far away from you and yet dare to come and challenge you to battle, it is because they want to seduce you to make an advance.</p> <p>If the enemy stations his troops in a convenient place, it is because there are practical advantages in doing so.</p> <p>When you find the trees moving, the enemy is advancing towards you.</p> <p>When you find a lot of obstacles hidden among the undergrowth, you know that is the enemy's deception.</p> <p>Birds rising in fright shows there are troops in ambush.</p> <p>Frightened animals scurrying about is a sign of the enemy's imminent attack.</p> <p>If the enemy's troops come angrily to meet you and confront yours for a long time, neither fighting nor retreating, you must watch cautiously what they are going to do.</p> <p>When you find the enemy's soldiers leaning on their weapons, you can reason that they have been famished.</p> <p>When you find the enemy's soldiers drink the water they draw before carrying it to the camp, it means that they have been suffering from thirst.</p> <p>When the enemy sees some profit but does not try to obtain it, it is because he has been completely exhausted.</p> <p>If the enemy sends a messenger to express his thanks in a mild tone, it indicates that the enemy wishes for a truce.</p>
	Enemy's position	<p>Clouds of dust gushing out in high straight columns tells you that the enemy's chariots are approaching.</p> <p>When the dust stay low and is widespread, it is a sign that the enemy's infantry is drawing near.</p> <p>But if the dust is scattered around, it shows that the enemy is cutting firewood.</p> <p>When the dust is low and small and rises intermittently, it indicates that the enemy is going to pitch camp.</p>
	Dust	

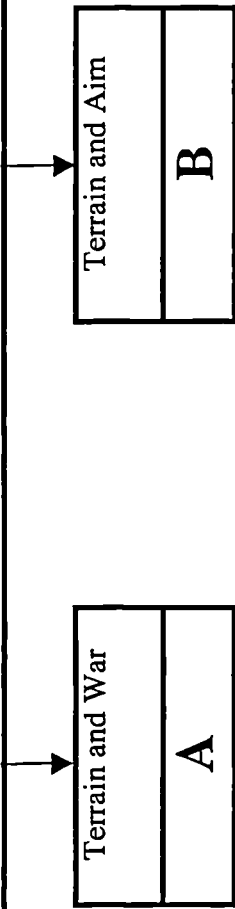
<b>B</b> Continue	Arm rep	<p>When the enemy's messenger speaks humbly while his war preparations continue, the enemy is going to advance.</p> <p>When the enemy speaks uncompromisingly and threatens to advance, he is going to retreat.</p> <p>When the enemy asks for a truce without advance appointment, it means that he must have been plotting.</p> <p>Where birds congregate it is empty. If the enemy cries out at night, they are afraid.</p> <p>If the army is turbulent, the general lacks severity.</p>
	Disorder Troops and Defeated Army	<p>When birds wheel above the enemy's campsite, it suggests that the camp must be unoccupied and the enemy has fled.</p> <p>Clamour from the enemy's camp at night shows that enemy's troops are terrified and insecure.</p> <p>Disturbance in the enemy's camp means his generals have lost their prestige and authority.</p> <p>When banners and flags are shifted about, confusion must have appeared in the enemy's camp.</p> <p>When lower officers become irritable, they have been weary of war.</p> <p>If the enemy feeds his horses with grain, kills beast of draught as food for the soldiers, destroy his cooking utensils, and shows no intention to return to the camp, that is to say, he has already determined to fight to death.</p> <p>One who frequently imposes punishments is in great difficulty.</p> <p>One who is at first excessively brutal and then fears the masses is the pinnacle of stupidity.</p> <p>When soldiers gather together in small groups and complain in a murmur, it betokens that the general has lost their support.</p> <p>A commander who rewards his soldiers too often is in a predicament.</p> <p>He who punishes his soldiers too frequently is in serious distress.</p> <p>If he treats his soldiers violently at first and then fears that they will betray him, he is extremely unintelligent.</p>

<b>C</b>	Battlefield General Affairs	<p>When soldiers are rashly punished before they have grown attached to you, they will not obey you .</p> <p>Such troops are naturally very difficult for you to command.</p> <p>If the soldiers have become attached to you, but you exercise no strict and impartial discipline, you still cannot command them to fight.</p> <p>You should command your troops with civility and humanity, unify and control them with martial discipline, and you will be invincible.</p> <p>If orders are strictly observed to discipline and instruct the troops, the soldiers will be obedient. Otherwise they will be disobedient.</p> <p>If orders are observed constantly and conscientiously, both the commander and the soldiers will benefit and trust each other.</p>
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Sun Tzu's The Art of War  
Terrain Book Number 10

**Overall Strategy**

So a general who is skilled in military operations moves his troops without losing his direction and purpose and acts with unlimited resources and adaptations.  
Know both the enemy and yourself and you will win victory with no danger;  
know both weather and geographical conditions and you will be ever-victorious.



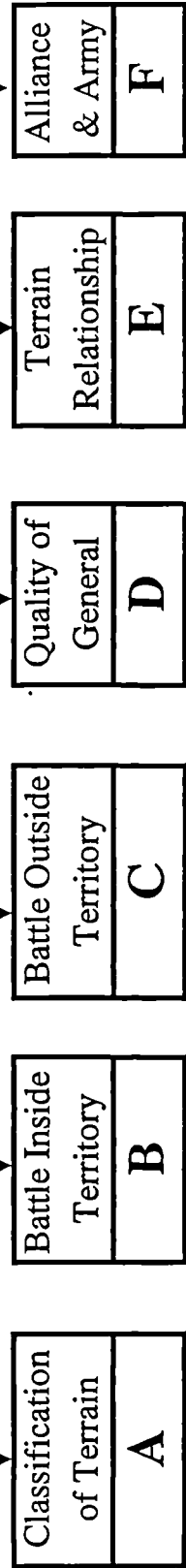
<b>A</b>	<p><b>Accessible</b> You should first take high and sunny positions and keep your supply routes unimpeded. This is convenient for you to fight with the enemy.</p> <p><b>Suspended</b> In such terrain you make a sally if the enemy is unprepared, and you will defeat him. If the enemy is fully prepared for your coming and you launch an attack, you may not defeat him, and you will have a difficult time getting back. This is the advantage.</p> <p><b>Stalemated</b> In such terrain even if the enemy offers you an attractive bait, do not make a sally, but pretend to retreat. When his troops are halfway out in pursuit of you, you may strike them. This is the advantage.</p> <p><b>Constricted</b> You should block the narrow passes with strong garrisons and wait for the enemy there. If the enemy has taken it first and blocked these narrow passes, you should not make a sally. If the enemy has not blocked them, you may pursue him.</p> <p><b>Precipitous</b> You should take a high position on the sunny side to wait for the coming enemy.</p> <p><b>Expansive</b> If the enemy races to control it, you should lead your troops away, and do not make a sally.</p> <p><b>Conclusions</b> If the enemy stations his troops on a distant terrain and his strength matches yours, it is certainly not easy to provoke a battle. Therefore it is to your disadvantage to sally. These, then, are the ways to take advantage of six different types of terrain to fight. The generals have the highest responsibility to inquire into them carefully.</p>
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<b>B</b>	Principles	<p>Now these six are not disasters brought about by Heaven and Earth but by the general's errors.          Now these six are the Tao of defeat.          Any general who undertakes responsibility for command cannot but investigate them.</p>
Six types of ill-fated	<p>Flight          Lax          Sinking</p>	<p>When conditions and military strengths are equal between you and your enemy, if your army has to fight one ten times its size, the result is your flight.          When soldiers are brave and skilled, but officers are weak and incompetent, the whole army will be lax in discipline.          When officers are valiant and competent but soldiers are weak and out of training, the army will be bogged down.</p>
Undisciplined	Disorderly Strength	<p>When the commander is weak, incompetent and fails to command respect, or when officers and soldiers behave in an undisciplined way, it is because of the lacking of proper training and clear instructions.          When military formations are disorderly, the army is in serious disorganisation.          If a commander fails to estimate the enemy's strength, not to use a small force against a large army, fights the strong enemy with his weak troops and at the same time does not select crack units as vanguards, the result is rout.</p>
Consideration	Terrain is an important aid to a commander in military operations.	
Tao of the Superior General	<p>Correctly estimating the enemy's situation, creating conditions to win.          Carefully calculating the dangerous grounds and distances are the basic duties of a wise commander.</p>	
Tao of Warfare	<p>If the light of the prevailing situation, fighting is sure to result in victory, a wise commander will decide to fight even if the sovereign tells him not to.          If the situation points to defeat, he will decide not to fight even if the sovereign orders him to.</p>	
State Treasure	<p>A great commander advances, without seeking personal fame and gain, retreats without shirking responsibility.          Aims at protecting the safety of the people and promotes the interests of the sovereign.          Such a commander is a gem of the state.</p>	
Others Considerations	<p>If a general cares for his men as he does infants, they will follow through thick and thin.          If he dearly loves his men as he does his own beloved sons, they will be willing to die with him in battle.          If a general indulges his men but does not know how to use them,          If a general loves them but cannot command them, and when they violate laws and regulations,          He fails to punish and manage them, such soldiers are likely spoiled children and will be useless for battle.</p>	

Sun Tzu's The Art of War  
The Nine Types of Battlegrounds Book No. 11

**Declare And War Preparation**

You should close all passes, abrogate all official tallies, and terminate all contact with the enemy's emissaries. Carefully examine your military plans in the temple council and make decisions. If you find out the opponent's weak point, you must break through it speedily. Seize what is most valuable to the enemy first. Don't betray your time of attack to him. In pursuing your plans, modify them according to the enemy's situations in order to win. At first assume the coyness of a maiden and when the enemy gives you an opening, attack him as swiftly as a running hare. This will make the enemy unable to resist you.



<b>A</b>	<p>Disperse terrain When a prince wages a campaign in his own territory, the place is called disperse ground. Never fight in disperse ground.</p> <p>Light terrain Enemy territory which he enters, but not deeply, is called frontier ground. Never stop in frontier ground.</p> <p>Contentious terrain The position that is favourable for both the enemy and yourself to occupy is called contentious ground. Never attack the enemy who first reaches contentious ground.</p> <p>Traversal terrain The position that is accessible to both sides is called open ground. Never allow the army's communication to be blocked in open ground.</p> <p>Focal terrain A position, where three neighbouring states meet, and which whoever first gets control of will gain the support of other neighbouring states, is called focal ground. Form alliances with neighbouring princes in focal ground.</p> <p>Heavy terrain When a prince penetrates deeply into hostile territory, having passing through many cities and towns, he is at serious ground. Plunder for provisions if arriving at serious ground.</p> <p>Entrapping terrain, A place with interlocking mountains, tangled forests and impenetrable marshes or any place that is hard to travel through is called difficult ground. Pass through swiftly, if you meet difficult ground.</p>
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<b>A</b> Continue	Encircled terrain	A place to which access is constricted and from which return requires making a detour, so that a small troop will suffice to defeat a large army, is called encircled ground. Devise plans to escape in encircled ground.
	Fatal terrain	A place where a desperate and speedy battle will save you or else you will be defeated and destroyed is called desperate ground. Fight a last-ditch battle in desperate ground.

<b>B</b>	Internal and Communication Battle	The generals who were skilled in military operations knew clearly how to make the enemy lose contact between the van and the rear, prevent his main body of soldiers and small divisions from cooperation. Make it impossible for the superiors and subordinates to support each other and communicate with each other. Scatter the enemy soldiers so that they could not concentrate, and keep them in disorder even if they were assembled. The skilled generals would advance when it was to their advantage and halt when situations were unfavourable. If the enemy comes to attack you with a large and well-ordered army, seize what he cherishes and he will conform to your desires. The essence of military operations is speed, taking advantage of the enemy's unpreparedness, going by routes he does not expect and attacking him where he is not on guard.
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<b>C</b>	External and Full-scale Battle	If you enter fertile land, you should plunder it for enough provisions for your men. Nourish them and do not exhaust them; keep them in high morale and conserve their energy. Direct your troops with ingenious tactics so that the enemy cannot see through your plan. You should throw your soldiers into a position from which there is no retreat, and where they will not flee even when facing death. Soldiers are not afraid of death, there will be nothing for them to fear. Both officers and soldiers will do their utmost to fight. Soldiers deep in a dangerous territory will become fearless, there is no road for them to retreat, they will stand firm. Stuck in the enemy's land, they are bound together. As there is no choice, they cannot but fight a desperate battle. They will do what you want them to do before you ask them, and they will cooperate closely before you condition them and they will consciously follow your direction before you order them. You should prohibit superstition and dispel rumours and suspicion among your soldiers, they will not desert the army even in the face of death.
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C	Continue	<p>Soldiers have no surplus wealth not because they have a dislike for possessions; they are fearless of death not because they have a dislike for longevity.</p> <p>On the day the army is ordered to make a decisive battle, soldiers may sit crying with tears wetting their garments, some may lie down there with tears flowing down their cheeks. But if you throw them into a position where there is no way for them to retreat, they will be undaunted, as brave as Zhuan Zhu or Cao Gui.</p> <p>If you strike the snake of Mount Chang's head, its tail will launch an attack on you; if you hit its tail, its head will strike you; if you beat its body, it will attack with both its head and tail.</p> <p>When the people of Wu and the people of Yue travel by the same boat caught in a storm, they will help each other just as both the left and the right hands cooperate.</p> <p>So holding the war horses together or burying the chariot wheels is not a reliable way to keep the soldiers together.</p> <p>Uniting the soldiers to fight bravely depends on good management and command.</p> <p>The correct use of geographical situations will make troops bring their courage and ability into full play.</p> <p>A skillful general should command thousands upon thousands of horses and men as if he were leading a single man who will obey without choice.</p>
	<p>Penetrate deeply into hostile territory and soldiers will be united and single-minded.</p>	

D	Quality of General	<p>A general must have a mind that is serene and unfathomable.</p> <p>He must administrate his troops in an impartial and upright manner.</p> <p>He should keep his officers and soldiers ignorant of his military plans.</p> <p>He changes his arrangements and alters his military plans without anyone knowing.</p> <p>He shifts his campsites and takes circuitous routes without anyone anticipating his purpose.</p> <p>When he leads his troops deep into a principedom, he should have the momentum of an arrow that has been released. He burns the boats and breaks the cauldrons to make the soldiers resolute in fighting.</p> <p>He drives his soldiers here and there as freely as he does a flock of sheep without anyone knowing where he will go.</p> <p>He assembles his whole army and puts it into dangerous situations.</p> <p>Varying tactics according to geographical positions, advancing and retreating to what is advantageous and observing the laws of human nature are what a general must study and examine carefully.</p> <p>The deeper your troops penetrate into hostile territory, the more they concentrate their spirit to fight; the less deep they penetrate, the less their will to fight is.</p>



<b>E</b>	<p>Critical terrain Disperse terrain Frontier terrain Contentious terrain Open terrain Focal terrain Serious terrain Difficult terrain Encircled terrain Fatal terrain</p>	<p>Crossing a neighbouring country to a battlefield where there is no way for soldiers to return. You should unify the will of your soldiers. You should keep the van and the rear linked up. You should hasten up your rear troops. You should defend your camp carefully. You should form strong alliances with neighbouring princes. You should ensure a continuous flow of provisions. You should press forward swiftly. You should block the points of access or egress. You must show your soldiers that there is no choice but a list-ditch fight.</p>
Results	<p>The soldiers will resist while surrounded, fight desperately while being forced to and follow the general while fallen into dangerous situations.</p>	

<b>F</b>	<p>External Alliances and Battle Operations</p>	<p>A general who is ignorant of the intention of the neighbouring princes cannot form alliances with them. He who is ignorant of the interlocking mountains and tangled forests, dangerous abysses and precipices, swamps and marshes cannot move his troops. He who fails to hire native guides cannot occupy the favourable ground. One who does not employ local guides will not secure advantages of terrain. If an overlord's army attacks a strong state, even the strong state cannot collect its strength to resist. Wherever such an army goes, it overawes its enemy and prevents his allies from joining him. An invincible army does not need to seek alliances with other states. Does not need to establish its power in these states. Rely on its own actual strength to overawe the enemy. It will be able to capture the enemy's cities and destroy his state. If you lead an overlord's army you must bestow rewards irrespective of customary practice and issue orders irrespective of convention, you can command thousands upon thousands of horses and men as if you were leading a single man. Set your troops to operation but never tell them your plans; use them to gain advantage, but never tell them the dangers and disadvantage involved. Only by throwing an army into a perilous position can they survive; only by putting them in desperate ground can they live. Provided the troops are placed in danger, they will be able to turn defeat into victory. Lies in pretending to follow the enemy's intentions, but in fact, concentrating your troops to attack one aspect of the army. You will be able to kill his commander even if you are a long drive of a thousand li away. This is called using artful and ingenious plans to accomplish great tasks.</p>
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Sun Tzu's The Art of War  
Attacking with fire Book Number 12

**Important Notes For Incendiary Attack**

To win a battle and capture the spoils but to fail to consolidate such achievement forebodes danger.  
For it is a waste of time and effort.  
If it is not advantageous, never send your troops; if it does not yield success, never use your men; if it is not a dangerous situation, never fight a hasty battle.  
An enlightened sovereign must know how to deliberate upon this problem and a good general should carefully deal with it.  
A sovereign should not wage a war simply out of anger, nor should a general dispatch his troops to fight simply out of indignation.  
When it is favourable to you, take action; when it is unfavourable, do not act.  
A man who is enraged will in time become happy, and he who is indignant will again become pleased, but a state that has perished can never revive, nor can a man who has died be brought back to life.  
Therefore an enlightened sovereign should handle the matter of war in a prudent way, and a good general treat war with caution.  
This is the way that keeps the state in peace and security, and the army intact.

Incendiary  
Attack  
**A**

Respond to the  
Changes of Fire  
**B**

**A**

Incendiary  
Attack

Burn the enemy troops.  
Burn their provisions and property.  
Burn their equipment.  
Burn their arsenals.  
Burn their transportation lines.  
Materials for setting fire must always be at hand.  
There are suitable seasons to launch a fire attack and suitable days for starting a fire.  
The suitable season for a fire attack is when the weather is dry.  
The suitable days for setting fire are when the moon is in the position of the constellations of the Sieve, the Wall, the Wing or the Cross-bar.

<b>B</b>	<p>When a fire is set within the enemy's camp, you should coordinate your action from without in advance.</p> <p>When the enemy's camp is on fire and yet his soldiers remain calm, you should bide your time and do not launch an attack.</p> <p>When the flames reach a height, you may follow it up with an attack if you can, and do not if you cannot.</p> <p>When a fire can be set from outside the enemy's camp, you need not wait until it is started inside,</p> <p>If you start a fire from up-wind, never launch an attack from down-wind.</p> <p>The wind that continues blowing during the day is likely to subside at night, but you should select a suitable time to set fire.</p> <p>Understand the varying situations under the five ways of fire attack and keep waiting for a suitable time.</p> <p>So general who uses fire to assist his attack will be sure to win; he who uses water to assist his attack only shows that he is wrong.</p> <p>Water may stop the enemy from moving forward, but cannot deprive the enemy of his impedimenta.</p>
Changes of Fire	

Sun Tzu's The Art of War  
Espionage Book Number 13

**Importance of Employing Spies**

When an army with one hundred thousand officers and soldiers is sent to war a thousand *li* away, the common people and the state treasury together have to spend a thousand pieces of gold everyday in support of it. There will be continuous disturbance at home and abroad, and a lot of common people involved with convoys are exhausted from performing transporting services.

About seven hundred thousand households will be unable to cultivate their fields.

If a general engages his state in a drawn-out war for several years to strive for victory which is decided merely in a single day, and if the general begrudges the expenditure of a hundred pieces of gold in honours and emoluments to employ spies and is thus ignorant of the enemy's situation, he is, of course, completely devoid of humanity.

Such a man is not a good general, not a good assistant to his sovereign, and no master of victory.

An enlightened sovereign and an able general can defeat the enemy whenever they take action and achieve extraordinary accomplishments, because they can foresee the development of war.

Such fore-knowledge cannot be obtained from ghosts and spirits, cannot be had from analogous experiences, cannot be found by calculating the positions of the sun, the moon and stars. It must be obtained from the people who clearly know the enemy's situations.

Spies  
A

Methods of  
Employing Spies  
B

<b>A</b>	<p>Principle</p> <p>Native spy</p> <p>Inside spy</p> <p>Converted spy</p> <p>Expendable spy</p> <p>Surviving spy</p>	<p>When you use of the five kinds of secret agents simultaneously, the enemy cannot know the principle of their operation.</p> <p>It is divinely intricate and becomes the greatest magic weapon for the sovereign to defeat the enemy.</p> <p>Native spies are those employed from among the enemy's villages.</p> <p>Inside spies are those employed from among the enemy's officials</p> <p>Converted spies are those employed from among the enemy spies.</p> <p>Expendable spies are our own secret agents, who are deliberately given some false information of ours to report to the enemy.</p> <p>Frequently they would be caught and put to death.</p> <p>Surviving spies are those who come and go between the enemy and us, and return safely with the enemy's information.</p>
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<b>B</b>	Principle	<p>In regard to trusted followers in the armed forces, none is more intimate than the spies who are close to the general or the commander; of all rewards, none is more generous than those give to spies, and regarding military secrets, none is more confidential than those relating to espionage.</p>
	Method of Using Spies	<p>He who is not a sage cannot use spies.          He who is not humane and just cannot command spies.          He who is not careful and subtle cannot get truthful information from spies.          Subtle indeed! Truly subtle! There is no place where espionage is not possible.          If a secret plan is divulged prematurely, the spy and those who are told about it shall be put to death.          If you plan to strike an enemy's troops, or attack an enemy's city, or kill an enemy's commander, you must find out first the name of the chief garrison commander, his aides-de-camp, trusted followers, ushers, gatekeepers and bodyguards, and you must instruct your spies to investigate these in detail.          You must ascertain those enemy spies who have been sent to conduct espionage against you.          Bribe them, exhort and release them to serve you.          At last, they will become converted spies and work for you.          You can obtain information about the enemy and recruit native spies and inside spies.          Your expendable spies may convey the false information about your army to the enemy.          The surviving spies you sent to the enemy may return on schedule and give you information.</p>
Essential	<p>A sovereign must know how to use the five types of spies. Such knowledge is necessarily derived from the converted spies, so converted spies should be rewarded generously.</p>	
History	<p>The rise of Yin was due to Yi Zhi, who was former minister of Xia.          The rise of Zhou Dynasty was due to Jiang Ziya, the former minister of Shang.</p>	
Conclusion	<p>So only the enlightened sovereign and the able general can find out and use the intelligent men as spies and achieve great tasks.          The use of spies is essential in war, and the army must depend on this in its action.</p>	

## Survey on ISO 9000 Quality Standards Implementation

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## **1. Introduction**

This report investigates the survey findings on the understanding of the concept and the implementation status of the ISO 9000 Quality Management System in Hong Kong. The responses provide insights to both local and foreign companies in determining their corporate strategies for the challenges in the Asian Pacific region in the coming years.

ISO (International Organisation for Standardisation) is a worldwide federation of national standards bodies from over 110 countries. Since it established and published the ISO 9000 series (a family of standards for quality management and quality assurance) in 1987, more than one hundred countries have adopted the ISO 9000 series as their national standards nowadays.

## **2. ISO 9000 Quality Standards**

ISO 9000 series is basically a management guideline about the way companies can establish, document and maintain their quality management system. The ISO 9000 system cannot guarantee the effectiveness of the system itself, however, such a system can demonstrate to customers the commitment to quality of a company and their vision of fulfilling their customers' requirements. The ISO 9000 system acts like a quality mark, which symbolises the increase of competitiveness of the products or services in the international market. Chapter 2 highlights the essence of the 20 detail elements of the ISO 9000 quality standard. Chapter 8 serves as the foundation based on which questions on the concept of the ISO 9000 quality management system and implementation were asked. Section 4 of Appendix C shows the questions on the detailed elements of ISO9000 quality standards. At the end of the survey findings, a question reference is included.

Under the 20 elements of the ISO 9000, a survey on the implementation of the system in Hong Kong was carried out. The major objectives were to research and assess the stage of development; the responses from different industrial sectors; and the attitude of different people towards the ISO 9000 quality management system in Hong Kong. Through this study, the driving force of companies to implement ISO 9000 and the major problems and difficulties during the implementation can also be revealed.

The designed questionnaire was targeted at two populations. The first one comprised the industrial people whose working companies had obtained the ISO 9000 certification. The other group comprised technical personnel who had 5 to 10 year industrial experience and who were part-time students pursuing a Higher Diploma course in Engineering Management. The main differences between these two groups were their years of experience, positions in their organisations and their company involvement in quality management. The people of the technical group were mainly at supervisory level while the ISO group were at management level. Besides, the majority of the companies of the technical group did not possess ISO 9000 certification. Hence, the viewpoints and management systems as presented by these two different groups could be compared and analysed. Some of the findings common to both groups could represent the general situation of Hong Kong's organisations on quality management.

Moreover, the views from various industrial sectors covered by both groups represent a general view of ISO 9000 implementation in Hong Kong industry.

### 3. Survey Response

Having heard of many disappointing responses through postal surveys, all questionnaires were sent with return envelope and postage. Through the Hong Kong Quality Assurance Association (HKQAA), a list of ISO 9000 registered companies in Hong Kong was obtained. Of these ISO companies, 333 questionnaires were sent out with 68 returned. Although only 58 responses were identified as valid, the response rate of 17% was still considered acceptable in general. Through the Department of Manufacturing Engineering in Hong Kong Technical College (Tsing Yi), 70 part-time students were selected with 44 questionnaires returned. Of these, 8 questionnaires were returned uncompleted, the 36 valid returns represents a 51% response rate. Statistical analysis techniques were then used in assisting the survey analysis and reporting. All the computations were carried out using the SAS package on a PC. Where possible, a statistical analysis technique was used to test the significant difference in opinion on a specific subject between the managerial level and the technical level. For better appreciation of the hypothesis testing using a t-test, some background information on hypothesis testing with the special cases being highlighted is shown in Appendix G. The *p*-value of 0.05 or 5 % represents the level of confidence in signifying there is significant difference in the two-tails hypothesis test.

As there were two groups of responses, their results were classified as 'Mgr' and 'Tech' for responses coming from management and technical personnel respectively. Their results were then totalled and denoted by 'Tot'.

The following table and chart show that various industrial sectors are included in the survey. The major industrial sectors who responded were construction, service and electrical & electronic industries. This result indicated that there is a higher level of awareness and interest of quality management in the engineering industry than in the service industry in Hong Kong.

Nature of Business	Mgr	Tech	Tot
Chemical	3	0	3
Construction	25	6	31
Electrical & Electronic	9	6	15
Machinery	0	3	3
Metal Products	1	1	2
Plastics	1	2	3
Printing	2	0	2
Service	8	8	16
Textile & Clothing	1	0	1
Toy	1	3	4
Others	7	3	10
No Response	0	4	4

*Table showing Distribution of Business Nature of Respondents*



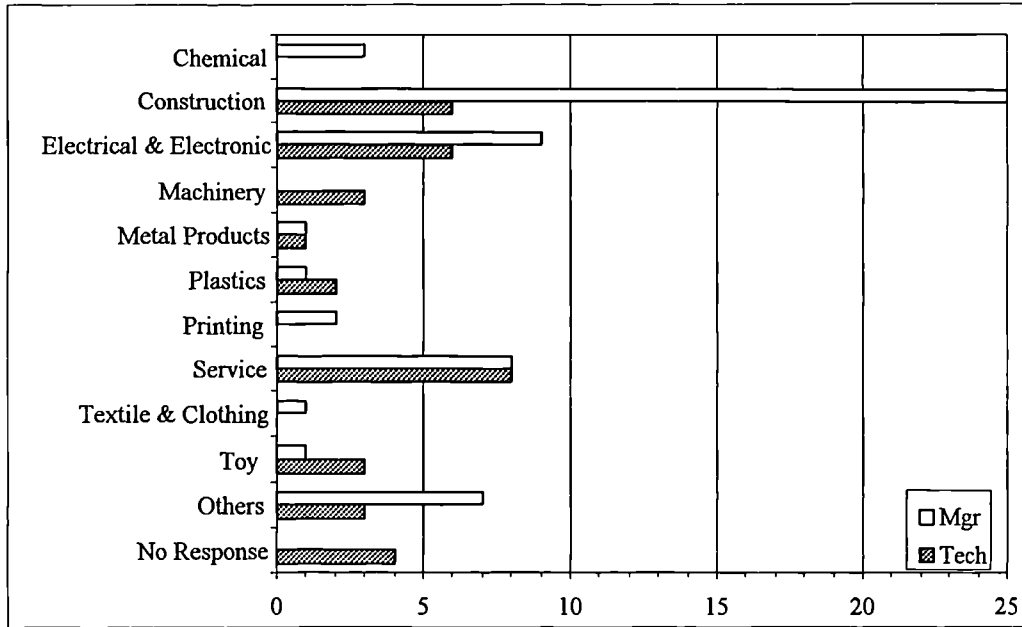


Chart showing the Distribution of Business Nature of Respondents

### 3.1 Management Responsibility (ISO 9000 Standard: Element 4.1)

*Finding 1.* About 80% of the responses showed that high position personnel were involved in the management, performance, and verification of quality-related work so identified.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
58	35	0	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	50	26	86	74	0.1528
no	8	9	14	26	0.1528

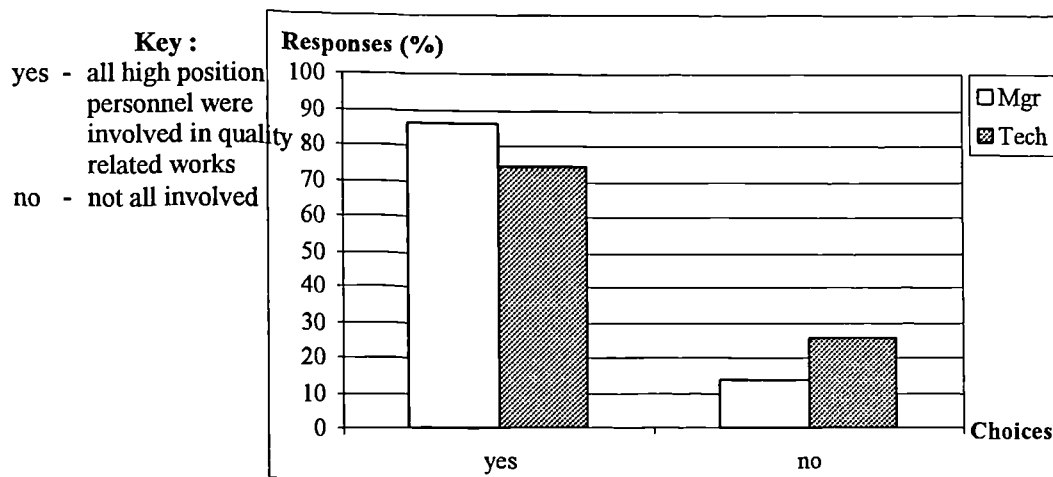


Figure 1. High Position Personnel Were Involved in Quality-related Works

As quality becomes the major concern of most organisations, they are found to have all high position personnel involved in the management, performance and verification of quality related work.

(Ref.: ISO Survey Part II, Question 1, and Element 4.1 - Management Responsibility 1.1)

*Finding 2.* There were 77% of the responses from the ISO 9000 registered companies admitted that they had personnel who were not in the high position involved in the management, performance, and verification of quality-related work, while only 19% were found in the non-ISO 9000 registered companies.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
53	32	5	4

Choices	Responses		Responses (%)		p-value	
	Mgr	Tech	Mgr	Tech		
Yes	41	6	77	19	0.0000	<0.05
No	12	26	23	81	0.0000	<0.05

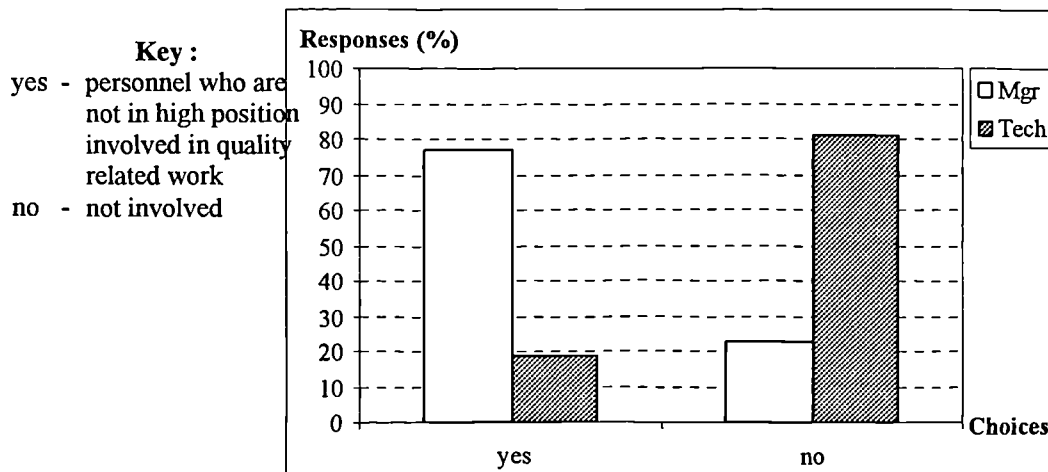


Figure 2. Personnel who are Not in High-Position Involved in Quality-related Work

Besides the high position personnel, all other employees should be aware of their responsibility of quality within organisation. Only most ISO 9000 registered companies and a few non-ISO 9000 registered companies mentioned that they did make use of external consultants, agents, supervisors, quality controllers, foremen, technicians and others involved in the management, performance and verification of quality-related work. The survey also shows the significant difference of the results from the two different groups of organisations that most ISO-registered companies put extra resources in quality aspects while non-ISO companies do not. This also indicates that ISO-registered companies have a higher awareness of quality than the non-registered ones.

(Ref.: ISO Survey Part II, Question 1, and Element 4.1 - Management Responsibility 1.1)

*Finding 3.* The most common practice in quality system review was once a year (45% of ISO 9000 registered companies, 37% of non-ISO 9000 registered companies). However, the majority of the companies of both groups of the companies had their quality system review half-yearly or annually.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
56	35	2	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	3	7	5	20	0.0569
b	4	6	7	17	0.1786
c	17	6	30	17	0.1617
d	25	13	45	37	0.4858
e	0	1	0	3	Nil
f	7	2	13	6	0.2594

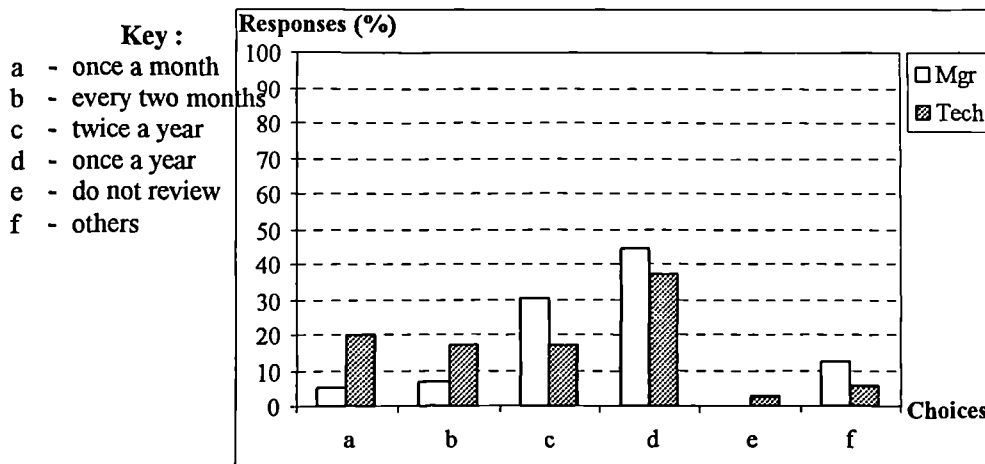


Figure 3. Frequency in Reviewing Quality System

Most companies reviewed their quality system to maintain the effectiveness and suitability.

(Ref.: ISO Survey Part II, Question 1, and Element 4.1 - Management Responsibility 1.2)

3.2 Quality System (ISO 9000 Standard: Element 4.2)

*Finding 4.* Over 70% of the ISO 9000 registered companies reported that all their departments had a copy of quality manual, while 32% of the non-ISO 9000 registered companies had the copy in the quality department. Statistical analysis shows that there is significant difference between these two groups of companies on quality manuals issued to all departments.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
58	34	0	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	12	11	21	32	0.2167
b	7	2	12	6	0.3404
c	6	4	10	12	0.8350
d	4	7	7	21	0.0855
e	8	6	14	18	0.6239
f	2	1	3	3	0.8963
g	41	6	71	18	0.0000 <0.05
h	6	4	10	12	0.8350

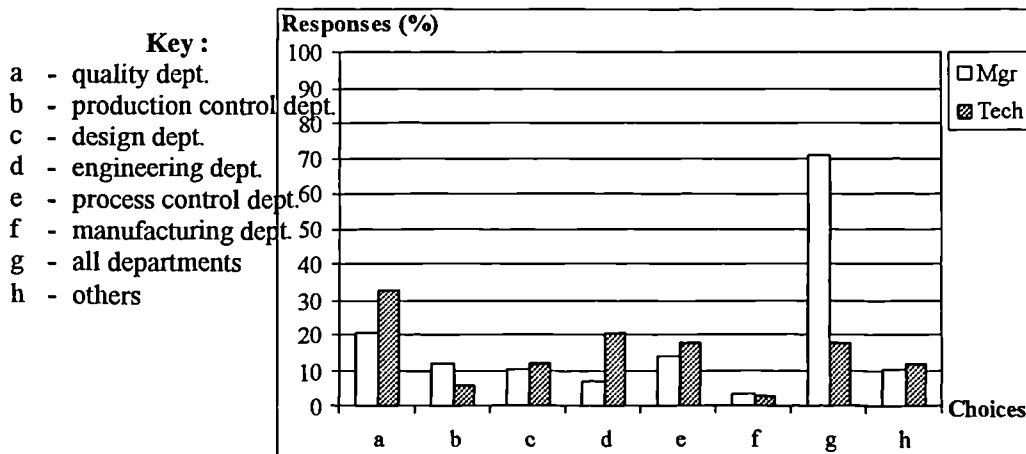


Figure 4. Departments have Copies of Quality Manuals

As one of the ISO 9000 registration requirements, companies should have their quality manuals distributed to the relevant departments. Most ISO 9000 registered companies reported to have all the departments a copy of quality manual while only several departments in the non-ISO 9000 registered companies had a quality manual, the most likely department was quality department. The general awareness of quality is observed to be higher in those ISO registered companies than the non-registered ones.

(Ref.: ISO Survey Part II, Question 2, and Element 4.2 - Quality System 2.1)

*Finding 5.* Fulfilling customers' requirement was the main goal for 69% of the ISO 9000 registered companies to set-up their quality plan, while 37% and 33% of those non-ISO registered companies had the objectives of fulfilling the customers' requirement and increasing quality respectively. Statistical analysis also shows that there is significant difference between these two groups of companies on setting-up their quality plan for meeting their customers' requirement.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
32	27	26	9

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	0	1	0	4	Nil
b	0	1	0	4	Nil
c	0	4	0	15	Nil
d	3	2	9	7	0.7913
e	5	9	16	33	0.1150
f	22	10	69	37	0.0144 <0.05
g	2	0	6	0	Nil

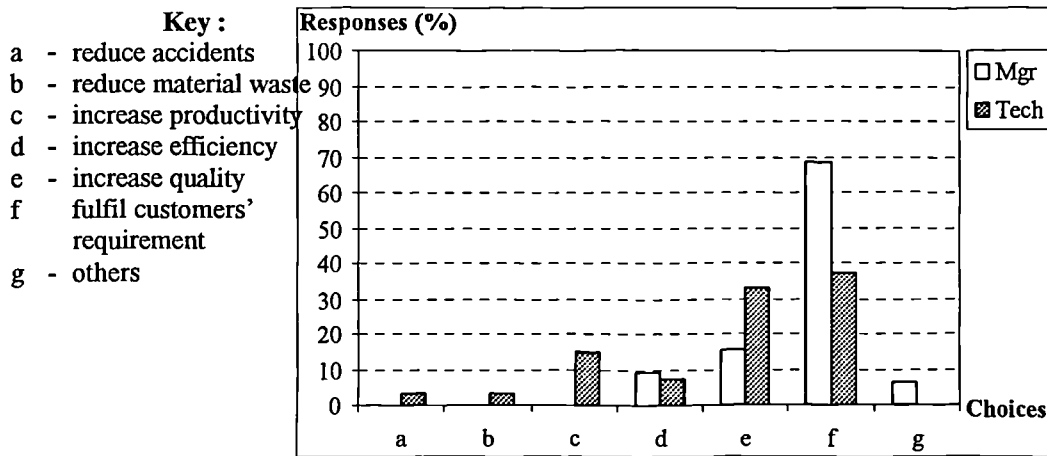


Figure 5. Goal of Quality Plan

The main goal for quality plan found in most ISO 9000 registered companies was fulfilling customers' requirements. Some non-ISO companies had the objective of increasing quality as their quality plans that indicates that these companies tend to put satisfying customers' requirements as their second important reason.

(Ref.: ISO Survey Part II, Question 2, and Element 4.2 - Quality System 2.2)

*Finding 6.* In general, about 30% of responses indicated that their quality manuals were reviewed yearly, however, over 40% of the ISO 9000 registered companies reported that their reviews were carried out when necessary.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
58	31	0	5

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	0	3	0	10	Nil
b	5	9	9	29	0.0299 < 0.05
c	11	8	19	26	0.4587
d	18	10	31	32	0.9070
e	25	1	43	3	0.0001 < 0.05

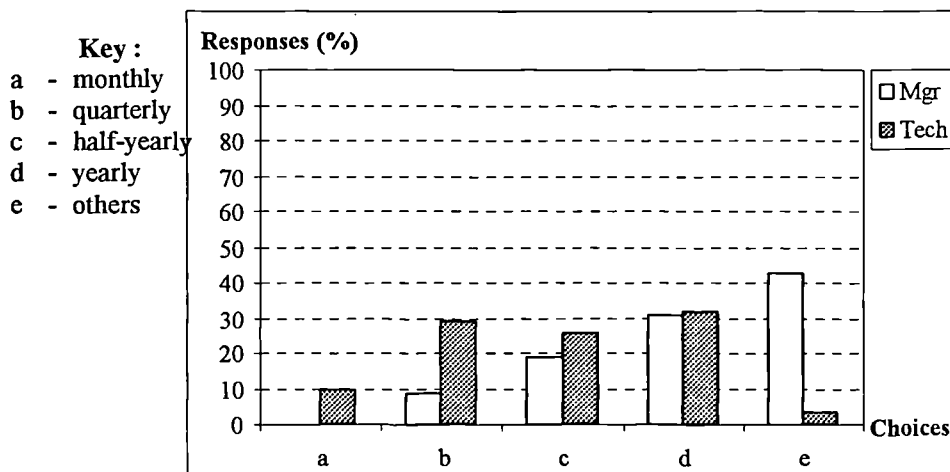


Figure 6. Frequency in Reviewing Quality Manual

Referring to the survey responses, quality manuals in most ISO 9000 registered companies were reviewed when necessary. For the non-ISO 9000 registered companies, they tended to have a regular review.

(Ref.: ISO Survey Part II, Question 2, and Element 4.2 - Quality System 2.3)

**3.3 Contract Review (ISO 9000 Standard: Element 4.3)**

*Finding 7.* The Quality manager was the most likely person (41% managerial responses and 33% technical responses) to be involved in co-ordinating and maintaining the contract review process

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
58	33	0	3

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	7	10	12	30	0.0529
b	5	6	9	18	0.2239
c	24	11	41	33	0.4537
d	17	5	29	15	0.1323
e	8	2	14	6	0.2170
f	14	10	24	30	0.5264
g	7	2	12	6	0.3615
h	11	10	19	30	0.2216
i	32	4	55	12	0.0001 <0.05

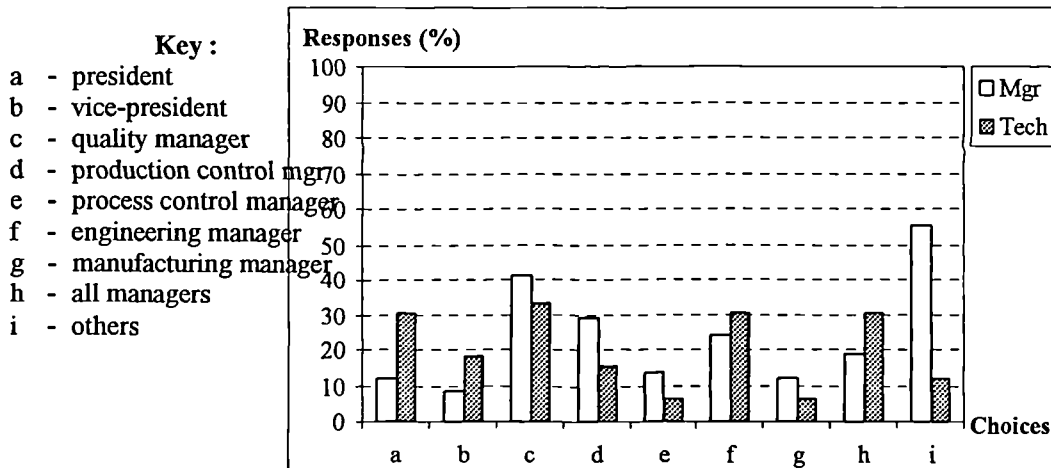


Figure 7. People Involved in Co-ordinating and Maintaining Contract Review Process

In co-ordinating and maintaining the contract review process, many managers were involved. The most likely person would be the quality manager. Moreover, managerial respondents also commented that chief executive officers, engagement partners, site agents, estimating managers; project managers and financial managers should also be involved. Statistical analysis also shows that there is significant difference between these two groups of companies on the involvement of other people in the contract review process. This explains clearly that contract review is a managerial role that most of the technical staff may not be involved in and be aware of.

(Ref.: ISO Survey Part II, Question 3, and Element 4.3 - Contract Review 3.1)



*Finding 8.* About half of the respondents' companies would review their contracts with customers

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
55	32	3	4

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	32	14	58	44	0.1978
no	23	18	42	56	0.1978
a (if yes)	3	3	9	21	0.2741
b (if yes)	1	4	3	29	0.0680
c (if yes)	1	4	3	29	0.0680
d (if yes)	4	2	13	14	0.8721
e (if yes)	23	1	72	7	0.0001 <0.05

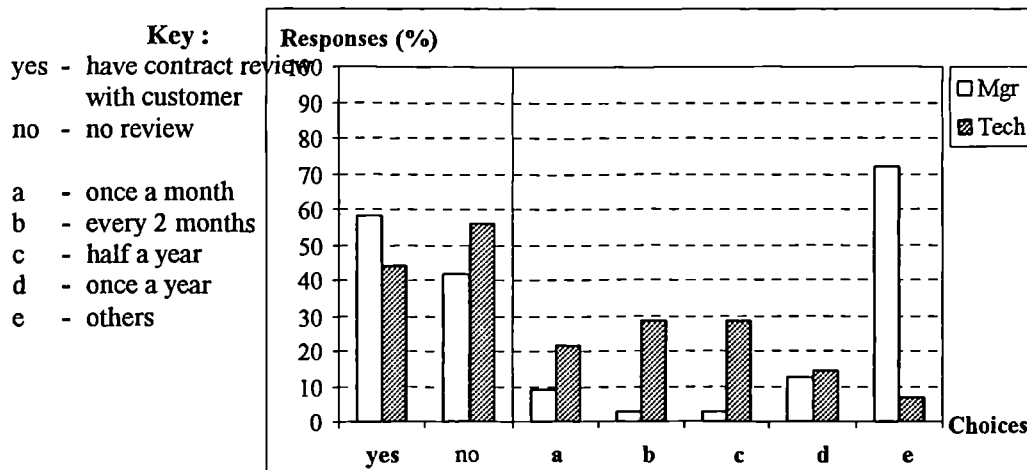


Figure 8. Formally Review Contracts with Customers and Its Frequency

Although contract review is one of the ISO 9000 requirements, only about half of respondents reported that their working companies had contract review practices. In fact companies could develop a better relationship and understand the customer requirements better through the contract review. The result indicates an inadequate understanding of quality and insufficient customer communication.

(Ref.: ISO Survey Part II, Question 3, and Element 4.3 - Contract Review 3.2)

**Finding 9.** Companies were highly reliant on customer complaints in collecting opinions of their products (86% and 53% from managerial and technical responses respectively).

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
57	36	1	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	24	7	42	19	0.0239 <0.05
b	49	19	86	53	0.0011 <0.05
c	12	6	21	17	0.6067
d	18	7	32	19	0.2027
e	12	9	21	25	0.6616
f	10	4	18	11	0.4036
g	2	3	4	8	0.3648
h	9	3	16	8	0.3013

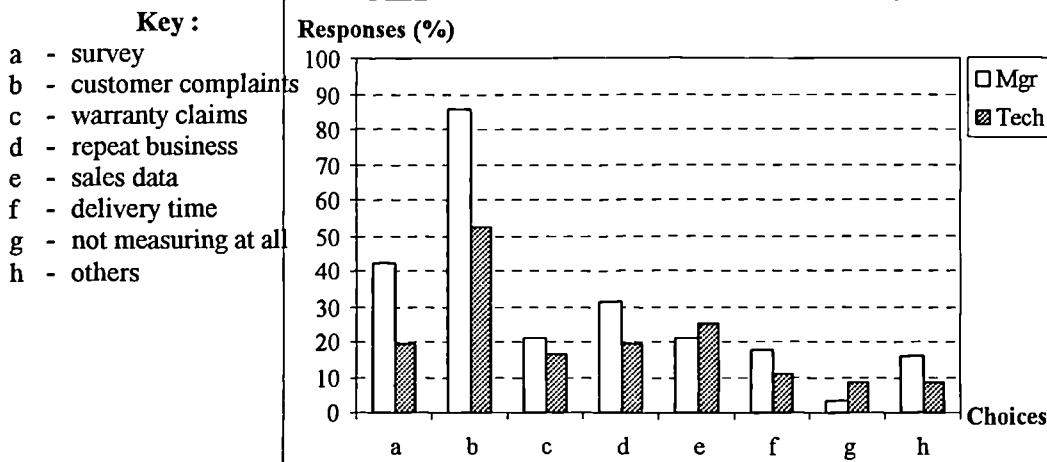


Figure 9. Methods in Collecting Customers' Opinions for Quality Improvement

It was shown that customer complaints were the main source of receiving customers' feedback that was rather improper and passive. Fortunately, other methods like customer surveys were also used in receiving customers' feedback. This result showed the passive attitude and the lack of concern about customers' satisfaction.

(Ref.: ISO Survey Part II, Question 3, and Element 4.3 - Contract Review 3.3)

3.4 Design Control (ISO 9000 Standard: Element 4.4)

*Finding 10.* About 50 to 60% of the companies believed that they could ensure the design output meeting the design input requirements by providing a preliminary design with full instructions

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
35	31	23	5

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	9	7	26	23	0.7711
b	17	19	49	61	0.3077
c	0	1	0	3	Nil
d	13	4	37	13	0.0219 <0.05

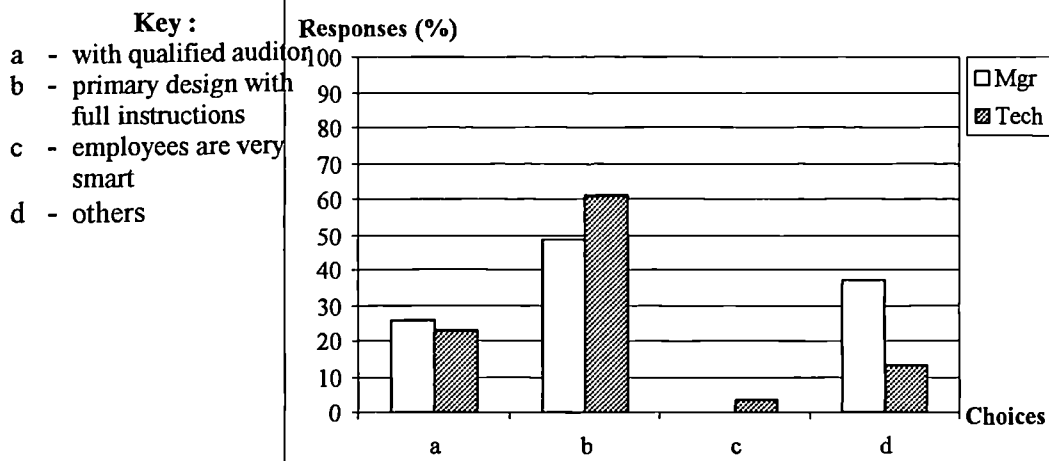


Figure 10. Methods in Ensuring Design Output meet Input Requirements

In order to ensure the design output meets design input requirements; most companies provide full instructions in the preliminary design.

(Ref.: ISO Survey Part II, Question 4, and Element 4.4 - Design Control 4.1)

*Finding 11.* Over 55% of the companies did not have a periodic design re-qualification process.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
32	35	26	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	14	11	44	31	0.3048
no	18	24	56	69	0.3048
a (if yes)	0	3	0	27	Nil
b (if yes)	0	2	0	18	Nil
c (if yes)	1	1	7	9	0.8657
d (if yes)	6	5	43	45	0.9019
e (if yes)	7	0	50	0	Nil

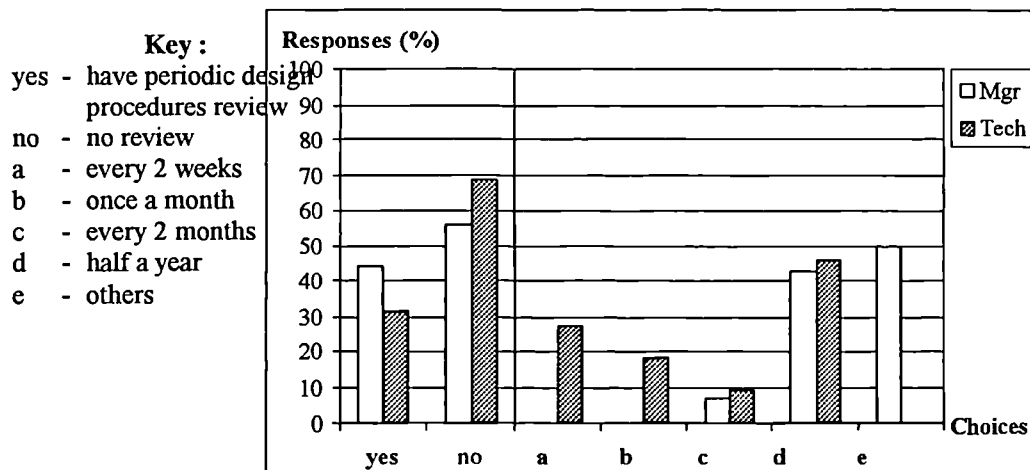


Figure 11. Review Design Procedures Periodically, and Its Frequency

A design re-qualification process was uncommon in many companies. The design outcome was then reliant mainly on the designers that might be not cost-effective and time-consuming.

(Ref.: ISO Survey Part II, Question 4, and Element 4.4 - Design Control 4.2)

*Finding 12.* 61% of the managerial respondents and 44% of the technical respondents believed that design control was useful when a consistent and disciplined approach was used. Only 3 % of the managerial respondents in comparison with 28% of technical respondents believed following specific steps during design of a product would reduce the creativity of the designers.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
31	32	27	4

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	1	9	3	28	0.0066 <0.05
b	19	14	61	44	0.1687
c	8	8	26	25	0.9426
d	4	1	13	3	0.1617

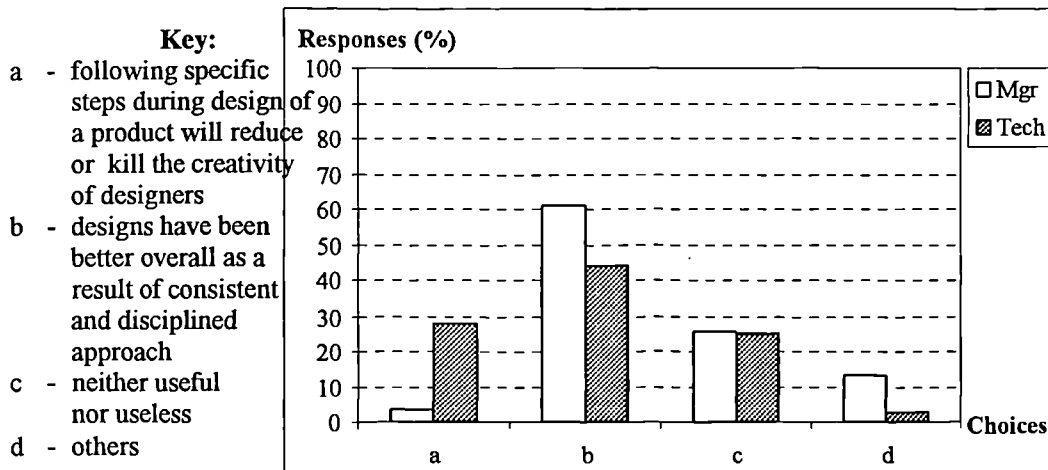


Figure 12. Usefulness of Design Control

Most respondents believed that design control was useful and the design outcomes would be better because of the consistent and disciplined approach.

(Ref.: ISO Survey Part II, Question 4, and Element 4.4 - Design Control 4.3)

### 3.5 Document Control (ISO 9000 Standard: Element 4.5)

*Finding 13.* Most companies had constant document review and some of them used computer to control documents and keep data.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
58	34	0	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	22	8	38	24	0.1583
b	13	14	22	41	0.0574
c	29	12	50	35	0.1744
d	18	1	31	3	0.0001 <0.05

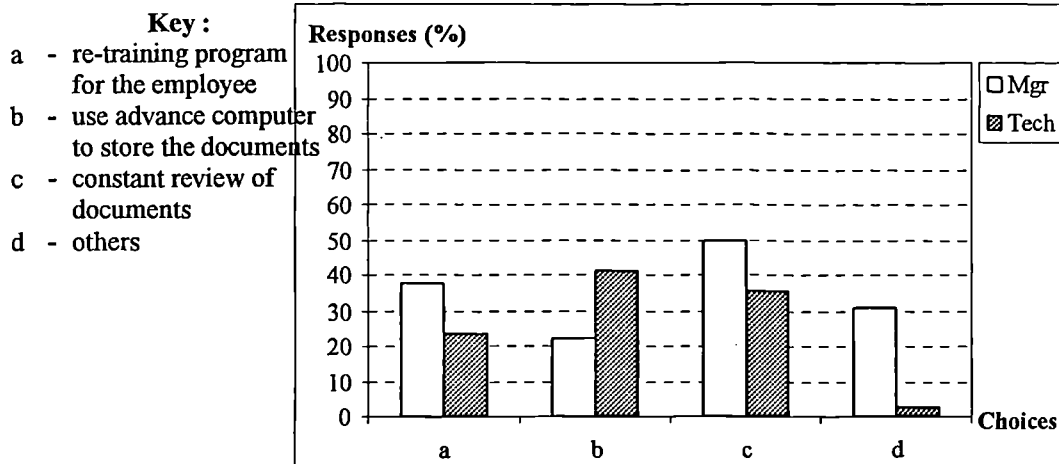


Figure 13. Methods in Maintaining Controlled Documents & Data

In order to control the documents and data in companies, companies mentioned that they would make use of regular review, and some companies would use a computer for data storage and upkeep of the document.

(Ref.: ISO Survey Part II, Question 5, and Element 4.5 - Document Control 5.1)

*Finding 14.* Relating to the common problems faced by the companies in document control, some companies reported that uncontrolled photocopying and incomplete or incorrect data in documents were common. Some companies even had outdated quality manuals being used.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
54	36	4	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	20	12	37	33	0.7228
b	7	15	13	42	0.0039 <0.05
c	29	13	54	36	0.1035
d	10	9	19	25	0.4660
e	12	1	22	3	0.0031 <0.05

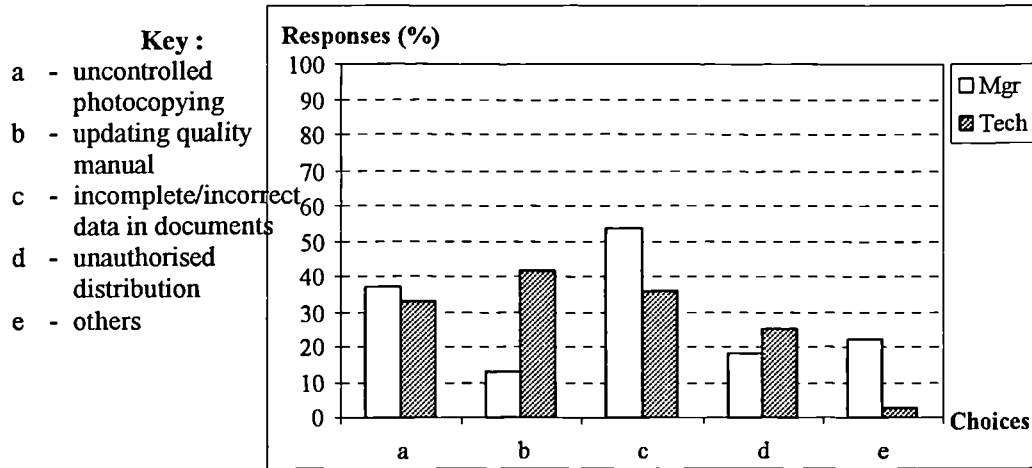


Figure 14. Problems in Document Control

Regarding document control, most companies had reported the problems in controlling photocopying and maintaining the up-to-date information. Moreover, outdated quality manuals can be easily found in non-ISO companies, and this showed a poor document control compared to the companies governed by ISO 9000 standard. This is confirmed by statistical analysis that there is significant difference between these two groups of companies on updating quality manuals.

(Ref.: ISO Survey Part II, Question 5, and Element 4.5 - Document Control 5.2)

*Finding 15.* ISO 9000 registered companies controlled nearly 50% more documents/records than the non-ISO 9000 registered companies, and quality manuals (98%) were the high focus in ISO 9000 registered companies, while specifications (44%) were one major concern in non-ISO 9000 registered companies

Choices	Total Responses		No Response		p-value	
	Mgr	Tech	Mgr	Tech		
	58	36	0	0		
Choices	Responses		Responses (%)		p-value	
	Mgr	Tech	Mgr	Tech		
a	42	14	72	39	0.0011	<0.05
b	51	10	88	28	0.0001	<0.05
c	57	11	98	31	0.0001	<0.05
d	28	12	48	33	0.1577	
e	35	13	60	36	0.0222	<0.05
f	48	16	83	44	0.0001	<0.05
g	54	15	93	42	0.0001	<0.05
h	30	9	52	25	0.0102	<0.05
i	33	12	57	33	0.0262	<0.05
j	21	8	36	22	0.1569	
k	37	11	64	31	0.0015	<0.05
l	21	5	36	14	0.0114	<0.05
m	8	4	14	11	0.7085	
n	6	1	10	3	0.1258	

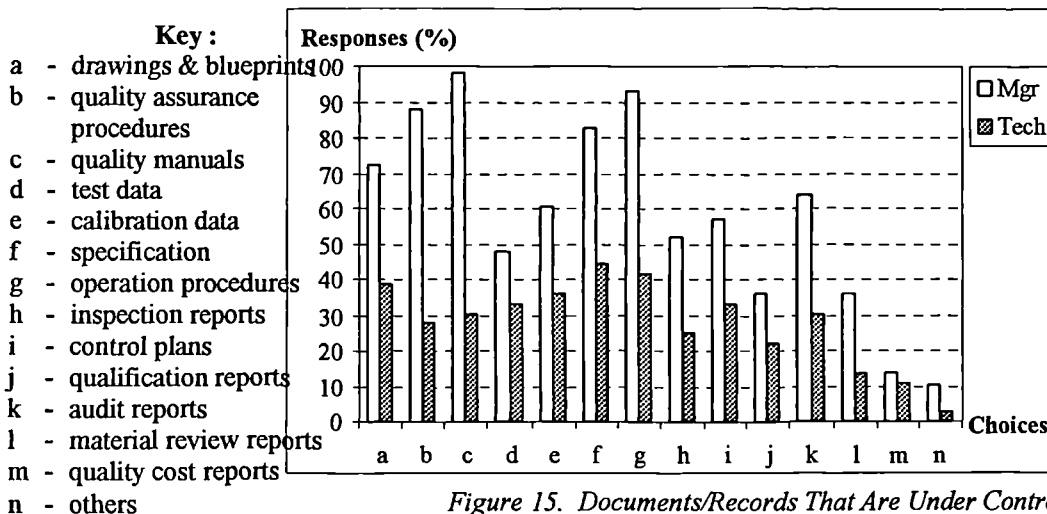


Figure 15. Documents/Records That Are Under Control

From the survey results, it was obvious that most ISO 9000 registered companies tended to have more documents controlled than the non-ISO companies. However, they seemed to have a common observation that the operational documents were most likely controlled. This is confirmed by the statistical analysis that there are significant differences between these two groups of companies on most of the issues under survey.

(Ref.: ISO Survey Part II, Question 5, and Element 4.5 - Document Control 5.3)



**3.6 Purchasing (ISO 9000 Standard: Element 4.6)**

*Finding 16.* Over 80% of the responses claimed that the purchased products conformed to the stated requirements

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
57	35	1	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	53	28	93	80	0.0963
no	4	7	7	20	0.0963
a (if no)	2	3	50	43	0.8402
b (if no)	2	4	50	57	0.8402
c (if no)	0	1	0	14	Nil
d (if no)	0	0	0	0	Nil

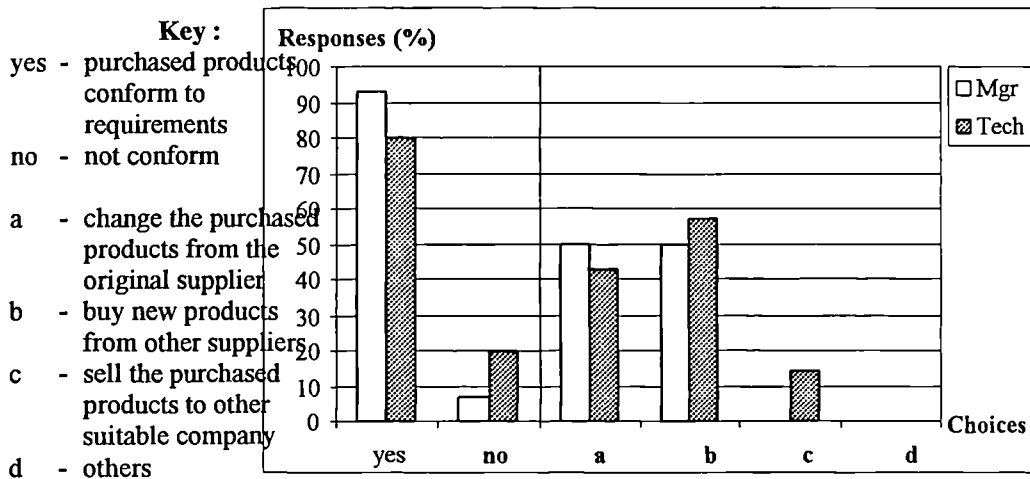


Figure 16. Purchased Products Conform to Requirements and Actions for Any Non-conformities

It was found that almost all purchased products conformed to the stated requirements in the delivery. If there were any problem, they would change the purchased products from the original suppliers or buy new products from the others.

(Ref.: ISO Survey Part II, Question 6, and Element 4.6 - Purchasing 6.1)

*Finding 17.* Over 60% of the ISO 9000 registered companies performed supplier survey, while over 60% non-ISO companies did not have any survey. Most companies said that sometimes they had problems with both long-term and newly qualified suppliers.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
39	31	19	5

Choices Suppliers	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	24	12	62	39	0.0589
no	15	19	38	61	0.0589
<b>Problem</b>					
a (if yes)	0	1	0	8	Nil
b (if yes)	3	4	13	33	0.1445
c (if yes)	4	3	17	25	0.5646
d (if yes)	15	4	63	33	0.1040
e (if yes)	2	0	8	0	Nil
<b>Long Term</b>					
a (if yes)	0	1	0	8	Nil
b (if yes)	5	3	21	25	0.7844
c (if yes)	3	3	13	25	0.3570
d (if yes)	15	5	63	42	0.2479
e (if yes)	1	0	4	0	Nil
<b>Newly Qualified</b>					
a (if yes)	3	1	13	8	0.7173
b (if yes)	4	5	17	42	0.1083
c (if yes)	4	1	17	8	0.5095
d (if yes)	13	5	54	42	0.4936
e (if yes)	0	0	0	0	Nil

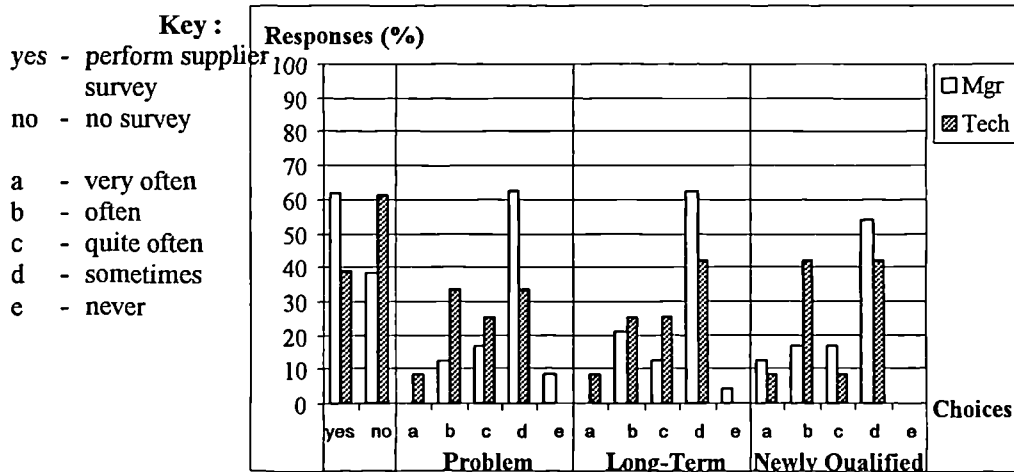


Figure 17. Performing Supplier Survey and Frequency in Finding Problem, Long-Term & Newly Qualified Suppliers

It was observed that the ISO 9000 registered companies were more like to perform supplier surveys. Through the survey, companies sometimes found problems from the different groups of suppliers.

(Ref.: ISO Survey Part II, Question 6, and Element 4.6 - Purchasing 6.2)

3.7 Purchaser Supplied Product (ISO 9000 Standard: Element 4.7)

*Finding 18.* About 35 to 45% of the respondents' companies used goods from customers in their processes.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
57	35	1	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	20	16	35	46	0.3159
no	19	6	33	17	0.0920
NA	18	13	32	37	0.5884

**Key :**  
 yes - use parts from customers in manufacturing  
 no - not use  
 NA - not applicable

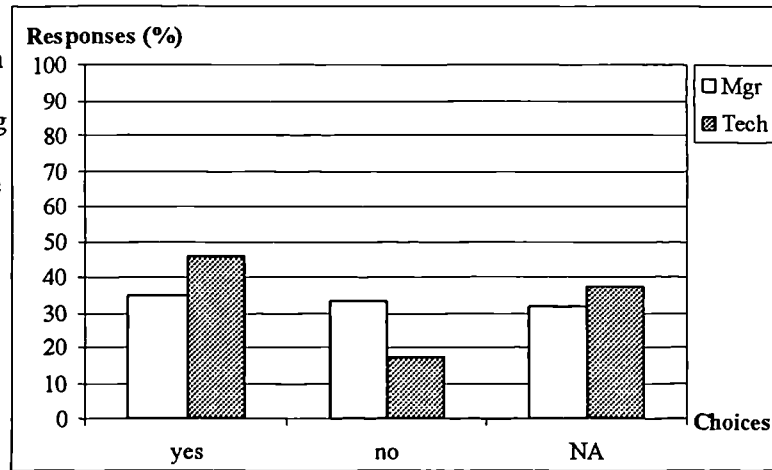


Figure 18. Using Parts Provided by Customers

Only some companies replied that they used parts provided by customers in their processes.

(Ref.: ISO Survey Part II, Question 7, and Element 4.7 - Purchaser Supplied Product 7.1)

**Finding 19.** About 67% of the ISO 9000 registered companies would record the condition, report to the customer and reject the products when they were lost, damaged, or unsuitable for use, while only 32% of the non-ISO companies would do that.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
43	34	15	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	0	5	0	15	Nil
b	2	11	5	32	0.0029 <0.05
c	18	13	42	38	0.7513
d	29	11	67	32	0.0019 <0.05
e	4	0	9	0	Nil

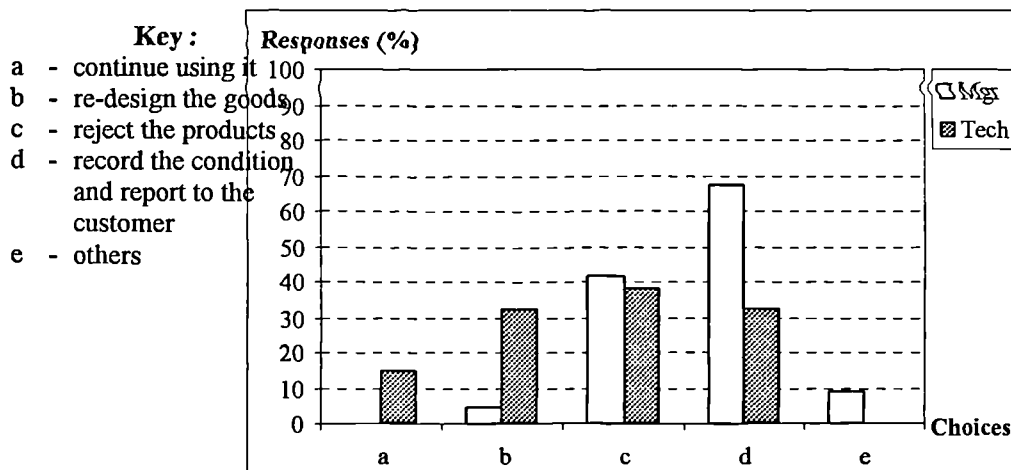


Figure 19. Actions for Losing, Damaged or Unsuitable Products

If customer supplied parts were lost, damaged or unsuitable for use, ISO 9000 registered companies would record the condition, report the customers and reject the parts, but non-ISO 9000 registered companies would redesign the goods. The number of high no response in the ISO registered companies indicated their uncertainty in taking action when quality problems were identified. People should have a more positive view on quality.

(Ref.: ISO Survey Part II, Question 7, and Element 4.7 - Purchaser Supplied Product 7.2)

### 3.8 Product Identification & Traceability (ISO 9000 Standard: Element 4.8)

*Finding 20.* Most of the companies believed that product identification and traceability is useful. Only 6% of responses from non-ISO 9000 registered companies felt that traceability in product identification is not very beneficial.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
55	36	3	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	13	4	24	11	0.1369
b	35	16	64	44	0.0727
c	7	14	13	39	0.0074 < 0.05
d	0	2	0	6	Nil
e	0	0	0	0	Nil

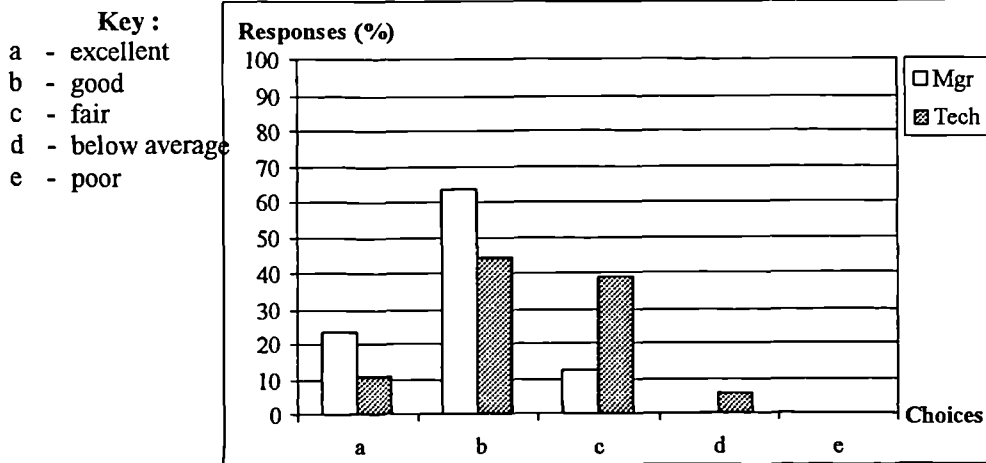


Figure 20. Benefits in Using Traceability in Product Identification

Most companies thought that using traceability in product identification was quite useful and ISO 9000 registered companies seemed to have a more positive attitude towards traceability.

(Ref.: ISO Survey Part II, Question 8, and Element 4.8 - Product Identification & Traceability 8.1)

*Finding 21.* About 50% of the responses replied that identification codes were normally attached on labels in most companies

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
55	34	3	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	21	5	38	15	0.0177 <0.05
b	21	12	38	35	0.7870
c	27	16	49	47	0.8542
d	13	2	24	6	0.0141 <0.05
e	16	0	29	0	Nil

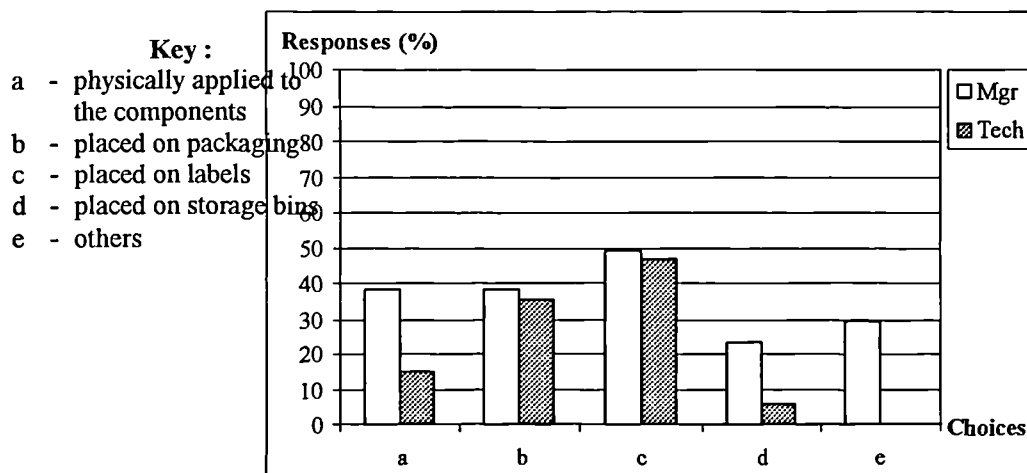


Figure 21. Places to Attach Identification Codes

According to the obtained results, identification codes were mostly placed on labels or packaging.

(Ref.: ISO Survey Part II, Question 8, and Element 4.8 - Product Identification & Traceability 8.2)

**3.9 Process Control (ISO 9000 Standard: Element 4.9)**

*Finding 22.* About 60% and 40% of the responses from ISO and non-ISO registered companies respectively experienced that the actual operations did not conform to documented instructions.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	35	16	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	9	8	21	23	0.8823
b	25	14	60	40	0.0902
c	6	7	14	20	0.5115
d	8	7	19	20	0.9177
e	5	1	12	3	0.1243
f	9	0	21	0	Nil

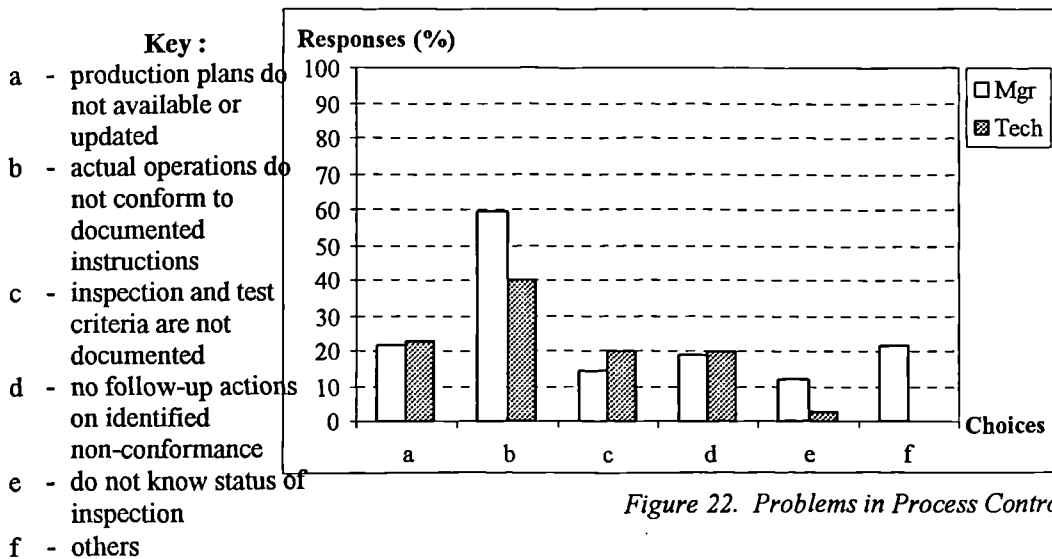


Figure 22. Problems in Process Control

It is observed that most companies found their employees did not follow the documented instructions in their works. This result indicates that employees did not understand the aims of having the documented instructions.

(Ref.: ISO Survey Part II, Question 9, and Element 4.9 - Process Control 9.1)

*Finding 23.* About 70% of the responses had their supervisors working in the production line with workers and 67% of them usually had 1 to 4 supervisors on the production line.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
47	35	11	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	33	24	70	69	0.8750
no	14	11	30	31	0.8750
a (if yes)	22	16	67	67	1.0000
b (if yes)	6	4	18	17	0.8845
c (if yes)	1	1	3	4	0.8219
d (if yes)	4	3	12	13	0.9664

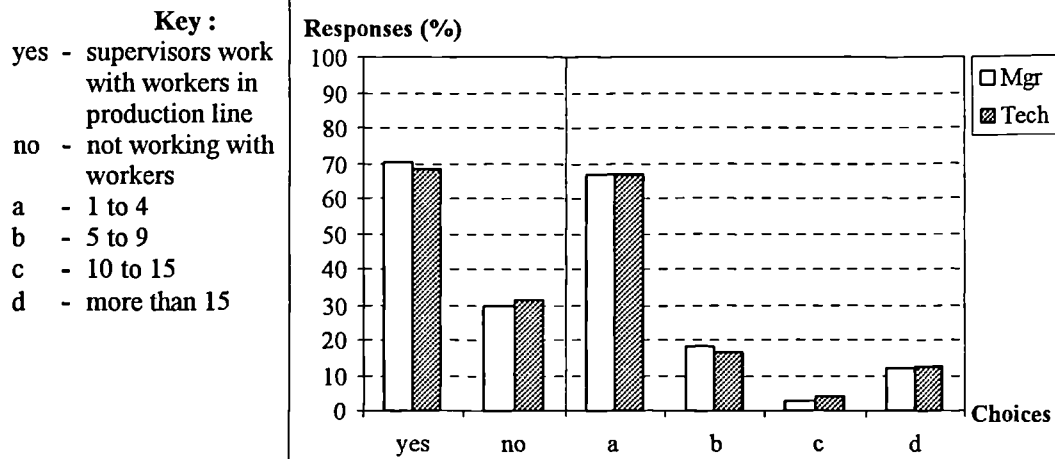


Figure 23. Supervisors Work with Workers in Production Line, and the Number of Supervisors

Supervisors in many companies were reported to be working with the workers together in the production line. The number of supervisors was normally within 4 persons.

(Ref.: ISO Survey Part II, Question 9, and Element 4.9 - Process Control 9.2)



*Finding 24.* Over 70% responses had schedules for regular machine maintenance and about 60% of them had good experience in using their schedules

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
50	36	8	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	44	26	88	72	0.0807
no	6	10	12	28	0.0807
a (if yes)	7	1	16	4	0.0795
b (if yes)	27	16	61	62	0.9886
c (if yes)	10	7	23	27	0.6975
d (if yes)	0	2	0	8	Nil
e (if yes)	0	0	0	0	Nil

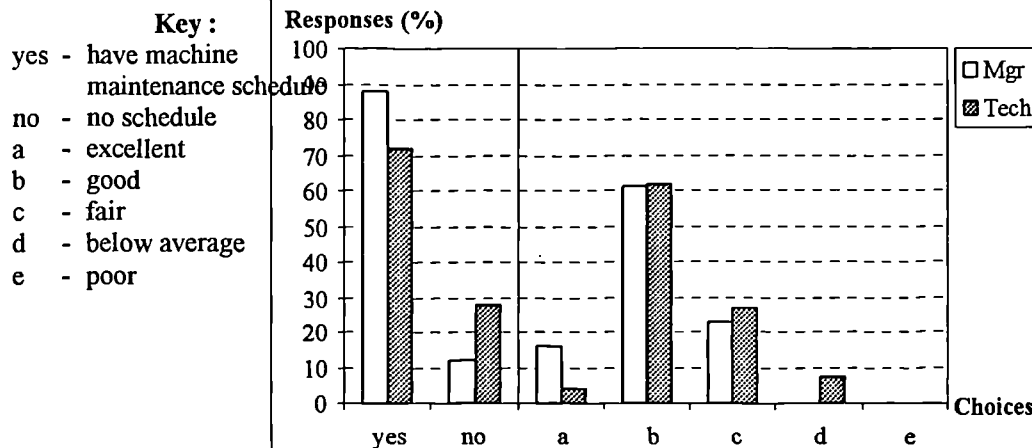


Figure 24. Scheduling for Machine Maintenance, and Its Effectiveness

In order to maintain the functionality of the production equipment, regular maintenance was very important. In the findings, most companies had a regular schedule for machine maintenance and had good experience in using their schedule.

(Ref.: ISO Survey Part II, Question 9, and Element 4.9 - Process Control 9.3)

3.10 Inspection and Testing (ISO 9000 Standard: Element 4.10)

*Finding 25.* All companies, except a 11% response of non-ISO 9000 registered companies, had a procedure for inspection of incoming materials

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
55	36	3	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	55	32	100	89	Nil
no	0	4	0	11	Nil
a (if yes)	8	0	15	0	Nil
b (if yes)	40	16	73	50	0.0330 <0.05
c (if yes)	7	13	13	41	0.0071 <0.05
d (if yes)	0	3	0	9	Nil
e (if yes)	0	0	0	0	Nil

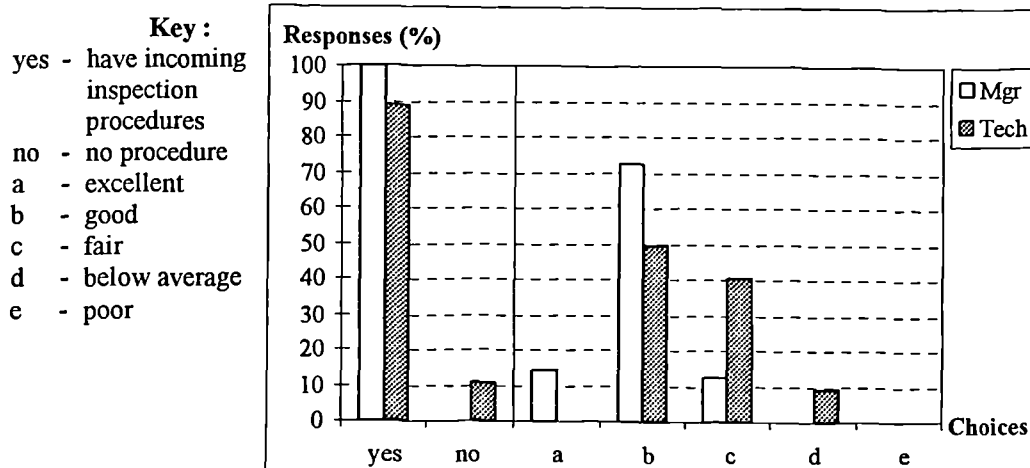


Figure 25. Procedures for Incoming Inspection and Its Efficiency

It was found that 100% ISO 9000 registered companies had a procedure for inspection of incoming material. Similarly, most non-ISO 9000 registered companies had incoming inspection procedures. Although all companies agreed the usefulness of the procedures, ISO 9000 registered companies had a more positive attitude and better experience.

(Ref.: ISO Survey Part II, Question 10, and Element 4.10 - Inspection and Training 10.1)

*Finding 26.* Companies (44% managerial responses and 31% technical responses) used inspection teams to ensure their products were inspected, tested and identified

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
54	35	4	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	24	11	44	31	0.2241
b	7	12	13	34	0.0265 <0.05
c	21	11	39	31	0.4794
d	13	2	24	6	0.0114 <0.05

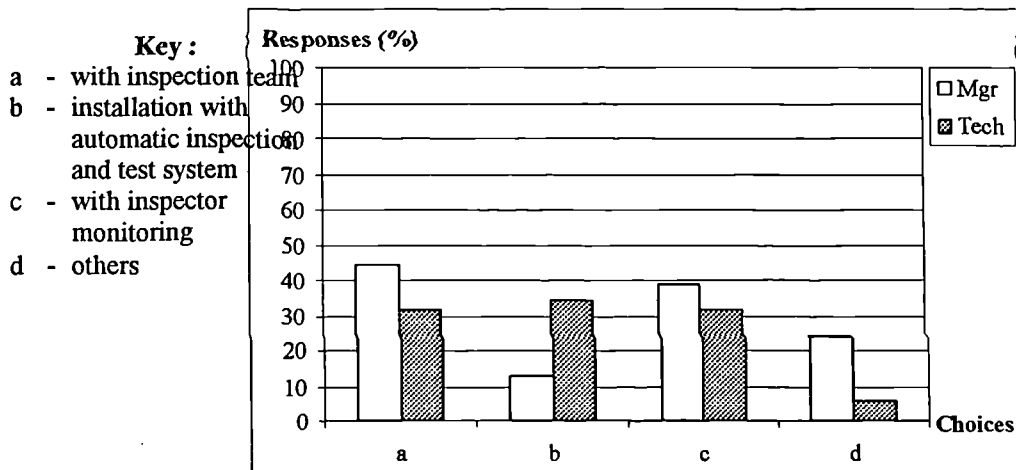


Figure 26. Methods in Ensuring Products are Inspected, Tested & Identified as Required

The ISO 9000 registered companies relied mainly on the inspection team and inspector monitoring to ensure the products quality. The effectiveness of the quality control depended greatly on the individual behaviour of the inspection team. However, some non-ISO 9000 registered companies reported that the use of automatic inspection machines is also common.

(Ref.: ISO Survey Part II, Question 10, and Element 4.10 - Inspection and Training, 10.2)

**Finding 27.** A quality plan that identified and scheduled which, when and where tests and inspections would take place was common to ISO 9000 registered companies (89%) but not for non-ISO 9000 registered companies (35%)

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
56	34	2	2

Choices	Responses		Responses (%)		p-value	
	Mgr	Tech	Mgr	Tech		
yes	50	12	89	35	0.0001	<0.05
no	6	22	11	65	0.0001	<0.05

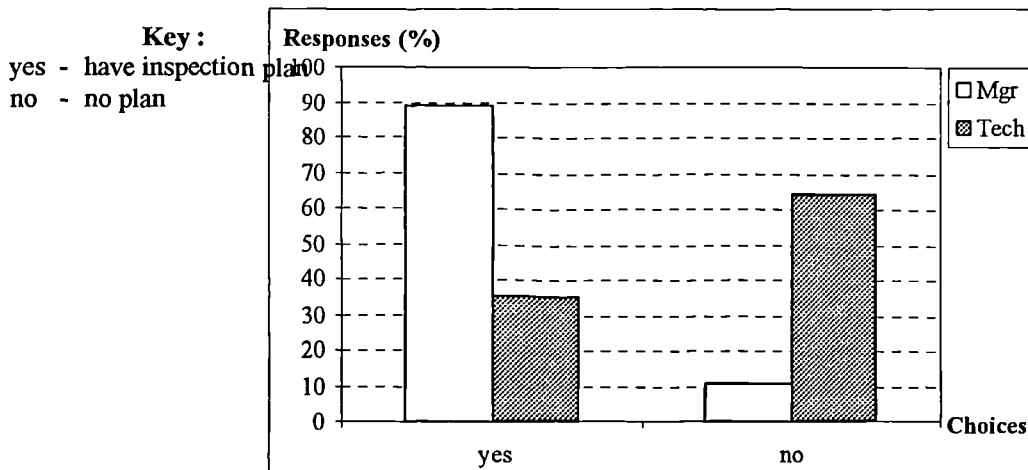


Figure 27. Existence of Quality Plan in Identifying & Scheduling Inspections

Most ISO 9000 registered companies had a quality plan that identified and scheduled which, when and where tests and inspections would take place, while a few non-ISO 9000 registered companies had the plan. This result implied that quality in ISO 9000 registered companies were planned and under control.

(Ref.: ISO Survey Part II, Question 10, and Element 4.10 - Inspection and Training, 10.3)

*Finding 28.* Set-up & first piece inspection was performed during the production verification for over 40% respondents' companies

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
50	35	8	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	26	14	52	40	0.2808
b	13	11	26	31	0.5895
c	7	11	14	31	0.0538
d	26	6	52	17	0.0009 <0.05
e	24	7	48	20	0.0079 <0.05
f	7	0	14	0	Nil

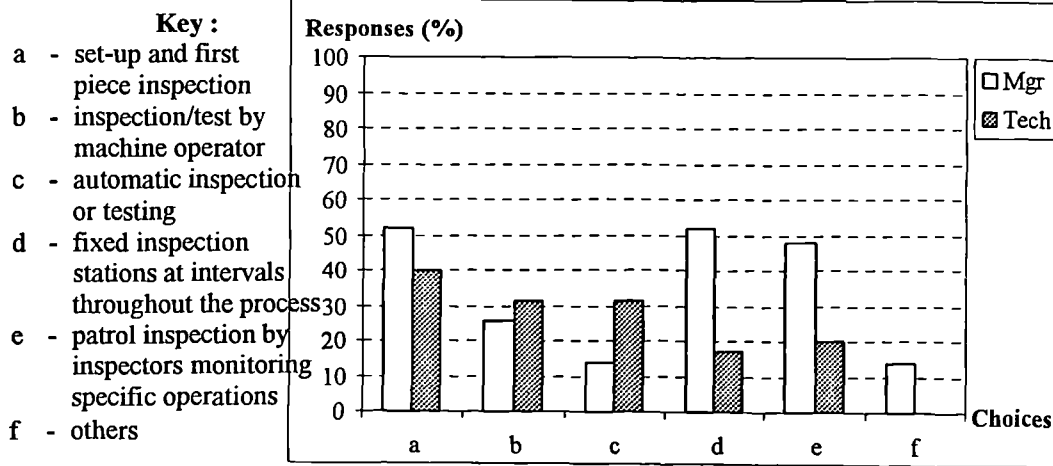


Figure 28. Inspections during Production Verification

(Ref.: ISO Survey Part II, Question 10, and Element 4.10 - Inspection and Training, 10.4)

**3.11 Inspection, Measuring, and Test Equipment (ISO 9000 Standard: Element 4.11)**

*Finding 29.* 94% of the ISO 9000 and 75% of non-ISO 9000 registered companies were found to have a regular schedule to calibrate all inspection, measuring and test equipment varying from monthly to yearly according to the types of equipment

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
54	36	4	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	51	27	94	75	0.0184 <0.05
no	3	9	6	25	0.0184 <0.05
a (if yes)	3	6	6	22	0.0720
b (if yes)	0	6	0	22	Nil
c (if yes)	1	2	2	7	0.3289
d (if yes)	0	1	0	4	Nil
e (if yes)	47	12	92	44	0.0001 <0.05

- Key:**  
 yes - have regular calibration schedule  
 no - no schedule  
 a - everyday  
 b - every two days  
 c - every three days  
 d - every four days  
 e - others

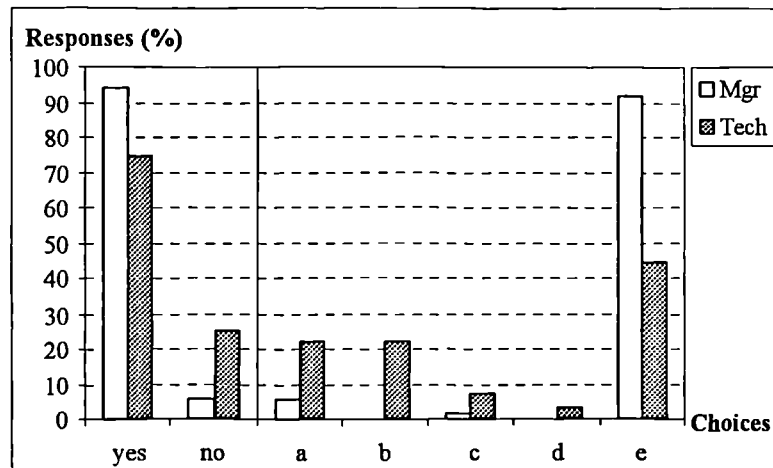


Figure 29. Regular Scheduling Calibration, and Its Frequency

It was found that most companies had a regular schedule to calibrate all test, measurement and inspection equipment. Referring to the equipment type and the usage frequency, different equipment would have a different schedule. Generally the calibration schedules were quite long.

(Ref.: ISO Survey Part II, Question 11, and Element 4.11 - Inspection, Measuring and Test Equipment 11.1)

**Finding 30.** Over 60% of the respondents would contact suppliers for maintenance when they found their equipment defective, out of calibration range or unsuitable for use.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
55	36	3	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	43	22	78	61	0.0795
b	0	5	0	14	Nil
c	16	9	29	25	0.6732
d	27	9	49	25	0.0214 <0.05
e	13	1	24	3	0.0017 <0.05

- Key :**
- a - contact suppliers for maintenance
  - b - continue using it
  - c - repair by own engineer
  - d - buy new equipment
  - e - others

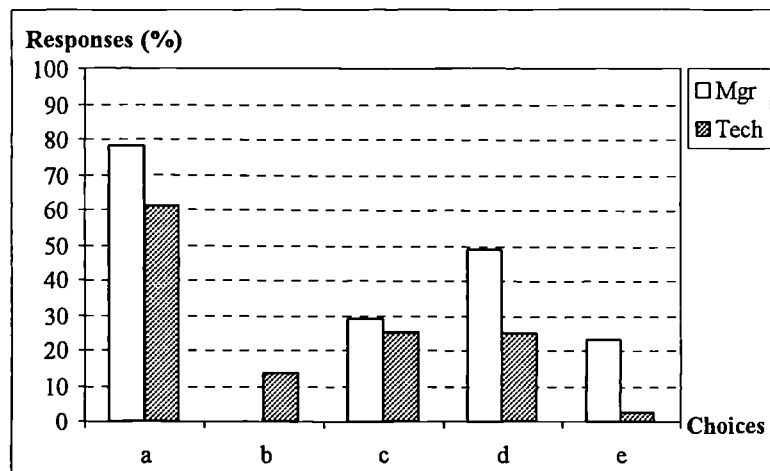


Figure 30. Actions when Equipment is Defective, Out of Calibration Range or Unsuitable for Use

If equipment were found defective, out of calibration range or unsuitable for use, many companies would contract the relevant suppliers for maintenance. For the rest, ISO 9000 registered companies would tend to buy new equipment or repair by themselves, but some non-ISO 9000 registered companies would continue using improper equipment.

(Ref.: ISO Survey Part II, Question 11, and Element 4.11 - Inspection, Measuring and Test Equipment 11.2)

### 3.12 Inspection and Test Status (ISO 9000 Standard: Element 4.12)

*Finding 31.* Inspection records and labels were the main clue to identify the inspection and test status of a product in both ISO 9000 (81%) and non-ISO 9000 (47%) registered companies

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
57	36	1	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	14	5	25	14	0.2181
b	12	3	21	8	0.0891
c	17	6	30	17	0.1553
d	28	15	49	42	0.4878
e	12	2	21	6	0.0227 <0.05
f	46	17	81	47	0.0006 <0.05
g	3	0	5	0	Nil
h	4	0	7	0	Nil

- Key :**
- a - markings
  - b - authorised stamps
  - c - tags
  - d - labels
  - e - routing cards
  - f - inspection records
  - g - test software
  - h - others

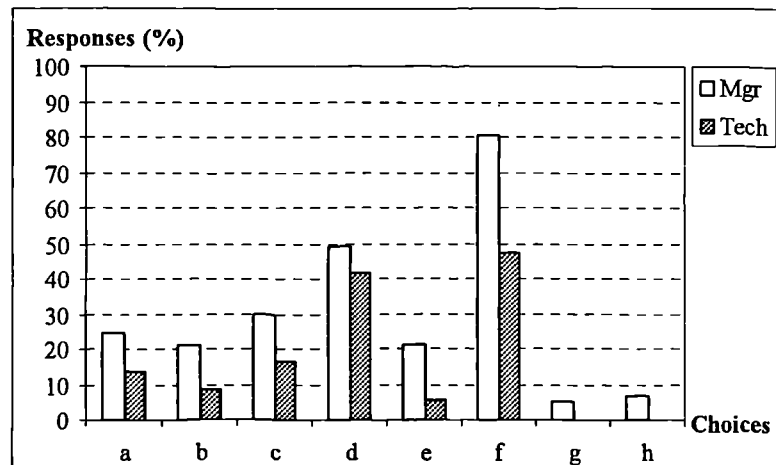


Figure 31. Methods in Identifying Inspection & Test Status of Products

To identify the inspection status of products, most companies would refer to the inspection records and product labels. Moreover, inspection records were highly applied in the ISO 9000 registered companies.

(Ref.: ISO Survey Part II, Question 12, and Element 4.12 – Inspection and Test Status 12.1)



**Finding 32.** Operators' inspection instructions were commonly found in over 70% of responses. The ISO 9000 registered companies seemed to be better instructions (77% of the companies ranked their instructions above average) compared with the non-ISO 9000 companies (46%).

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
56	36	2	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	45	26	80	72	0.3698
no	11	10	20	28	0.3698
a (if yes)	6	0	13	0	Nil
b (if yes)	29	12	64	46	0.1366
c (if yes)	9	12	20	46	0.0198 <0.05
d (if yes)	1	2	2	8	0.3502
e (if yes)	0	0	0	0	Nil

- Key :**  
 yes - have instructions for each operator  
 no - no instruction  
 a - excellent  
 b - good  
 c - fair  
 d - poor  
 e - very poor

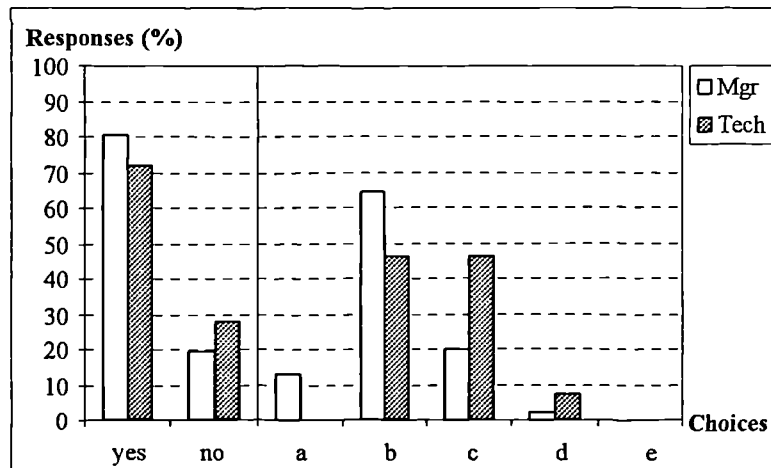


Figure 32. Inspection Instructions for Each Operator and Its Usefulness

As inspection plan was well developed; different parameters used would result in different inspection confidence. Thus, most companies had inspection instructions provided for their operators. However, employees of the ISO 9000 registered companies had better perceptions than that of the non-ISO 9000 registered companies.

(Ref.: ISO Survey Part II, Question 12, and Element 4.12 – Inspection and Test Status 12.2)

**Finding 33.** In most ISO 9000 registered companies, 80-100% of the workers were actually followed the inspection procedures, but only 40-60% of them followed the procedures in most non-ISO 9000 registered companies

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
49	34	9	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	2	6	4	18	0.0669
b	0	3	0	9	Nil
c	3	12	6	35	0.0023 <0.05
d	13	7	27	21	0.5394
e	31	6	63	18	0.0000 <0.05

- Key :**  
 a - under 20%  
 b - 20 to 40%  
 c - 40 to 60%  
 d - 60 to 80%  
 e - 80 to 100%

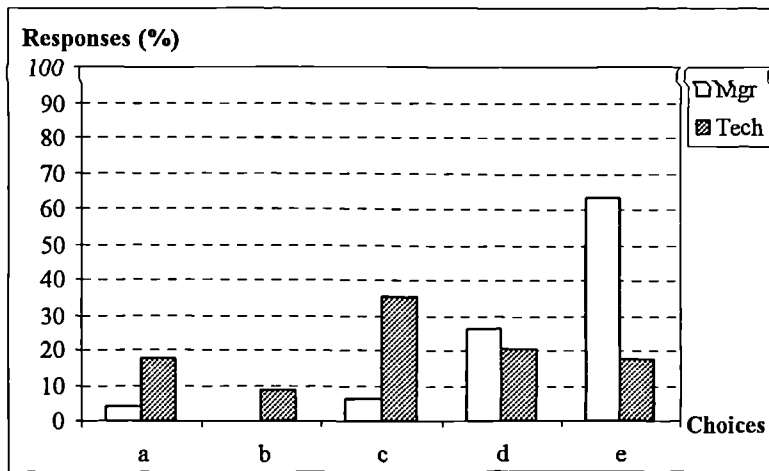


Figure 33. Percentage of Workers Following Inspection Instructions

It was found that the attitudes of the employees of ISO 9000 registered companies were much better than that of the non-ISO 9000 registered companies. In ISO 9000 registered companies, 63% of the respondents claimed that 80 to 100% of the employees followed the instructions, while there were only 18% of the respondents from the non-ISO 9000 registered companies.

(Ref.: ISO Survey Part II, Question 12, and Element 4.12 – Inspection and Test Status 12.3)

**3.13 Control of Non-conforming Product (ISO 9000 Standard: Element 4.13)**

*Finding 34.* Line supervisors were mainly responsible for reporting the non-conforming products in 55% and 39% of the responses from ISO 9000 and non-ISO 9000 registered companies, respectively

<i>Finding 33. Total Responses</i>		<i>No Response</i>	
<i>Mgr</i>	<i>Tech</i>	<i>Mgr</i>	<i>Tech</i>
56	36	2	0

<b>Choices</b>	<b>Responses</b>		<b>Responses (%)</b>		<b>p-value</b>
	<b>Mgr</b>	<b>Tech</b>	<b>Mgr</b>	<b>Tech</b>	
a	19	8	34	22	0.2334
b	11	11	20	31	0.2357
c	31	14	55	39	0.1258
d	17	6	30	17	0.1419

- Key :**  
 a - quality control manager  
 b - technical assistants  
 c - line supervisors  
 d - operators  
 e - others

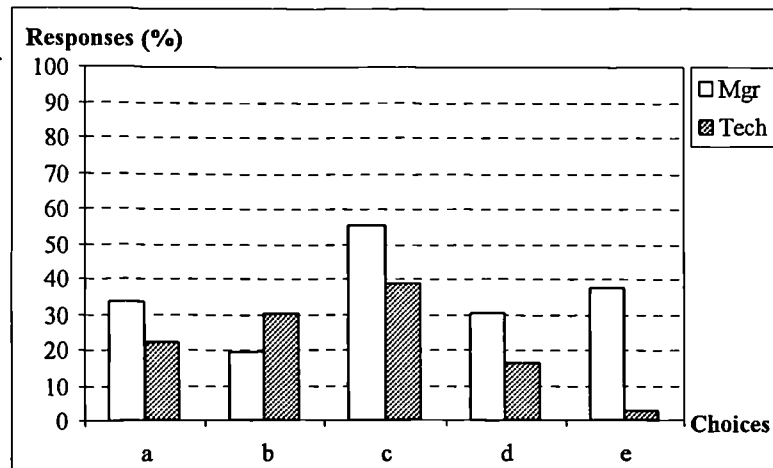


Figure 34. People Responsible for Reporting Non-conformities

In ISO 9000 registered companies, line supervisors and quality control manager were the most likely persons responsible for reporting the non-conforming products. In non-ISO 9000 registered companies, line supervisors and technical assistants were the one responsible.

(Ref.: ISO Survey Part II, Question 13, and Element 4.13 – Control of Non-conforming Product 13.1)

**Finding 35.** Employees in the ISO 9000 registered companies found it easier in write a report for non-conforming products than those in non-ISO 9000 registered companies (64% versus 31%)

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
55	35	3	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	2	3	4	9	0.3680
b	19	21	35	60	0.0176 <0.05
c	35	11	64	31	0.0026 <0.05

**Key :**  
 a - very difficult  
 b - difficult  
 c - easy to handle

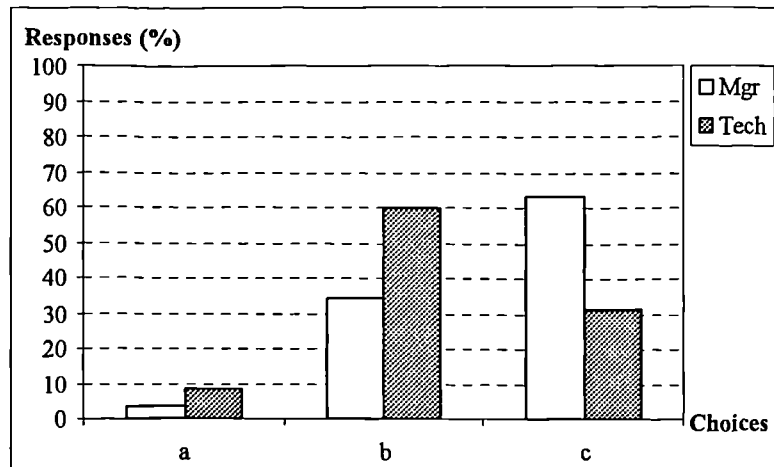


Figure 35. Difficulty for Employees Writing Non-conformities Report

64% of the ISO 9000 registered companies and 31% of the non-ISO 9000 registered companies believed that it was easy to handle non-conforming products report writing. On the other hand, 35% of the ISO 9000 registered companies and 60% of the non-ISO registered companies thought that report writing was difficult.

(Ref.: ISO Survey Part II, Question 13, and Element 4.13 – Control of Non-conforming Product 13.2)

3.14 Corrective Actions (ISO 9000 Standard: Element 4.14)

*Finding 36.* About 70% of the respondents' companies measured the effectiveness of the corrective actions. Counting the number of defectives was used as the best indicator of measuring.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
58	33	0	3

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	45	21	78	64	0.1552
no	13	12	22	36	0.1552
a (if yes)	8	5	18	24	0.5730
b (if yes)	19	14	42	67	0.0659
c (if yes)	12	1	27	5	0.0095 <0.05
d (if yes)	17	2	38	10	0.0056 <0.05

- Key :**  
 yes - measure the effectiveness of corrective actions  
 no - no measure  
 a - using charts  
 b - counting number of defectives  
 c - measure productivity  
 d - others

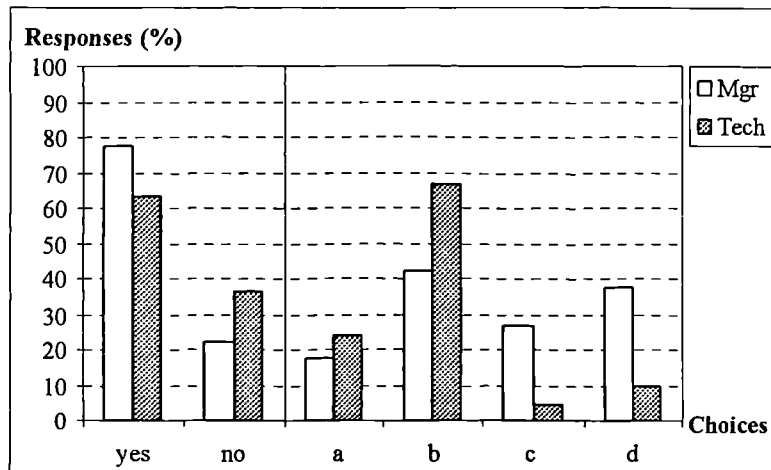


Figure 36. Measuring Effectiveness of Corrective Actions, and the Measuring Methods

Many companies found to have measurement on the effectiveness of the corrective actions. The most common method was directly counting the number of defectives generated.

(Ref.: ISO Survey Part II, Question 14, and Element 4.14 – Corrective Actions 14.1)

**Finding 37.** It was found that 96% of the ISO 9000 registered companies keep the correction records, while 74% of the non-ISO 9000 registered companies kept the records.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
57	31	1	5

Choices	Responses		Responses (%)		p-value	
	Mgr	Tech	Mgr	Tech		
yes	55	23	96	74	0.0114	<0.05
no	2	8	4	26	0.0114	<0.05

**Key :**  
 yes - keeping correction records  
 no - not keeping

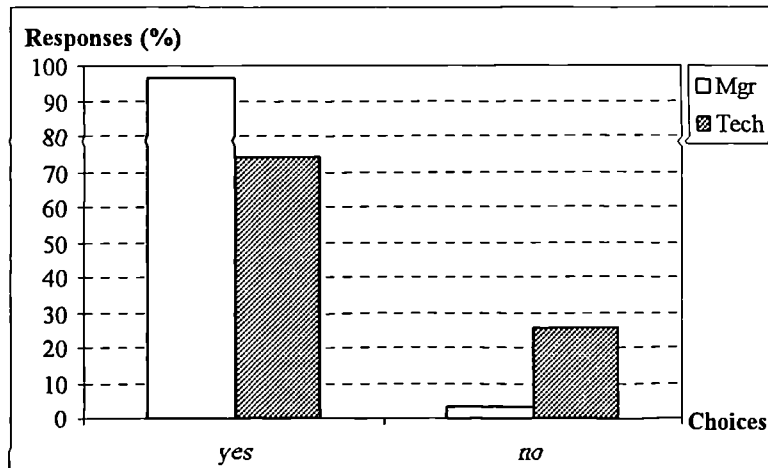


Figure 37. Keeping Correction Records

Almost all ISO 9000 registered companies and many non-ISO 9000 registered companies had kept the correction records for future reference.

(Ref.: ISO Survey Part II, Question 14, and Element 4.14 – Corrective Actions 14.2)

**Finding 38.** Line operators or QC teams were normally asked in the responses to seek the root causes in generating defects

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
56	31	2	5

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	25	16	45	52	0.5383
b	22	15	39	48	0.4168
c	19	3	34	10	0.0048 <0.05

- Key :**  
a - line operators  
b - form a QC team  
c - others

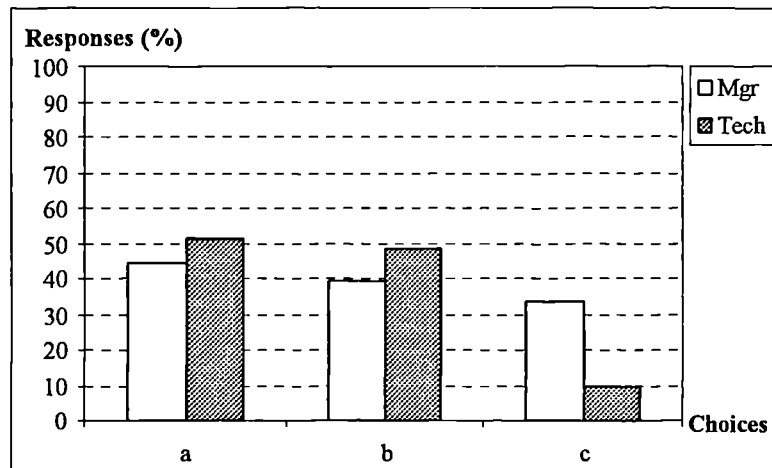


Figure 38. People in Finding the Root Causes of Defects

In order to find the root causes of defects, 45% of the ISO 9000 registered companies and 52% of the non-ISO 9000 registered companies would ask the line operators directly. Moreover, 39% of the ISO 9000 registered companies and 48% of the non-ISO 9000 registered companies would form a team to handle the problem.

(Ref.: ISO Survey Part II, Question 14, and Element 4.14 – Corrective Actions 14.3)

**3.15 Handling, Storage, Packaging and Delivery (ISO 9000 Standard: Element 4.15)**

*Finding 39.* Over 75% of the responses replied that their companies had methods to prevent the damage of product and over 80% of them were satisfied with the performance

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
56	36	2	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	52	28	93	78	0.0598
no	4	8	7	22	0.0598
a (if yes)	6	2	12	7	0.5379
b (if yes)	14	6	27	21	0.5938
c (if yes)	27	15	52	54	0.8898
d (if yes)	4	5	8	18	0.2255
e (if yes)	1	0	2	0	Nil

- Key :**
- yes - have methods to prevent product damage
  - no - no method
  - a - extremely satisfied
  - b - very satisfied
  - c - satisfied
  - d - marginally satisfied
  - e - dissatisfied

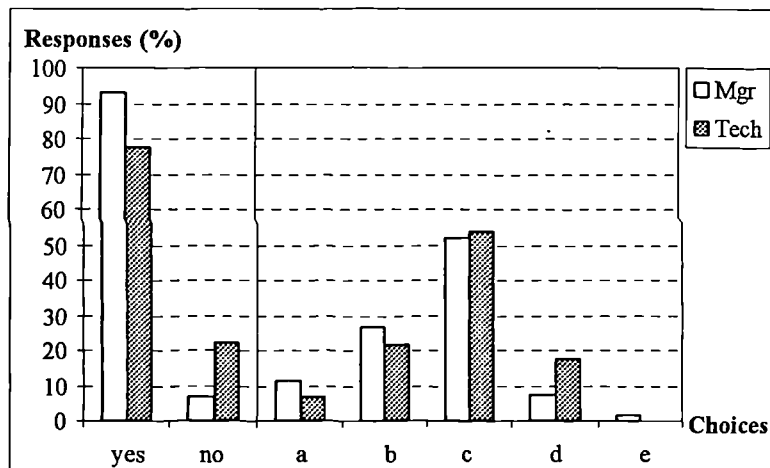


Figure 39. Methods in Preventing Product Damage, and the Degree of Satisfaction

Most companies had installed methods to prevent the damage of products and only a few respondents were reported to be unsatisfied with the methods.

(Ref.: ISO Survey Part II, Question 15, and Element 4.15 – Handling, Storage, Packaging and Delivery 15.1)



**Finding 40.** Less than 20% of the responses mentioned that companies' storage containers were not designed and provided by them, or purchased from others

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
51	34	7	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	8	5	16	15	0.9035
b	9	8	18	24	0.5123
c	25	17	49	50	0.9305
d	9	4	18	12	0.4664

- Key :**
- a - designed and provided by company
  - b - purchased from others with the intention of reducing damage or deterioration
  - c - both of them
  - d - neither of them

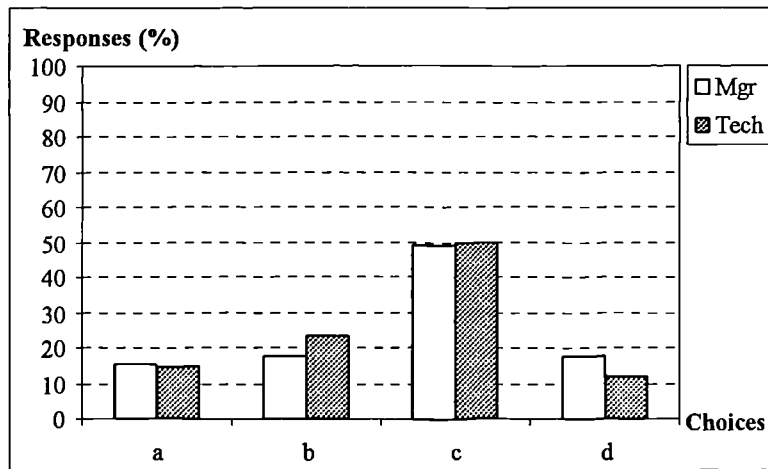


Figure 40. Source of Storage Containers

Owing to the cost and suitability of the storage containers, they were both designed and provided by the companies themselves and purchased from outside.

(Ref.: ISO Survey Part II, Question 15, and Element 4.15 – Handling, Storage, Packaging and Delivery 15.2)

*Finding 41.* 70% of the ISO 9000 and 50% of the non-ISO 9000 registered companies always deliver the product to customers on time

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
56	36	2	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	6	3	11	8	0.7112
b	39	18	70	50	0.0592
c	11	13	20	36	0.0807
d	0	2	0	6	Nil

- Key :**  
 a - absolutely on time  
 b - always on time  
 c - sometimes  
 d - never

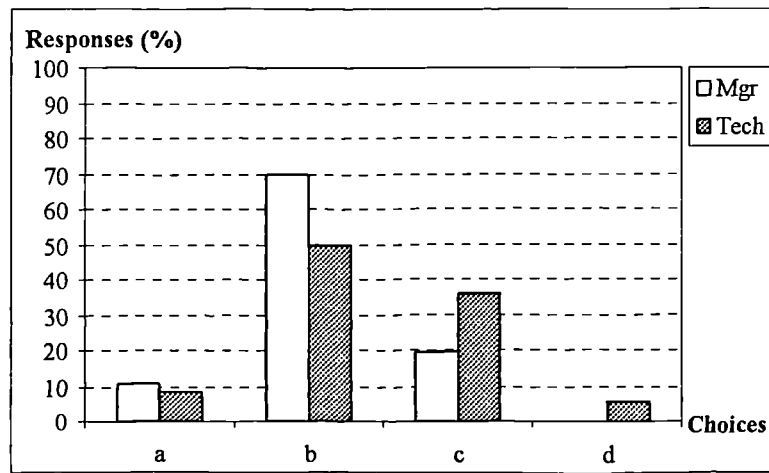


Figure 41. Product Delivery to Customers

Both ISO 9000 and non-ISO 9000 registered companies claimed that their product delivery were generally on time.

(Ref.: ISO Survey Part II, Question 15, and Element 4.15 – Handling, Storage, Packaging and Delivery 15.3)

**Finding 42.** Customers were reported to be unsatisfied with companies' packaging in only 3% of the responses of non-ISO 9000 registered companies

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
51	35	7	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	3	2	6	6	0.9743
b	24	7	47	20	0.0099 <0.05
c	24	17	47	49	0.8919
d	0	8	0	23	Nil
e	0	1	0	3	Nil

- Key :**  
 a - extremely satisfied  
 b - very satisfied  
 c - satisfied  
 d - marginally satisfied  
 e - dissatisfied

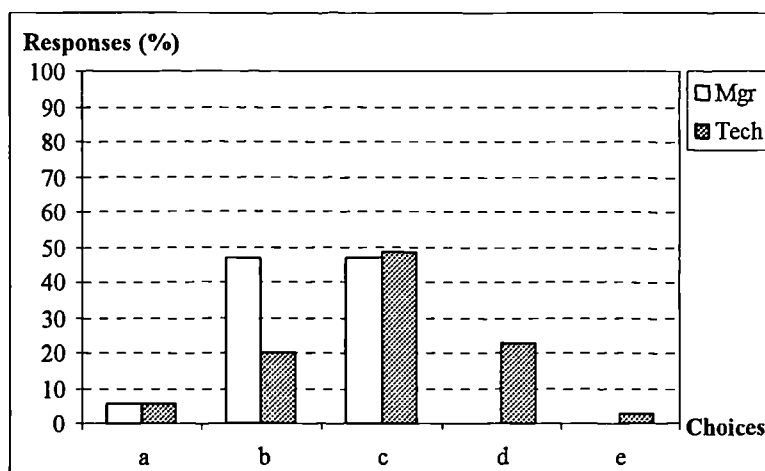


Figure 42. Degree of Customer Satisfaction for Packaging

It was found that customers of ISO 9000 registered companies tended to be more satisfied with the packaging than that of non-ISO 9000 registered companies. This might be due to the better communication with customers under the ISO 9000 system.

(Ref.: ISO Survey Part II, Question 15, and Element 4.15 – Handling, Storage, Packaging and Delivery 15.4)

**3.16 Quality Records (ISO 9000 Standard: Element 4.16)**

*Finding 43.* 62% of the ISO 9000 and 41% of the non-ISO 9000 registered companies had incompletely defined quality records, and 36% of the ISO 9000 and 52% of the non-ISO 9000 registered companies had no indexing in the quality records

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	29	16	7

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	26	12	62	41	0.0907
b	15	15	36	52	0.1845
c	15	3	36	10	0.0090 <0.05

- Key :**  
a - incompletely defined  
b - no indexing  
c - damaged or lost

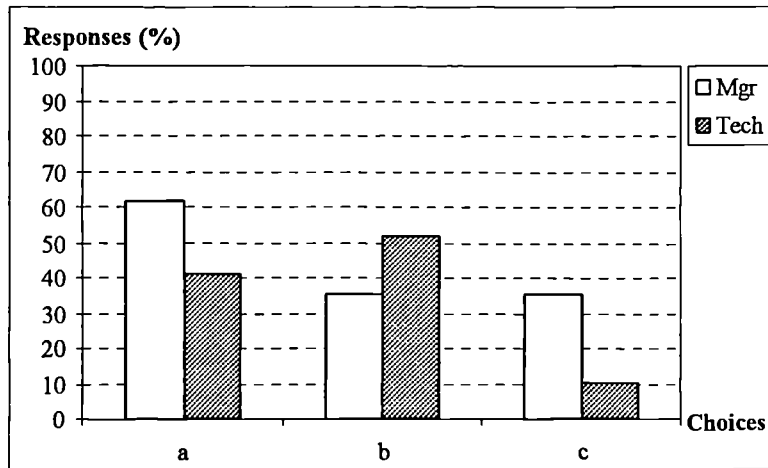


Figure 43. Problems in Quality Records

Incomplete quality records definition and no indexing of quality records could be found in many companies.

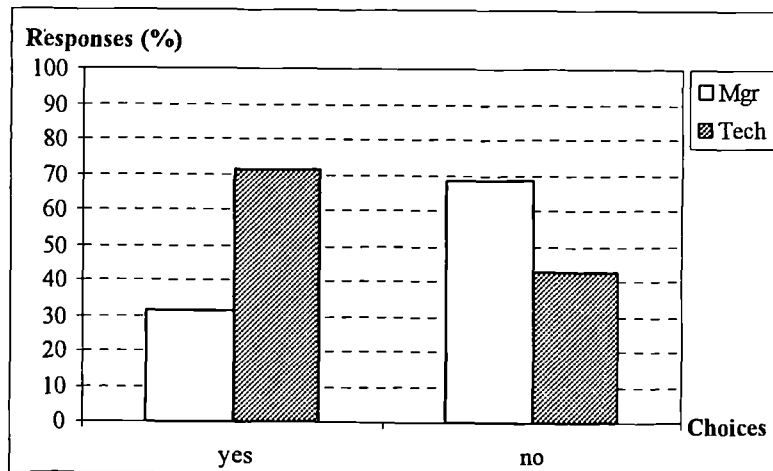
(Ref.: ISO Survey Part II, Question 16, and Element 4.16 - Quality Record 16.1)

**Finding 44.** Workers in ISO 9000 registered companies (32%) were less likely to make the same mistake or error frequently than those in non-ISO 9000 registered companies (71%)

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
57	32	1	4

Choices	Responses		Responses (%)		p-value	
	Mgr	Tech	Mgr	Tech		
yes	18	20	32	71	0.0043	<0.05
no	39	12	68	43	0.0043	<0.05

**Key :**  
 yes - workers make the same mistake or error frequently  
 no - not frequent



Section 33.01

Figure 44. Workers Making Same Mistake or Error Frequently

In ISO 9000 registered companies, few workers were found to make the same mistake or error. This was just the opposite situation in the non-ISO 9000 registered companies.

(Ref.: ISO Survey Part II, Question 16, and Element 4.16 - Quality Record 16.2)

**Finding 45.** 97% of the ISO 9000 registered companies used re-training programs to correct workers' mistakes, while only 64% of non-ISO 9000 registered companies did so.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
35	28	23	8

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	34	18	97	64	0.0018 <0.05
b	5	10	14	36	0.0481 <0.05
c	0	1	0	4	Nil

- Key :**
- a - re-training
  - b - warning letter
  - c - transfer worker to other position

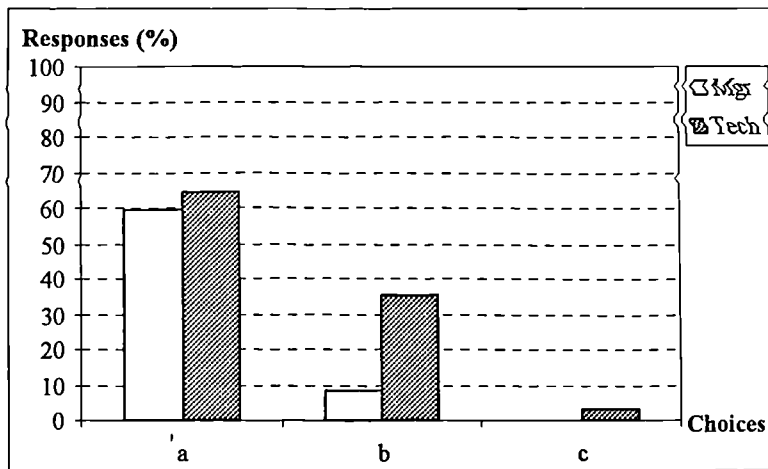


Figure 45. Actions to Correct Workers' Mistake

ISO 9000 registered companies preferred re-training for the workers to correct their frequent mistakes or errors, but non-ISO 9000 registered companies would use re-training and warning letters.

(Ref.: ISO Survey Part II, Question 16, and Element 4.16 - Quality Record 16.3)

**Finding 46.** Quality records were retained in all ISO 9000 registered companies and most of the non-ISO 9000 registered companies (74%).

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
48	34	10	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	48	25	100	74	Nil
no	0	9	0	26	Nil
a (if yes)	0	3	0	12	Nil
b (if yes)	1	3	2	12	0.1645
c (if yes)	0	2	0	8	Nil
d (if yes)	2	8	4	32	0.0092 <0.05
e (if yes)	45	9	94	36	0.0001 <0.05

- Key :**  
 yes - retain quality records  
 no - no retain  
 a - one month  
 b - two months  
 c - half year  
 d - one year  
 e - over one year

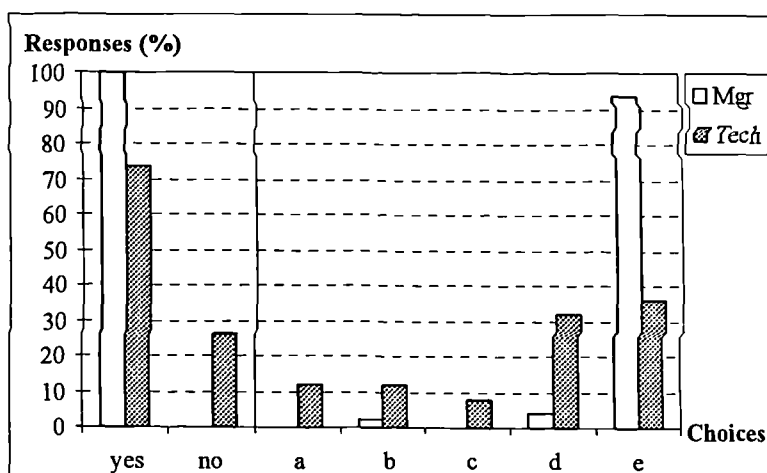


Figure 46. Retaining Quality Records and the Duration

ISO 9000 registered companies always retained the quality records and most of them kept the records over one year. However, only 74% of the non-ISO 9000 registered companies were found to have quality records retained and a few of them had kept the records over one year.

(Ref.: ISO Survey Part II, Question 16, and Element 4.16 - Quality Record 16.4)

**3.17 Internal Quality Audits (ISO 9000 Standard: Element 4.17)**

*Finding 47.* Only 17% of the non-ISO 9000 registered companies had no internal audit

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
57	36	1	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	57	30	100	83	Nil
no	0	6	0	17	Nil

**Key :**  
 yes - have internal audits  
 no - no audit

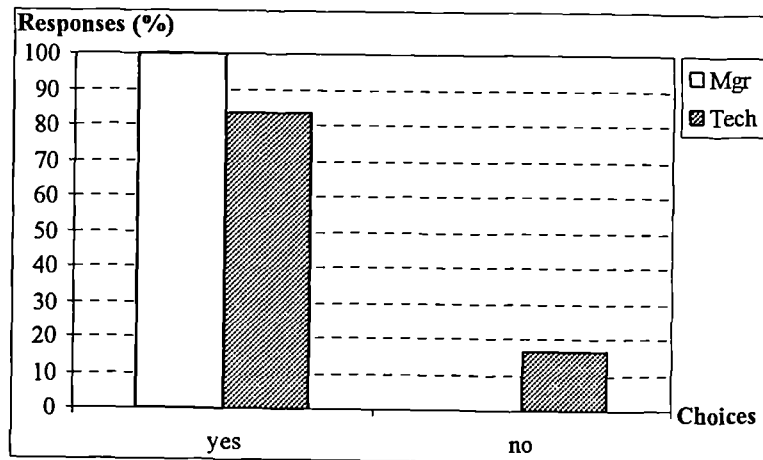


Figure 47. Internal Audits

All ISO 9000 registered companies and 83% of the non-ISO 9000 registered companies claimed that they had internal audits.

(Ref.: ISO Survey Part II, Question 17, and Element 4.17 – Internal Quality Audits 17.1)



**Finding 48.** Only 7% of the ISO 9000 and 50% of the non-ISO 9000 registered companies had no external audit

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
57	36	1	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	53	18	93	50	0.0001 <0.05
no	4	18	7	50	0.0001 <0.05

**Key :**  
 yes - have external audits  
 no - no audit

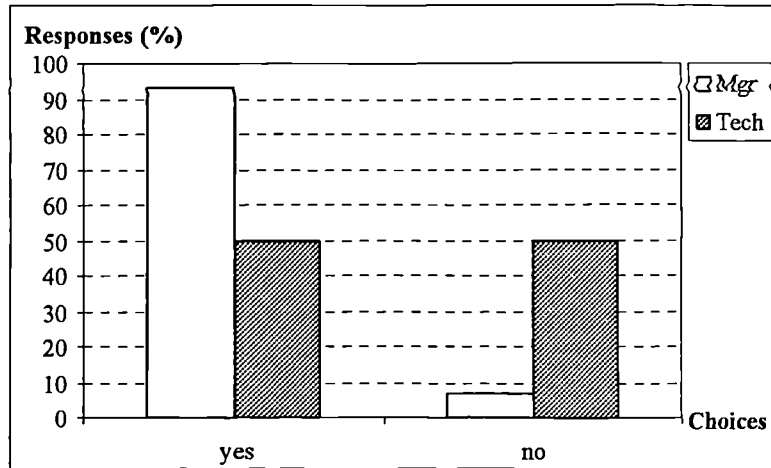


Figure 48. External Audits

All ISO 9000 registered companies and only 50% of the non-ISO 9000 registered companies claimed that they had external audits. It was found that the external auditors of most companies were HKQAA, Arthur Andersen, Etal Sgs Yarsley and Hoklas, etc.

(Ref.: ISO Survey Part II, Question 17, and Element 4.17 – Internal Quality Audits 17.2)

**Finding 49.** The three most significant factors in selecting auditors were training and experience (91% of the ISO 9000 versus 62% of the non-ISO 9000 registered companies), competence and skills (56% versus 53%), and education and professional qualification (65% versus 35%).

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
54	34	4	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	30	18	56	53	0.8131
b	49	21	91	62	0.0032 <0.05
c	35	12	65	35	0.0065 <0.05
d	15	9	28	26	0.8949
e	9	12	17	35	0.0465 <0.05
f	10	3	19	9	0.2166
g	4	4	7	12	0.4944
h	18	9	33	26	0.5023
i	4	0	7	0	Nil

- Key :**
- a - education & professional qualifications
  - b - training & experience
  - c - competence & skills
  - d - communications abilities
  - e - knowledge of production, accounting, system analysis & engineering
  - f - ability to get on with people
  - g - ability to cope with changing technology
  - h - ability to communicate, verbally and in writing
  - i - others

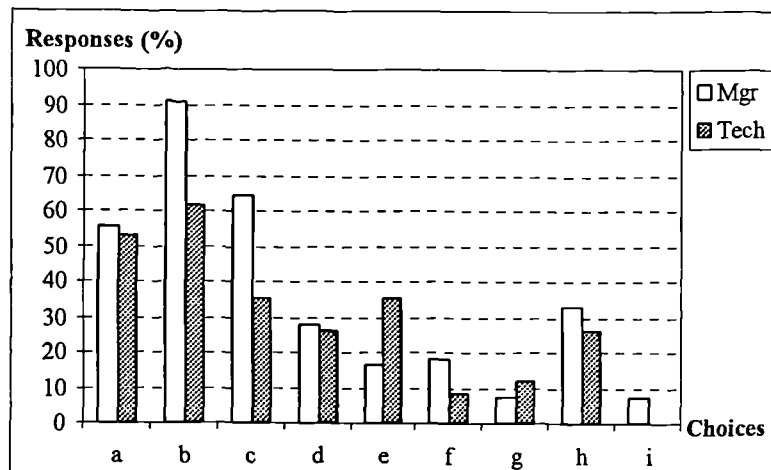


Figure 49. Criteria in Selecting Auditors

The three most significant factors in selecting auditors were the same for ISO 9000 and non-ISO 9000 registered companies. They were training & experience, competence & skills, and education & professional qualification.

(Ref.: ISO Survey Part II, Question 17, and Element 4.17 – Internal Quality Audits 17.3)

3.18 Training (ISO 9000 Standard: Element 4.18)

*Finding 50.* The ISO 9000 registered companies (94%) were found to be more supportive in staff development training programs than non-ISO 9000 registered companies (78%).

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
49	36	9	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	46	28	94	78	0.0449 <0.05
no	3	8	6	22	0.0449 <0.05
a (if yes)	21	5	46	18	0.0148 <0.05
b (if yes)	1	15	2	54	0.0001 <0.05
c (if yes)	24	8	52	29	0.0435 <0.05

- Key :**  
 yes - pay training fee for employees  
 no - not pay  
 a - sponsor and release employees during office hours  
 b - just pay or reimburse course fees  
 c - both of them

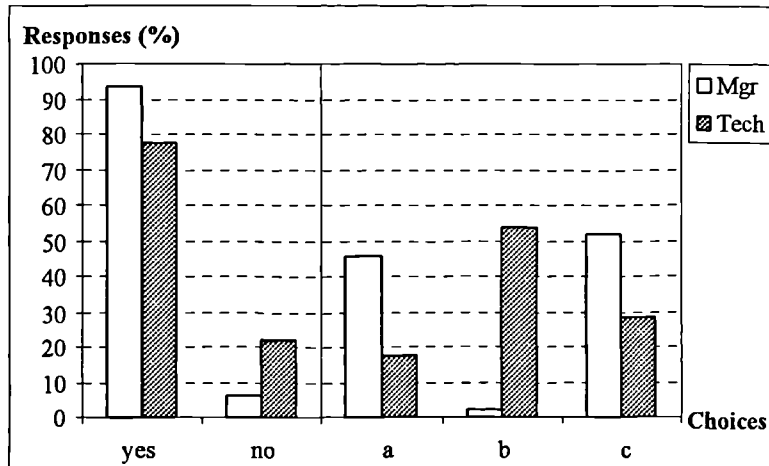


Figure 50. Pay Training Fees for Employees

More ISO 9000 registered companies mentioned that they would pay training fees for their employees than non-ISO 9000 registered companies. For the ISO 9000 registered companies, they not only paid the course fees, but also released employees during office hours. On the other hand, most non-ISO 9000 registered companies preferred paying the course fees only.

(Ref.: ISO Survey Part II, Question 18, and Element 4.18 – Training 18.1)

*Finding 51.* Over 70% of the responses of ISO 9000 registered companies ranked above average for the training and staff development plans, while about 30% of the responses were found from non-ISO 9000 registered companies.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
55	35	3	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	8	0	15	0	Nil
b	31	11	56	31	0.0207 <0.05
c	14	19	25	54	0.0053 <0.05
d	2	3	4	9	0.3680
e	0	2	0	6	Nil

- Key :**  
 a - excellent  
 b - good  
 c - fair  
 d - below average  
 e - poor

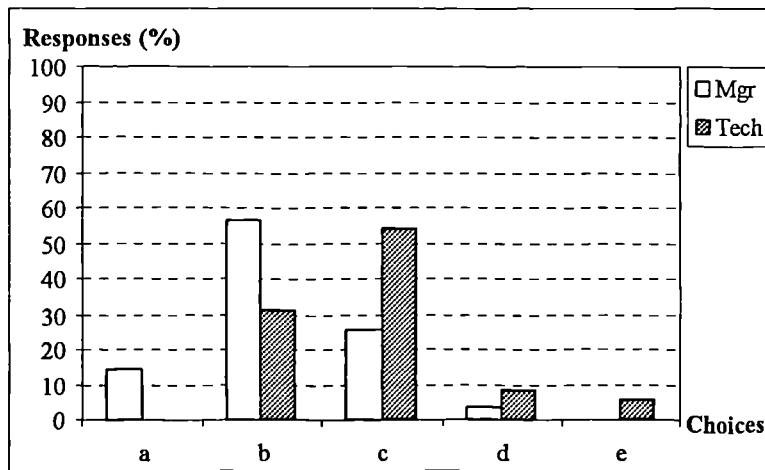


Figure 51. Performance of Training and Staff Development Plans

From the respondents' feedback, training and staff development plans in ISO 9000 registered companies were better than that in non-ISO 9000 registered companies.

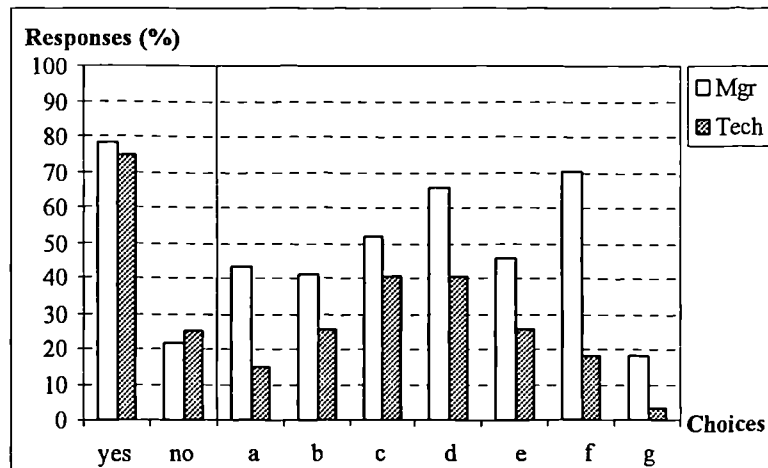
(Ref.: ISO Survey Part II, Question 18, and Element 4.18 – Training 18.2)

**Finding 52.** There were regular training programs for employees in over 70% of the responses.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
56	36	2	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	44	27	79	75	0.6943
no	12	9	21	25	0.6943
a (if yes)	19	4	43	15	0.0127 <0.05
b (if yes)	18	7	41	26	0.2049
c (if yes)	23	11	52	41	0.3521
d (if yes)	29	11	66	41	0.0384 <0.05
e (if yes)	20	7	45	26	0.1027
f (if yes)	31	5	70	19	0.0000 <0.05
g (if yes)	8	1	18	4	0.0411 <0.05

- Key :**  
 yes - provide regular training program  
 no - no program  
 a - Chinese language  
 b - English language  
 c - basic usage of computer  
 d - technical knowledge  
 e - management  
 f - quality knowledge  
 g - others



(a) Figure 52. Providing Regular Training Programs, and the Types of Program

Above 70% companies had regular training programs for employees. ISO 9000 registered companies were found to have more training than the non-ISO 9000 registered companies. Quality knowledge, technical knowledge and computer were the main programs in the ISO 9000 registered companies. A little different from ISO 9000 registered companies, technical knowledge, computer and management were the main programs in the non-ISO 9000 registered companies.

(Ref.: ISO Survey Part II, Question 18, and Element 4.18 – Training 18.3)

*Finding 53.* Only 4% of the ISO 9000 and 12% of the non-ISO 9000 registered companies had employees not very satisfied with the provided training courses

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
55	34	3	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	6	2	11	6	0.4262
b	36	19	65	56	0.3722
c	11	9	20	26	0.4830
d	2	4	4	12	0.1934
e	0	0	0	0	Nil

- Key :**
- a - very satisfied
  - b - quite satisfied
  - c - neither satisfied nor dissatisfied
  - d - not very satisfied
  - e - dissatisfied

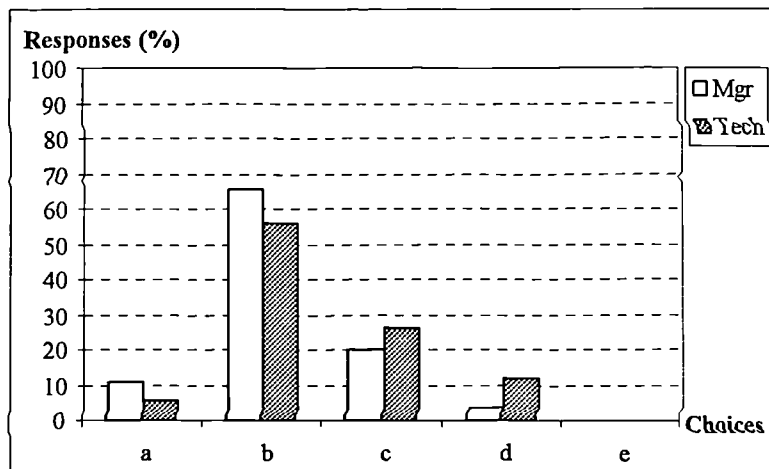


Figure 53. Feedback of Employees about Training Courses

No employee was reported to be dissatisfied with the training courses provided from the companies, and only a few employees were not very satisfied.

(Ref.: ISO Survey Part II, Question 18, and Element 4.18 – Training 18.4)

3.19 Servicing (ISO 9000 Standard: Element 4.19)

*Finding 54.* About 10% of the responses would have workers taking more than one week's time to respond to the customers' order.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
43	35	15	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	11	3	26	9	0.0433 <0.05
b	10	3	23	9	0.0738
c	16	17	37	49	0.3187
d	4	4	9	11	0.7619
e	2	8	5	23	0.0256 <0.05

- Key :**
- a - less than two hours
  - b - half day
  - c - one to three days
  - d - one week
  - e - more than one week

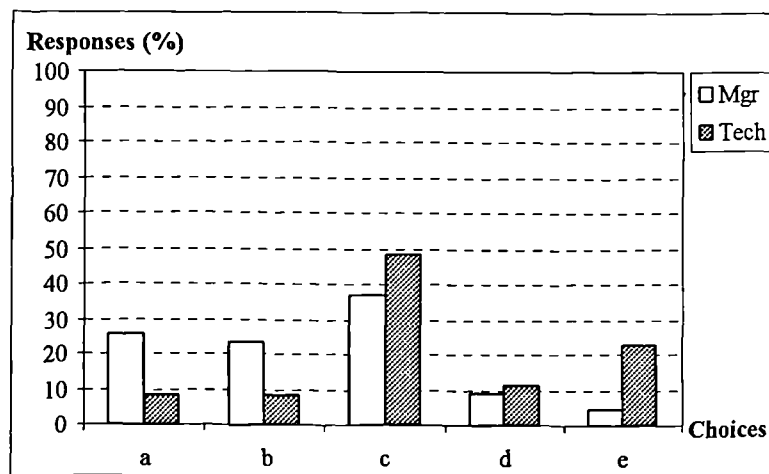


Figure 54. Respond Time to Customer Orders

1 to 3 days was the most likely response time for customer orders. From the results, ISO 9000 registered companies tended to have shorter response time than the non-ISO 9000 registered companies.

(Ref.: ISO Survey Part II, Question 19, and Element 4.19 – Servicing19.1)

*Finding 55.* 58% of the ISO 9000 and 31% of the non-ISO 9000 registered companies seldom received customer complaints, 38% of the ISO 9000 and 49% of the non-ISO 9000 registered companies reported that they received customer complaints sometimes.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
50	35	8	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	2	3	4	9	0.4142
b	19	17	38	49	0.3375
c	29	11	58	31	0.0154 <0.05
d	0	4	0	11	Nil

- Key :**  
a - always  
b - sometimes  
c - seldom  
d - never

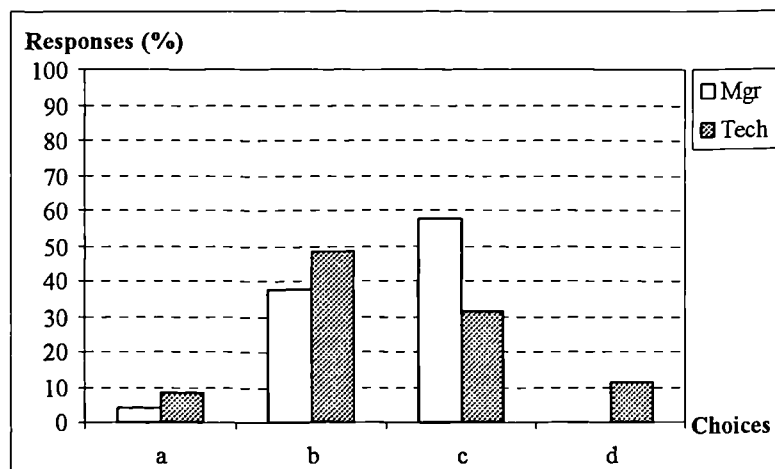


Figure 55. Frequency in Receiving Customer Complaints

In general, ISO 9000 registered companies had fewer complaints from customers than the non-ISO 9000 registered companies. However, it may be strange that only 11% of the non-ISO 9000 registered companies replied that they never had complaints. There might be no complaint channel established in non-ISO 9000 registered companies.

(Ref.: ISO Survey Part II, Question 19, and Element 4.19 – Servicing19.2)



**Finding 56.** More than 70% of the respondents' companies had enough equipment and well-trained people available to give timely service, and over 70% of them were reported to have their customers quite satisfied.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
47	35	11	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	42	25	89	71	0.0507
no	5	10	11	29	0.0507
a (if yes)	4	1	10	4	0.3673
b (if yes)	30	18	71	72	0.9607
c (if yes)	8	5	19	20	0.9255
d (if yes)	0	1	0	4	Nil
e (if yes)	0	0	0	0	Nil

- Key :**
- yes - have enough equipment and well-trained people for timely service
  - no - no service
  - a - very satisfied
  - b - quite satisfied
  - c - neither satisfied nor dissatisfied
  - d - not very satisfied
  - e - dissatisfied

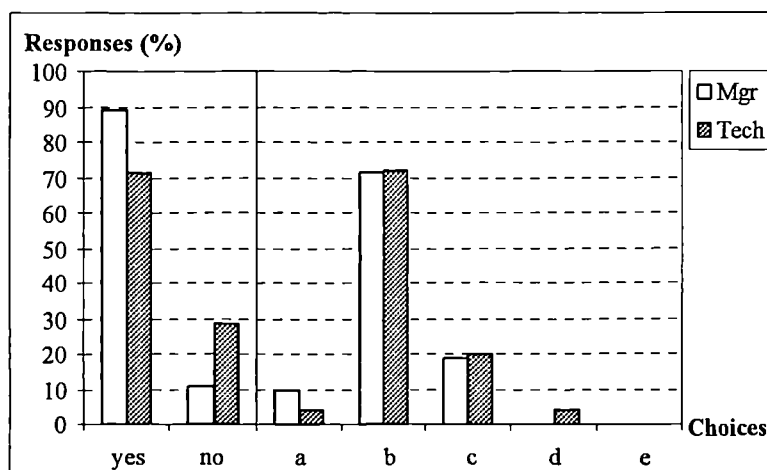


Figure 56. Equipment and Well-trained People for Timely Service, and Customer Feedback

Most companies replied that they had enough equipment and well-trained people available to give timely service. Most of them also claimed that their customers were quite satisfied with the services.

(Ref.: ISO Survey Part II, Question 19, and Element 4.19 – Servicing19.3)

### 3.20 Statistical Techniques (ISO 9000 Standard: Element 4.20)

*Finding 57.* About 40% of the respondents thought that statistical techniques were good in ensuring process capability and it was fair for about 30% of the respondents

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
43	35	15	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	5	2	12	6	0.3700
b	18	15	42	43	0.9305
c	14	10	33	29	0.7088
d	4	6	9	17	0.3091
e	2	2	5	6	0.8350

**Key :**  
a - excellent  
b - good  
c - fair  
d - below average  
e - poor

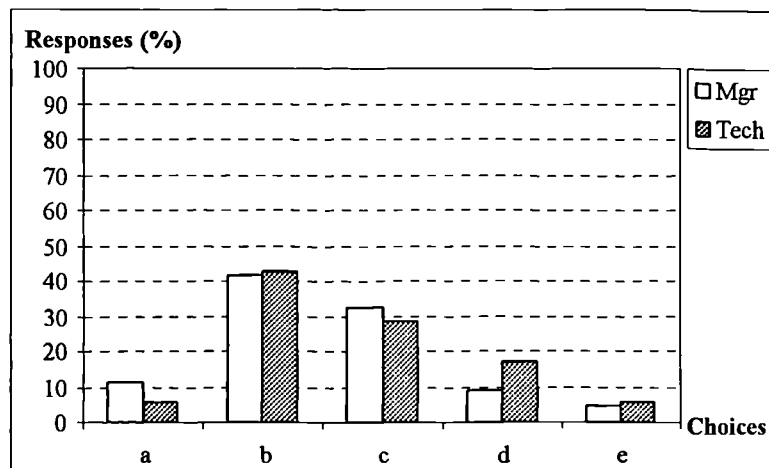


Figure 57. Performance of Statistical Techniques in Ensuring Process Capability

Only 14% of the ISO 9000 and 23% of the non-ISO 9000 registered companies thought that statistical techniques were not very useful for ensuring process capability.

(Ref.: ISO Survey Part II, Question 20, and Element 4.20 – Statistical Technique 20.1)

**Finding 58.** 51% of the ISO 9000 registered companies used Statistical Process Control (SPC), while 39% of the non-ISO 9000 registered companies used SPC and AOQL methods

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
43	23	15	13

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	22	9	51	39	0.3584
b	3	7	7	30	0.0344 < 0.05
c	8	9	19	39	0.0710
d	18	0	42	0	Nil

- Key :**
- a - Statistical Process Control (SPC)
  - b - Taguchi method
  - c - AOQL
  - d - others

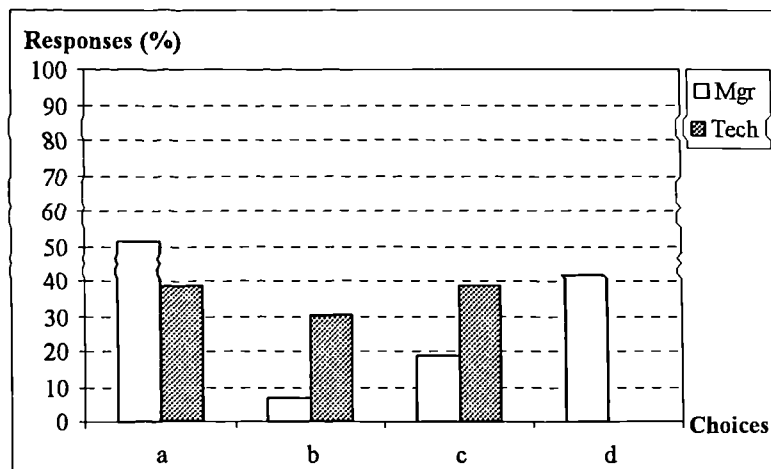


Figure 58. Types of Statistical Techniques Being Used

The most commonly used statistical techniques were most likely to be the Statistical Process Control (SPC) and ALQ method.

(Ref.: ISO Survey Part II, Question 20, and Element 4.20 – Statistical Technique 20.2)

*Finding 59.* 71% of the ISO 9000 registered companies' responses and 60% of the non-ISO 9000 registered responses were agreed that statistical techniques were useful in improving product quality

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
45	35	13	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	8	3	18	9	0.2409
b	24	18	53	51	0.8677
c	11	9	24	26	0.8981
d	2	5	4	14	0.1513

- Key :**  
a - very useful  
b - useful  
c - neither useful nor useless  
d - useless

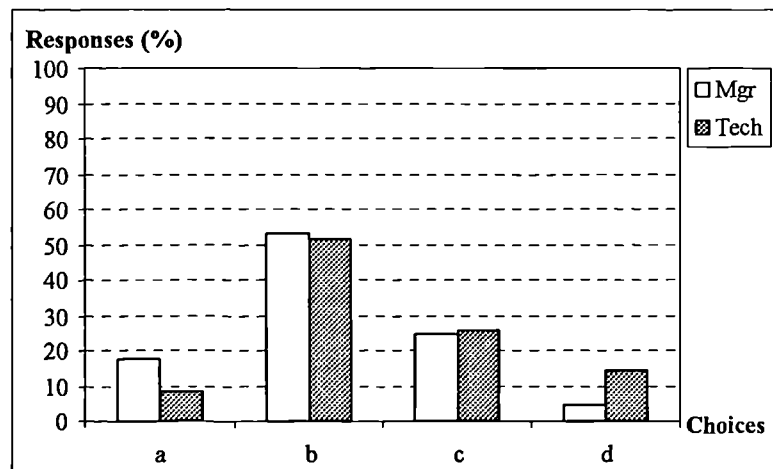


Figure 59. Usefulness of Statistical Techniques in Improving Product Quality

Statistical techniques were found to be useful in improving the product quality.

(Ref.: ISO Survey Part II, Question 20, and Element 4.20 – Statistical Technique 20.3)

**Survey on ISO 9000 Implementation in Hong Kong**

\*\*\*\*\*

**Content**

Part I            General Information

ISO 9000 Quality Management System

Part II           Questions on the detailed elements of ISO Quality Standard

\*\*\*\*\*

**Part I -     General Information****(This part is optional, however, please help to complete this part as far as possible)**

Company Name     : \_\_\_\_\_

Address            : \_\_\_\_\_

Nature of business: (Please ✓ as appropriate)

Service            Toy                 Printing            Electrical & Electronic Industry     Industrial machinery     Plastics            Metal products     Textile & Clothing     Food and beverage     Chemical           Construction       

Others: \_\_\_\_\_

Company Status                 : Locally owned / Foreign invested

Year Established in Hong Kong     : \_\_\_\_\_

Year Established in China         : \_\_\_\_\_

No. Of Employees in Hong Kong     : \_\_\_\_\_

No. Of Employees in China         : \_\_\_\_\_

Respondent Name &amp; Position       : \_\_\_\_\_

Contact Telephone No.             : \_\_\_\_\_

Date                                 : \_\_\_\_\_

(Contact person in your company)

For further interview, please     contact     : \_\_\_\_\_

Position                             : \_\_\_\_\_

Telephone                           : \_\_\_\_\_

## Part II - Questions on the detailed elements of ISO Quality Standard.

### 1. Element 4.1 Management Responsibility

Management responsibility is the keystone requirement of ISO 9000 standards. It covers the overall responsibility of management to the organisation, which centres in the creation, monitoring, and improvement of a quality assurance system within a company by which a uniform high-quality product is produced.

1.1 Are all high-position personnel involved in the management, performance, and verification of quality-related work so identified?

Yes  No

Except these people, is there other personnel involvement?

Yes  No

If YES, please list:

\_\_\_\_\_

\_\_\_\_\_

1.2 How often does management regularly review the system of quality assurance for effectiveness and suitability?

- a) Once a month
- b) Every two month
- c) Twice a year
- d) Once a year
- e) Do not review
- f) Others:
- \_\_\_\_\_

### 2. Element 4.2 - Quality System

It is an extension of the Element 4.1. The supplier should establish and maintain a documented quality system as a means of ensuring that product conforms to specified requirements. It should concern the initiation, development, implementation, and maintenance of the quality system.

2.1 Which departments in your company get a Quality Manual? Please ✓ as appropriate:

- a) Quality Department
- b) Production Control Department
- c) Design Department

- d) Engineering Department
- e) Process Control Department
- f) Manufacturing Department
- g) All departments
- h) Others:
- \_\_\_\_\_

2.2 What is the main goal for your quality plan? Please ✓ one where appropriate:

- a) reduce accidents
- b) reduce material waste
- c) increase productivity
- d) increase efficiency
- e) increase quality
- f) fulfil customer requirement
- g) others:
- \_\_\_\_\_
- \_\_\_\_\_

2.3 How often will Quality Manual be reviewed?

- a) monthly
- b) quarterly
- c) half yearly
- d) yearly
- e) others:
- \_\_\_\_\_

### 3. Element 4.3 - Contract Review

It is being considered as a marketing function. Specifically, it is the task of assuring the customer's needs and expectations are met. This function is supported by the co-operation and feedback of several other departments, such as engineering, manufacturing, and quality.

3.1 Who will be involved in the co-ordinating and maintaining the contract review process? Please ✓ as many as appropriate:

- a) President
- b) Vice-president
- c) Quality Manager
- d) Production control Manager
- e) Process control Manager
- f) Engineering Manager
- g) Manufacturing Manager
- h) All Managers
- i) Others:
- \_\_\_\_\_

3.2 Are contracts formally reviewed with customer?

- Yes  No
- If YES, how often is it?
- a) once a month
  - b) every 2 months
  - c) half a year
  - d) once a year
  - e) others: \_\_\_\_\_

- 3.3 How do you collect customers' opinion about your product/services in order to improve quality? Please ✓ as many as appropriate:
- a) survey
  - b) customer complaints
  - c) warranty claims
  - d) repeat business
  - e) sales data
  - f) delivery time
  - g) not measuring at all
  - h) others: \_\_\_\_\_

#### 4. Element 4.4 - Design Control

'Design Control' is lengthy in comparison to most elements. It states that if the process used to control the design is effective, then the design will be consistent. The supplier should establish and maintain procedures to control and verify the design of the product to ensure that the specified requirements are met.

- 4.1 How do you ensure that design output meets design-input requirements?
- a) with qualify auditor
  - b) primary design with fully instruction
  - c) the employees are very smart
  - d) others : \_\_\_\_\_
- 4.2 Does your company have periodic design re-qualification?
- Yes  No
- If YES, how often is it?
- a) every 2 weeks
  - b) once a month
  - c) every 2 months
  - d) half a year
  - e) others: \_\_\_\_\_

- 4.3 Do you think the design control really useful to your company?
- a) following specific steps during design of a product will reduce or kill the creativity of designers
  - b) designs have been better overall as a result of consistent and disciplined approach
  - c) neither useful nor useless
  - d) other comments: \_\_\_\_\_

#### 5. Element 4.5 - Document Control

The basic principle of the element is for management to identify quality records and develop procedures to control this quality documentation within the company. In reality, discipline in issuing and tracking documents can prevent many of the serious problems companies experienced in bringing a successful product to market.

- 5.1 It is very difficult to control documents and data that relate to the requirements of ISO 9000. How do you maintain the control?
- a) re-training program for the employee
  - b) use advance computer to store the documents
  - c) constant review of documents
  - d) others: \_\_\_\_\_
- 5.2 Does your company find problem(s) in the following items? Please ✓ as appropriate:
- a) uncontrolled photocopying
  - b) quality manual outdated
  - c) incomplete/incorrect data in documents
  - d) unauthorised distribution
  - e) others: \_\_\_\_\_
- 5.3 What types of documents and quality records will be controlled? Please ✓ as appropriate:
- a) drawings and blueprints
  - b) quality assurance procedures
  - c) quality manuals
  - d) test data
  - e) calibration data
  - f) specification
  - g) operation procedures

- h) inspection reports
  - i) control plans
  - j) qualification reports
  - k) audit report
  - l) material review reports
  - m) quality cost reports
  - n) others:
- 

**6. Element 4.6 - Purchasing**

In general, this element is intended for company to establish a system ensuring that both the companies understands the appropriate requirements of the purchase order and the subcontractor before the order is released.

- 6.1 Do purchased products conform to stated requirements?  
 Yes  No

If NO, what action(s) will you take? Please ✓ as appropriate:

- a) change the purchased product from the original supplier
  - b) buy new products from other suppliers
  - c) sell these purchased products to other suitable company
  - d) others:
- 

- 6.2 Does your company perform supplier survey?  
 Yes  No

If YES, how often do you find problem supplier, long-term supplier and new qualified supplier from your survey results?

	Problem	Long-term	New qualified
a) very often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) quite often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) sometimes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**7. Element 4.7 - Purchaser Supplied Product**

Purchaser supplied products are those goods your customer sends you to use in your own manufacturing process. This element is merely an

extension of the previous requirement. It covers the verification, shipment, storage, maintenance, and incorporation of customer supplied goods.

- 7.1 Does your company use goods from customer in manufacturing process?  
 Yes  No  not applicable

- 7.2 When product is lost, damaged, or unsuitable for use, what will you do? Please ✓ as appropriate:

- a) continue using it
  - b) redesign the goods
  - c) reject the products
  - d) record the condition and report to the customer
  - e) others:
- 

**8. Element 4.8 - Product Identification & Traceability**

The ability to identify and trace all materials used in the manufacturing process is critical to assuring that you use the correct components for optimal quality.

- 8.1 What do you think if your company use traceability in product identification?

- a) excellent
- b) good
- c) fair
- d) below average
- e) poor

- 8.2 Where are the identification codes attached? Please ✓ as appropriate:

- a) physically applied to the components
  - b) placed on packaging
  - c) placed on labels
  - d) placed on storage bins
  - e) others
- 

**9. Element 4.9 - Process Control**

The element is specifically directed toward activities that must be accomplished for a product to be generated. These activities include



paperwork, manufacturing, training, service, installation and design.

9.1 Does your company find problems in the following? Please ✓ as appropriate:

- a) production plans do not available or updated
  - b) actual operations do not conform to documented instructions
  - c) inspection and test criteria are not documented
  - d) no follow-up actions on identified non-conformance
  - e) not knowing status of inspection
  - f) others:
- 
- 

9.2 Does supervisor work in the production line with workers?

Yes  No

If YES, how many supervisors are there in the production line?

- a) 1- 4
- b) 5- 9
- c) 10- 15
- d) More than 15

9.3 Do you have a schedule for regular machine maintenance?

Yes  No

If YES, what is your experience about using such schedule?

- a) excellent
- b) good
- c) fair
- d) below average
- e) poor

## 10. Element 4.10 - Inspection and Training

It deals with the inspection of goods at receiving, during production, and after production in each phase of the manufacturing cycle. Also, it should be used to gather the data needed to identify the root cause of the problem.

10.1 Do you have a procedure for inspection of incoming material?

Yes  No

If YES, how do you think the efficiency of the procedure?

- a) excellent
- b) good
- c) fair
- d) below average
- e) poor

10.2 How do you ensure that products are inspected, tested and identified according to quality plan or documented procedures?

- a) with inspection team
  - b) installation with automatic inspection and test system
  - c) with inspector monitoring
  - d) others:
- 
- 

10.3 Do you have a quality plan that identifies and schedules which, when and where tests and inspections will take place?

Yes  No

If YES, what kind of test or inspection does your company perform?

---

---

10.4 Does your company include the following checks during the verification at each stage of production? Please ✓ as appropriate:

- a) set-up and first piece inspection
  - b) inspection/test by machine operator
  - c) automatic inspection or test
  - d) fixed inspection stations at intervals throughout the process
  - e) patrol inspection by inspectors monitoring specific operations
  - f) others:
- 
- 

## 11. Element 4.11 - Inspection, Measuring, and Test Equipment

The standard requires you to list, track, and calibrate every piece of equipment used for measuring, inspecting, or testing the products you produce. Equipment shall be used in a manner, which ensures that measurement uncertainty is known and is consistent with the required measurement capability.

Yes  No

11.1 Do you have a regular schedule for calibrating all test, measurement and inspection equipment?

Yes  No

If YES, how often is it?

- a) everyday
  - b) every two days
  - c) every three days
  - d) every four days
  - e) others:
- 

11.2 If you find your equipment defective, out of calibration or unsuitable for use, what action(s) does your company take? Please  as appropriate:

- a) contact the suppliers for maintenance
  - b) continues using it
  - c) repair by your own engineer
  - d) buy new equipment
  - e) others:
- 
- 

## 12. Element 4.12 - Inspection and Test Status

The purpose of this element is to ensure that product is identified as to whether it has been inspected and whether it is conforming or non-conforming. The identification of inspection and test status shall be maintained throughout production and installation of the product to ensure that only product that has passed the required inspections and tests is dispatched, used, or installed.

12.1 How does your company identify the inspection and test status of your products? Please  where appropriate:

- a) markings
  - b) authorised stamps
  - c) tags
  - d) labels
  - e) routing cards
  - f) inspection records
  - g) test software
  - h) others:
- 

12.2 Does your company have any inspection instruction for each operator?

If YES, what do you think?

- a) Excellent
- b) Good
- c) Fair
- d) Poor
- e) Very Poor

12.3 What percentage of your workers follows these procedures?

- a) under 20%
- b) 20 - 40%
- c) 40 - 60%
- d) 60 - 80%
- e) 80 - 100%

## 13. Element 4.13 - Control of Non-conforming Product

The element dictates to a company what must be done to address the identification, segregation, disposition and documentation of the non-conforming product. The purposes are to prevent the rejected product from reaching the customer and identify the presence of a problem and remove the root cause.

13.1 Who is/are responsible for reporting the non-conforming products? Please  where appropriate:

- a) Quality Control Manager
  - b) Technical assistant(s)
  - c) Line supervisor(s)
  - d) Operator(s)
  - e) Others:
- 

13.2 How difficult do your employees find in writing up the above-mentioned report?

- a) very difficult
- b) difficult
- c) easy to handle

## 14. Element 4.14 - Corrective Actions

The unique part of this element is the requirement for a company to become proactive in its approach to problem solving. The root cause for defective product is identified, and corrective action is taken to prevent occurrence in the future.

14.1 Do you measure the effectiveness of the corrective actions?

Yes  No

If YES, how? Please ✓ where appropriate:

- a) using charts
- b) by counting the number of defectives
- c) by measuring productivity
- d) others: \_\_\_\_\_

14.2 Does your company keep correction records?

Yes  No

14.3 How do you find the root causes of the defects?

Please ✓ where appropriate:

- a) ask the line operator(s) directly
- b) form a QC team to find the root cause(s)
- c) others: \_\_\_\_\_

#### 15. Element 4.15 Handling, Storage, Packaging and Delivery

This element is in support of the design and manufacturing elements. The areas covered are associated with protecting the condition of the material from the time it is received from a supplier through the storage, processing, packaging, and delivery stages. It will not guarantee acceptable product, but it will ensure that good product will not be converted into scrap.

15.1 Does your company install any methods to prevent the damage of product?

Yes  No

If YES, how satisfied are you with the prevention method?

- a) extremely satisfied
- b) very satisfied
- c) satisfied
- d) marginally satisfied
- e) dissatisfied

15.2 Are all storage containers (1) designed and provided by you or (2) purchased from others with the intention of reducing damage/deterioration? Please ✓ where appropriate:

- a) (1)
- b) (2)
- c) both of them

d) neither of them

15.3 Does your company deliver the product to customer on time?

- a) absolutely on time
- b) always on time
- c) sometimes
- d) never

15.4 How satisfied are your customers with your packaging?

- a) extremely satisfied
- b) very satisfied
- c) satisfied
- d) marginally satisfied
- e) dissatisfied

#### 16. Element 4.16 - Quality Records

In this element, the supplier should establish and maintain procedures for identification, collection, indexing, filing, storage, maintenance and disposition of quality records. Also, it serves three important purposes: verify the required activities are maintained and followed, verify the condition of the product at a given in time, and provide a history of a part, process or program.

16.1 Have you ever found problem(s) in the following? Please ✓ where appropriate:

- a) defined quality records incomplete
- b) no indexing of quality records
- c) damage in or loss of quality records

16.2 Does your worker make the same mistake or error frequently?

Yes  No

What action will you make?

- a) re-training program
- b) warning letter
- c) transfer the worker to other position

16.3 Does your company retain the quality records?

Yes  No

If YES, how long is it?

- a) one month
- b) two months
- c) half year
- d) one year
- e) over one year

### 17. Element 4.17 Internal Quality Audits

The purpose of this requirement is to ensure that your company's management is constantly checking the effectiveness of its management quality system. The company should carry out a comprehensive system of planned and documented internal quality audits to verify whether quality activities comply with planned arrangements and to determine the effectiveness of the quality system.

17.1 Are there internal audits?

Yes  No

17.2 Are there external audits?

Yes  No

If YES, who are they?

---

17.3 What do you base on in selecting auditors?

Please ✓ the 3 most significant:

- a) education and professional qualification
  - b) training and experience
  - c) competence and skills
  - d) communications abilities
  - e) knowledge of production, accounting, system analysis and engineering
  - f) ability to get on with people
  - g) ability to cope with changing technology
  - h) ability to communicate, verbally and in writing
  - i) others:
- 
- 

### 18. Element 4.18 - Training

The basic premise of this element is for a company to identify the knowledge and skill required and provides for the training of all personnel performing activities affecting quality. Also, the training records should be maintained.

18.1 Will your company pay training fees for the employees?

Yes  No

If YES, will your company:

- a) sponsor and release them during office hours
- b) just pay or reimburse their course fees
- c) both

18.2 How good are the training and staff development plans for all employees in your company?

- a) excellent
- b) good
- c) fair
- d) below average
- e) poor

18.3 Is there any regular training programs for your employees?

Yes  No

If YES, What is it?

- a) Chinese language
  - b) English language
  - c) basic usage of computer
  - d) technical knowledge
  - e) management
  - f) quality knowledge
  - g) others:
- 

18.4 What is the feedback of your employee about the training courses?

- a) very satisfied
- b) quite satisfied
- c) neither satisfied nor dissatisfied
- d) not very satisfied
- e) dissatisfied

### 19. Element 4.19 - Servicing

Service is any contracted servicing that your company provided after the sale of the product. The purpose of this element is to establish and maintain procedures for performing and verifying that servicing meets the specified requirements.

19.1 How long do your workers take to respond to the customers' orders (installation, repair, and etc.)?

- a) less than 2 hours
- b) half day
- c) 1 to 3 day
- d) 1 week
- e) more than 1 week

- 19.2 How often does your company receive complaints from customers?
- a) always
  - b) sometimes
  - c) seldom
  - d) never

- 19.3 Are there enough equipment and well-trained people available to give timely service for your product?
- Yes  No

If YES, what is the feedback of your customer?

- a) very satisfied
- b) quite satisfied
- c) neither satisfied nor dissatisfied
- d) not very satisfied
- e) dissatisfied

## 20. Element 4.20 - Statistical Techniques

This element is included to ensure that its statistical methods are being used by a company to control processes or production, the methods are accurate and properly applied for verifying the acceptability of process capability and product characteristics.

- 20.1 How good are the statistical techniques used in your company to ensure process capability?
- a) excellent
  - b) good
  - c) fair
  - d) below average
  - e) poor

- 20.2 What statistical techniques do your company used? Please ✓ where appropriate:
- a) Statistical Process Control (SPC)
  - b) Taguchi Method
  - c) AOQL
  - d) Others: \_\_\_\_\_

- 20.3 Do you think that the statistical technique can really help you to improve the product quality?
- a) very useful
  - b) useful
  - c) neither useful nor useless
  - d) useless

**Survey on Total Quality Management System Implementation**

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### **1. Introduction**

This report investigates the understanding of concept and implementation of total quality management in Hong Kong. A survey was conducted to explore the state of management systems in Hong Kong based companies under the TQM philosophy. The responses provide insights to both local and foreign companies in determining their corporate strategies for the challenges in the Asia Pacific region.

Total Quality Management (TQM) has become the management style of the 1990s. In order to survive in today's competitive market, companies have been forced to improve their efficiency and effectiveness; to become more customer-oriented; and to work towards both proof of and improvement of quality.

### **2. Questionnaire on Total Quality Management and Survey**

Based on the Deming's quality philosophy, a questionnaire was designed and the question design is shown in Chapter 8. Section 4 of Appendix D shows the questions on the TQM concept and implementation. At the end of the survey findings, a question reference is included. The aim was to research and assess the status of development of TQM in Hong Kong; and also collect responses from different industrial sectors the attitude of employees towards TQM. Through this survey study, the driving force of companies implementing TQM and their major problems and difficulties during the implementation could also be revealed.

Through the Hong Kong Quality Assurance Association (HKQAA), a list of 333 ISO 9000 registered companies was obtained. Out of these questionnaires, a total of 68 returned. Although only 58 responses were identified as valid, the response rate of 17% was still high. Through the Manufacturing Engineering Department in Hong Kong Technical College (Tsing Yi), 70 part-time students were selected and a total of 44 questionnaires were returned. Out of these returns, there were 8 questionnaires returned uncompleted. Therefore, there were 36 valid responses (51%).

Statistical analysis methods were used in assisting survey analysis and reporting. All the computations were carried out on SAS package from a PC. The survey findings are discussed in detail in each section.

### **3. Survey Responses**

As there are two groups of responses according to the respondents' position, the reporting results are labelled/distinguished as "Mgr" and "Tech" for responses from companies and part-time students respectively. Their combined results are then denoted by "Tot".

The following table and chart show that various industrial sectors are included in the survey. The major industrial sectors responded are construction, service and electrical & electronic industries. This result also implied that there are a high level of awareness and interest of quality management system in engineering industry than in service industry in Hong Kong.

Nature of Business	Mgr	Tech	Tot
Chemical	3	0	3
Construction	25	6	31
Electrical & Electronic	9	6	15
Machinery	0	3	3
Metal Products	1	1	2
Plastics	1	2	3
Printing	2	0	2
Service	8	8	16
Textile & Clothing	1	0	1
Toy	1	3	4
Others	7	3	10
No Response	0	4	4

Table showing the Distribution of Business Nature of Respondents

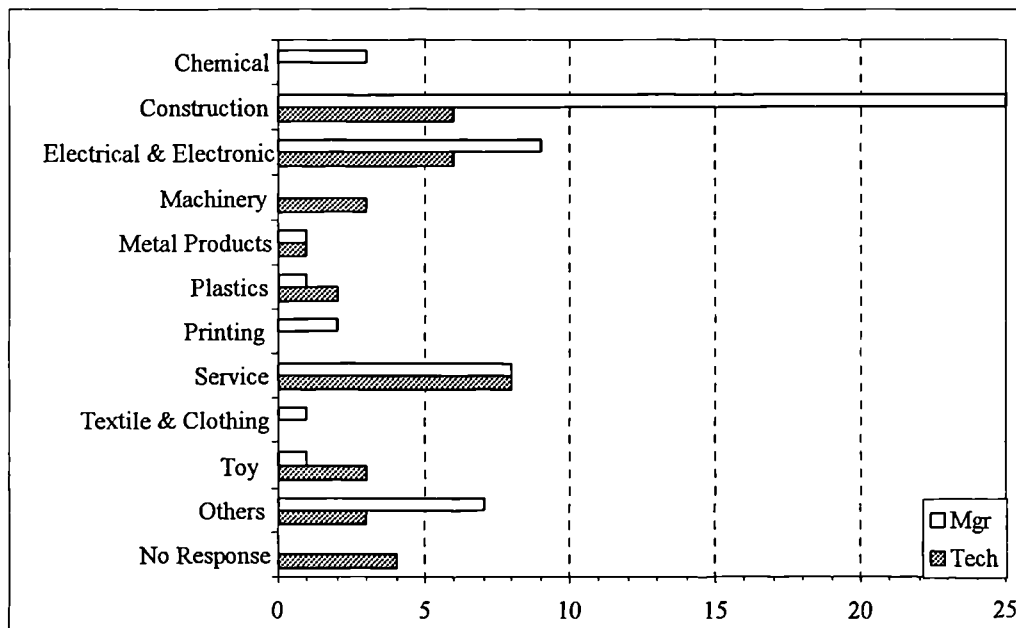


Chart showing the Distribution of Business Nature of Respondents



### 3.1 Constancy of purpose for improvement of quality

*Finding 1.* Customer complaints were the main source of obtaining customer feedback; 86% and 57% of the responses of ISO 9000 and non-ISO 9000 registered companies, respectively.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	35	16	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	13	10	31	29	0.8231
b	23	14	55	40	0.2017
c	36	20	86	57	0.0063 <0.05
d	13	7	31	20	0.2812
e	11	4	26	11	0.1061
f	1	3	2	9	0.2535
g	6	0	14	0	Nil

- Key:**
- a - marketing research
  - b - customer survey
  - c - customer complaint
  - d - sales report data
  - e - sales data
  - f - not measuring
  - g - others

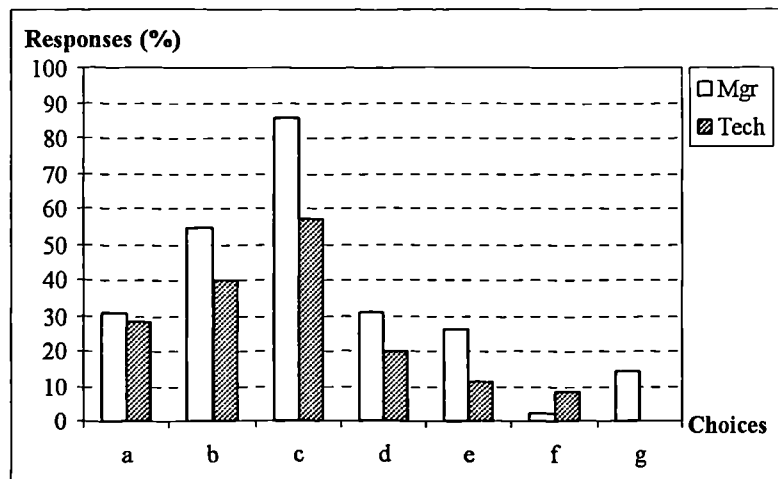


Figure 1. Method in Obtaining Customer Feedback

From the results of the surveys, ISO 9000 registered companies had more means in obtaining customer feedback than the non-ISO registered companies. Using the customer complaint method as the major source of receiving the customers' feedback was considered to be passive. On the other hand, a customer survey was the other commonly used method of obtaining customer feedback.

The result also showed that there was an incorrect attitude or a lack of concern about customers' satisfaction. Companies are simply waiting for things to happen rather than preventing them from getting worse.

The findings, the major two methods used to measure customers' feedback and satisfaction are customer complaints and customer survey, were similar to the survey result of Taylor (Taylor, 1995).

(Ref.: TQM Part III, Question 1, 1.1)

*Finding 2.* Hong Kong employees prefer to follow the current working practice, with less interest in accepting new knowledge and technology. Only about 50% of the managerial responses quite enjoyed accepting new knowledge, however the situation was worse for the technical responses at about 20%.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	36	16	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	0	2	0	6	Nil
b	5	8	12	22	0.2282
c	17	18	40	50	0.4058
d	18	5	43	14	0.0038 < 0.05
e	2	3	5	8	0.5271

- Key :**  
 a - very dislike  
 b - quite dislike  
 c - neither dislikes nor like  
 d - quite like  
 e - very like

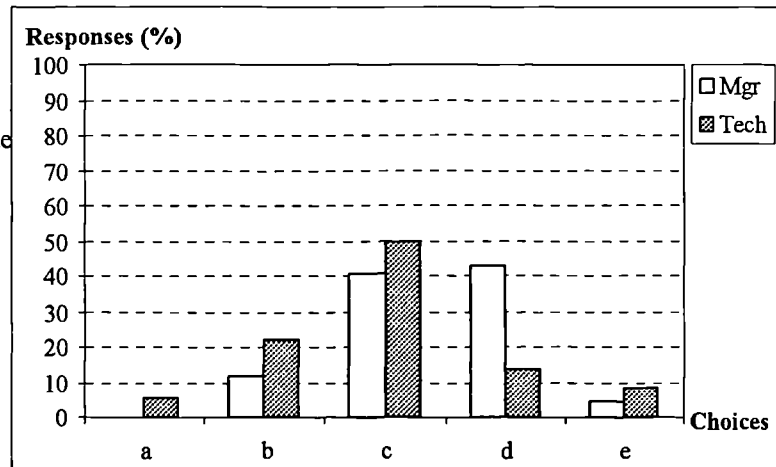


Figure 2. Employees' Attitude towards New Knowledge Acceptance

Managerial respondents had a more positive result than did the technical respondents. The difference could be identified because of their different educational background. Technical respondents seemed to be more passive and they just followed the companies' policy or instruction. However, very few respondents disliked new knowledge.

Hence, top management should have some policy to encourage staff development and promote the importance of acquiring new knowledge or innovation.

(Ref.: TQM Part III, Question 1, 1.2)

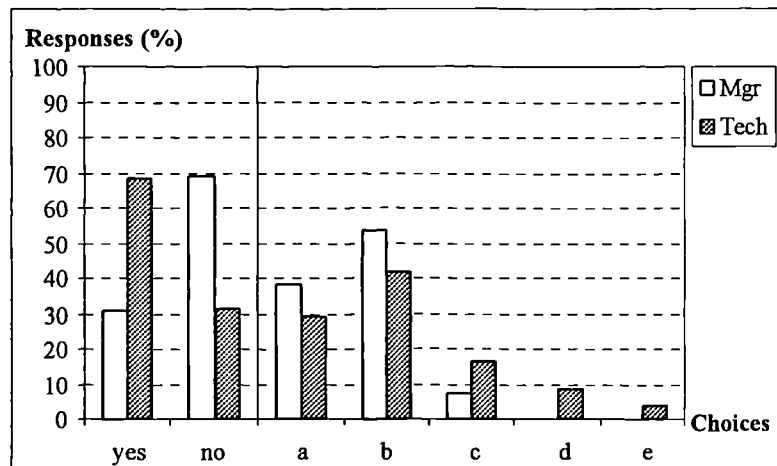
*Finding 3.* Benchmarking is generally agreed in its importance. However, because of the job nature, about 30% managerial responses had make use of it, while there was about 70% usage in the technical responses.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	35	16	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	13	24	31	69	0.0008 <0.05
no	29	11	69	31	0.0008 <0.05
a (if yes)	5	7	38	29	0.5768
b (if yes)	7	10	54	42	0.4917
c (if yes)	1	4	8	17	0.4599
d (if yes)	0	2	0	8	Nil
e (if yes)	0	1	0	4	Nil

*Note: Respondents are allowed to have only one choice*

- Key :**  
 yes - have benchmarking  
 no - no benchmarking  
  
 a - very important  
 b - quite important  
 c - neither important  
 nor unimportant  
 d - quite unimportant



*Figure 3. Usage of Benchmarking and its Importance*

Referring to the findings, there were significant differences in using benchmarking between the two groups of respondents. The reason might be due to their job nature. Managerial level tended to consider problems within a whole system which was not easy to find comparisons, while benchmarking was a tool usually used in the technical level. Those who replied using benchmarking considered that it was a quite important tool.

From the finding, generally it was found that benchmarking was important to quality improvement. And Hong Kong companies had realised the importance and benefit of benchmarking which allows firms to identify and incorporate the best industry practices meeting the customer satisfaction and motivates employees towards continuous improvement and enhances products' quality (Boone et al., 1995).

(Ref.: TQM Part III, Question 1, 1.3)

### 3.2 Adopt new management philosophy

*Finding 4.* Over 80% of both responses replied that their top management had defined the company vision so the employees could realise the direction of the company.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	36	16	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	38	29	90	81	0.2146
no	4	7	10	19	0.2146

**Key :**  
yes - have vision  
no - no vision

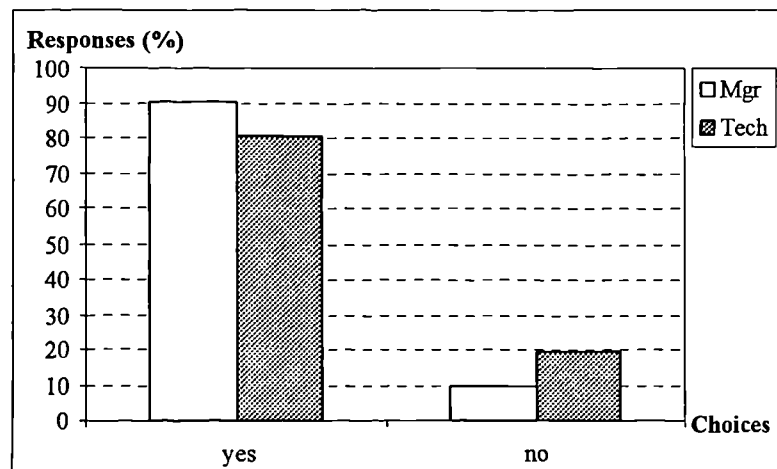


Figure 4. Vision Defined in Top Management

The result was very encouraging and positive. Almost all respondents' working companies had a clear vision being defined. This also indicated that companies had a long term perspective and direction in all system planning. Similarly, technical respondents also understood that their companies had a long-term vision for them to achieve.

(Ref.: TQM Part III, Question 2, 2.1)

*Finding 5.* Over 75% of the responses believed that quality planning and quality management were regarded as the two most important elements of management.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	35	16	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	32	27	76	77	0.9230
no	10	8	24	23	0.9230

**Key :**  
 yes - quality planning & quality management are important elements  
 no - not important

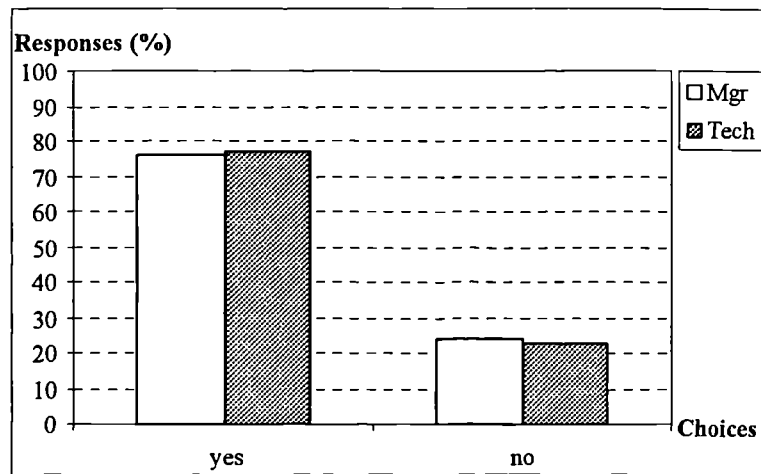


Figure 5. Quality Planning & Quality Management are Important Elements in Strategic Plan

Most respondents agreed that quality planning and quality management were regarded as the two most important elements in management.

Their opinions reflected the quality awareness in today's market trend.

(Ref.: TQM Part III, Question 2, 2.2)

*Finding 6.* After implementing TQM, there should be changes in management attitude but over 50% responses reported that they could not identify those changes.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
29	35	29	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	14	12	48	34	0.2637
no	15	23	52	66	0.2637

**Key :**  
 yes - management attitude change after implementing TQM  
 no - no change

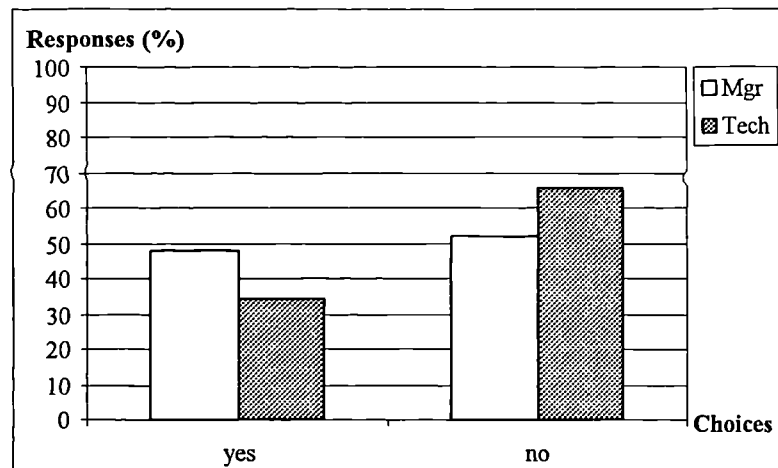


Figure 6. Changes in Management Attitude after Implementing TQM

Owing to most companies had not implemented TQM; there were few responses. The notified change was the recognition of customer feedback and improving the quality accordingly. However, over half of respondents could not identify any change in management attitude after implementing TQM, the reason may be the lack of understanding of TQM.

Such unchanged attitudes implied that there was a common misunderstanding of TQM concepts and the mentioned TQM systems were most unlikely to be the full TQM scheme.

(Ref.: TQM Part III, Question 2, 2.3)

### 3.3 Understand the purpose of inspection

*Finding 7.* Top management involvement was the key success element in quality improvement. Over 75% of the ISO 9000 registered companies reported that their top management were involved in quality improvement and problem solving, while only 9% from the non-ISO 9000 registered companies reported the same.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	35	16	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	0	2	0	6	Nil
b	6	16	14	46	0.0030 <0.05
c	4	14	10	40	0.0024 <0.05
d	26	3	62	9	0.0001 <0.05
e	6	0	14	0	Nil

- Key :**
- a - not at all involved
  - b - not very involved
  - c - neither involved nor not involved
  - d - quite involved
  - e - very involved

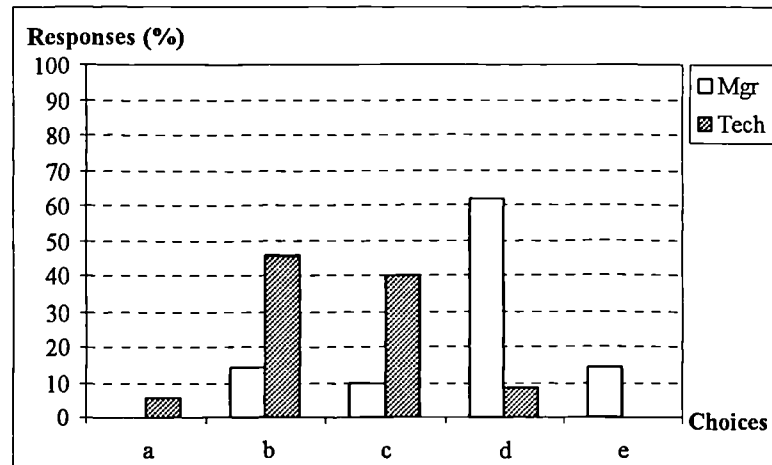


Figure 7. Involvement of Top Management in Quality Improvement

Due to the different quality management systems used, top management of the ISO 9000 registered companies were very much more involved in identifying and supporting employees in problem solving than the non-ISO 9000 registered companies. Statistical analysis also shows that there are significant differences between these two groups of companies on the involvement of top management in quality improvement and problem solving. This also reveals that technical staffs in the non-ISO registered companies may think that top management was not participating in the daily problem solving and quality improvement program with them.

This result reveals that the commitment of top management in quality system development is important and a lot of effort has to be put in for the development of a quality system that suits their companies.

(Ref.: TQM Part III, Question 3, 3.1)

### 3.4 Relationship between organisation and supplier

*Finding 8.* Quality of products or services and the price were the main choosing criteria of suppliers of 93% and 80% responses of ISO 9000 registered companies, respectively. However, 50% responses of non-ISO 9000 registered companies would consider the suppliers' image.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
41	36	17	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	33	13	80	36	0.0000 <0.05
b	11	18	27	50	0.0366 <0.05
c	20	8	49	22	0.0153 <0.05
d	38	12	93	33	0.0001 <0.05
e	5	1	12	3	0.1140

- Key :**
- a - price
  - b - company image
  - c - previously relationship
  - d - product's / service's quality
  - e - others

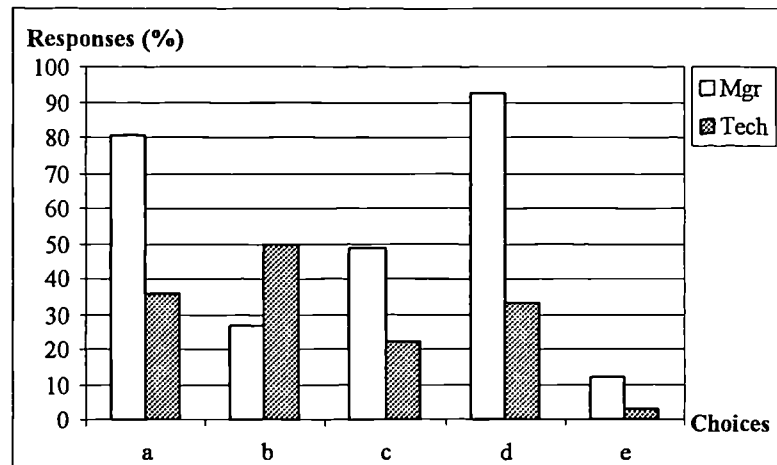


Figure 8. Criteria in Choosing Suppliers

According to Dr. Deming, purchasing products should not be on the basis of price only; the quality should be the major consideration. The respondents of the ISO 9000 registered companies were very consistent with this philosophy. On the contrary, non-ISO 9000 registered companies seemed to follow their current practices with no special consideration in supplier selection. Statistical analysis also shows that there are significant differences between these two groups of companies on supplier selection that could affect quality severely.

Non-ISO9000 registered companies should put more emphasis on product or service quality rather than company image, for example. This may also due to the reason that the respondents were at working level and they tended to look at things from a simpler angle.

(Ref.: TQM Part III, Question 4, 4.1)



*Finding 9.* Over 55% responses recognised the importance of having partnerships with key suppliers.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
41	36	17	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	31	20	76	56	0.0647
no	10	16	24	44	0.0647

**Key :**  
 yes - have partnership with key suppliers  
 no - no partnership

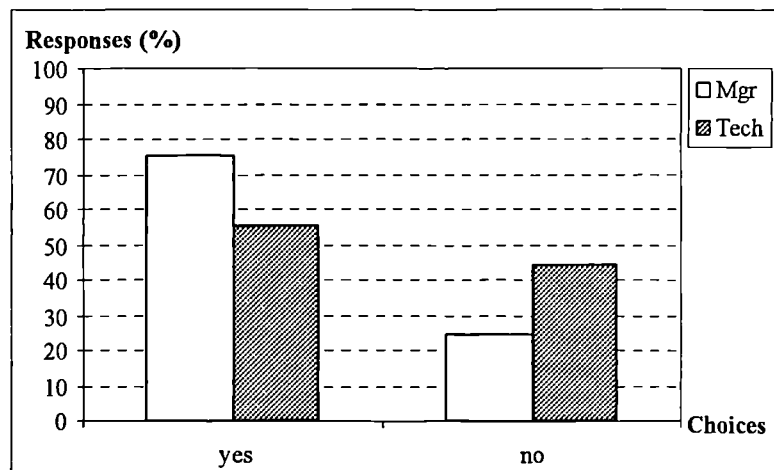


Figure 9. Establishing Partnership with Key Suppliers

Most companies understood the importance of having an established partnership with their key suppliers.

This observation indicated that in the long run the awareness of the products' quality and the good relationship between suppliers and companies could promote the continuous improvement of quality.

(Ref.: TQM Part III, Question 4, 4.2)

*Finding 10.* 93% of the ISO 9000 registered companies replied that customer's expectation and satisfaction were usually translated into supplier requirements, while only 64% non-ISO 9000 registered companies had the same practice.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
40	36	18	0

Choices	Responses		Responses (%)		p-value	
	Mgr	Tech	Mgr	Tech		
yes	37	23	93	64	0.0029	<0.05
no	3	13	8	36	0.0029	<0.05

**Key :**  
 yes - customer's expectation & satisfaction were translated into supplier's requirements  
 no - no translation

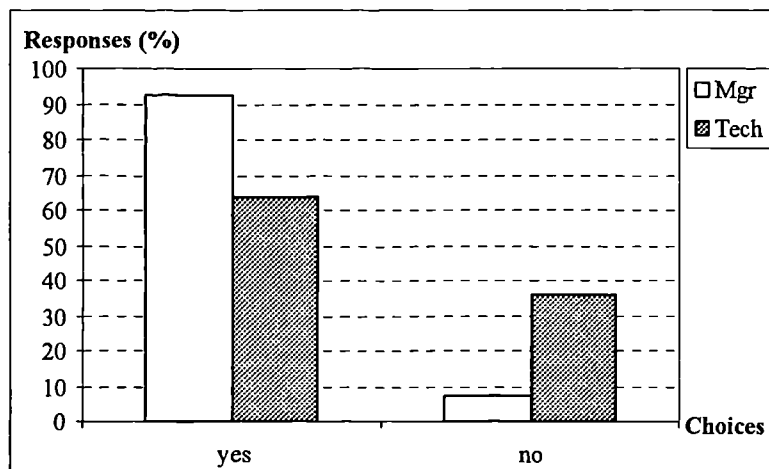


Figure 10. Translating Customer's Expectation & Satisfaction into Supplier's Requirements

It was revealed that majority of the companies had translated their customers' expectation and satisfaction into supplier's requirements, especially for the ISO 9000 registered companies.

With the non-ISO9000 registered companies, customer satisfaction would enhance the overall quality improvement system. Generally speaking, customers' satisfaction was a very important factor in quality management.

(Ref.: TQM Part III, Question 4, 4.3)

### 3.5 Continuous improvement of every process

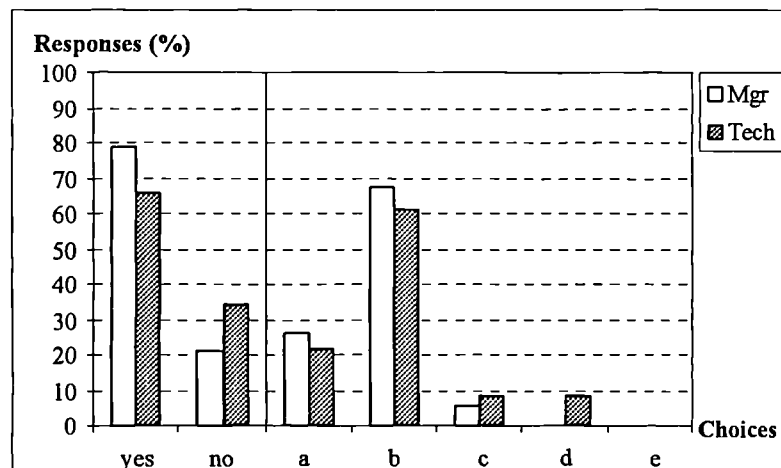
*Finding 11.* Measurement of customer satisfaction was included in strategic planning in over 65% responses.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
43	35	15	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	34	23	79	66	0.1907
no	9	12	21	34	0.1907
a (if yes)	9	5	26	22	0.6903
b (if yes)	23	14	68	61	0.6066
c (if yes)	2	2	6	9	0.6898
d (if yes)	0	2	0	9	Nil
e (if yes)	0	0	0	0	Nil

*Note: Respondents are allowed to have only one choice*

**Key :**  
 yes - customer satisfaction was included in strategic planning  
 no - not included  
 a - very important  
 b - quite important  
 c - neither important nor unimportant  
 d - quite unimportant  
 e - very unimportant



*Figure 11. Customer Satisfaction was included in Strategic Planning and its Importance*

Measurement of customer satisfaction was commonly included in strategic planning and respondents replied that such measurement was quite important.

Because of the market trend, most companies realised the importance of customer satisfaction so it was included in the planning. This could enhance the design of processes and continuously work towards the best of quality.

The finding indicated that similar result was also observed in the survey conducted in New Zealand (Bately, 1994), which proved that measurement of customer satisfaction is important to quality improvement.

(Ref.: TQM Part III, Question 5, 5.1)

### 3.6 Training and education

*Finding 12.* 63% of the responses replied that there was no TQM training program provided for employees.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
43	35	15	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	16	13	37	37	0.9953
no	27	22	63	63	0.9953
a (if yes)	12	3	75	23	0.0041 < 0.05
b (if yes)	3	4	19	31	0.4699
c (if yes)	7	7	44	54	0.6040
d (if yes)	2	2	13	15	0.8303
e (if yes)	1	0	6	0	Nil

- Key :**
- yes - provide TQM training program to employees
  - no - no training
  - a - company personnel
  - b - external consultants
  - c - top management staff
  - d - academic institutions
  - e - others

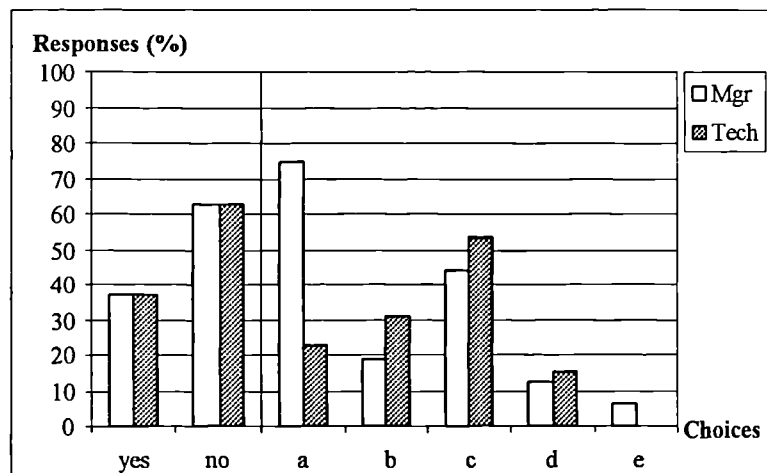


Figure 12. Providing TQM Training to Employees and the Conducting Persons

Only one-third of respondents in both groups mentioned that there was training on TQM in their companies. This indicated that Hong Kong companies had a low awareness of the quality concept and TQM philosophies. If TQM training was organised, the speakers were mainly the internal staff of the companies.

As TQM was not that popular in Hong Kong industry and probably had some barriers of implementation, staff would most likely have less experience and understanding of the philosophies. This might explain why employees had doubts and the system implementation was less successful.

(Ref.: TQM Part III, Question 6, 6.1)

*Finding 13.* Middle management (81% ISO, 55% non-ISO), front-line supervisors (65% ISO, 42% non-ISO) and quality staff (76% ISO, 48% non-ISO) were the main sort of employees receiving TQM training, all these people are at high position.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
37	33	21	3

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	18	14	50	42	0.5354
b	30	18	81	55	0.0167 <0.05
c	24	14	65	42	0.0613
d	28	16	76	48	0.0185 <0.05
e	12	8	32	24	0.4562
f	16	10	43	30	0.2699
g	16	6	43	18	0.0241 <0.05
h	7	6	19	0	Nil

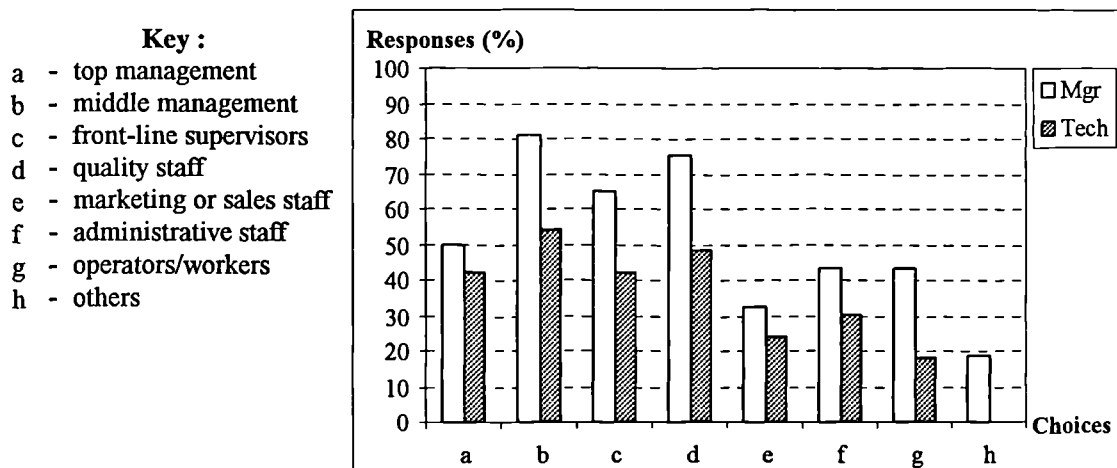


Figure 13. Employee Types in Receiving Training

The responses indicate that the ISO 9000 registered companies provided more training to their employees than those non-ISO 9000 registered companies. However, all companies had a trend in targeting the training for more senior position personnel. This shows the misunderstanding of TQM concept that all staff in the organisation should be involved in the transformation process. Generally the supporting staff and general workers were mostly overlooked. The result is the general awareness of TQM as a company quality culture was less significant.

Statistical analysis also shows that there are significant differences between these two groups of companies on the types of person receiving TQM training. Much higher percentages of people receiving the training were identified who were at middle management, quality staff and operative levels. The higher level of significant difference at operative level explains the situation of higher awareness of quality from the operative level.

(Ref.: TQM Part III, Question 6, 6.2)

**Finding 14.** The major areas of training were identified: ISO 9000 guideline & criteria (95% ISO, 28% non-ISO), quality system auditing (80% ISO, 13% non-ISO), statistical process control (29% ISO, 34% non-ISO) and leadership (34% ISO, 31% non-ISO). Quality concepts were overlooked.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
41	32	17	4

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	8	6	20	19	0.9357
b	4	2	10	6	0.5945
c	14	10	34	31	0.7972
d	23	5	56	16	0.0003 <0.05
e	9	7	22	22	0.9939
f	12	11	29	34	0.6467
g	10	9	24	28	0.7228
h	12	4	29	13	0.0880
i	39	9	95	28	0.0001 <0.05
j	33	4	80	13	0.0000 <0.05
k	8	6	20	19	0.9357
l	1	0	2	0	Nil

- Key :**
- a - TQM and marketing
  - b - quality costs of TQM
  - c - top management leadership in TQM
  - d - definition of quality
  - e - quality circles
  - f - statistical process control
  - g - employee involvement in TQM
  - h - problem solving tools
  - i - ISO 9000 guideline and criteria
  - j - quality systems auditing
  - k - reliability in quality control
  - l - others

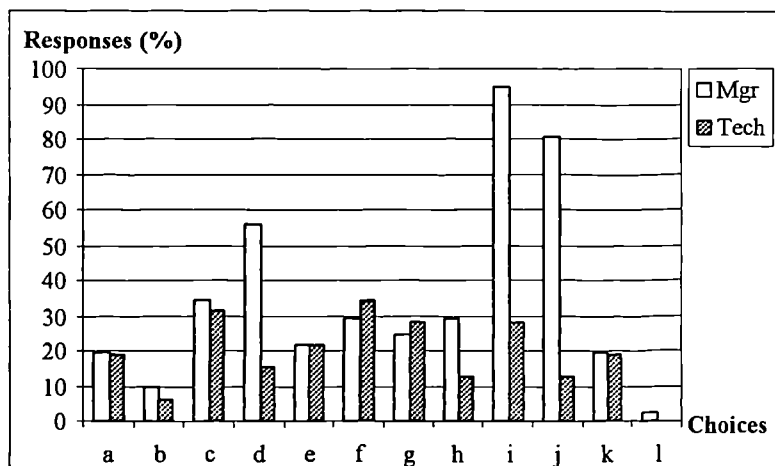


Figure 14. Training Areas

The differences in responses between the two groups were obvious. For those ISO 9000 registered companies that had the certification for few years, they need further training on ISO 9000 standard and auditing, that is quite different from the non-ISO group. Other than the ISO training, the low responses on the other training areas from both groups were identified. This also explains why ISO certification is mainly for satisfying the documentation requirements and having less emphasis on TQM philosophies. Basically, ISO 9000 standard is a guideline on how to set-up and document a quality system; there is less concern about the quality improvement concept. Therefore, there should be more training on total quality management so as to improve the employees' perception of quality.

(Ref.: TQM Part III, Question 6, 6.3)

### 3.7 Leadership

*Finding 15.* About 50% of responses believed team building was commonly applied in leadership.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
38	33	20	3

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	20	15	53	45	0.5529
b	6	6	16	18	0.7921
c	9	7	24	21	0.8070
d	3	5	8	15	0.3418
e	0	0	0	0	Nil

- Key :**  
 a - team building  
 b - authoritarian  
 c - participatory  
 d - servant leader  
 e - others

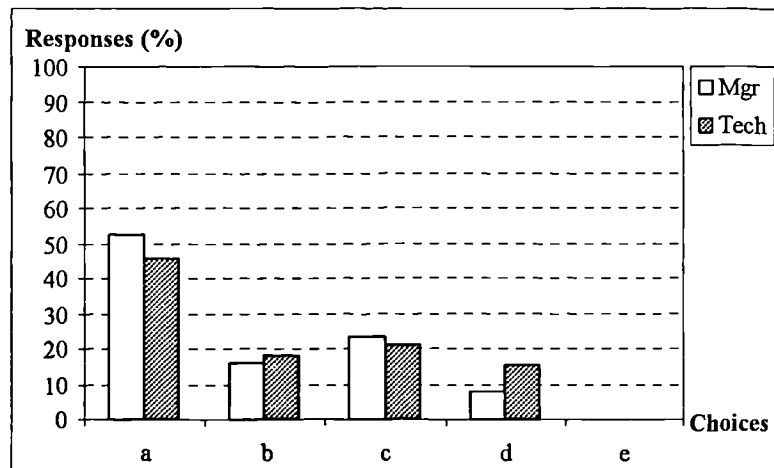


Figure 15 Leadership Style

About half of respondents replied that their companies' management structure was in team building.

Although the responses were not high, it indicated that team building was mostly used in Hong Kong. Through team building, employees could enjoy participation in various activities and have effective communication at all levels, thereby creating a harmonised working environment.

The analysis indicated that team building was the main leadership style in most Hong Kong companies. It also indicated that leadership in an organisation was extremely important (Zairi, 1994). Good leadership could mean vision, cheerleading, love, trust, consistency, and creating heroes at all levels.

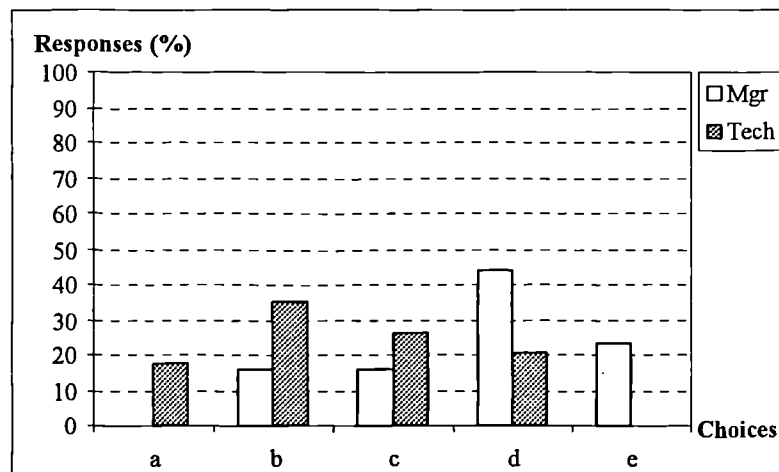
(Ref.: TQM Part III, Question 7, 7.1)

*Finding 16.* Top management was involved in encouraging employees to participate in continuous improvement in 67% ISO 9000 registered companies, while there were only 21% in non-ISO 9000 registered companies.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
43	34	15	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	0	6	0	18	Nil
b	7	12	16	35	0.0557
c	7	9	16	26	0.2798
d	19	7	44	21	0.0298 <0.05
e	10	0	23	0	Nil

- Key :**
- a - not at all involved
  - b - not very involved
  - c - neither involved nor not involved
  - d - quite involved
  - e - very involved



*Figure 16. Degree of Top Management in Encouraging Employees in Participating Continuous Improvement*

Top management of the ISO 9000 registered companies was more involved on employee's encouragement for continuous improvement than the non-ISO registered companies.

This result implies that the attitude and commitment of top management were the essential factors in implementing a successful quality management system.

Statistical analysis also shows that there is significant difference between these two groups of companies on top management involvement encouraging employees to participate in continuous improvement.

(Ref.: TQM Part III, Question 7, 7.2)



### 3.8 Job satisfaction

*Finding 18.* The concerns of job security are different depending on their position in the companies. Managerial respondents were highly concerned about their opportunity for advancement and job stability in the company, whereas the technical respondents considered the job stability and co-operation between employees as their major concerns.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
40	34	18	2

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	22	16	55	47	0.5025
b	7	6	18	18	0.9870
c	25	18	63	53	0.4132
d	8	6	20	18	0.8001
e	17	5	43	15	0.0087 <0.05
f	17	4	43	12	0.0023 <0.05
g	15	13	38	38	0.9491
h	27	7	68	21	0.0000 <0.05
i	15	7	38	21	0.1158

Note: Respondents are allowed to have more than one choice

- Key :**
- a - cooperation between employees
  - b - management's views on qualification
  - c - job stability
  - d - information about firm's situation
  - e - considerate management
  - f - perceived responsibility in the job
  - g - work load on job
  - h - opportunity for advancement
  - i - Job importance

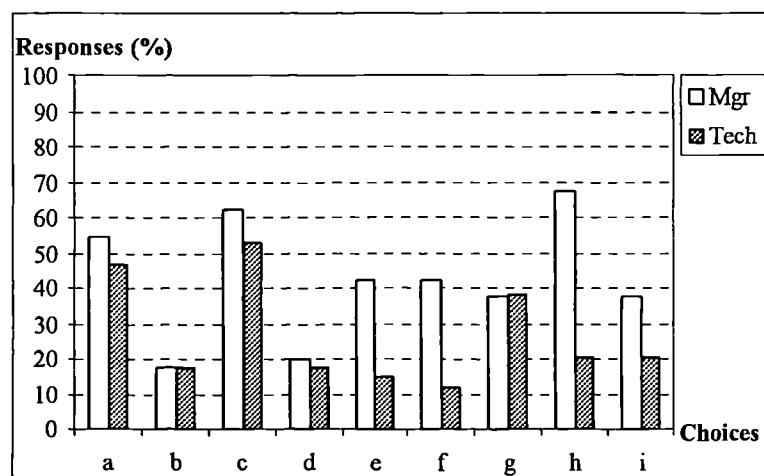


Figure 18. Factors Affecting Job Security

From the results, technical respondents tended to be concerned much more about their peer-to-peer relationship, job stability and present workload. On the other hand, managerial respondents would think more broadly and their consideration was for a long-term sense.

(Ref.: TQM Part III, Question 8, 8.1)

**Finding 19.** Over 80% of the responses of the managerial respondents from the ISO 9000 registered companies replied that they enjoyed working in the current environment, whereas only 31% of the technical respondents from the non-ISO 9000 registered companies had the same feelings. A large minority of the respondents (44%) from the non-ISO companies group felt they were neither enjoyable nor not enjoyable working in the current environment.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
43	36	15	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	9	2	21	6	0.0409 <0.05
b	26	9	60	25	0.0013 <0.05
c	7	16	16	44	0.0056 <0.05
d	1	8	2	22	0.0102 <0.05
e	0	1	0	3	Nil

- Key :**
- a - very enjoyable
  - b - quite enjoyable
  - c - neither enjoyable nor not enjoyable
  - d - not very enjoyable
  - e - not at all enjoyable

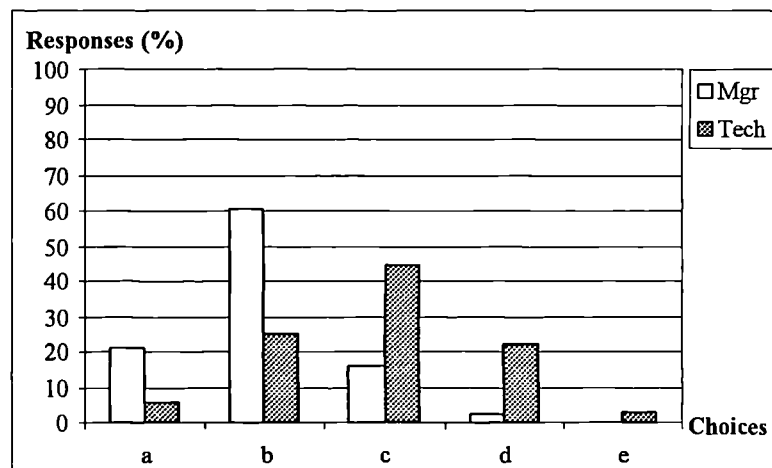


Figure 19. Degree of Enjoyable Working in Current Environment

Statistical analysis also shows that there are significant differences between these two groups of respondents on their satisfaction and enjoying working in the current environment. The vast majority of the managerial respondents from the ISO 9000 registered companies replied that they enjoyed working in the current environment may be explained because of their senior positions with good salary and proper recognition of their work and contributions in the companies.

The managerial respondents tended to be more aggressive, while the technical respondents tended to be rather passive and follow what was being told.

Staff development programs like training and education would help employees to enhance their skills and knowledge. Proper care from the management would also promote working morale and co-operation. Proper recognition and awards for contributions would promote ownership and further contributions from employees.

(Ref.: TQM Part III, Question 8, 8.2)

*Finding 20.* Over 95% of the ISO 9000 registered companies provided communication channels for employees to air their dissatisfaction or any grievances to management, whereas the situation is different for non-ISO registered companies, with slightly less than 70% of the companies having the proper channels.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	36	16	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	40	25	95	69	0.0038 <0.05
no	2	11	5	31	0.0038 <0.05
a (if yes)	18	7	45	28	0.1758
b (if yes)	7	6	18	24	0.5313
c (if yes)	31	15	78	60	0.1354
d (if yes)	27	3	68	12	0.0000 <0.05
e (if yes)	4	1	10	4	0.3408

- Key :**
- yes - provide channel for employee complains or enquiries
  - no - no channel
  - a - personnel department
  - b - complain box
  - c - through supervisors
  - d - through meetings
  - e - others

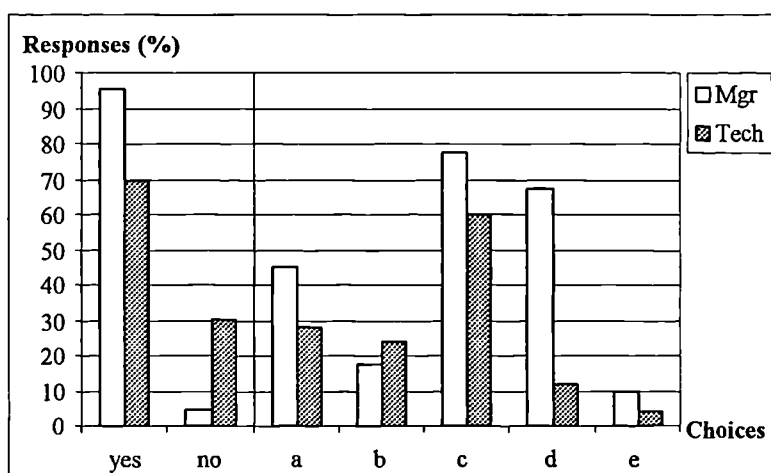


Figure 20. Channels for Employee Grievances

The survey indicates that most companies did provide proper channels for employees making complaints and grievances to management, especially the ISO 9000 registered companies. Statistical analysis also reveals that there is significant difference between these two groups of companies on the provision of proper communication channels for making grievances.

However, the communication channels used were still traditional and passive. The Chinese tend to talk to their superiors about their complaints and grievances first, instead of making them public. They tend to listen to their superiors' advice and respect them. Therefore, making complaints through their supervisors is not uncommon in Chinese society.

Managerial respondents replied that making complaints through meetings was quite normal. In doing so, they were seen to be open in policy and readily accept comments and suggestions from their staff. However, most junior staff refused to make complaints openly in meetings because they think that they would quite embarrass the management and therefore it was improper to do so. It is, therefore recommended to provide more channels for employees making their views known to management, in particular grievances. To a certain extent, quality circles making use of the opportunities for all employees making suggestions are useful and constructive as well.

(Ref.: TQM Part III, Question 8,8.3)

### 3.9 Barriers between departments

*Finding 21.* Communication (52% ISO, 31% non-ISO), motivation (21% ISO, 42% non-ISO), poor relationship (45% ISO, 25% non-ISO) and different management style (38% ISO, 25% non-ISO) were the main factors causing restrictions and barriers among departments. All these problems could be summarised as personnel management, which greatly depended on the cultures and working practices.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	36	16	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	19	9	45	25	0.0646
b	16	9	38	25	0.2219
c	22	11	52	31	0.0527
d	9	15	21	42	0.0545
e	5	7	12	19	0.3641
f	10	11	24	31	0.5094
g	2	1	5	3	0.6547
h	2	2	5	6	0.8761
i	1	0	2	0	Nil

- Key :**
- a - personality conflicts
  - b - management style
  - c - communication
  - d - lack of motivation
  - e - participation
  - f - closed mind
  - g - caste system
  - h - not respecting others individual identity
  - i - others

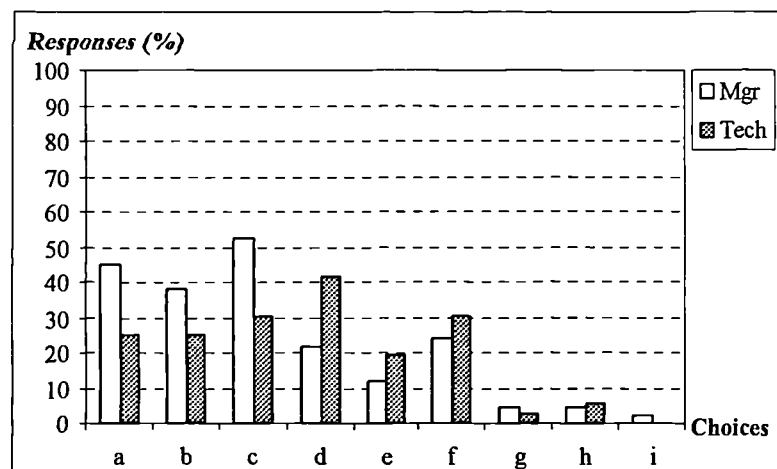


Figure 21. Factors in Causing Restrictions & Barriers among Departments

From the results, it was indicated that the most important factors causing restrictions and barriers among departments were communication, motivation, poor relationships and different management styles.

These barriers exist because of poor communication, ignorance of the organisation's mission, competition, and fear and personal jealousies.

(Ref.: TQM Part III, Question 9, 9.1)

### 3.10 Slogans and targets

*Finding 22.* Different from the Western culture or Japanese style, slogans for quality improvement were not commonly used among the Chinese and these could be indicated in over 50% responses.

Choices	Total Responses		No Response		p-value
	Mgr	Tech	Mgr	Tech	
	43	36	15	0	

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	20	11	47	31	0.1518
no	23	25	53	69	0.1518

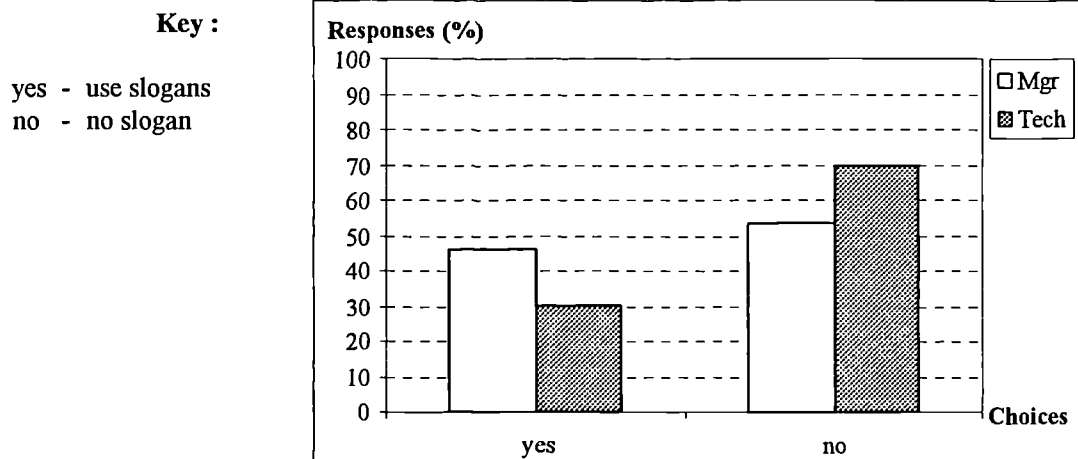


Figure 22. Using Slogans to Encourage Employees Participating in Quality Improvement

Most organisations did not promote the use of slogans of quality management to encourage employees participating in quality improvement program.

On the other hand, some of the most commonly used slogans in the respondents' companies were:

- *Good quality,*
- *Reliability is our priority,*
- *Progress towards perfection,*
- *Zero defects, customer total satisfaction,*
- *Quality is all,*
- *Quality first,*
- *Right first time, right every time,*
- *6σ specification,*
- *Japanese 5S,*
- *Reach ISO 9000 standard,*
- *Increase reliability,*
- *Decrease complaint,*
- *Better and faster services*

(Ref.: TQM Part III, Question 10, 10.1)

*Finding 23.* 55% of the ISO 9000 registered companies had set targets for quality improvement, while only 26% of the non-ISO 9000 registered companies had done that.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	35	16	1

Choices	Responses		Responses (%)		p-value	
	Mgr	Tech	Mgr	Tech		
yes	23	9	55	26	0.0096	<0.05
no	19	26	45	74	0.0096	<0.05

**Key :**

yes - target is set  
no - no target

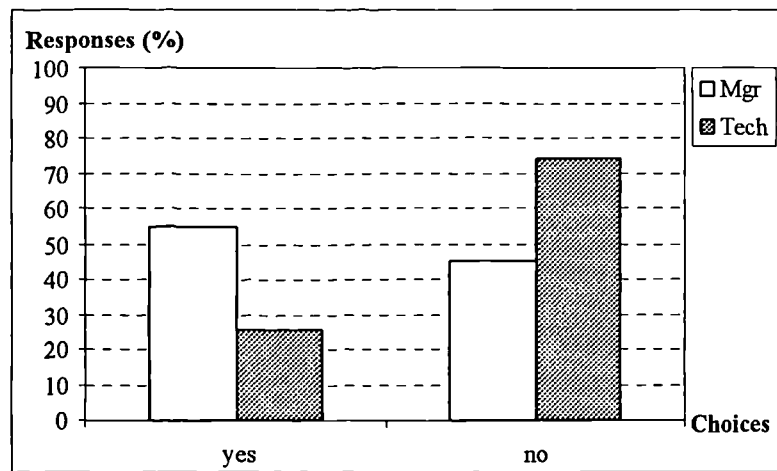


Figure 23. Setting Target for Quality Improvement

The survey result revealed that most of the companies had not set targets for quality improvement, especially those companies without ISO 9000 certification.

For those companies that replied, some of their targets were meeting customer requirements, outgoing quality maintained at 99.5% or above. These targets are supposed to be long term rather than short term.

(Ref.: TQM Part III, Question 10, 10.2)

3.11 Goals for management

*Finding 24.* Goals were set to direct employees to fulfil quality improvement programs in 57% of the ISO 9000 registered companies and a few of non-ISO 9000 registered companies (27%).

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	33	16	3

Choices	Responses		Responses (%)		p-value	
	Mgr	Tech	Mgr	Tech		
yes	24	9	57	27	0.0092	<0.05
no	18	24	43	73	0.0092	<0.05
a (if no)	10	7	56	29	0.0886	
b (if no)	7	16	39	67	0.0766	
c (if no)	1	1	6	4	0.8392	

**Key :**  
 yes - goal is set  
 no - no goal  
  
 a - not planned  
 b - planning  
 c - planned

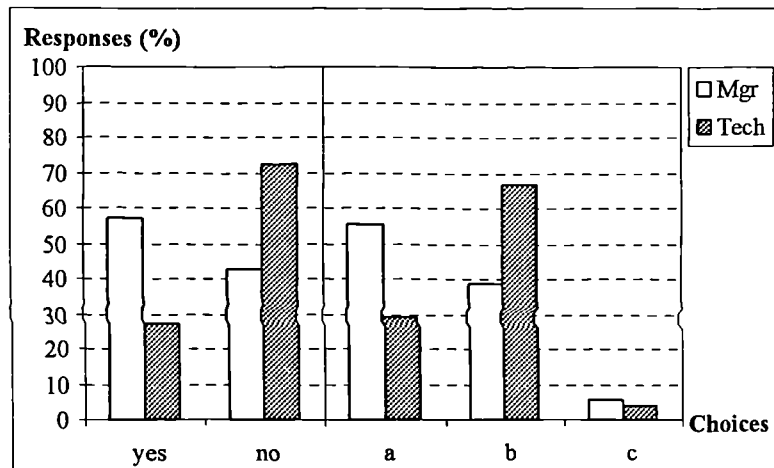


Figure 24. Setting Goal to Direct Employees to Fulfil Quality Improvement Program

Similar to Finding 23, it was surprises that only about half of the ISO 9000 registered companies had goals defined to direct employees to fulfil the quality improvement program. It is expected the goals for the non-ISO 9000 registered companies would be even less defined. The defined goals were found to be zero defect, high efficiency & productivity, and high quality.

The large portion of undefined goals would be most likely due to the communication problems; employees were unclear about their goals.

(Ref.: TQM Part III, Question 11, 11.1)

*Finding 25.* 56% and 34% responses of ISO 9000 and non-ISO 9000 registered companies agreed that goals should be set for key results such as customers' satisfaction and quality rather than goals for activities in minimising production costs.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
43	35	15	1

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	2	2	5	6	0.8350
b	4	12	9	34	0.0095 < 0.05
c	13	9	30	26	0.6641
d	18	12	42	34	0.5004
e	6	0	14	0	Nil

- Key :**
- a - very disagree
  - b - quite disagree
  - c - neither disagree nor agree
  - d - quite agree
  - e - very agree

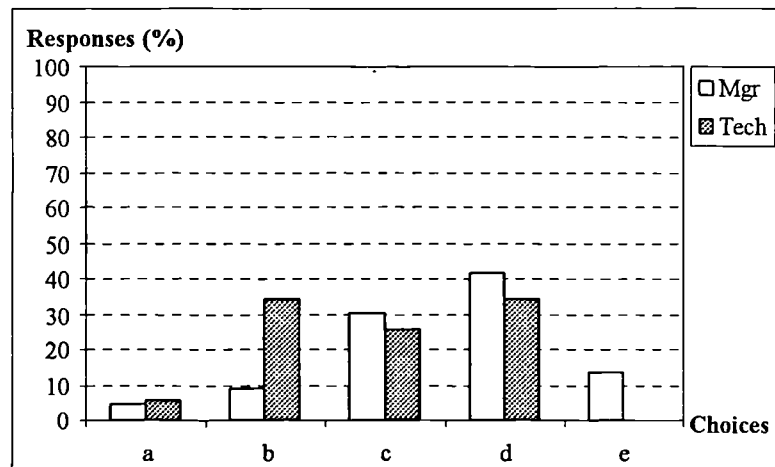


Figure 25. Defining Goal for Customer Satisfaction & Quality

Most managerial respondents were agreed that customer satisfaction and quality should be the key results of the goals developed. However, the technical respondents were different, some agreed and some disagreed.

These results indicated that different groups of people had different concerns.

(Ref.: TQM Part III, Question 11, 11.2)



### 3.12 Pride in workmanship

*Finding 26.* Performance of employees was the major consideration in advancing salary in 68% of ISO 9000 registered companies, but the same responses could only find in 44% non-ISO 9000 registered companies.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
40	32	18	4

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	2	4	5	13	0.2814
b	0	12	0	38	Nil
c	27	14	68	44	0.0438 <0.05
d	11	2	28	6	0.0136 <0.05

*Note: Respondents are allowed to have only one choice*

- Key :**
- a - paid for quantity of production
  - b - paid for quality of production
  - c - paid for performance of employees
  - d - others

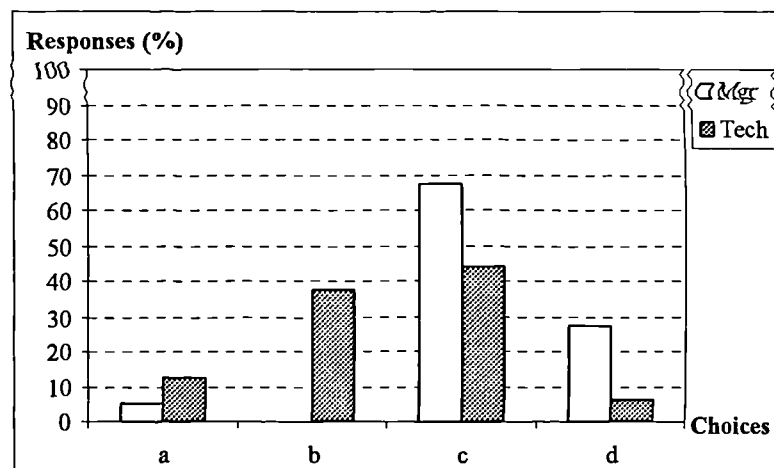


Figure 26. Criteria for Advancing Salary

Owing to the job nature or companies' policy, managerial respondents replied that the pay system was depending on the performance. The technical respondents' pay system was depending on the performance or the production quality.

No matter which pay systems were used, these systems could enhance the participation of employees in processes and improve their working performance.

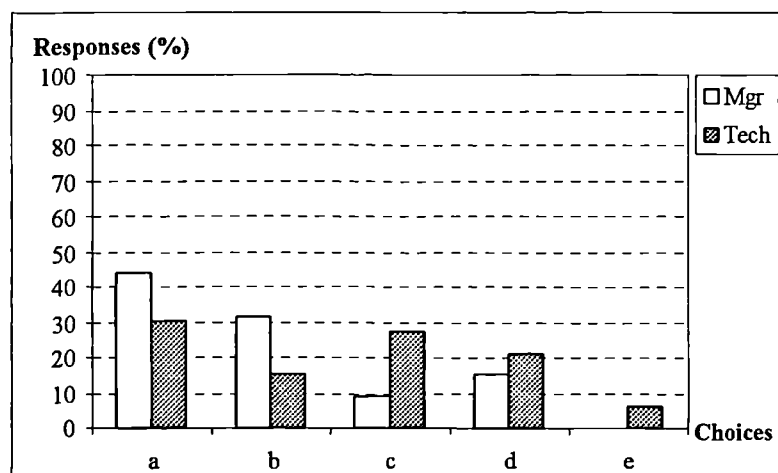
(Ref.: TQM Part III, Question 12, 12.1)

*Finding 27.* 44% of the managerial responses and 30% of the technical responses reported that salary was an important factor in affecting job satisfaction.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
32	33	26	3

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	14	10	44	30	0.2684
b	10	5	31	15	0.1274
c	3	9	9	27	0.0636
d	5	7	16	21	0.5687
e	0	2	0	6	Nil

- Key :**
- a - salary
  - b - importance of job
  - c - feedback from job
  - d - presents challenge
  - e - others



*Figure 27. Factors in Affecting Job Satisfaction*

Apart from job security and leadership style, salary was most likely be the great influence on the job satisfaction.

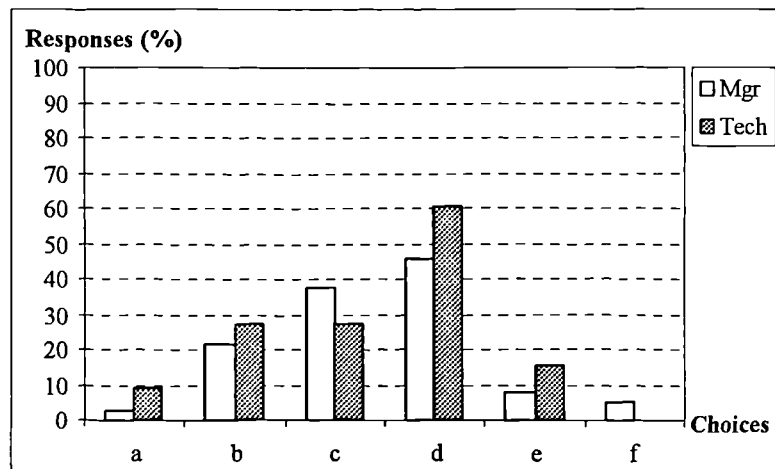
(Ref.: TQM Part III, Question 12, 12.2)

*Finding 28.* After implementing a quality system, over 45% of the responses realised that there was an increase of responsibility of employees.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
37	33	21	3

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
a	1	3	3	9	0.2725
b	8	9	22	27	0.5885
c	14	9	38	27	0.3547
d	17	20	46	61	0.2259
e	3	5	8	15	0.3624
f	2	0	5	0	Nil

- Key :**
- a - increase job security
  - b - increase personal effectiveness
  - c - increase autonomy in how to do the job
  - d - increase responsibility
  - e - increase pride in workmanship
  - f - others



*Figure 28. Changes in Employees' Behaviour after Implementing Quality Management*

Both groups of respondents replied that there was an increase in responsibility after implementing a quality system.

This implied that responsibility was delegated from the top down to the employees at operated levels. Then, employees had more control and would be more concerned about their work.

(Ref.: TQM Part III, Question 12, 12.3)

**3.13 Management transformation**

*Finding 29.* Over 80% of the ISO 9000 registered companies claimed that they were ready to commit to years of support for quality system implementation, on the other hand, there were only about 60% of the non-ISO 9000 registered companies were ready for years of support.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
42	34	16	2

Choices	Responses		Responses (%)		p-value	
	Mgr	Tech	Mgr	Tech		
yes	34	20	81	59	0.0347	<0.05
no	8	14	19	41	0.0347	<0.05

**Key :**  
 yes - ready for years of support for quality system implementation  
 no - not ready

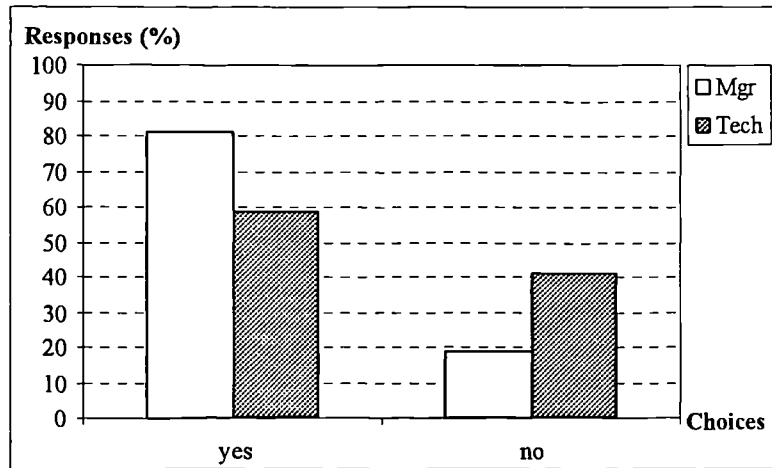


Figure 29. Ready for Years of Support for Quality System Implementation

As companies had implemented ISO 9000, they should have prepared for years of support. However, still some proportion of companies were not ready for the support. This situation was of course more severe in the non-registered group.

Statistical analysis also shows that there is significant difference between these two groups of companies on their commitment for quality system implementation.

(Ref.: TQM Part III, Question 13, 13.1)

*Finding 30.* Over 70% of the ISO 9000 registered companies had their employees understande that it is essential to have management changes, while about 40% of the non-ISO 9000 registered companies had the same understanding.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
41	36	17	0

Choices	Responses		Responses (%)		p-value
	Mgr	Tech	Mgr	Tech	
yes	29	14	71	39	0.0046 <0.05
no	12	22	29	61	0.0046 <0.05
a (if yes)	16	6	55	43	0.3516
b (if yes)	19	8	66	57	0.4432
c (if yes)	15	6	52	43	0.4721
d (if yes)	12	2	41	14	0.0604
e (if yes)	1	0	3	0	Nil

- Key :**
- yes - employee understand the essential to have management changes
  - no - not understand
  - a - through long-term management
  - b - through seminars and talks
  - c - through guidelines and education
  - d - through defined long-term goals and targets
  - e - others

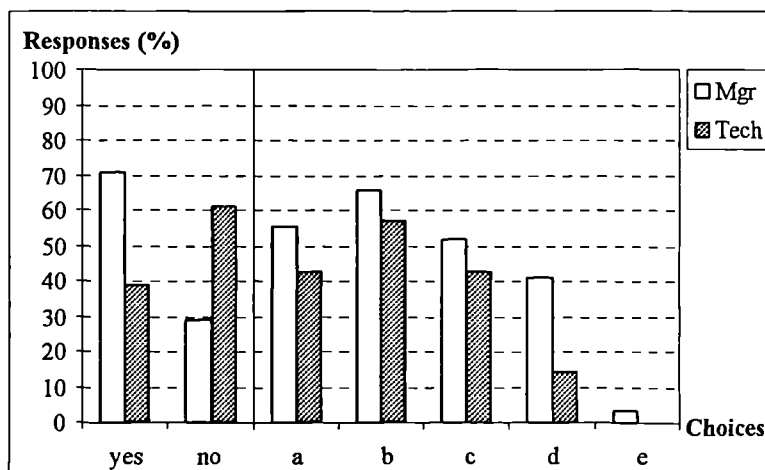


Figure 30. Employees Understand the Essential to have Management Changes and the Way in Understanding

In general, communication and training would be better in those registered ISO 9000 companies than those not registered. Therefore, more employees are found to understand the reasons for management changes in the ISO 9000 registered companies. Moreover, both groups of respondents reported that the understanding was from seminars and talks.

Statistical analysis also shows that there is significant difference between these two groups of companies on having management change and their way of thinking.

(Ref.: TQM Part III, Question 13, 13.2)

**Survey on TQM Implementation in Hong Kong**

\*\*\*\*\*

Total Quality Management System

Part III Questions on TQM Concept

\*\*\*\*\*

**Part III - Questions on TQM Concept**

- c) neither important nor unimportant
- d) quite unimportant
- e) very unimportant

**1. Constancy of purpose for Improvement of Quality**

Establishing and practising constancy of purpose in an organisation can success concerning quality, profitability and long-term survival. If we do not invest for the future in product and process development, we would have large problems in the long run.

1.1 How does your organisation obtain the customers' feedback? Please ✓ as many as appropriate.

- a) marketing research
- b) customer surveys
- c) customer complaints
- d) sales report data
- e) sales data
- f) not measuring
- g) other (specify) \_\_\_\_\_

1.2 What is the attitude of your employees in accepting new knowledge e.g. new trend in quality improvement? Please ✓ one where appropriate.

- a) very dislike
- b) quite dislike
- c) neither dislike nor like
- d) quite like
- e) very like

1.3 Has your organisation established benchmarking relationships to other companies? Please ✓ one where appropriate.

Yes  No

If YES, how important is benchmarking to your company? Please ✓ one where appropriate.

- a) very important
- b) quite important

**2. Adopt New Management Philosophy**

Nowadays, we should think quality in a new way and change to a concept built on systematic planning, problem prevention and continuous improvement of all processes. We should adopt this new management philosophy because it builds up a system for continuous improvement in an organisation.

2.1 In your organisation, does top management have a vision of where the organisation should go? Please ✓ one where appropriate.

Yes  No

2.2 In your organisation's management, is quality planning and quality management regarded as the most important elements? Please ✓ one where appropriate:

Yes  No

If NO, what is the most important element in your organisation's management?

\_\_\_\_\_

\_\_\_\_\_

2.3 Was there a change in management attitude in your organisation after the implementing TQM? Please ✓ one where appropriate.

Yes  No

If YES, in what way? And what was the impact on the employees?

\_\_\_\_\_

\_\_\_\_\_

### 3. Under the Purpose of Inspection

We should eliminate the need for 100 % inspection and should build quality into the processes of production without inspecting the end product.

- 3.1 To what extent is top management involved to identify and support everyone in problem solving? Please ✓ one where appropriate.
- a) not at all involved
  - b) not very involved
  - c) neither involved nor not involved
  - d) quite involved
  - e) very involved

### 4. Relationship between Organisation and Suppliers

Choosing the supplier is part of the quality improvement process. To secure an efficient feedback to the supplier's improvement work, strong and good relations must be established between supplier and organisation. We should have as few suppliers as possible and this can develop close co-operation between customer and supplier.

- 4.1 On what criteria is your organisation based in choosing suppliers? Please ✓ as many as appropriate.
- a) price
  - b) company image
  - c) previously relationship
  - d) products'/services' quality
  - e) others (specify) \_\_\_\_\_

- 4.2 Does your organisation have an established partnership with key suppliers? Please ✓ one where appropriate.
- Yes  No

- 4.3 Are customers' expectation and satisfaction translated into supplier requirements in your organisation? Please ✓ one where appropriate.
- Yes  No

### 5. Continuous Improvement of Every Processes

Every production process (for both good and services) should be continuously updated and

altered customer preferences continuously, so that the quality of products/services can be constantly improved.

- 5.1 Has the measurement of customer satisfaction been included in your organisation's strategic planning? Please ✓ one where appropriate.
- Yes  No

If YES, how important is this measurement to planning? Please ✓ one where appropriate.

- a) very important
- b) quite important
- c) neither important nor unimportant
- d) quite unimportant
- e) very unimportant

### 6. Training and Education

Owing to today's rapidly changing world, education should be prepared to face such changing situations. Also training on the job should be needed to enhance employees' proficiency.

- 6.1 Has your organisation organised TQM training program for employees? Please ✓ one where appropriate:
- Yes  No

If YES, who conducted this training program? Please ✓ as many as appropriate:

- a) company personnel
- b) external consultants
- c) top management staff
- d) academic institutions
- e) other (specify) \_\_\_\_\_

- 6.2 In your organisation, what sort of employees received the training courses? Please ✓ as many as appropriate:

- a) top management
- b) middle management
- c) first line supervisors
- d) quality staff
- e) marketing/sales staff
- f) administrative staff
- g) operators/workers
- h) others (specify) \_\_\_\_\_

- 6.3 In your organisation, what aspects of quality system training have been conducted? Please ✓ as many as appropriate:

- a) TQM and marketing
- b) quality costs of TQM
- c) top management leadership in TQM
- d) definition of quality
- e) quality circles
- f) statistical process control
- g) employee involvement in TQM
- h) problem solving tools e.g. control charts
- i) ISO 9000 guidelines and criteria
- j) quality systems auditing
- k) reliability in quality control
- l) others (specify) \_\_\_\_\_

## 7. Leadership

Management's task is to understand the needs and expectations of their customers and find methods for process improvement. Also it supports employees in their leadership development and helps them to do a better job so as to achieve quality improvement.

7.1 Which of the following describes the leadership style in your organisation? Please ✓ one that can apply in your organisation.

- a) team building
- b) authoritarian
- c) participatory
- d) servant leader
- e) others (specify) \_\_\_\_\_

7.2 To what extent does top management set an example to encourage employees to participate in continuous improvement? Please ✓ one where appropriate:

- a) not at all involved
- b) not very involved
- c) neither involved nor not involved
- d) quite involved
- e) very involved

7.3 Can your organisation trust the employees to have their ownership of work? Please ✓ one where appropriate.

Yes  No

## 8. Job Satisfaction

If employees feel insecure, they are afraid of asking questions, or are afraid of innovation and change. They will never do a good job. Therefore, an organisation should improve the

working environment continuously to improve the job satisfaction of employees so that well-performed job can be done.

8.1 What factors affect the job security of the employees in your organisations? Please ✓ as many as appropriate.

- a) co-operation between employees
- b) management's professional qualifications
- c) job stability
- d) information about firm's situation
- e) considerate management
- f) perceived responsibility in the job
- g) work load on job
- h) opportunity for advancement
- i) importance of job

8.2 How enjoyable do you work in your organisation's environment? Please ✓ one where appropriate.

- a) very enjoyable
- b) quite enjoyable
- c) neither enjoyable nor not enjoyable
- d) not very enjoyable
- e) not at all enjoyable

8.3 If your employees have any complains or questions; does your company provide any channel for them?

Yes  No

If YES, please ✓ as appropriate:

- a) Personnel department
- b) Complaining box
- c) Through their supervisors
- d) Through meeting/conferences
- e) Others: \_\_\_\_\_

## 9. Barries between Departments

Many of today's quality defects are a result of a lack of communications between different departments and because employees have not properly identified their internal customers well enough. Hence, employees must work together to deal with quality problems and achieve better quality of products/services.

9.1 Which of the following factors is the most important factor that caused the restrictions



and barriers between departments? Please ✓  
one where appropriate.

- a) personality conflicts
- b) management style
- c) communication
- d) lack of motivation
- e) participation
- f) closed mind
- g) caste system
- h) not respecting others individual identity
- i) other (specify) \_\_\_\_\_

10. Slogans and Targets

Slogans, targets and campaigns aimed at influencing employees' efficiency, may have an effect for a short period, but these do not tend to yield lasting results. This may be due to the fact that the weaknesses which the campaigns aim to improve are attributable to the system and not to the employees.

10.1 Has your organisation promoted some slogans of quality management (e.g. zero defects, right first time) to encourage the employees participate in quality improvement? Please ✓ one where appropriate.

Yes  No

If YES, what slogans have been used, please write one of them which used frequently.

\_\_\_\_\_

\_\_\_\_\_

10.2 Has your organisation set a target for quality improvement and enforced the target? Please ✓ one where appropriate.

Yes  No

If YES, what target has been set in your organisation?

\_\_\_\_\_

\_\_\_\_\_

11. Goals for Management

It is wrong to set targets and goals in an organisation. If the organisation concern with making employees reach goals i.e. only focusing on outcome and not on processes, this may limit the employees' opportunities to improve and create morale.

11.1 For the management system in your organisation, has it set goals to direct employees to fulfil the quality improvement programs? Please ✓ one where appropriate.  
Yes  No

If YES, what goals have been set? And have these goals achieved the positive result e.g. improve productivity?

\_\_\_\_\_

\_\_\_\_\_

If NO, has your organisation planned to set goals for management? Please ✓ one where appropriate.

- a) not planned
- b) planning
- c) planned

11.2 Do you agree that an organisation should develop goals for key results such as customer satisfaction and quality rather than goals for activities such as minimising production costs? Please ✓ one where appropriate.

- a) very disagree
- b) quite disagree
- c) neither disagree nor agree
- d) quite agree
- e) very agree

12. Pride in Workmanship

It is difficult to feel occupational pride if employees do not know what a good job is, if employees cannot influence their work situation. So, the organisation should create a work situation which is positive and which encourages initiative for continuous improvement and development.

12.1 What kind of wage system is currently used in your organisation? Please ✓ one where appropriate.

- a) paid for quantity of production
- b) paid for quality of production
- c) paid for performance of employees
- d) others (specify) \_\_\_\_\_

12.2 Apart from job security and leadership style, what factor most likely has affected job satisfaction? Please ✓ one where appropriate.

- a) salary
- b) importance of job

- c) feedback from job itself
- d) presents a challenge
- e) other (specify) \_\_\_\_\_

12.3 After implementing quality system e.g. TQM, what aspects of behaviour of employees have changed in your organisation? Please ✓ one where appropriate.

- a) increase job security
- b) increase personal effectiveness
- c) increase autonomy in how to do the job
- d) increase responsibility
- e) increase pride in workmanship
- f) others (specify) \_\_\_\_\_

### 13. Management Transformation

**Management transformation should be undergone in an organisation to create an organisation favourable to work on quality improvement, an organisation where all involved feel responsible and motivated in their work on continuous improvement of all processes.**

13.1 Is your organisation ready to commit years of support, funding and resources for the effort of implementing quality management systems? Please ✓ one where appropriate.

- Yes  No

13.2 Does everyone in your organisation understand such management change is essential? Please ✓ one where appropriate.

- Yes  No

If YES, how can he/she obtain information to understand such changes? Please ✓ as many as appropriate.

- a) through long-term management objectives
- b) through seminars and talks
- c) through guidelines and education
- d) through defined long-term targets and goals
- e) other (specify) \_\_\_\_\_

## Survey on Business Management Strategies Using Confucius Philosophy

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## 1. Introduction

This report investigates the impact and influence of Confucius philosophy in quality management strategies in Hong Kong. A survey was conducted to explore the usefulness of Confucius teachings in Hong Kong based companies under the Western TQM concepts.

The Confucius of whom to be discussed here refers to *The Analects of Confucius*. It is a collection of the 'selected sayings' of the Master and was compiled by his disciples after his death. The Analects have twenty books and came from different sources, on different dates. There are many authors who wrote articles and books on *The Analects of Confucius* outlining the key principles of Confucian teaching.

## 2. The Analects of Confucius used as Total Quality Management Strategies

As presented in Chapter 5, Confucius suggested that there are five relationships between people. These relationships are based on mutual, complementary obligations. The senior should take care of the junior and the younger should respect the older. As an individual, one should try to cultivate individual behaviour and ethics. Being the elder or senior member in the family, he or she should maintain harmony in the family. Harmony would give people dignity, respect and prestige. The family chief looked after the families' members, and protected them. All family members were expected to be loyal to the family, respect the senior and eldest and take care of those who are junior and younger in the family.

Confucius philosophies have been so deeply ingrained in the Chinese people's mind that they formed the major ingredients of the Chinese culture. The principles of Confucius philosophies can be adopted and mapped into the business environment:

### Confucian Philosophies

Cultivate one's behaviours  
Cultivate one's ethics  
Regulate and harmonise one's family  
  
Manage the state  
Rule the whole country

### Business Environment

Cultivate one's behaviours in business  
Cultivate one's professional ethics  
Manage a section or department in an organisation  
Manage the organisation  
Manage a corporation, multi-national corporation

Researchers in the process of implementation of TQM in various organisations reported that one of the major barriers to overcome is to change the quality concept of the people and culture of the organisation. The TQM concepts based on the Western gurus' thinking might not be totally acceptable to some organisations from the East Asian countries having an entire different historical background, history of economic development and economic structure that are significantly different from the West. There is no reason why these countries while adopting TQM philosophies as the Western science cannot change and modify in some way retaining their underlying traditions or cultures.

Quality systems have been implemented in Hong Kong for many years and recently it seems to be a global trend. While adopting TQM philosophies from the West, would

Hong Kong keep the Chinese cultures and traditions into consideration thereby increase the business competitiveness?

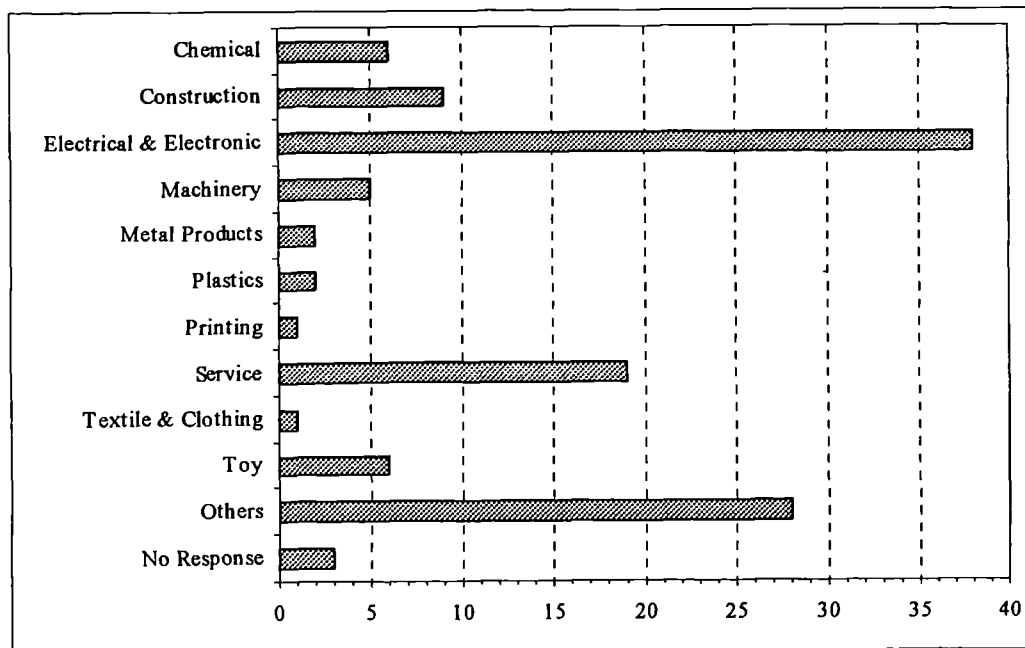
Under the TQM philosophy and the *Analects of Confucius*, a questionnaire on quality management strategies was devised and a survey was conducted in Hong Kong. Further research into the *Analects of Confucius* identifies twenty-four behaviours and ethics relating the Confucius philosophies to quality management environment. Respondents were required to rank the level of importance of those selected criteria from the *Analects of Confucius* on quality management strategies. The designed questionnaires were targeted at various kind of industrial sectors so a representative result on quality management strategies merging with the Western TQM philosophy in Hong Kong could be obtained.

### 3. Survey Responses and summary

The Table and Figure show that various industrial sectors were included in the survey.

Nature of Business	Company
Chemical	6
Construction	9
Electrical & Electronic	38
Machinery	5
Metal Products	2
Plastics	2
Printing	1
Service	19
Textile & Clothing	1
Toy	6
Others	28
No Response	3

The Table shows Distribution of Business Nature of Respondents



The chart shows Distribution of Business Nature of Respondents

To identify the two groups of responses, the reporting results were labelled by “Mgr” and “Tech” for managerial and technical responses respectively.

General speaking, the findings obtained from the survey indicated that both manager and technical groups agreed quite well that *The Analects of Confucius* contribute well to overall quality management strategies in Hong Kong business environment.

Total Responses		No Response	
Mgr	Tech	Mgr	Tech
96	66	24	4

Criteria English	Criteria Chinese	Mean		p-value
		Mgr	Tech	
<b>A. Cultivation of Individual Behaviours “Xiu Shen”</b>				
Learn	Xue	3.80	3.65	0.4035
Trust	Xin	4.19	3.82	0.0447
Moral conduct	De	3.56	3.41	0.3692
Wisdom	Zhi	3.73	3.58	0.3632
Words & deeds	Yang Xing	3.91	3.52	0.0256
<b>B. Cultivation of Professional Ethics “Yang Xing” in an Organisation</b>				
Benevolence	Ren	3.21	2.95	0.1152
Righteousness	Yi	2.88	2.86	0.9431
Courtesy	Li	3.63	3.50	0.4634
Question	Chi	3.41	3.24	0.3207
Forgive	Shu	3.32	3.29	0.8359
<b>C. Manage a Section or Department “Qi Jia”</b>				
Filial Piety	Xiao	2.96	3.33	0.0555
Sincerity	Cheng	3.76	3.26	0.0041
Thrift	Jian	3.21	3.15	0.7126
Reception	Fu Zi	3.32	3.06	0.0499
Respect	Ji	2.78	2.89	0.4988
<b>D. Manage an Organisation “Chi Guo”</b>				
Govern	Zhi	3.71	3.48	0.2290
Communication	Jun Chen	4.07	3.68	0.0346
Loyal	Zhong	3.65	3.21	0.0188
Team effort	Ce	3.91	3.59	0.0872
Reward & punishment	Lu	3.46	3.61	0.3637
<b>E. Manage and Operate a Multi-national Corporation “Ping Tian Xia”</b>				
Integrity	Jie	3.07	3.14	0.6631
Honest & clean	Lian	3.64	3.62	0.9394
Observe regulation	Lu Zheng	3.73	3.70	0.8590
Proper title	Zheng Ming	3.44	3.35	0.6180

Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance

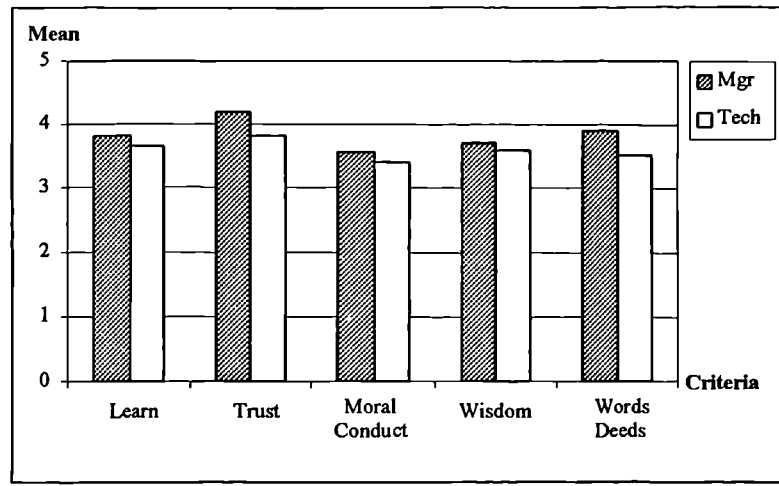


Figure A1. Importance on the “Cultivation of Individual Behaviours”

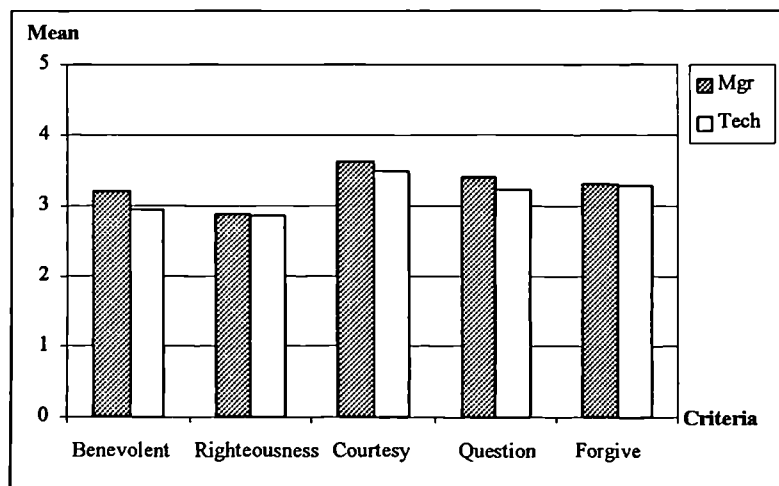


Figure B1. Expected Importance of the “Cultivation of Professional Ethics”

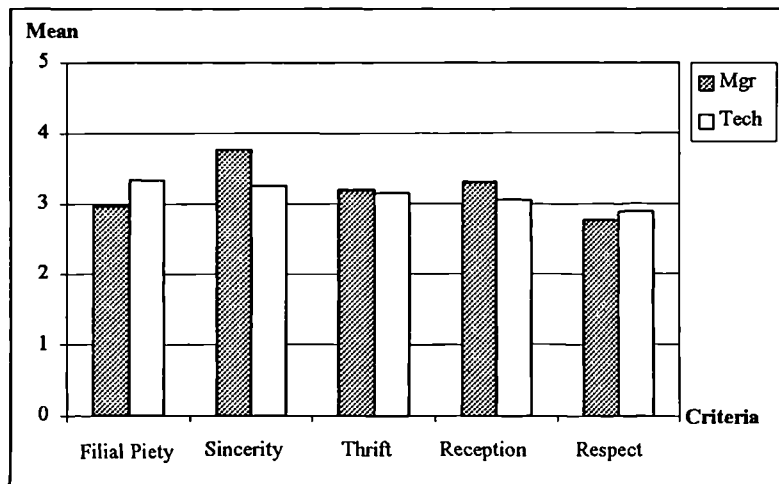


Figure C1. Expected Importance of the “Regulating and Harmonising a Family”

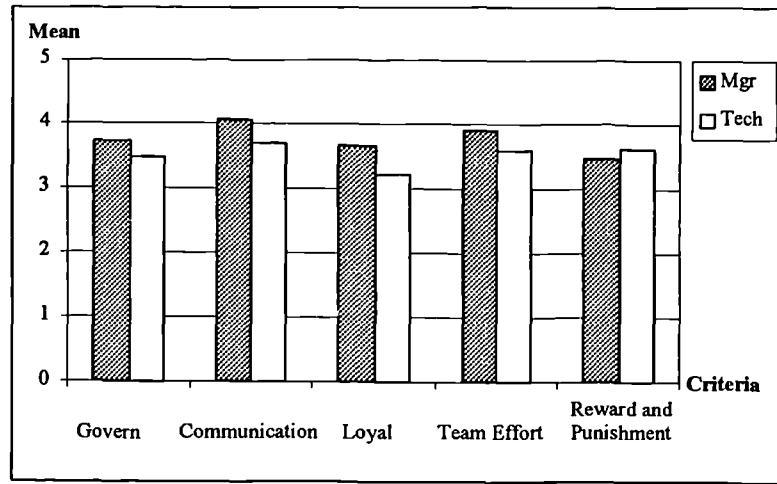


Figure D1. Expected Importance of the “*Managing the State*”

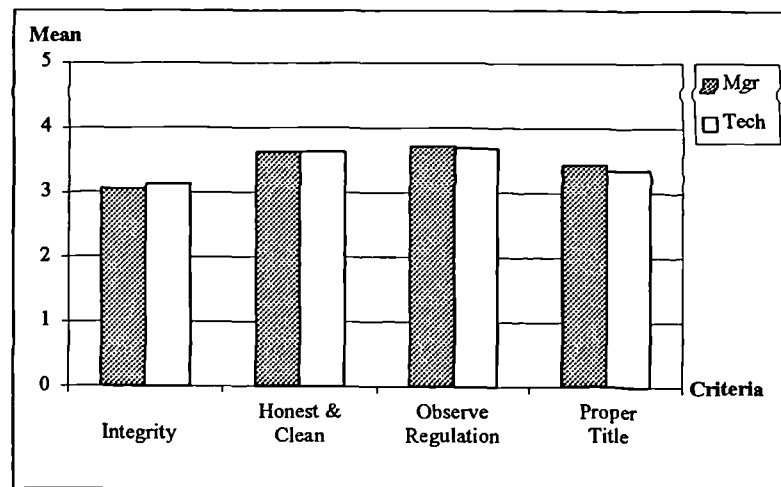


Figure E1. Expected Importance of the “*Ruling the Whole Country and Bringing Peace to the World*”

In general, both survey responses of Mgr. and Tech. reported that the selected 24 elements from the Analects of Confucius were quite useful in the business environment.

Detailed discussions and comparisons are provided in the followings.



- (i) Detailed comparison between Mgr. and Tech. on the findings A “Cultivation of Individual Behaviours” in the Analects of Confucius.

Criteria	Level of Importance	Responses		Responses (%)		p-value
		Mgr	Tech	Mgr	Tech	
Learn	1	6	3	6	5	0.6441
	2	7	7	7	11	0.4638
	3	15	17	16	26	0.1128
	4	40	22	42	33	0.2865
	5	28	17	29	26	0.6366
Trust	1	6	4	6	6	0.9611
	2	3	5	3	8	0.2363
	3	8	12	8	18	0.0794
	4	29	23	30	35	0.5371
	5	50	22	52	33	0.0182 <0.05
Moral Conduct	1	7	3	7	5	0.4785
	2	8	7	8	11	0.6264
	3	26	21	27	32	0.5171
	4	34	30	35	45	0.2014
	5	21	5	22	8	0.0085 <0.05
Wisdom	1	3	3	3	5	0.6406
	2	3	9	3	14	0.0252 <0.05
	3	35	18	36	27	0.2233
	4	31	19	32	29	0.6377
	5	24	17	25	26	0.9139
Words & Deeds	1	2	3	2	5	0.4090
	2	10	7	10	11	0.9694
	3	14	18	15	27	0.0571
	4	39	24	41	36	0.5873
	5	31	13	32	20	0.0774

5 levels of importance: 1 is the least importance, and 5 is the most importance

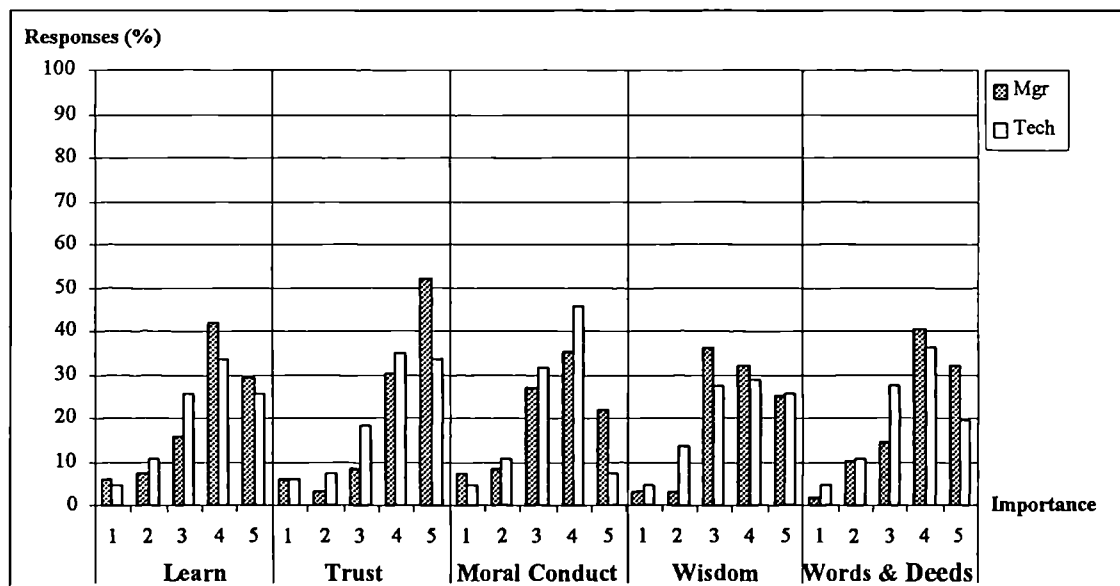


Figure A2. Importance of the “Cultivation of Individual Behaviours”

(ii) Detailed comparison between Mgr. and Tech. on the findings B “Cultivation of Professional Ethics” in the Analects of Confucius.

Criteria	Level of Importance	Responses		Responses (%)		p-value
		Mgr	Tech	Mgr	Tech	
Benevolence	1	5	2	5	3	0.4858
	2	17	17	18	26	0.2189
	3	37	28	39	42	0.6229
	4	27	15	28	23	0.4442
	5	10	3	10	5	0.1503
Righteousness	1	8	2	8	3	0.1366
	2	26	21	27	32	0.5171
	3	37	26	39	39	0.9136
	4	20	13	21	20	0.8610
	5	5	3	5	5	0.8494
Courtesy	1	7	1	7	2	0.0617
	2	7	8	7	12	0.3212
	3	24	23	25	35	0.1768
	4	35	25	36	38	0.8552
	5	23	9	24	14	0.1062
Question	1	5	0	5	0	Nil
	2	10	14	10	21	0.0728
	3	36	26	38	39	0.8089
	4	31	17	32	26	0.3740
	5	14	8	15	12	0.6555
Forgive	1	7	2	7	3	0.2134
	2	12	12	13	18	0.3202
	3	34	24	35	36	0.9024
	4	29	21	30	32	0.8288
	5	14	7	15	11	0.4621

5 levels of importance: 1 is the least importance, and 5 is the most importance

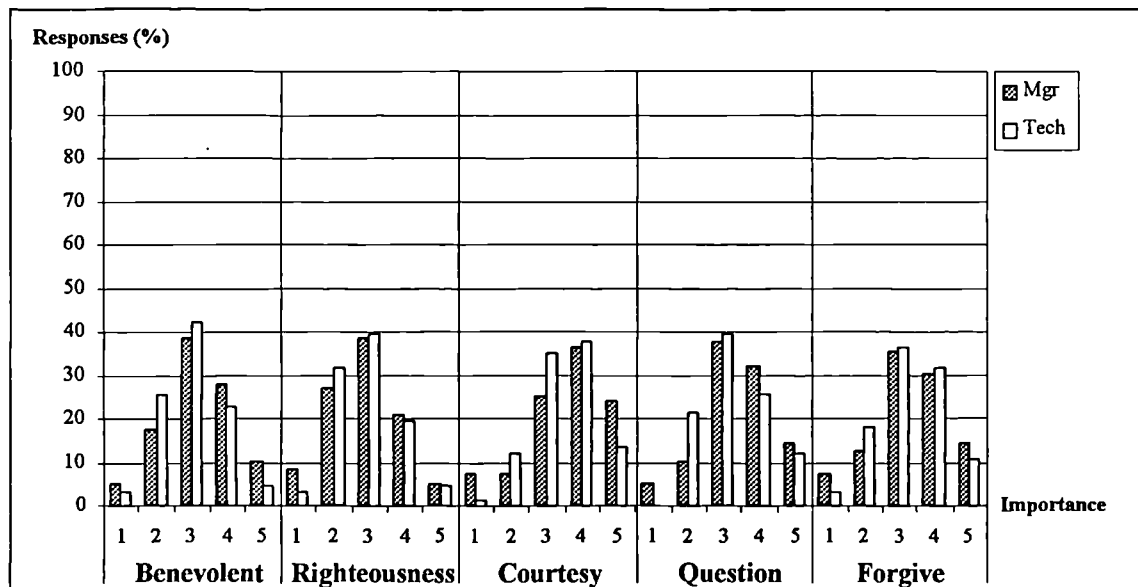


Figure B2. Importance of the “Cultivation of Professional Ethics”

(iii) Detailed comparison between Mgr. and Tech. on the findings C “Manage a Section or Department” in the Analects of Confucius

Criteria	Level of Importance	Responses		Responses (%)		p-value
		Mgr	Tech	Mgr	Tech	
Filial Piety	1	11	5	11	8	0.4189
	2	18	9	19	14	0.3940
	3	33	17	34	26	0.2460
	4	22	24	23	36	0.0628
	5	10	10	10	15	0.3712
Sincerity	1	3	1	3	2	0.4927
	2	8	10	8	15	0.1987
	3	18	24	19	36	0.0118 <0.05
	4	42	23	44	35	0.2588
	5	24	6	25	9	0.0059 <0.05
Thrift	1	5	2	5	3	0.4858
	2	17	13	18	20	0.7507
	3	34	28	35	42	0.3704
	4	33	19	34	29	0.4573
	5	7	4	7	6	0.7614
Reception	1	4	1	4	2	0.2999
	2	12	11	13	17	0.4584
	3	39	38	41	58	0.0339 <0.05
	4	31	15	32	23	0.1869
	5	10	1	10	2	0.0117 <0.05
Respect	1	15	4	16	6	0.0461 <0.05
	2	26	19	27	29	0.8133
	3	28	24	29	36	0.3381
	4	19	18	20	27	0.2679
	5	8	1	8	2	0.0357 <0.05

5 levels of importance: 1 is the least importance, and 5 is the most importance

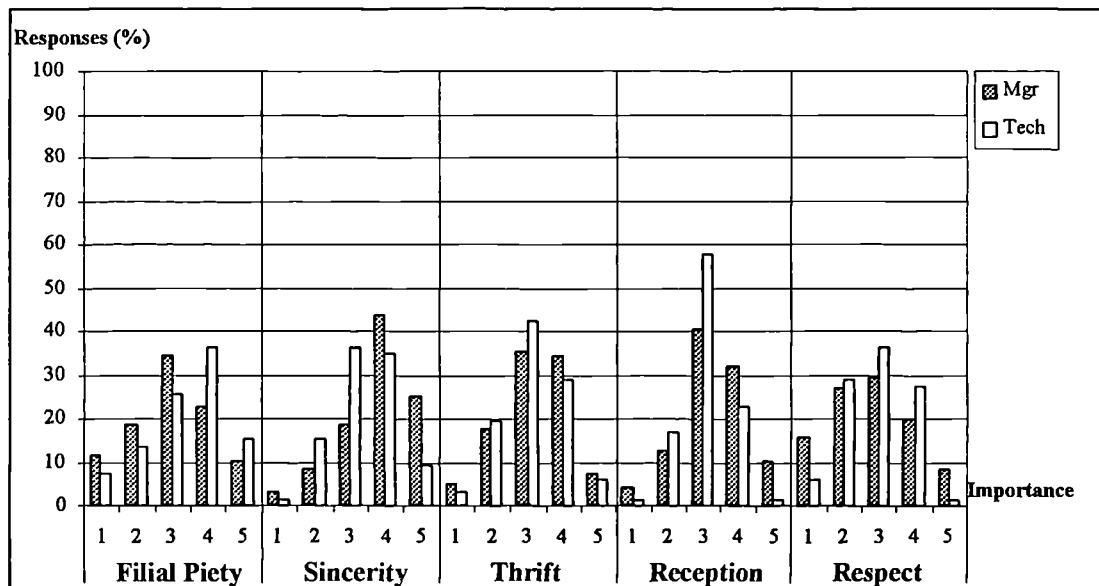


Figure C2. Importance on the “Regulating and Harmonising a Family”

(iv) Detailed comparison between Mgr. and Tech. on the findings D “Manage an Organisation” in the Analects of Confucius

Criteria	Level of Importance	Responses		Responses (%)		p-value
		Mgr	Tech	Mgr	Tech	
Govern	1	5	1	5	2	0.1792
	2	7	15	7	23	0.0096 <0.05
	3	24	15	25	23	0.7415
	4	30	21	31	32	0.9395
	5	29	14	30	21	0.2050
Communication	1	6	2	6	3	0.3262
	2	6	7	6	11	0.3409
	3	6	13	6	20	0.0167 <0.05
	4	35	27	36	41	0.5697
	5	43	16	45	24	0.0074 <0.05
Loyal	1	6	2	6	3	0.3262
	2	12	11	13	17	0.4584
	3	20	27	21	41	0.0055 <0.05
	4	30	18	31	27	0.5887
	5	28	7	29	11	0.0024 <0.05
Team Effort	1	5	4	5	6	0.8174
	2	9	2	9	3	0.0858
	3	17	25	18	38	0.0058 <0.05
	4	24	21	25	32	0.3442
	5	41	14	43	21	0.0043 <0.05
Reward & Punishment	1	8	1	8	2	0.0357 <0.05
	2	7	7	7	11	0.4638
	3	36	17	38	26	0.1190
	4	23	33	24	50	0.0005 <0.05
	5	22	8	23	12	0.0699

5 levels of importance: 1 is the least importance, and 5 is the most importance

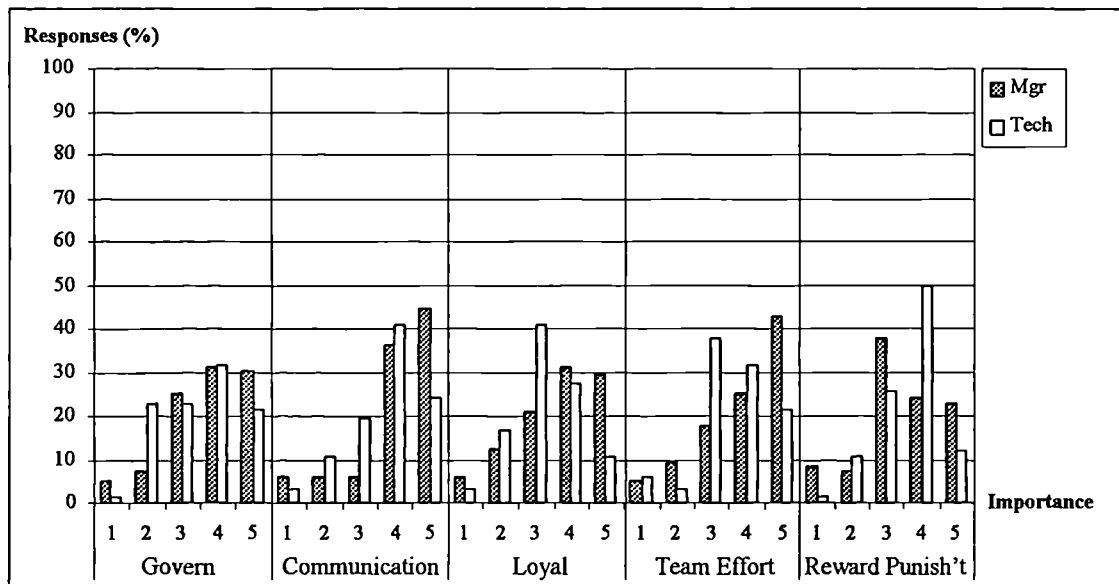


Figure D2. Importance on the “Manage the State”

- (v) Detailed comparison between Mgr. and Tech. on the findings, E “Manage and Operate a Multi-national Corporation” in the Analects of Confucius

Criteria	Level of Importance	Responses		Responses (%)		p-value
		Mgr	Tech	Mgr	Tech	
Integrity	1	3	0	3	0	Nil
	2	25	15	26	23	0.6333
	3	37	30	39	45	0.3832
	4	24	18	25	27	0.7475
	5	7	3	7	5	0.4785
Honest & Clean	1	6	3	6	5	0.6441
	2	11	7	11	11	0.8664
	3	23	19	24	29	0.4937
	4	28	20	29	30	0.8773
	5	28	17	29	26	0.6366
Observe Regulation	1	6	2	6	3	0.3262
	2	9	5	9	8	0.6910
	3	22	20	23	30	0.2948
	4	27	23	28	35	0.3658
	5	32	16	33	24	0.2156
Proper Title	1	4	3	4	5	0.9080
	2	18	7	19	11	0.1431
	3	26	24	27	36	0.2114
	4	28	23	29	35	0.4473
	5	20	8	21	12	0.1514

5 levels of importance: 1 is the least importance, and 5 is the most importance

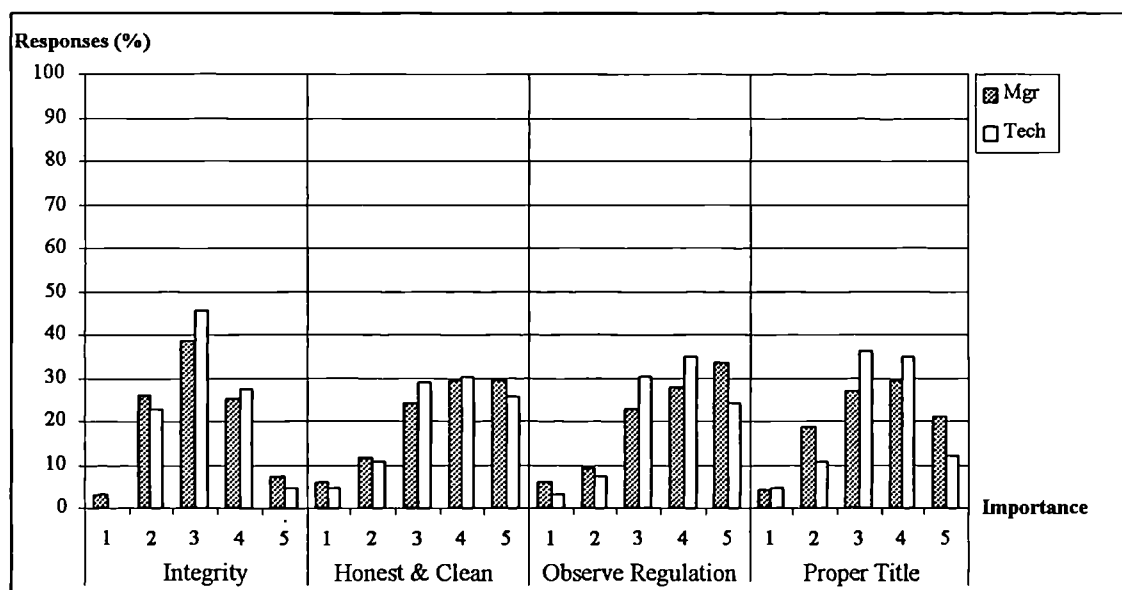


Figure E2. Importance on the “Rule the Whole Country and Bring Peace to the World”

**Survey on the Effect of Chinese Culture on  
Quality and Business Management Strategies based on Confucius' Philosophies**

Please rank the given criteria according to their order of importance.

**Key of Ranking:**

- “1” is regarded as not important  
 “2” is regarded as below average important  
 “3” is regarded as average important  
 “4” is regarded as very important  
 “5” is regarded as extremely important

**Behaviours & Characters**

**Best Performance in Business Environment**

<b>Cultivation of Individual Behaviours</b>		<b>1 2 3 4 5</b>
1. Learn	Study for purpose of application	□□□□□
2. Trust	Keep a promise	□□□□□
3. Moral conduct	Be of noble character and high prestige	□□□□□
4. Wisdom	Make a sensible selection	□□□□□
5. Words and deeds	Suit the action to the word	□□□□□

<b>Cultivation of Professional Ethics</b>		<b>1 2 3 4 5</b>
1. Benevolence	Be benevolent and see benevolence	□□□□□
2. Righteousness	Speak out sternly from a sense of justice	□□□□□
3. Courtesy	Treat people with due respect	□□□□□
4. Question	Do not feel ashamed to ask and learn	□□□□□
5. Forgive	Forgive someone	□□□□□

<b>Manage a Section or Department in an Organisation</b>		<b>1 2 3 4 5</b>
1. Filial piety	Show filial obedience	□□□□□
2. Sincerity	Express earnestly & sincerely	□□□□□
3. Thrift	Be economical with one's money	□□□□□
4. Reception	Reception and Hospitality	□□□□□
5. Respect	Respect senior generation and eldest	□□□□□

<b>Manage an Organisation</b>		<b>1 2 3 4 5</b>
1. Govern	Rule the state well, give people peace and security	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2. Communication	Well communication between senior and junior	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. Loyal	Be loyal and devoted to work	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. Team effort	Plan and work jointly and co-operatively	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. Reward and punishment	Proper incentives and punishment	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

<b>Manage and Operate a Corporation</b>		<b>1 2 3 4 5</b>
1. Integrity	Maintain integrity even under severe and desperate conditions	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2. Honest and clean	Be honest and clean in performing duties	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. Observe regulation	Observe rules and regulations	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. Proper title	Be perfectly justifiable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

**Survey on Business Management Strategies Using  
The Sun Tzu's The Art of War and The Thirty-six Strategies**

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## **1. Introduction**

This report investigates the business management strategies under the influence of Chinese philosophy and culture in Hong Kong. A survey was conducted to investigate the viewpoints and attitudes of the management in Hong Kong based companies in Sun Tzu's philosophy and the Thirty-six Strategies. The responses provide insights to both local and foreign companies in understanding the corporate strategies and behaviours for the future challenges in Asia Pacific region.

Sun Tzu was a great warrior in the ancient China and his philosophy became a bible of war and strategies in China for a great number of years. Nowadays, his philosophy is becoming one of the major topics to be studied in military schools of some countries. The strategies and tactics of Sun Tzu's The Art of War can apply not only in the military area, but also to the management behaviour and business strategies.

Hong Kong is an international city, however, in the innovation and usage of technology Hong Kong will basically follow the footsteps of other countries. Being a Chinese society, most people in Hong Kong are being influenced by traditional Chinese philosophies and cultures. Because of the long history of China, general management behaviours in Hong Kong might have been inherent from their culture. Sun Tzu's philosophy, for example, or some others would help to provide guidelines in developing a local characteristic business management strategic system.

## **2. Questionnaire and Survey Return**

Under the Sun Tzu's philosophy and the well known Thirty-six Strategies, a survey on their implementations in Hong Kong business environment was conducted. The main objective of the survey was to conduct research and assess the usefulness and impact of these philosophies and strategies to Hong Kong situation. Furthermore the effects of the philosophies to management behaviours and business strategies were to be investigated. The questionnaire was designed into two main parts:

*Part I: Ranking on the levels of importance of the main themes of the 13 Books of the Sun Tzu's The Art of War as Hong Kong business management strategies*

*Part II: Ranking on the levels of importance of the 36 Strategies as Hong Kong business management strategies*

The designed questionnaires were targeted at the companies that have a well-developed and organised management system so a representative result of management situation in Hong Kong could be obtained. Depending on the main themes of each of the Sun Tzu's thirteen books, questionnaires were designed and selected with business management strategies in mind.

Similar to the surveys for ISO9000 quality system and TQM philosophies, all questionnaires were sent out with return envelope plus postage. The ISO9000 registered list obtained from HKQAA was used initially for ISO9000 and TQM surveys. Out of 333 questionnaires being sent out, 75 of them returned. All questionnaires were having identification labels showing the companies' name and their postal addresses. Since the survey on implementation of Sun Tzu's philosophies and Thirty-six Strategies requires in depth knowledge and understanding of company policy and strategies, these 75 companies were used again sending the questionnaires addressed to senior management. Of these 75 questionnaires, a total of 25 questionnaires were returned. Finally, 23 responses were identified as valid (31%).

The response rate was encouraging. As it was unexpected, the returns indicated that they were mainly from senior management. They were either involved in corporate strategies planning or interested in the use of Sun Tzu's philosophy as their business management strategies. Some of them showed interest on the survey and had indicated in their returns that they expected receiving the result after the survey. From the general ranking of the use of Sun Tzu's philosophy and the Thirty-six Strategies in business management strategies, the returns represented that the respondents had a good understanding of the philosophies. It is therefore confident to believe that these responses from the senior management present a good picture of usefulness of the Sun Tzu's philosophy in business management strategies.

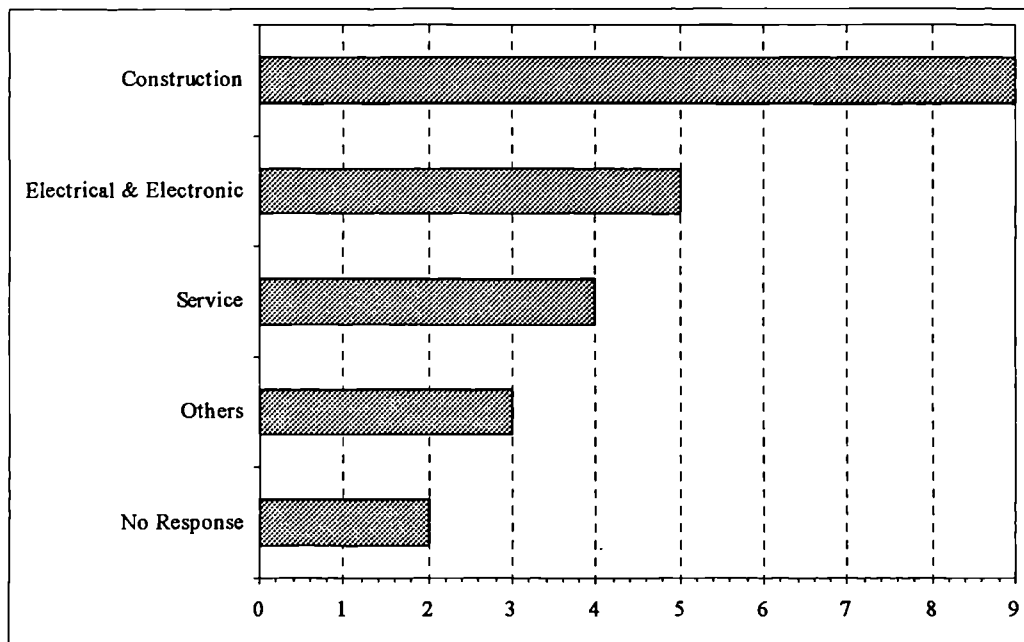
Statistical analysis methods were used in assisting survey analysis and reporting. All the computations were carried out on SAS package from a Pentium PC. The survey responses are discussed in detail in the following section.

### 3. Survey Responses

The following table and figure show that various industrial sectors are included in the survey. The major industrial sectors responded are electrical & electronic and service industries.

Nature of Business	Company
Construction	9
Electrical & Electronic	5
Service	4
Others	3
No Response	2

*Table showing Distribution of Business Nature of Respondents*



*Figure showing Distribution of Business Nature of Respondents*

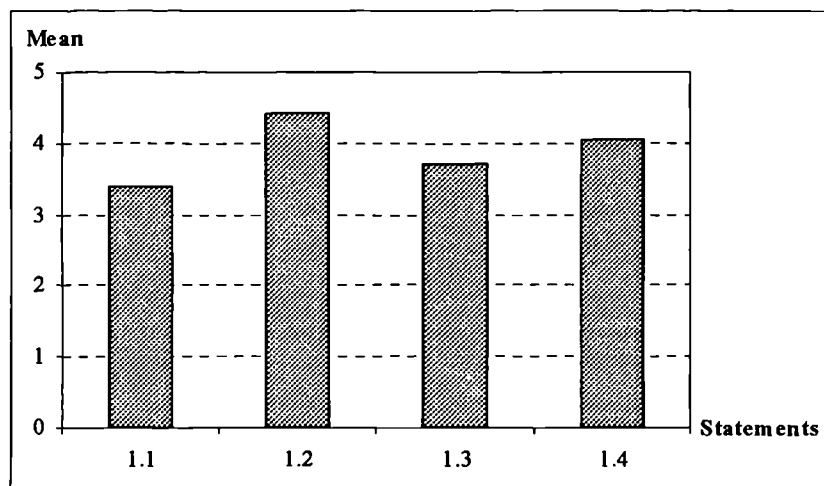
#### 4. Survey on Business Management Strategies using The Sun Tzu's The Art of War

##### Finding I. Situation Appraisal

Statements of Book 1 "Situation Appraisal"	Business Management Strategies "Planning"
1.1 It may be described as one of the most important affairs to the state.	Understand the actual situation; decide on the plan of actions.
1.2 We should analyse and compare the conditions of an enemy and ourselves.	Analyse and compare both parties' conditions, both favourable and unfavourable.
1.3 Any military operation takes deception as its basic quality.	Business is very much related to strategic, administrative and tactics planning.
1.4 He who plans and prepares carefully will find himself in a favourable position and win victory.	Right information and proper preparation will help business making a success.

Statements	Responses	Mean
1.1	23	3.39
1.2	23	4.43
1.3	23	3.70
1.4	23	4.04

Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance



These business management strategies for *planning* based on Sun Tzu's The Art of War are 3.9 in average which is close to the "very essential" ranking position. This high ranking implies that Sun Tzu's wisdom in this Book were widely used and adopted as Chinese business and management strategies in their *planning*.

To summarise these essential strategies for business and management excellence, the following points are identified:

1. Understand the actual situation; decide on the plan of actions. (1.1)
2. Competition is of vital importance to the top management and executive in business.
3. Appraise plans for competition using five basic factors: they are company policy (Tao), environment (heaven), place (earth), leadership (general) and regulations (law). Every executive should make the best use of these five factors; those who can master them well will success and who do not will fail.
4. Tao refers to the essential purpose, spirit and virtues of an individual or organisation.
5. Heaven refers to the impact of general business conditions and political culture on the competitive situation.
6. Earth refers to the way that work being organised and managed.
7. Because leadership comes from the inside of people, it shows the attitudes and abilities of individuals.
8. Regulation refers to getting facts timely and accurately. It relates to the reality of the conditions and circumstances in the competitive situation.
9. Analyse and compare both parties' conditions, both favourable and unfavourable. (1.2)
10. When considering competitive strategy, carefully assess the plans and gather information and ask the following questions.
11. Which executives practice leadership according to the Sun Tzu's seven principles?
12. Whose top management has shown the good characters and virtues? Who is more popular to employees and people? Which executive creates enthusiasm and co-operation among employees and associates?
13. Whose executive has demonstrated the professional leadership and ability?
14. Who has gained the favourable business climate and seeks the advantageous opportunity and situation? Which company are more favourable by the current political climate and economic policies and conditions?
15. Whose company policies, disciplines and regulations are more thoroughly observed and implemented?
16. Whose employees are more competent to their works and stronger?

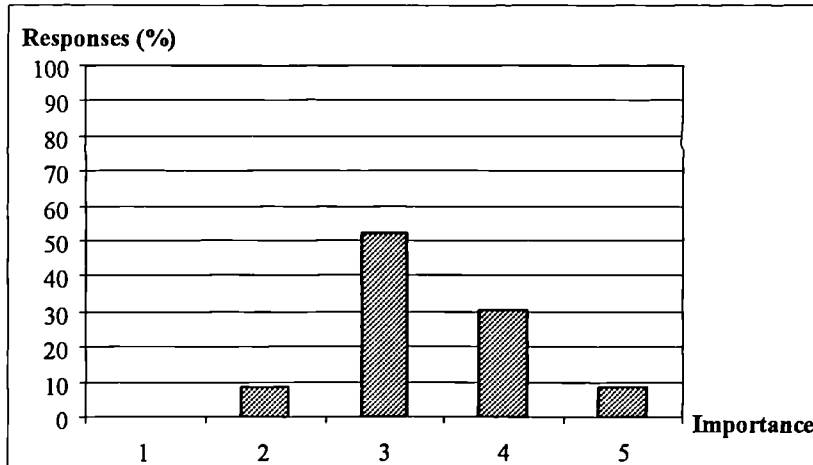
17. Which company has the better-trained staff?
18. Whose rewards and punishments are fairer, clearer and properly acknowledged by the employees? Which executive and company do reward merits, encourage staff development and personal growth?
19. The top management should take the advice and use the right person for the job.
20. Business is very much related to strategic, administrative and tactics planning. (1.3)
21. An executive must create plans for competitive actions, which allow the executive to leverage the strengths of the individuals as well as the company in the marketplace.
22. Sun Tzu's philosophy on military operation takes deception as its basic quality. However in business and management, all competitive advantages are based on *effective execution of plans*. *Continuously seeking new methods*, new approaches and new market segments would help to innovate new ideas that maintain the leading position in the marketplace and demonstrate the ability to adapt changes.
23. In circumstances where competitor is strong, develop innovative products and services.
24. When competitor is arrogant, please be humble and ask for advice. That may be from the customers and find out the competitor's weakness.
25. Executives must understand how and when to launch proper business strategies and tactics where competitors are unprepared, and unexpected.
26. Right information and proper preparation will help business making a success. (1.4)
27. Executives who plan and prepare carefully will be in a favourable position and win the business competition.

Detailed statistics of Book "Situation Appraisal" are provided in the following:

- (i) Statement 1.1 - What is war? It may be described as one of the most important affairs to the state. (Understand the actual situation; decide on the plan of actions.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	12	52
4	7	30
5	2	9

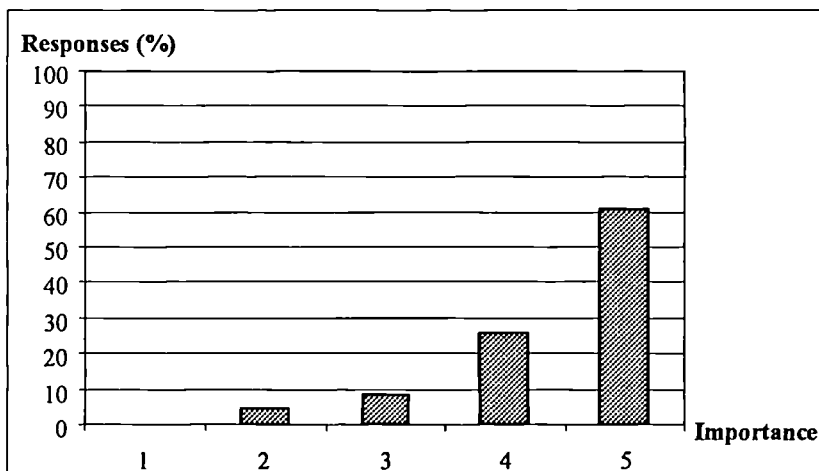
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 1.2 - We should analyse and compare the conditions of an enemy and ourselves. (Analyse and compare both parties condition, both favourable and unfavourable.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	2	9
4	6	26
5	14	61

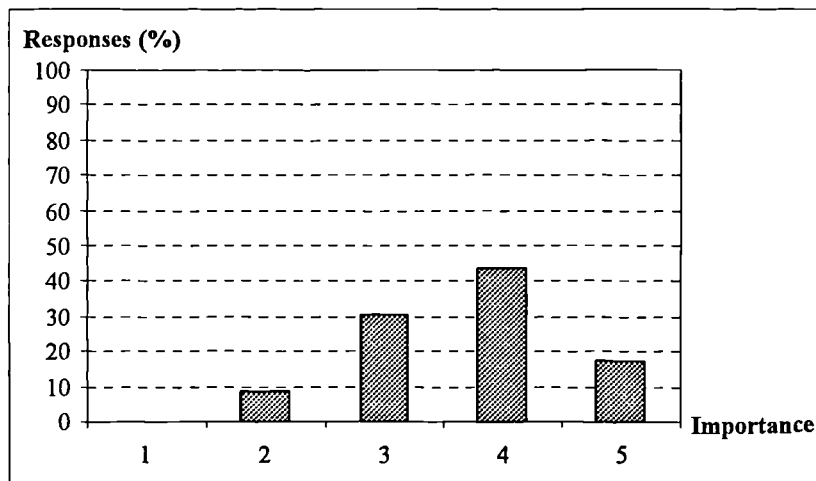
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 1.3 - Any military operation takes deception as its basic quality. Business is very much related to strategic, administrative and tactics planning. (Business is very much related to strategic, administrative and tactics planning.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	7	30
4	10	43
5	4	17

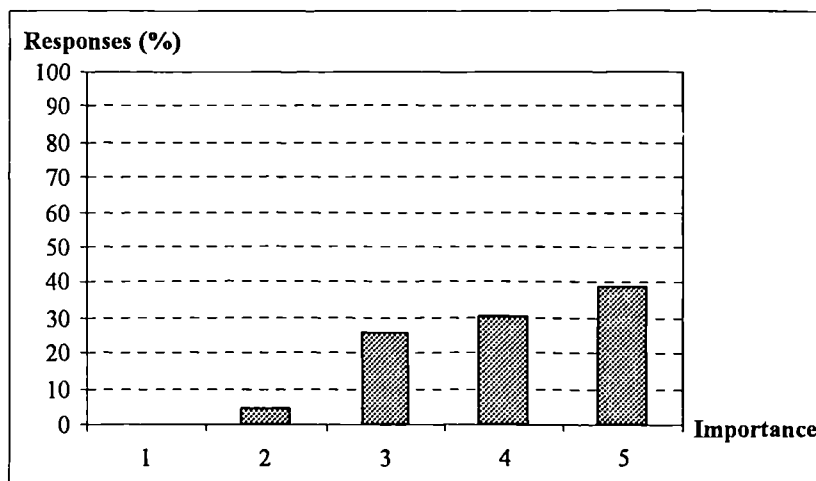
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Statement 1.4 - He who plans and prepares carefully will find himself in a favourable position and win victory. (Right information and proper preparation will help business making a success.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	6	26
4	7	30
5	9	39

5 levels of importance: 1 is the least importance, and 5 is the most importance



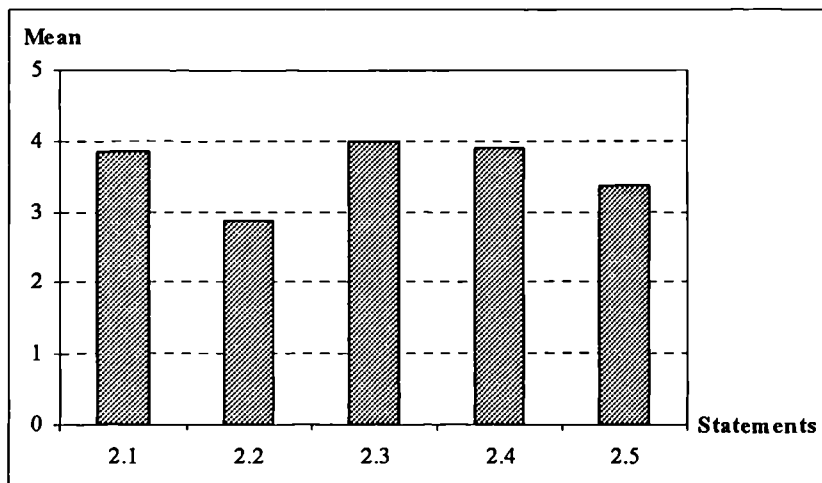


**Finding II. Waging War**

<i>Statements of Book 2 "Waging War"</i>	<b>Business Management Strategies "Competitive Action"</b>
2.1 <i>You have had enough money.</i>	Make a good and realistic estimation on the actual expenses before entering into business.
2.2 <i>We have heard of criticism of a hasty campaign, we have never seen the cleverness in prolonging a war.</i>	Speed and quick decision help in business.
2.3 <i>He who is adept in military operations never raises an army twice.</i>	Organisation structure should be clear and effective.
2.4 <i>Hence a wise commander should strive to get provisions in the enemy state.</i>	Do not add extra burden to the head-office for any new proposal.
2.5 <i>The more times you defeat the enemy the stronger you will be.</i>	Unify other business into the corporation.

Statements	Responses	Mean
2.1	22	3.86
2.2	23	2.87
2.3	23	4.00
2.4	23	3.91
2.5	23	3.35

*Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance*



These major business management strategies for *competitive actions* based on Sun Tzu's The Art of War are 3.6 in average which is nearer to the "very importance" ranking position. This high ranking implies that Sun Tzu's wisdom in this Book was widely used and adopted as Chinese business and management strategies in their *competitive actions*.

Except statement 2.2, which ranked about 3, the other four statements in this Book were ranked around 4. This result implies that the actions on budget control and resource allocation were considered to be highly essential.

To summarise these essential strategies for business and management excellence, the following points are captured:

1. Make a good and realistic estimation on the actual expenses before entering into business. (2.1)
2. Competitive actions must be supported by the personal and organisation resources and that must be available before action is taken. Full commitment and innovative ideas from employees are the most valuable resources.
3. When creativity is dulled, commitment dampened, enthusiasm drained, financing depleted; competitors will take advantage of weakness position.
4. Speed and quick decision help in business. (2.2)
5. Quick and successful return is the overall objective of any competitive action. In business negotiation, speedy decision is essential for overall success. Prolonged discussion may bring harm to the overall situation in particular when control of the actual situation is difficult. When competitive actions are prolonged, resources will become scare and desperate.
6. Strategies that waste time and exhaust resources never work.
7. Executives who cannot balance risk with opportunity cannot profit in today's business environment, in particular in this information technology age. Speed and innovation with accurate information are the keys to success.
8. Organisation structure should be clear and effective. (2.3)
9. A skilful executive should have a simple and effective organisational structure for well-defined management objectives, quick decision making, less extravagant spending and proper use of resources.
10. Do not add extra burden to the head-office for any new proposal. (2.4)
11. Large and multinational corporation should let the subsidiaries and remote plants use their local resources and people and not to over-burden the head office.
12. Timely, proper and accurate information is the key of successful competition. However, expensive information would waste resources.
13. Beware of the usefulness of some expensive information that may be out of date.

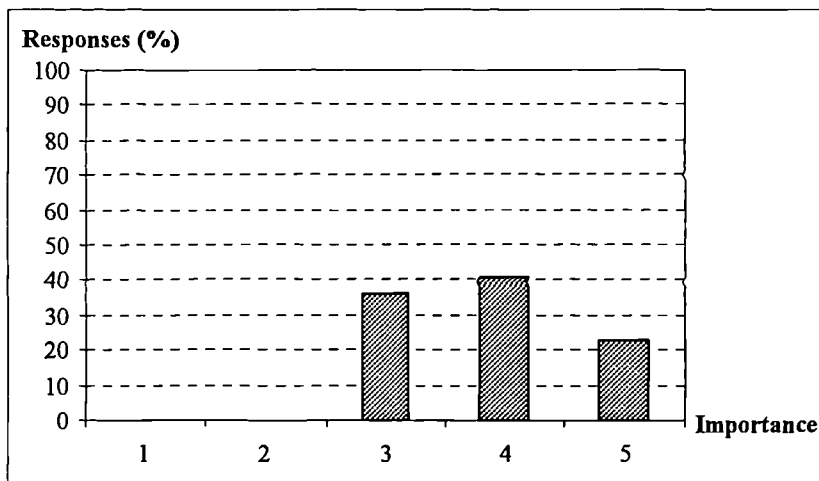
14. Wise executive harvests timely information from his constituent and competitors.
15. Unify other business into the corporation. (2.5)
16. To become more competitive in the marketplace, taking over or unifying business with competitors are not uncommon. Proper use of the existing expertise and human resource will further strengthen the foundation of the corporate for future competition. A skilful executive builds the strongest possible team from the people in the company and corporate.
17. To capture the spirits of employees, executives must give them clearly defined and valuable rewards. It could be group award or individual achievement on merits.
18. Reward someone openly and use that as an example as meaningful rewards for excellence.
19. Treat employees well and provide proper training to them. Individual achievement could be the overall success of the whole company.
20. Executive must understand how to excite the employees and dominate a marketplace with quick results and not prolonged activities.

Detailed statistics of Book "Waging War" are provided in the following:

- (i) Statement 2.1 - You have had enough money. (Make a good and realistic estimation on the actual expenses before entering into business.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	8	36
4	9	41
5	5	23

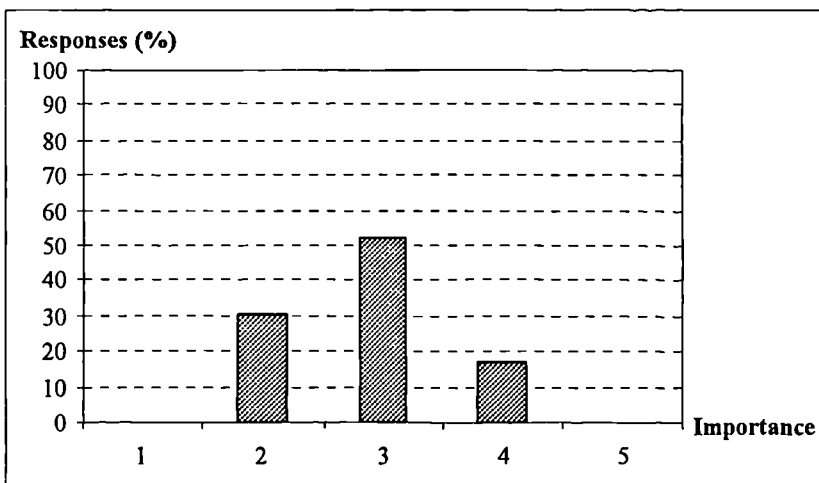
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 2.2 - We have heard of criticism of a hasty campaign, we have never seen the cleverness in prolonging a war. (Speed and quick decision help in business.)

Level of Importance	Responses	Responses (%)
1	0	0
2	7	30
3	12	52
4	4	17
5	0	0

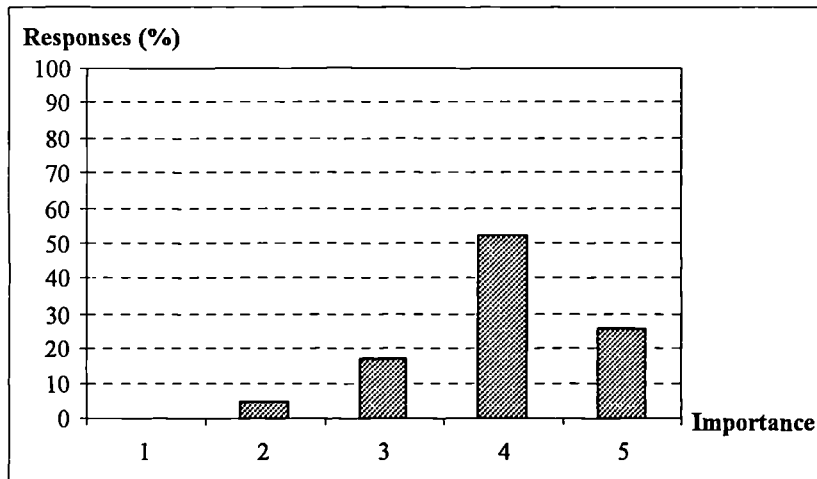
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 2.3 - He who is adept in military operations never raises an army twice. (Organisation structure should be clear and effective.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	4	17
4	12	52
5	6	26

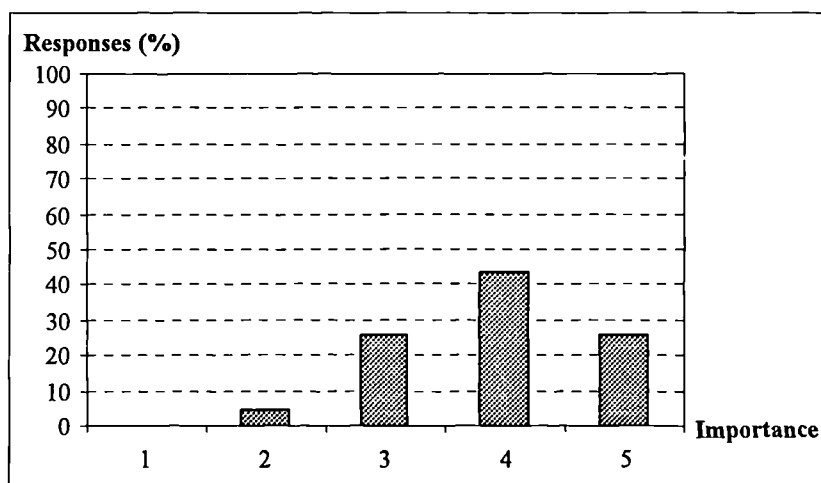
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Statement 2.4 - Hence a wise commander should strive to get provisions in the enemy state. (Not to add extra burden to the head-office for any new proposal.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	6	26
4	10	43
5	6	26

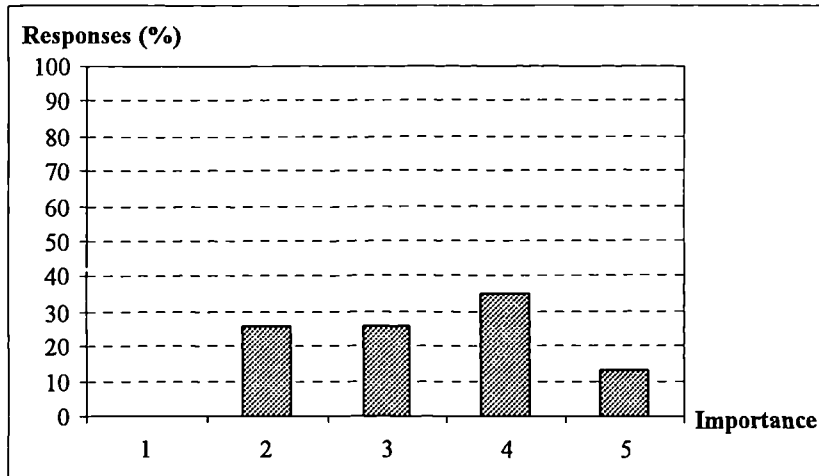
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 2.5 - The more times you defect the enemy the stronger you will be. (Unify other business into the corporation.)

Level of Importance	Responses	Responses (%)
1	0	0
2	6	26
3	6	26
4	8	35
5	3	13

*5 levels of importance: 1 is the least importance, and 5 is the most importance*

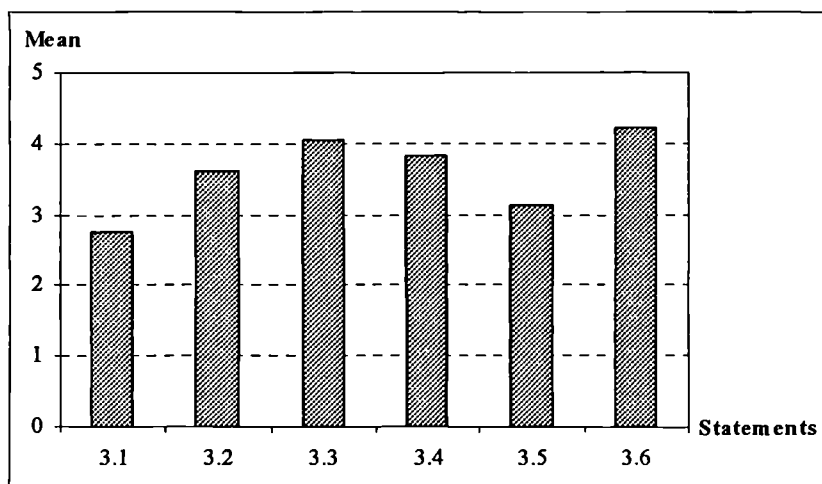


**Finding III. Strategic Attacks**

<i>Statements of Book 3 "Strategic Attacks"</i>	<b>Business Management Strategies "Competitive Strategy"</b>
3.1 <i>Winning a victory and subduing the enemy without fighting is the highest excellence.</i>	Take over business without extra costs.
3.2 <i>The best policy for the military operations is to gain victory by means of strategy.</i>	Understand strategy helps to win competition.
3.3 <i>He must gain complete victory all-under-heaven.</i>	Use wisdom and best strategy instead of aggressive tactics for success.
3.4 <i>The weaker battles on stubbornly without taking its strength into account; it will surely be conquered by the stronger.</i>	Understand the situation and act flexibly.
3.5 <i>The general assist the ruler in governing a nation.</i>	Decision should be taken at appropriate company level - more delegation of responsibility.
3.6 <i>If you know both the enemy and yourself, you will fight a hundred battles without danger of defeat.</i>	Understand yourself and your competitor better helps you win.

Statements	Responses	Mean
3.1	22	2.77
3.2	23	3.61
3.3	23	4.04
3.4	23	3.83
3.5	23	3.13
3.6	23	4.22

*Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance*



These business management strategies for *competitive strategy* based on Sun Tzu's The Art of War are 3.6 in average which is close to the "very importance" ranking position. This high ranking implies that Sun Tzu's wisdom in this Book

was widely used and adopted as Chinese business and management strategies in their competitions.

This Book aims at develop winning *competitive strategy* in accordance to the individuals and company characteristics that is essential in business management.

To summarise these essential strategies for business and management excellence, the following points are identified:

1. Take over business without extra costs. (3.1)
2. Capture a market is by providing a better service and innovating new products. Destructive tactics should only be used as the last resort.
3. To capture competitors by tactics rather than destructive will be the best strategy.
4. To win the approval of the entire constituency without competitive battles is the ultimate goal. *Wining a competition through head on competition* is very much a waste of resources.
5. Understand strategy helps to win competition. (3.2)
6. Innovating new products continuously will be a best strategy. Proper marketing must follow it on.
7. To attack competitor's products and reputation is the worst strategy. A destructive competition may end up self-defecting.
8. Use wisdom and best strategy instead of aggressive tactics for success. (3.3)
9. A skilful executive should pay attention in the meeting of new demands through continuous innovation, satisfying customers' satisfaction and eventually having a bigger market share.
10. Preserve resources by not having a prolonged campaign and head on competition. This is the art of effective competitive strategy.
11. Understand the situation and act flexibly. (3.4)
12. Considering the available resources, the executive should estimate the possible outcome before entering the real competition. Be optimistic, however, always consider the worst scenario and plan for that.
13. For a weaker side competition, be prepared to leave in favour of some other more profitable constituents that can dominate.



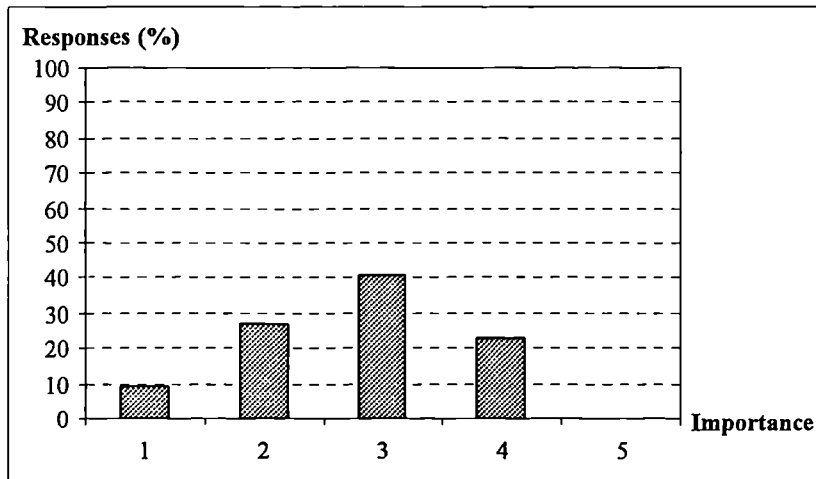
14. Executives are leaders that can determine or affect the survival and growth of themselves and the organisation.
15. Decision should be taken at appropriate company level -- more delegation of responsibility. (3.5)
16. A high-ranking executive can cause a lot of trouble in a number of ways. Executive can cause trouble by acting out of ignorance, focusing on rules rather than customers and providing some flexibility, promoting someone with no skills and ability.
17. Employees may be confused and de-motivated by the action of the high-ranking executive. Competitions will be not to the advantage of the company.
18. An executive is the one who understands the strength and weakness of self and competitors and knows when to attack and when to retreat will win.
19. An executive is the one who knows how to best use the available resources under all circumstances will win.
20. An executive is the one who manages to gain the best support from the customers, employees and management.
21. An executive is the one who has made the best possible preparation with the most up-to-date information and waits for opportunities.
22. An executive is the one who can make the best use of the authorities given from the top management without interference.
23. If someone knows the constituents, the competitors, the strategies and oneself well will win for hundred times.
24. Understand yourself and your competitor better helps you win. (3.6)

Detailed statistics of Book "Strategic Attacks" are provided in the following:

- (i) Statement 3.1 - Winning a victory and subduing the enemy without fighting is the highest excellence. (Take over business without extra costs.)

Level of Importance	Responses	Responses (%)
1	2	9
2	6	27
3	9	41
4	5	23
5	0	0

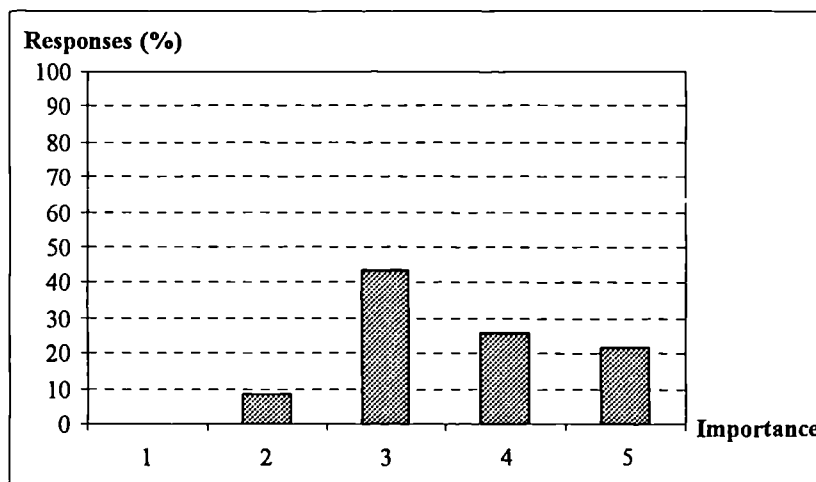
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 3.2 - The best policy for the military operations is to gain victory by means of strategy. (Understand strategy helps to win competition.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	10	43
4	6	26
5	5	22

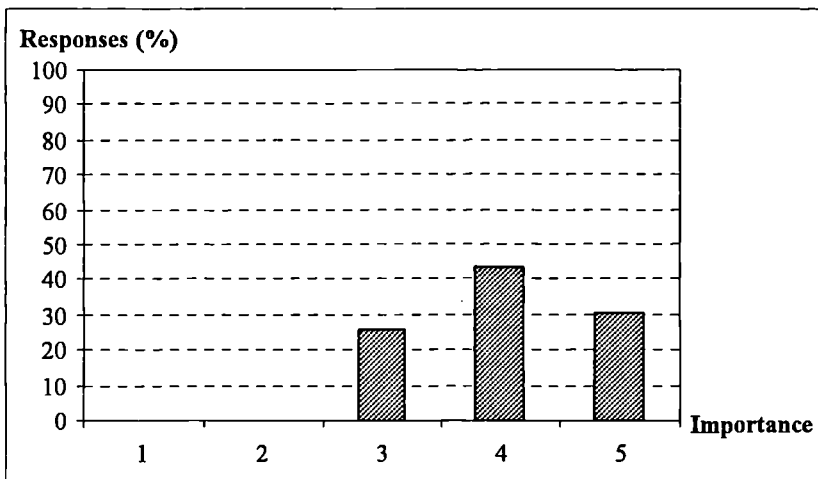
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 3.3 - He must gain complete victory all-under-heaven. (Use wisdom and best strategy instead of aggressive tactics for success.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	6	26
4	10	43
5	7	30

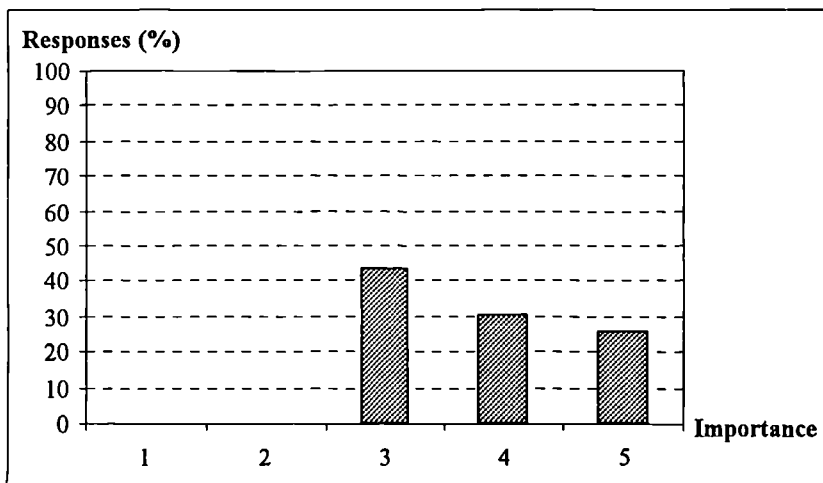
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Statement 3.4 - The weaker battles on stubbornly without taking its strength into account, it will surely be conquered by the stronger. (Understand the situation and act flexibly.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	10	43
4	7	30
5	6	26

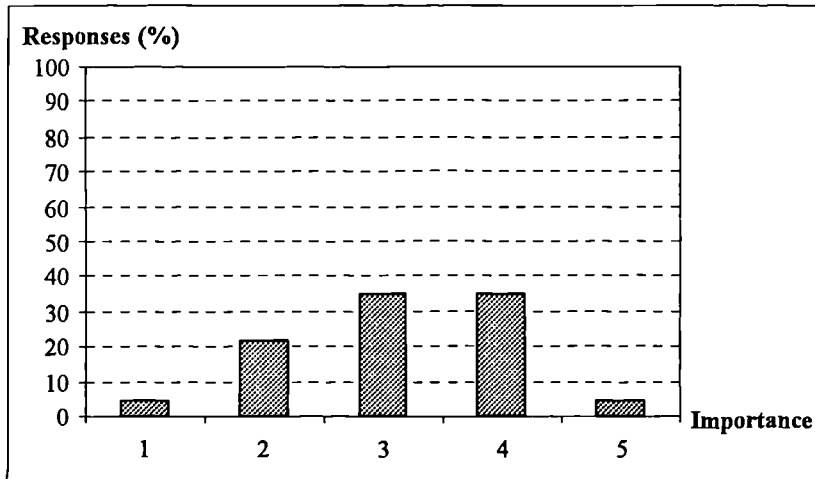
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 3.5 - The general assist the ruler in governing a nation. (Decision should be taken at appropriate company level - more delegation of responsibility.)

Level of Importance	Responses	Responses (%)
1	1	4
2	5	22
3	8	35
4	8	35
5	1	4

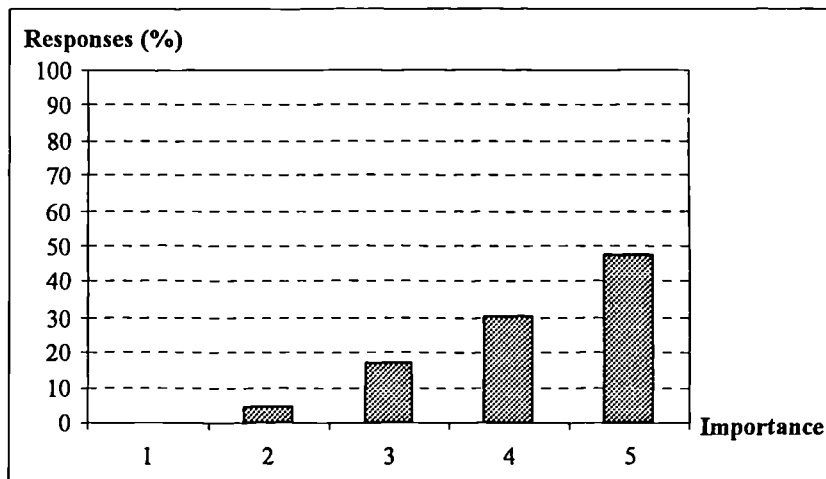
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Statement 3.6 - If you know both the enemy and yourself, you will fight a hundred battles without danger of defeat. (Understand yourself and your competitor better helps you win.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	4	17
4	7	30
5	11	48

5 levels of importance: 1 is the least importance, and 5 is the most importance

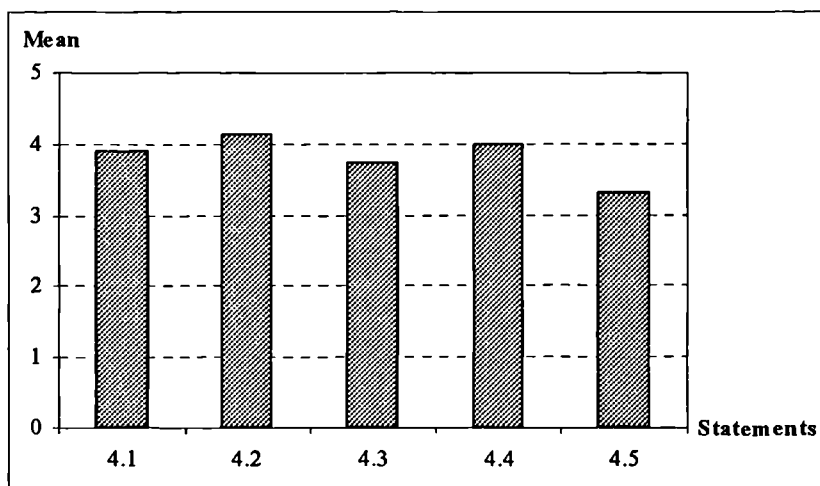


**Finding IV. Disposition of the Army**

<i>Statements of Book 4 "Disposition of the Army"</i>	<b>Business Management Strategies "Positioning"</b>
4.1 <i>One may foretell a victory but cannot be sure to gain victory as one wish.</i>	Strengthen yourself before entering into competition.
4.2 <i>They can, on one hand, protect themselves and, on the other hand, win a complete victory.</i>	Attack right to the target, defence keeps top secret.
4.3 <i>Those skilled in war always defeated the enemy that could easily be conquered</i>	Beware of business and situation changes; never be content at your position.
4.4 <i>They have planned for certainty of their victory and the enemy is already destined to defeat.</i>	Careful planning of the whole situation enable the business take control.
4.5 <i>He who is adept in military operations always understands the principles of war and adopts the correct policies, so that victory is entirely in his hands.</i>	Understand the principles of business and help to adopt the correct policies and be successful.

Statements	Responses	Mean
4.1	22	3.91
4.2	23	4.13
4.3	23	3.73
4.4	23	4.00
4.5	23	3.30

*Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance*



These business management strategies for *positioning* based on Sun Tzu's The Art of War are 3.8 in average which is close to the "very importance" ranking position. This high ranking implies that Sun Tzu's wisdom in this Book was widely used and adopted as Chinese business and management strategies in their *positioning*.

This result indicated that self-improvement and great abilities of business management were agreed to be the long-term survival method.

To summarise these essential strategies for business and management excellence, the following points are identified:

1. Strengthen yourself before entering into competition. (4.1)
2. Effective executives position themselves and companies in situations where they will survive even facing severe economic downfall or keen market competitions.
3. Effective executive tries to equip themselves and the companies with the most up-to-date technology and ready for continuous innovation.
4. Survival in the world market competition depends on a careful and well-prepared defence. An effective executive will position themselves strongly wherever possible for defence first.
5. Attack right to the target, defence keeps top secret. (4.2)
6. Victory results from taking the initiative in well equipping and acting at the right moment. They are highly unlikely making any mistakes.
7. An effective executive should be aware of business and situation changes. He should never be content at the present position. (4.3)
8. Effective executives try to introduce new ideas and introduce new markets and products. The most dangerous situation is one who has contented with the existing situation and never steps forward.
9. Careful planning of the whole situation enables the business take control. (4.4)
10. Effective executives are not necessary be well known to everybody or well capable in all aspects, but be able to leverage the importance and capture those easy ones' firsts. They are not the people with infinite wisdom and reckless courage.
11. Effective executives have the competitive strategies will be in a never loose situation.
12. Effective executives defend from the positions that can never be attacked.
13. Effective executives create the situation of winning first before taking positive action stepping forward or initiating attack. They win those, which seem easy.
14. Effective executives cultivate themselves on their characters and professional ethics.

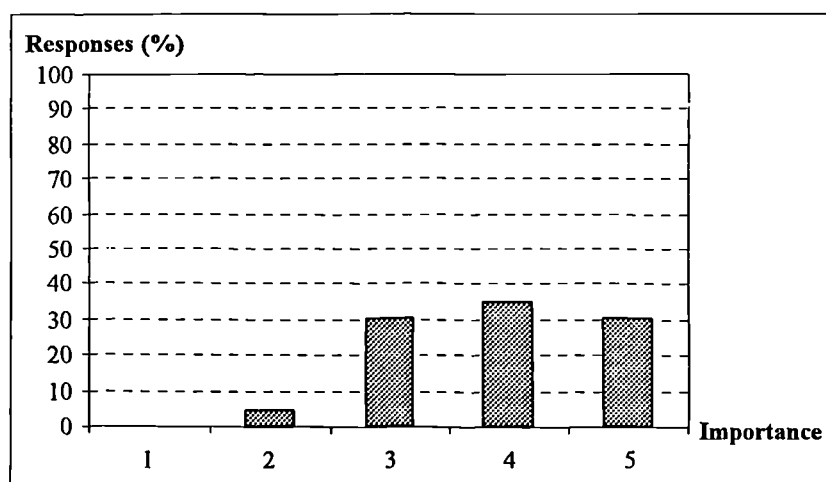
15. A strong and responsible organisation is to all people concern including the publics; that is highly essential for business excellence.
16. Detail elements of strategies include strategy identification, facts finding and gathering, strategy analysis, alternative strategy consideration, strategy checking and judging, and strategy action taken.
17. Effective executives demonstrate their momentum and initiative at work.
18. Effective executives make good preparations and wait for opportunities created by others, and act at the right time.
19. Effective executives are those whom competent in market analysis and survey, estimate of resources, calculation of manpower and market share, comparing the strengths and weaknesses of self and competitors, analysis and foresee the chance of success and failure.
20. Understand the principles of business and help to adopt the correct policies and be successful. (4.5)

Detailed statistics of Book "Disposition of the Army" are provided in the following:

- (i) Statement 4.1 - One may foretell a victory but cannot be sure to gain victory as one wish. (Strengthen yourself before entering into competition.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	7	30
4	8	35
5	7	30

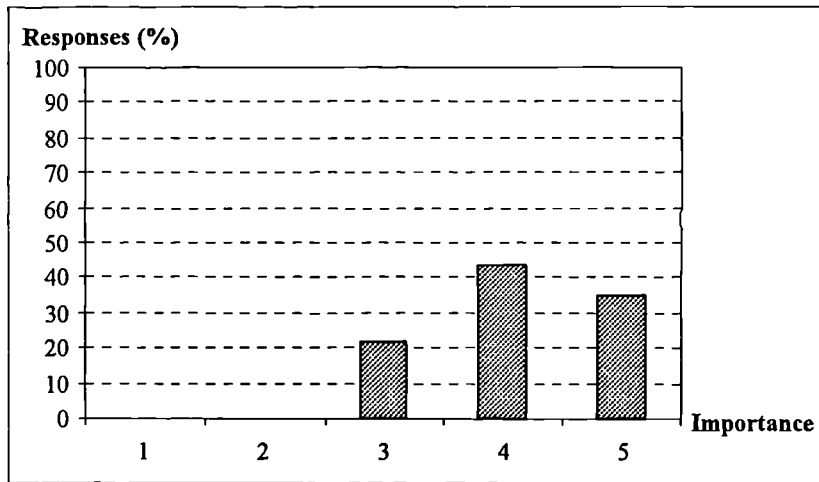
*5 levels of importance: 1 is the least importance, and 5 is the most importance*



- (ii) Statement 4.2 - They can, on one hand, protect themselves and, on the other hand, win a complete victory. (Attack right to the target, defence keeps top secret.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	5	22
4	10	43
5	8	35

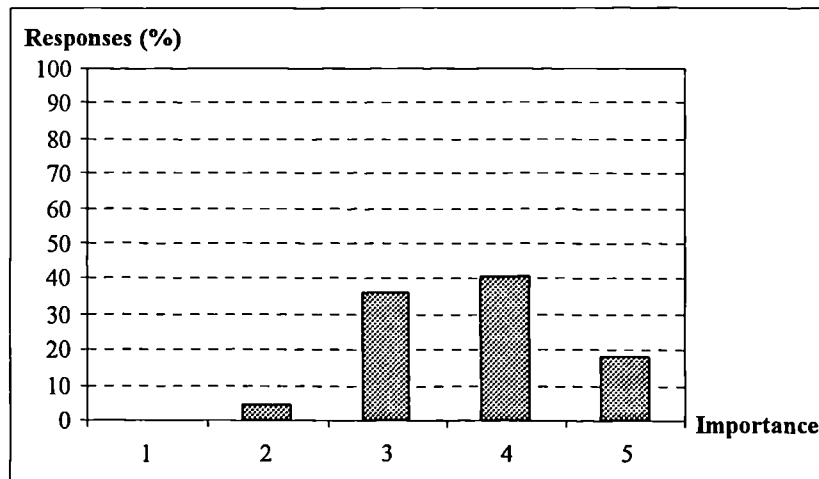
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 4.3 - Those skilled in war always defeated the enemy that could easily be conquered. (Beware of business and situation changes; never be content at your position.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	5
3	8	36
4	9	41
5	4	18

5 levels of importance: 1 is the least importance, and 5 is the most importance

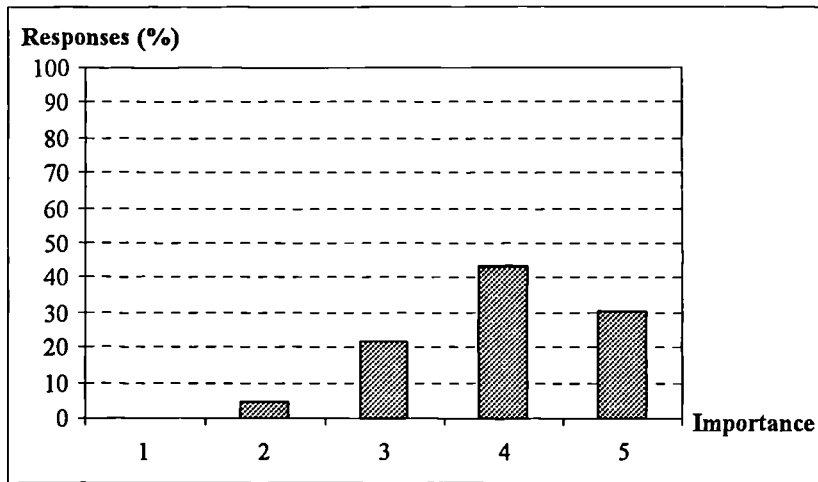




- (iv) Statement 4.4 - They have planned for certainty of their victory and the enemy is already destined to defeat. (Careful planning of the whole situation enable the business take control.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	5	22
4	10	43
5	7	30

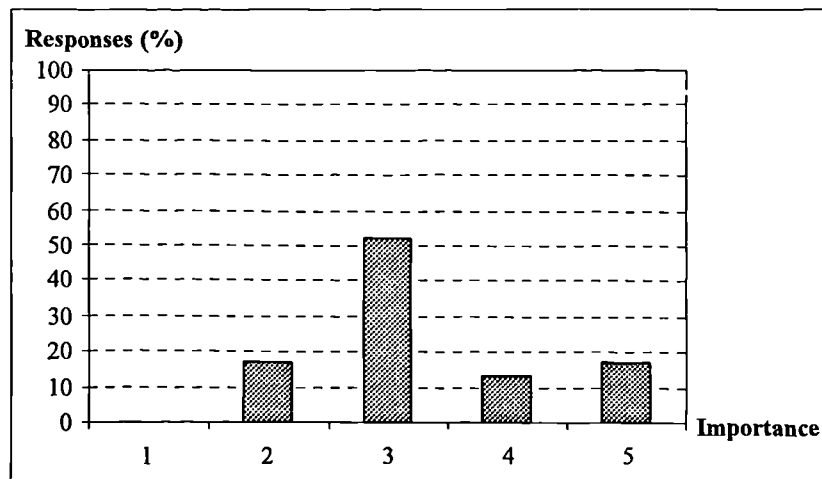
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 4.5 - He who is adept in military operations always understands the principles of war and adopts the correct policies, so that victory is entirely in his hands. (Understand the principles of business and help to adopt the correct policies and be successful.)

Level of Importance	Responses	Responses (%)
1	0	0
2	4	17
3	12	52
4	3	13
5	4	17

5 levels of importance: 1 is the least importance, and 5 is the most importance

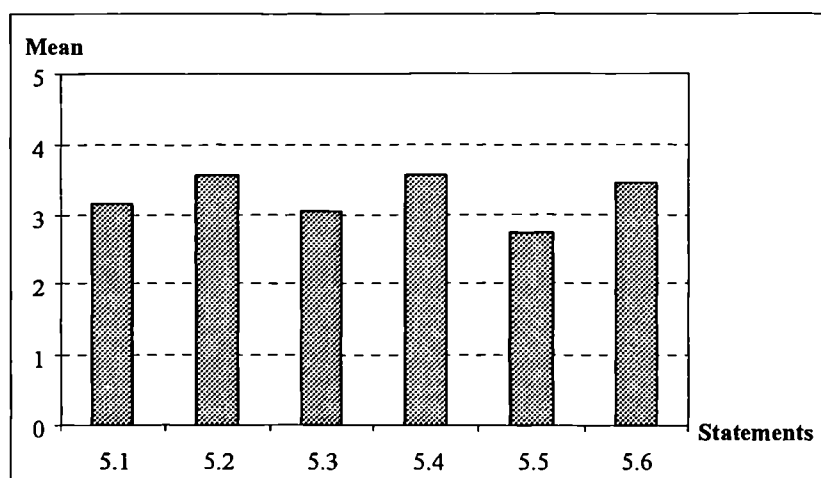


## Finding V. Forces

Statements of Book 5 "Forces"	Business Management Strategies "Opportunity and Timing"
5.1 <i>Managing a big army is in principle the same as managing a small one; it is a matter of organisation.</i>	Good organisation helps to define clear job responsibilities.
5.2 <i>During war, general should adopt the normal way of confronting the enemy, while using special tactics to take the enemy by surprise.</i>	Business tactics require flexible managing policy.
5.3 <i>Military formations are not more than the application of special and normal tactics, but their variations and combinations will give rise to an infinite series of manoeuvres.</i>	Application of special and normal tactics will give rise to an infinite series of business approaches.
5.4 <i>A general who is skilled in war can exploit his own vantage position and launch a swift and sharp attack.</i>	Move quickly to explore business opportunities.
5.5 <i>He can drive the enemy about with small advantages and awaits the enemy in strength.</i>	Offer some advantages and win by strategy.
5.6 <i>A general can select the right men and fully exploit the favourable situation.</i>	Right person gets the right job.

Statements	Responses	Mean
5.1	23	3.17
5.2	23	3.57
5.3	23	3.04
5.4	23	3.57
5.5	23	2.74
5.6	23	3.43

Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance



These business management strategies for *opportunity and timing* based on Sun Tzu's The Art of War are 3.3 in average which is close to the "essential" ranking

position. This ranking implies that Sun Tzu's wisdom in this Book was adopted as Chinese business and management strategies in their *opportunity and timing*.

The importance of this Book is the good organisational structure and high employee morale. All employees appreciate their responsibilities and authorities, and then information can be well distributed. Moreover, a motivated working environment would increase the employees' morale resulting in performing some good works.

To summarise these essential strategies for business and management excellence, the following points are identified:

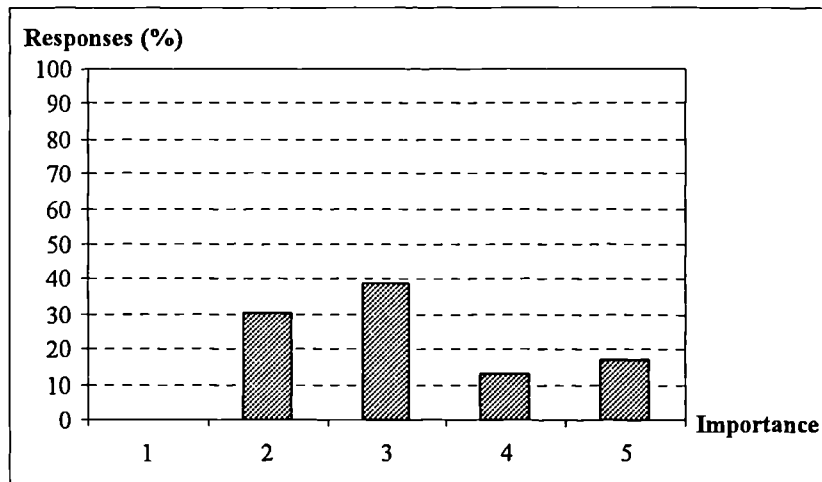
1. Good organisation helps to define clear job responsibilities. (5.1)
2. Organisation helps to define job responsibilities. There are no differences whether it is a large or small organisation.
3. Successful and effective competition relies on proper organisation and good communications at all levels.
4. Business tactics require flexible managing policy. (5.2)
5. Application of special and normal tactics will give rise to an infinite series of business approaches; such as defence and attack positions. (5.3)
6. Normal tactics are used to confront opponents, whereas special tactics are used to win. Special tactics are something that is unexpected.
7. Winning situations will help to realise the strengths and weaknesses of competitors.
8. Effective executives win competitive situations because of the creation of some great number of tactics and launched them at the most appropriate timing.
9. Skilful executives make use of the tactics-giving rise to some infinite number of resources.
10. The actual situations of both parties whether they are in apparent disorder or proper organisation depend on management structure. Illusion of fear or great courage depends on the actual circumstances. Seeming weakness or strength depends on their actual dispositions.
11. Move quickly to explore business opportunities. Wise executives get control of the situation through own initiatives. (5.4)
12. Offer some advantages and win by strategy. (5.5)
13. Wise executives select the most appropriate person for the job. Right person gets the right job. (5.6)

Detailed statistics of Book "Forces" are provided in the following:

- (i) Statement 5.1 - Managing a big army is in principle the same as managing a small one; it is a matter of organisation. (Good organisation helps to define clear job responsibilities.)

Level of Importance	Responses	Responses (%)
1	0	0
2	7	30
3	9	39
4	3	13
5	4	17

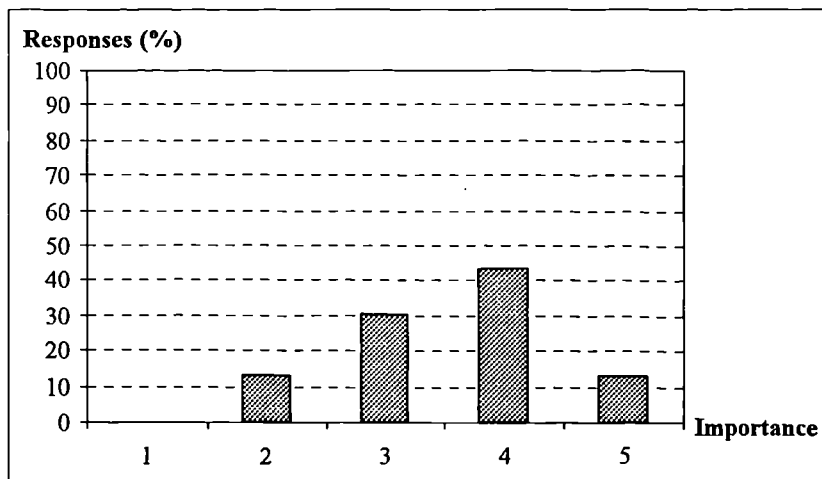
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 5.2 - During war, general should adopt the normal way of confronting the enemy, while using special tactics to take the enemy by surprise. (Business tactics require flexible managing policy.)

Level of Importance	Responses	Responses (%)
1	0	0
2	3	13
3	7	30
4	10	43
5	3	13

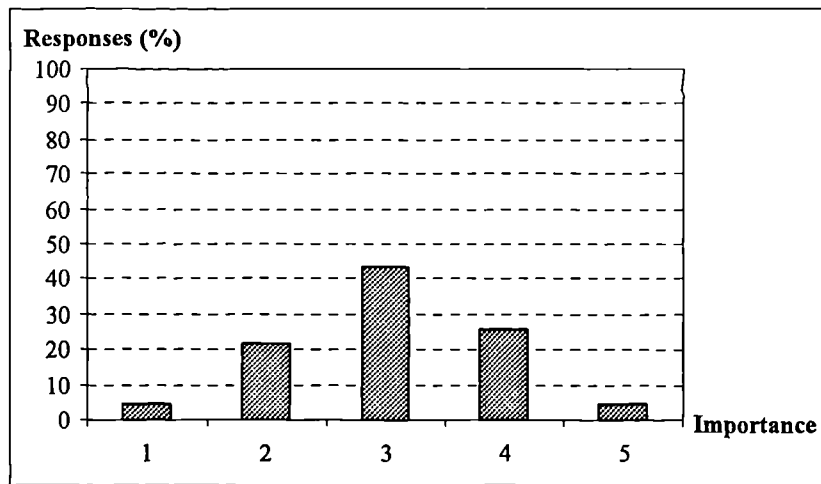
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 5.3 - Military formations that are not more than the application of special and normal tactics, but their variations and combinations will give rise to an infinite series of manoeuvres. (Application of special and normal tactics will give rise to an infinite series of business approaches.)

Level of Importance	Responses	Responses (%)
1	1	4
2	5	22
3	10	43
4	6	26
5	1	4

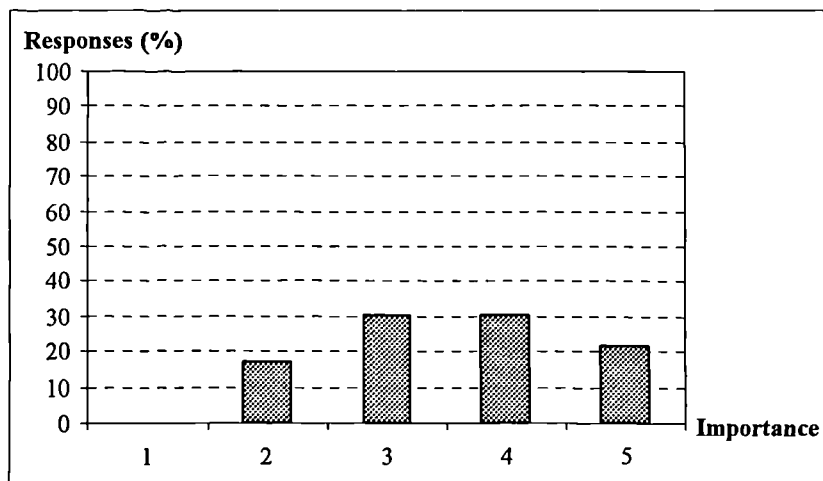
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Statement 5.4 - A general who is skilled in war can exploit his vantage position and launch a swift and sharp attack. (Move quickly to explore business opportunities.)

Level of Importance	Responses	Responses (%)
1	0	0
2	4	17
3	7	30
4	7	30
5	5	22

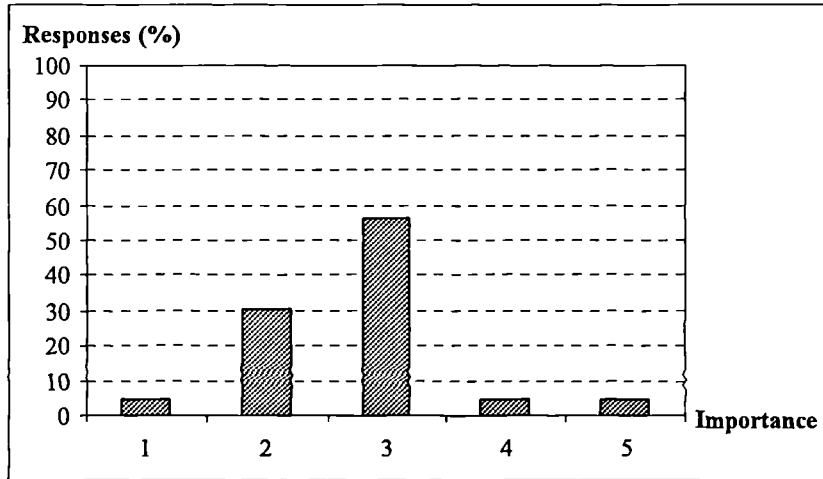
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 5.5 - He can drive the enemy about with small advantages and awaits the enemy in strength. (Offer some advantages and win by strategy.)

Level of Importance	Responses	Responses (%)
1	1	4
2	7	30
3	13	57
4	1	4
5	1	4

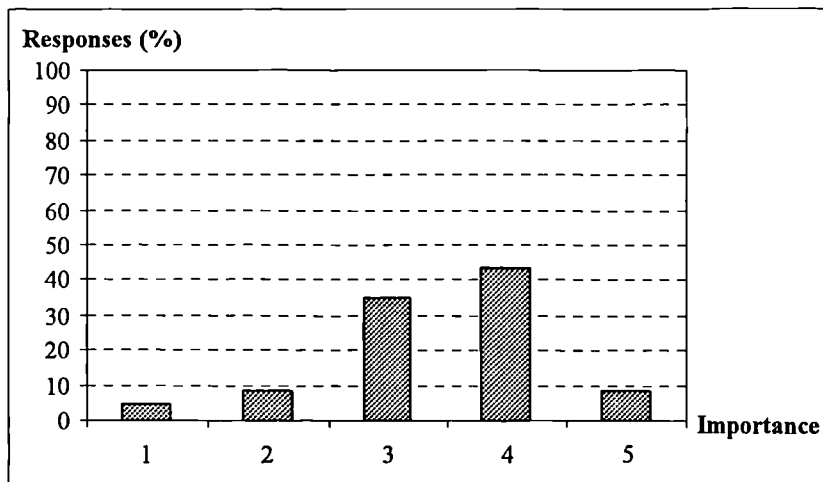
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Statement 5.6 - A general can select the right men and fully exploit the favourable situation. (Right person gets the right job.)

Level of Importance	Responses	Responses (%)
1	1	4
2	2	9
3	8	35
4	10	43
5	2	9

5 levels of importance: 1 is the least importance, and 5 is the most importance

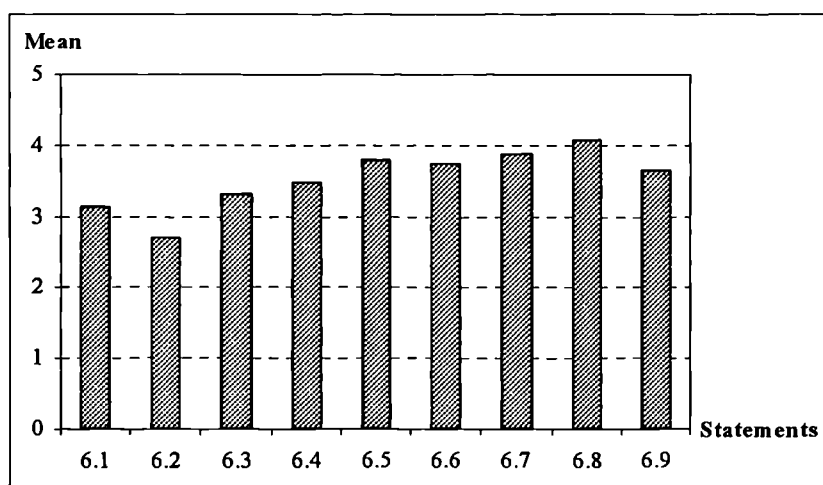


## Finding VI. Opportunism

Statements of Book 6 "Opportunism"	Business Management Strategies "Control"
6.1 <i>Appear at the place to which the enemy won't come; attack a place where the enemy does not expect you.</i>	Keep ahead of competition through innovations.
6.2 <i>That you are certain to take what you attack is because the enemy cannot fortify it. That you are certain of success in holding it what you defend is because the enemy cannot attack it.</i>	Attack competitor's weak points while building on your strength.
6.3 <i>The offensive one takes can be so strong that the enemy cannot defend just because one strikes at the enemy's weak point. One can withdraw without being overtaken by the enemy just because one moves so swiftly that the enemy cannot pursue.</i>	Attack competitor's weak points with commitment. Company should know when to withdraw from the market to reduce loses by withdrawing from the market at the right time.
6.4 <i>If we expose the enemy's disposition and hide ours, we can concentrate our troops and divide the enemy's forces.</i>	Know the competition not allowing them to know you, enabling you to concentrate effectively.
6.5 <i>One who has few must take precautions against possible attacks everywhere; one who has many compels the enemy to prepare against his attacks.</i>	If one over-diversify, the business can easily be challenged. Concentrate your effort where you are strong.
6.6 <i>If a general knows both the place and the time of a battle to come, he can lead his troops to go even a thousand li away for a decisive battle.</i>	Know the market well for success.
6.7 <i>A victory may be made. Even if the enemy's troops are many, we can find a way to make them unable to fight.</i>	Even the competition is keen, people can still win by better understand the market requirement and prove successful.
6.8 <i>The way to defeat the enemy should not follow the beaten track, but change constantly according to the enemy's changing situation.</i>	Change strategy constantly according to the changing of market situation.
6.9 <i>The way to fight never remains constant and water never flows in the same way.</i>	Business tactics will never remain constant and should take any form.

Statements	Responses	Mean
6.1	23	3.13
6.2	23	2.70
6.3	23	3.30
6.4	23	3.48
6.5	23	3.78
6.6	23	3.74
6.7	23	3.87
6.8	23	4.09
6.9	23	3.65

*Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance*



These business management strategies for *control* based on Sun Tzu's The Art of War are 3.5 in average which is in between the "importance" and "very importance" ranking positions. This ranking implies that Sun Tzu's wisdom in this Book was generally used and adopted as Chinese business and management strategies in their *control*.

The responses in this Book were very positive and the ranking was between level 3 and 4 of importance. The main ideas in this Book are that increasing market share by new products and strategies and avoiding direct competition with the competitors. People should also know in advance the strategies of the competitors and focus on the weak points for marketing strategies.



To summarise these essential strategies for business and management excellence, the following points are identified:

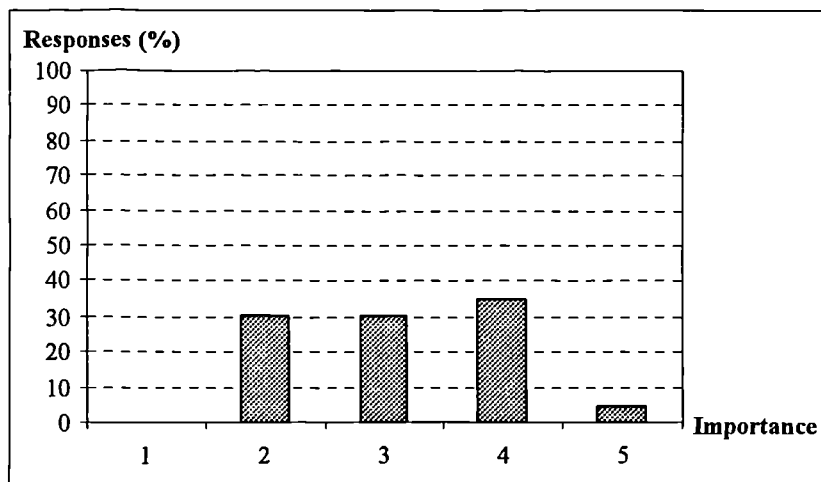
1. Keep ahead of competition through innovations. (6.1)
2. Effective executive should take charge of the competitive situation overseeing the market change and distribution.
3. Prepare quickly and keep ahead of the competition. Do not move by the competition.
4. Keep the rivals on the move and in the dark. Appear where the competition must rush to defend.
5. Attack competitor's weak points while building on your strength. (6.2)
6. Attack those weak points that cannot be defended; defend those strong points that cannot be attacked. That leads to the situations that competitors do not know which point to defend or attack. That also leads to the situations that the moves are always succeed and never attacked.
7. Attack competitor's weak points with commitment. Company should know when to withdraw from the market to reduce loses by withdrawing from the market at the right time. (6.3)
8. Move the competition but retain freedom; divide the competition while remain intact; distract the competition while remain focus. Hence pressure those weak points and create overwhelming leverage.
9. Know the competition not allowing them to know you, enabling you to concentrate effectively. (6.4)
10. Competitors will be weakened in certain points if resources are to be spread out in order to meet new challenges.
11. If one over-diversify, the business can easily be challenged. Concentrate your effort where you are strong. (6.5)
12. Know the market well for success; lead the market and do not let competitors lead you. (6.6)
13. Be able to control the time and place of competition so that good and detail preparation works can be carried out without risking failure, hence take control of the competition situations.
14. Even thought the competition is keen, people can still win by better understand the market requirement and prove to be successful. (6.7)

- 15. Competition result can be control by knowing all details and comparing their strengths and weaknesses.
- 16. Change strategy constantly according to the changing of market situation. (6.8)
- 17. Effective executives should review the strategy, compare the strength and weakness of both sides and then look for sufficiency of resources.
- 18. Business tactics will never remain constant and should take any form. (6.9)
- 19. Final strategy will take no special form and be invisible.

Detailed statistics of Book "Opportunism" are provided in the following:

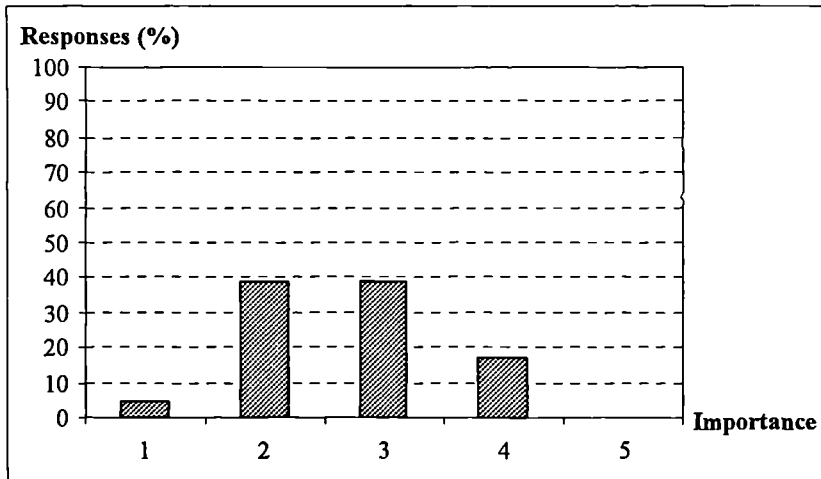
- (i) Statement 6.1 - Appear at the place to which the enemy won't come; attack a place where the enemy does not expect you. (Keep ahead of competition through innovations.)

Level of Importance	Responses	Responses (%)
1	0	0
2	7	30
3	7	30
4	8	35
5	1	4



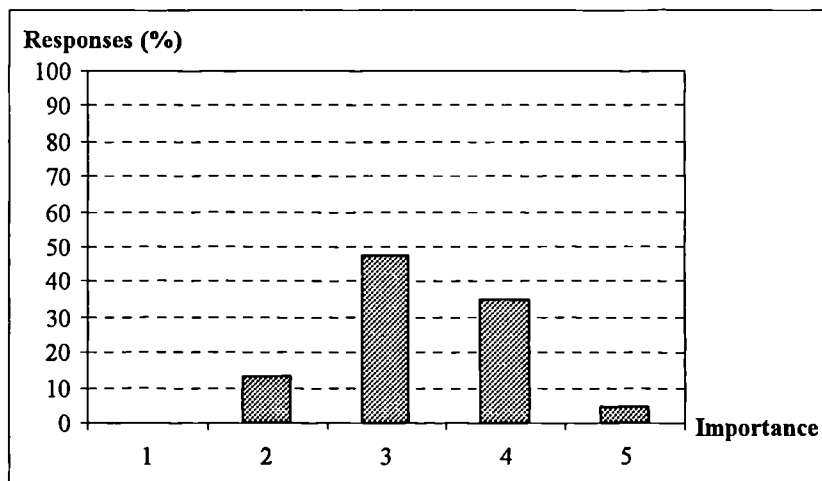
- (ii) Statement 6.2 - That you are certain to take what you attack is because the enemy cannot fortify it. That you are certain of success in holding it what you defend is because the enemy cannot attack it. (Attack competitor's weak points while building on your strength.)

Level of Importance	Responses	Responses (%)
1	1	4
2	9	39
3	9	39
4	4	17
5	0	0



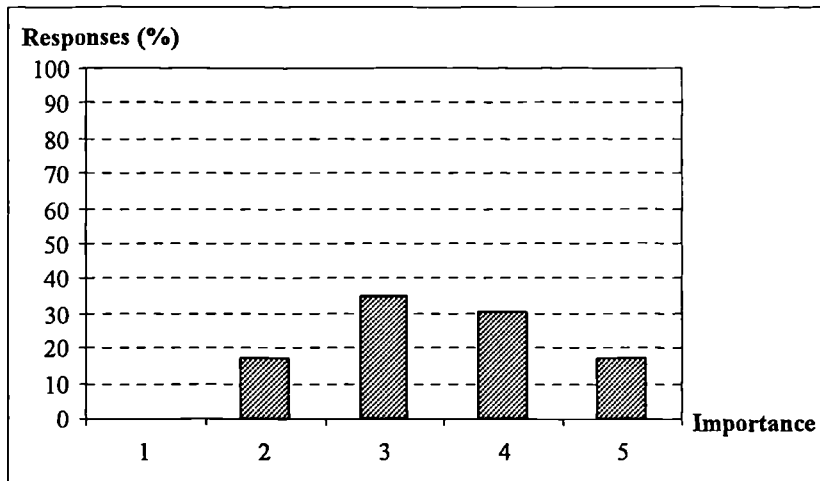
- (iii) Statement 6.3 - The offensive one can be so strong that the enemy cannot defend just because one strikes at the enemy's weak point. One can withdraw without being overtaken by the enemy just because one moves so swiftly that the enemy cannot pursue. (Attack competitor's weak points with commitment. Company should know when to withdraw from the market to reduce losses by withdrawing from the market at the right time.)

Level of Importance	Responses	Responses (%)
1	0	0
2	3	13
3	11	48
4	8	35
5	1	4



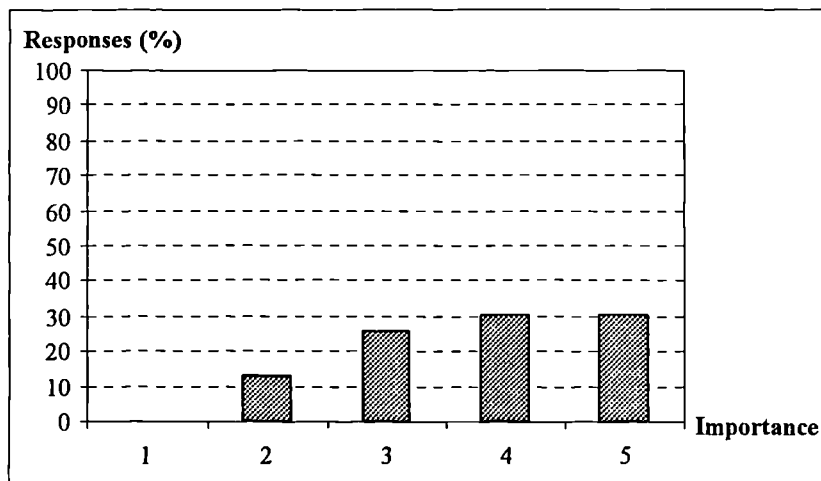
- (iv) Statement 6.4 - If we expose the enemy's disposition and hide ours, we can concentrate our troops and divide the enemy's forces. (Know the competition not allowing them to know you, enabling you to concentrate effectively.)

Level of Importance	Responses	Responses (%)
1	0	0
2	4	17
3	8	35
4	7	30
5	4	17



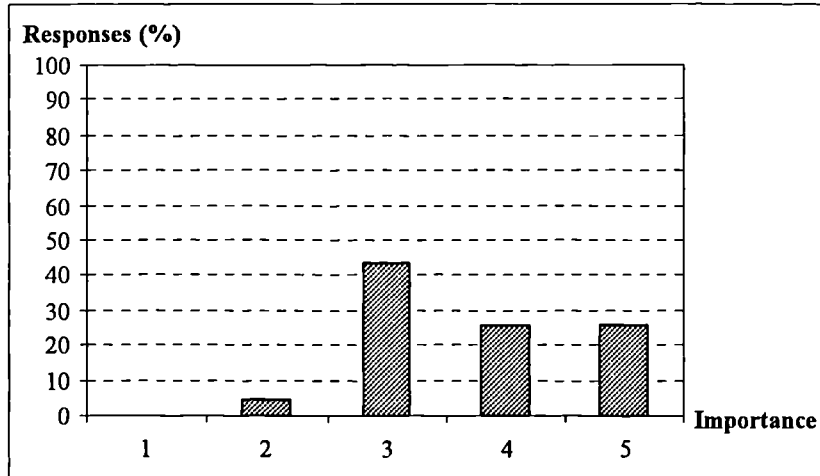
- (v) Statement 6.5 - One who has few must take precautions against possible attacks everywhere; one who has many compels the enemy to prepare against his attacks. (If one over-diversify, the business can easily be challenged. Concentrate your effort where you are strong.)

Level of Importance	Responses	Responses (%)
1	0	0
2	3	13
3	6	26
4	7	30
5	7	30



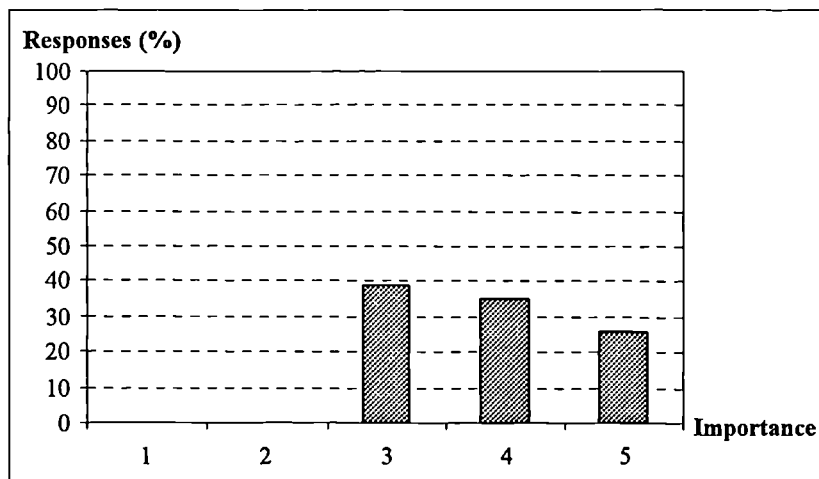
- (vi) Statement 6.6 - If a general knows both the place and the time of a battle to come, he can lead his troops to go even a thousand li away for a decisive battle. (Know the market well for success.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	10	43
4	6	26
5	6	26



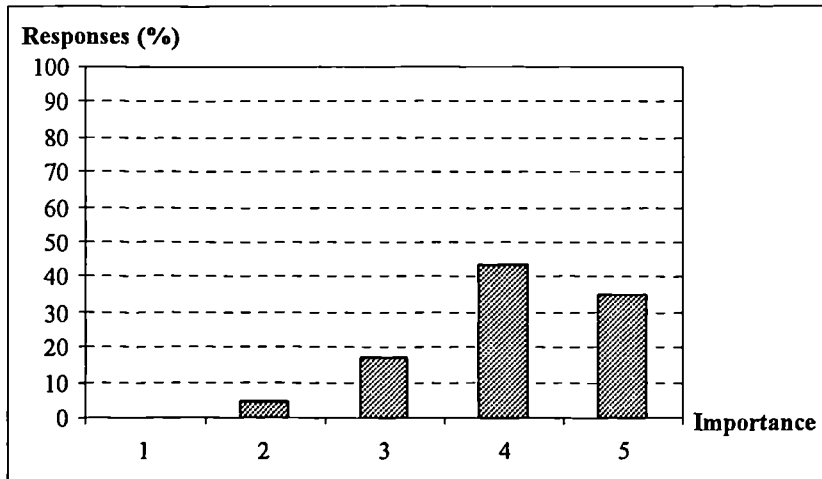
- (vii) Statement 6.7 - A victory may be made. Even if the enemy's troops are many, we can find a way to make them unable to fight. (Even the competition is keen, people can still win by better understand the market requirement and prove successful.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	9	39
4	8	35
5	6	26



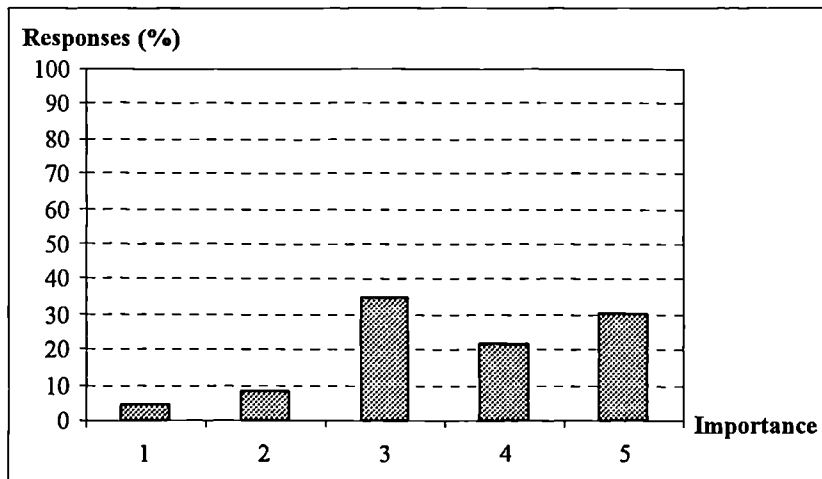
- (viii) Statement 6.8 - The way to defeat the enemy should not follow the beaten track, but change constantly according to the enemy's changing situation. (Change strategy constantly according to the changing of market situation.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	4	17
4	10	43
5	8	35



- (ix) Statement 6.9 - The way to fight never remains constant and water never flows in the same way. (Business tactics will never remain constant and should take any form.)

Level of Importance	Responses	Responses (%)
1	1	4
2	2	9
3	8	35
4	5	22
5	7	30

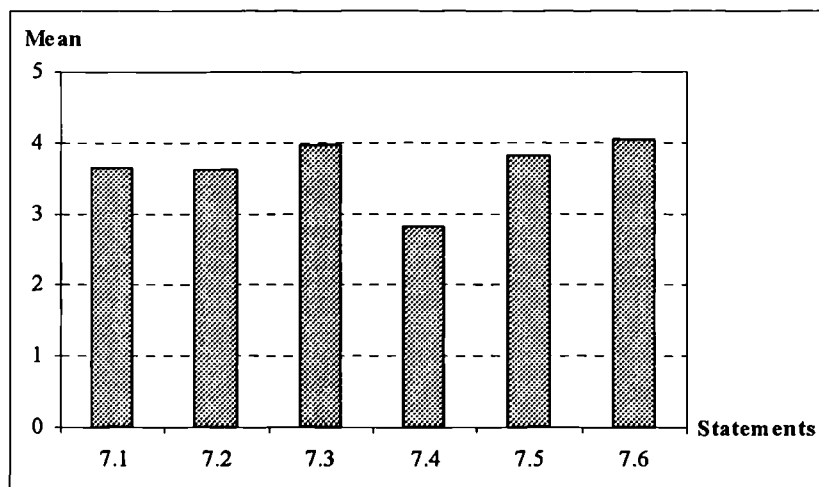


## Finding VII. Manoeuvres

Statements of Book 7 "Manoeuvres"	Business Management Strategies "Managing Direct Conflict"
7.1 During the whole military process nothing is more difficult than to fight for a favourable position with the enemy.	Business competition is most difficult when confronting competition head-on.
7.2 There is not only advantage but also danger in fighting for a favourable position.	There are not only disadvantages but also danger in competing for a favourable position. Inadequate preparation will loss business and market share.
7.3 A commander who does not understand the plots and schemes of the princes cannot enter into alliances with them.	Know the potential partner well before entering into join venture.
7.4 He who masters the tactics of deviation first will win victory.	Keep the vision while maintaining flexibility for short-term deviation.
7.5 They usually use gongs, drums, flags and banners as instruments to unify the army.	Motivate your people for a common goal through good communication.
7.6 Keep a highly disciplined army to fight the confused enemy army.	Strengthen the organisation and plan business strategies.

Statements	Responses	Mean
7.1	23	3.65
7.2	23	3.61
7.3	23	3.96
7.4	23	2.83
7.5	23	3.83
7.6	23	4.04

Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance



These business management strategies for *managing direct conflict* based on Sun Tzu's The Art of War are 3.7 in average, which is close to the "very importance" ranking position. This high ranking implies that Sun Tzu's wisdom in this Book

was widely used and adopted as Chinese business and management strategies in *managing direct conflict*.

This observation indicates an important role of the top management in seeking more market share, getting accurate market information, organising the organisation and preparing strategies for market competitions. Sufficient resources should always be available meeting the challenge of competitions. As the market demand varies from time to time, top management should lead the employees and make the necessary responses.

To summarise these essential strategies for business and management excellence, the following points are identified:

1. Business competition is most difficult when confronting competition head-on. (7.1)
2. Understand the need to take on competition by *gathering information and necessary resources*, organise them properly and bring them all under control.
3. It is most difficult to make a circuitous route direct and turn disadvantage into advantage. Right timing and use of information will help to win the situations.
4. Prolong meeting without any decision made will be wasting of time and resources. It also creates grievances among staffs. Proper decisions should be made *at the right time after knowing all the details*.
5. There are not only disadvantages but also danger in competing for a favourable position. Inadequate preparation will loss business and market share. (7.2)
6. Move into a difficult conflict situation without well preparation will become little chance of success, efforts scattered, resources wasted and motivation destroyed.
7. Know the potential partners well before entering into join venture. (7.3)
8. Employ inside informants and consultants to find out the strengths and weaknesses of competitors and propose successful plans. Keep the strategy secret and change the form constantly.
9. Keep the vision while maintaining flexibility for short-term deviation. (7.4)
10. The superbly effective executives who master the tactic and make complicated route simple will win. So the whole company business should be as swift as strong wind while taking action, as stable and order as forest while executing plan, as fierce and violent as fire while attacking business; and as firm as mountain while carrying out policies and strategies.



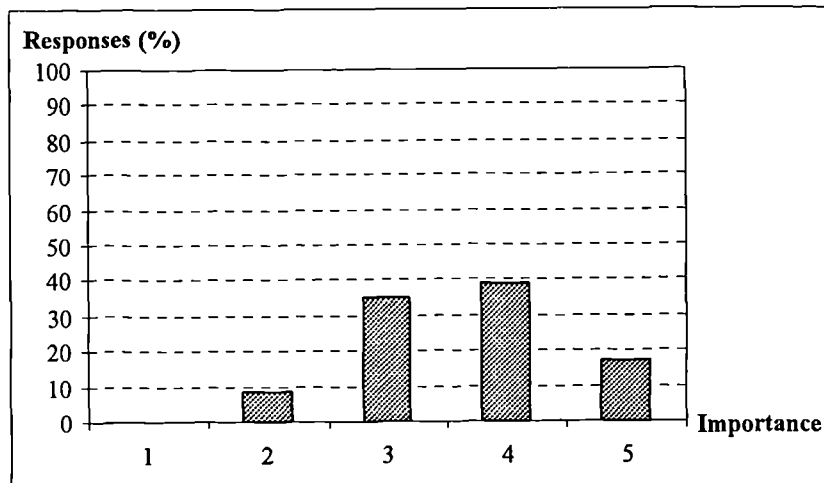
11. Motivate your people for a common goal through good communication. (7.5)
12. Improper communication and order will generate employees' emotion. Wise executives unify employees' plan of action using clear instructions and good communication.
13. Strengthen the organisation and plan business strategies. (7.6)
14. Good master of the morale and emotions, good grasp of the tactics and information, and good control of the strengths and weaknesses of the organisation and employees will certainly win.
15. Do not challenge a well-prepared and well-organised competitor quickly. Time the action accordingly and waits for the change of situation.

Detailed statistics of Book "Manoeuvres" are provided in the following:

- (i) Statement 7.1 - During the whole military process nothing is more difficult than to fight for a favourable position with the enemy. (Business competition is most difficult when confronting competition head-on.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	8	35
4	9	39
5	4	17

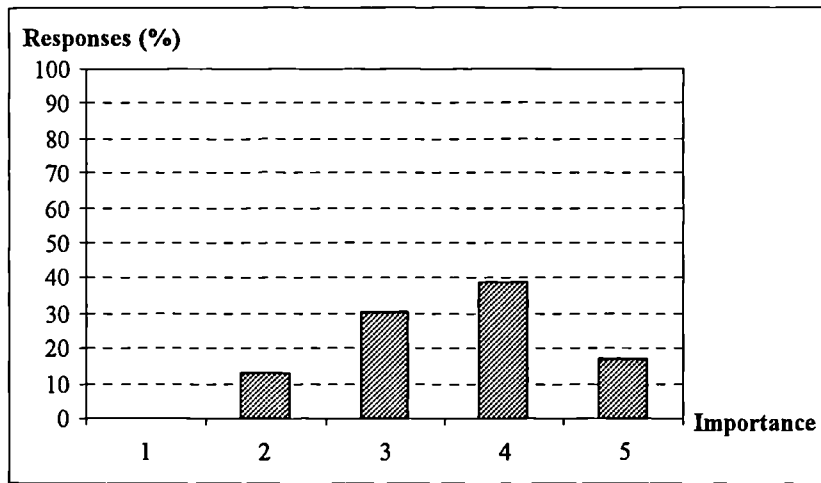
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 7.2 - There is not only advantage but also danger in fighting for a favourable position. (There are not only disadvantages but also danger in competing for a favourable position. Inadequate preparation will loss business and market share.)

Level of Importance	Responses	Responses (%)
1	0	0
2	3	13
3	7	30
4	9	39
5	4	17

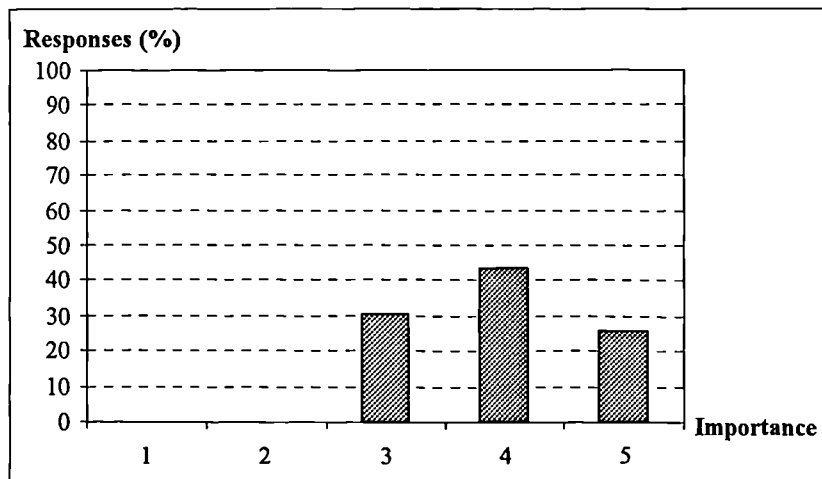
5 levels of importance: 1 is the least importance, and 5 are the most importance



- (iii) Statement 7.3 - A commander who does not understand the plots and schemes of the princes cannot enter into alliances with them. (Know the potential partner well before entering into join venture.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	7	30
4	10	43
5	6	26

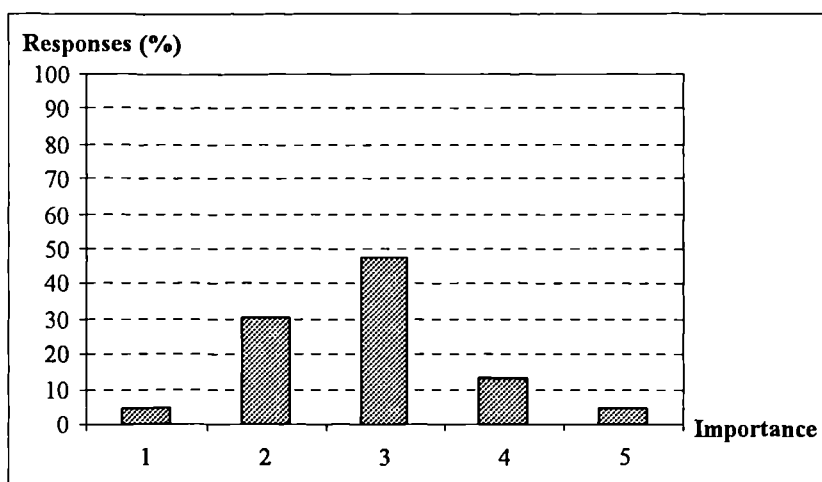
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Statement 7.4 - He who masters the tactics of deviation first will win victory. (Keep the vision while maintaining flexibility for short-term deviation.)

Level of Importance	Responses	Responses (%)
1	1	4
2	7	30
3	11	48
4	3	13
5	1	4

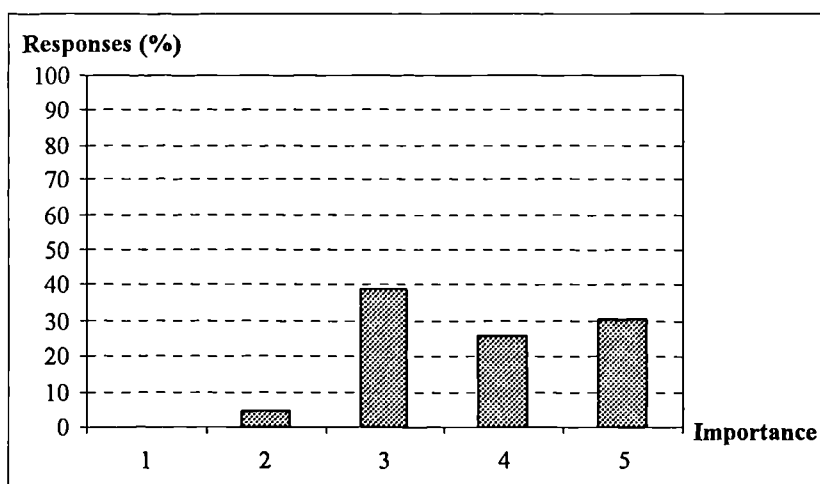
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 7.5 - They usually use gongs, drums, flags and banners as instruments to unify the army. (Motivate your people for a common goal through good communication.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	9	39
4	6	26
5	7	30

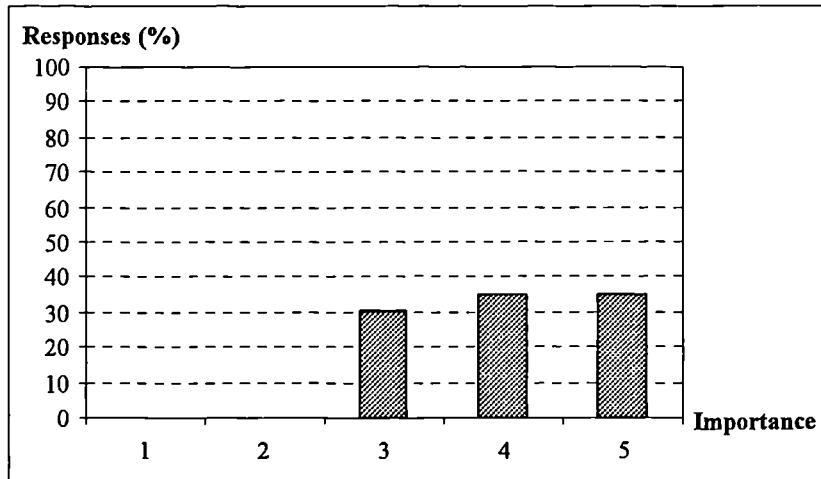
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Statement 7.6 - Keep a highly disciplined army to fight the confused enemy army. (Strengthen the organisation and plan business strategies.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	7	30
4	8	35
5	8	35

*5 levels of importance: 1 is the least importance, and 5 is the most importance*

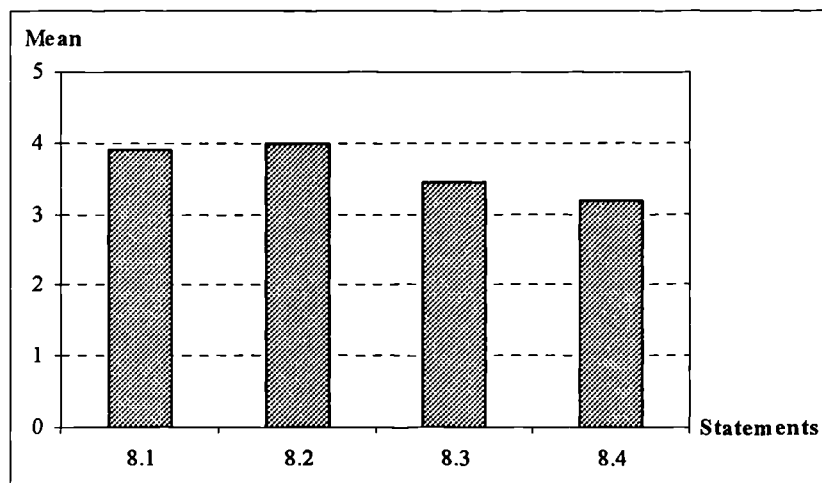


## Finding VIII. The Nine Variations

Statements of Book 8 "The Nine Variations"	Business Management Strategies "Flexibility"
8.1 Never launch an upward attack on the enemy who occupies high ground.	Never engage in competition if you are weak and cannot be defended.
8.2 The tactical variables which a general or commander should thoroughly understand. Only if he knows them well can he know military operations.	Market conditions should thoroughly be understood. Only if they are known well can business be operated properly.
8.3 A wise general must give his consideration to both favourable factors and unfavourable factors.	Consider both favourable and unfavourable factors in business, gains and losses in strategic calculations.
8.4 There are five fatal weakness of a general: brave but not resourceful, cowardly on the eve of a battle, quick-tempered easily provoked, honour be driven to reckless situation, benevolent but hesitant and passive.	Fatal weakness of management should be understood.

Statements	Responses	Mean
8.1	23	3.91
8.2	23	4.00
8.3	23	3.43
8.4	22	3.18

Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance



These business management strategies for *flexibility* based on Sun Tzu's The Art of War are 3.6 in average which is in between the "importance" and "very importance" ranking positions. This high ranking implies that Sun Tzu's wisdom in this Book was widely used and adopted as Chinese business and management strategies in their overall *flexibility*.

All these statements are related to the ability and the flexibility of strategies of the top management. Even though the company is operating smoothly and the market is stable, the top management should prepare for any consequent competitions.

To summarise these essential strategies for business and management excellence, the following points are identified:

1. Never engage in competition if you are weak and cannot be defended. (8.1)
2. Never set up a position that is remote from your resources.
3. Form allies with partners' in particular offshore partners, communicate with them for information and have mutual support.
4. Never engage in competition with strong competitors that can challenge your position.
5. Never take in any advantage from the competitors because that could be bait.
6. Effective business should never try to take over a retreated business entirely, and never try to win the situation completely, and leave a chance of survival to the competitors.
7. An executive should be flexible in strategy and adaptable to changes in all circumstances, for the best possible management of resources.
8. Market conditions should thoroughly be understood. They should be known well before business can be operated properly. (8.2)
9. There are some plans that should not be followed completely; only to those situations that are advantageous to the company.
10. There are some competitors, which should not be attacked.
11. There are some business that should not be captured.
12. There are some markets that should not be seized.
13. There are some decisions from the top management that should not be obeyed entirely but acted for the benefit of the company.
14. Consider both favourable and unfavourable factors in business, gains and losses in strategic calculations. (8.3)
15. By considering the gains and losses, the strategic plans can be trusted for maximising profits and foreseeing problems.

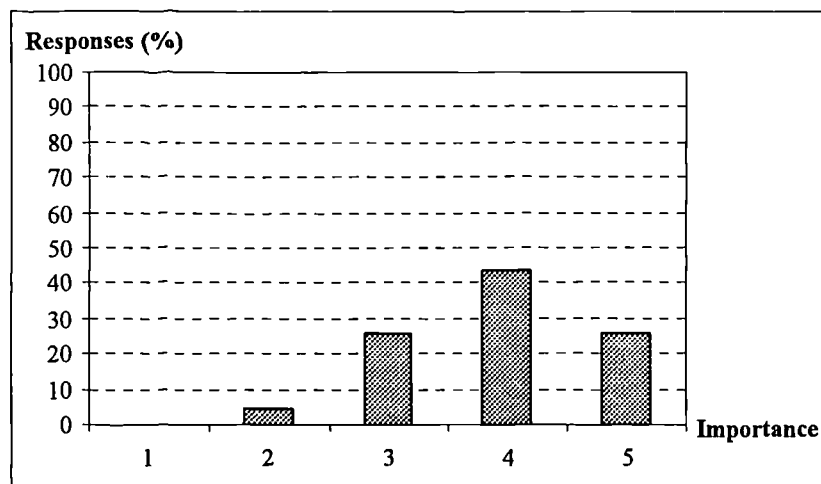
16. Make the competitors loose by constraining their movement.
17. Keep the competitors busy by keeping them busy.
18. Keep the competitors occupied by giving them some benefits.
19. Fatal weakness of management should be understood. (8.4)
20. Recklessness will result in wasting of resources.
21. Cowardliness will result in usurping by competitors.
22. Bad-temper will result in reckless decisions.
23. Self-importance will result in flattering actions. A sense of honour is liable to be shamed and driven to reckless action.
24. Benevolence will bring in hesitating and passive decisions; worrying unpopularity.

Detailed statistics of Book "The Nine Variations" are provided in the following:

- (i) Statement 8.1 - Never launch an upward attack on the enemy who occupies high ground. (Never engage in competition if you are weak and cannot be defended.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	6	26
4	10	43
5	6	26

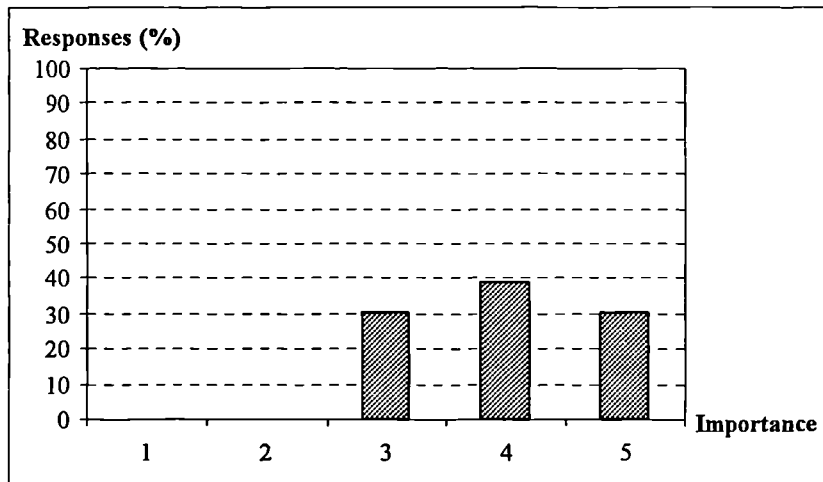
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 8.2 - The tactical variables which a general or commander should thoroughly understand. Only if he knows them well can he know military operations. (Market conditions should thoroughly be understood. Only if they are known well can business be operated properly.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	7	30
4	9	39
5	7	30

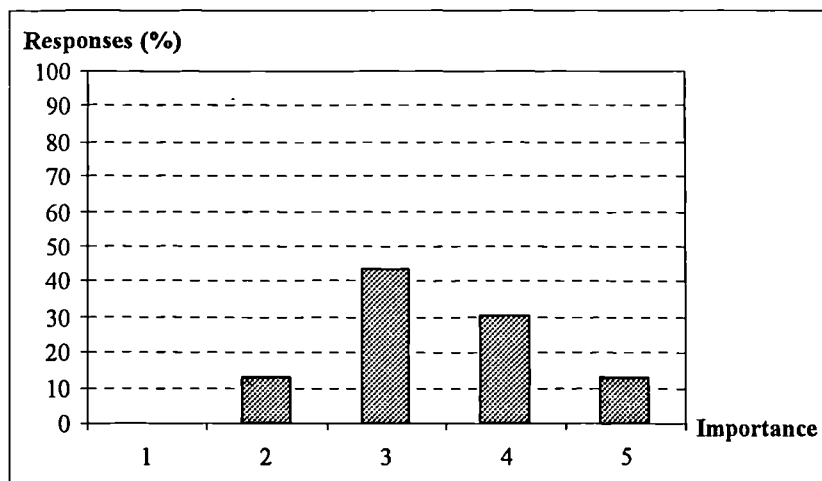
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 8.3 - A wise general must give his consideration to both favourable factors and unfavourable factors. (Consider both favourable and unfavourable factors in business, gains and losses in strategic calculations.)

Level of Importance	Responses	Responses (%)
1	0	0
2	3	13
3	10	43
4	7	30
5	3	13

5 levels of importance: 1 is the least importance, and 5 is the most importance

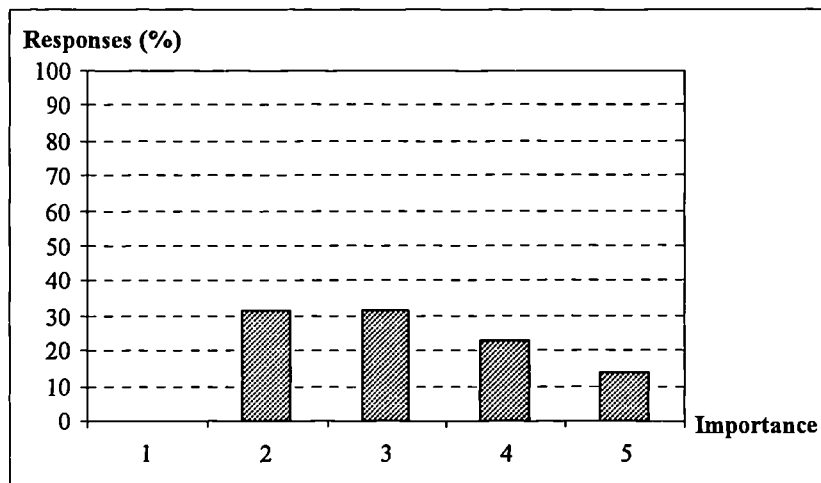




- (iv) Statement 8.4 - There are five fatal weakness of a general: brave but not resourceful, cowardly on the eve of a battle, quick-tempered easily provoked, honour be driven to reckless situation, benevolent but hesitant and passive. (Fatal weakness of management should be understood.)

Level of Importance	Responses	Responses (%)
1	0	0
2	7	32
3	7	32
4	5	23
5	3	14

*5 levels of importance: 1 is the least importance, and 5 is the most importance*

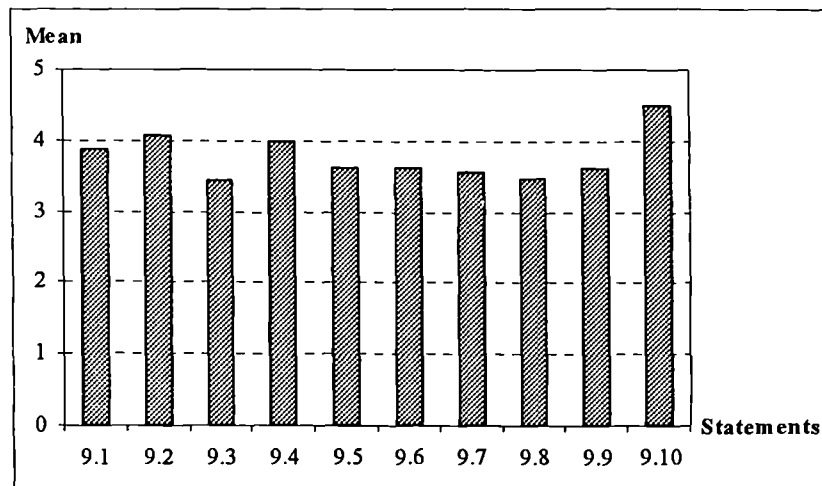


## Finding IX. Marches

Statements of Book 9 "Marches"	Business Management Strategies "Manoeuvring"
9.1 <i>Be sure to stay near the valleys when going through mountains; after crossing the river you must stay far away from it.</i>	Take the best approach during difficult market condition and stay away from difficult situations.
9.2 <i>Be sure to cross salt marshes quickly with no delay.</i>	Get away from dangerous situation as quickly as possible.
9.3 <i>All commanders prefer to station their troops on high ground rather than on low land.</i>	Observe competitors position and plan strategy accordingly and better reaction.
9.4 <i>If heavy rain falls in the upper reaches of a river and forms torrents rushing down to the lower course, never cross the river but wait until the flood subsides.</i>	Wait until the situation clear before re-entering into market competition. Good and accurate decision makes proper investment in business.
9.5 <i>You must have a thorough search to see if there are ambushes laid or spies hiding.</i>	Thoroughly understand the market situation to avoid potential problem and identify pitfall.
9.6 <i>Birds rising in flight shows there are troops in ambush.</i>	Observe market indicators to identify potential problems.
9.7 <i>When the enemy asks for a truce without advance appointment, it means that he must have been plotting.</i>	When competition proposes a joint venture without warning, it means that he understands his strategic position.
9.8 <i>When the enemy sees some profit but does not try to obtain it, it is because he has been completely exhausted.</i>	When the competitor does not explore market potential, it means he has no extra resources.
9.9 <i>Disturbance in the enemy's camp means his generals have lost their prestige and authority.</i>	When a competitor has low morale, it means their leadership is poor. Prestige and authority of senior management are both essential.
9.10 <i>If orders are observed constantly and conscientiously, both the commander and the soldiers will benefit and trust each other.</i>	If everyone does what they should do diligently both the management and workforce benefit and trust each other and have good relationship.

Statements	Responses	Mean
9.1	23	3.87
9.2	23	4.09
9.3	23	3.43
9.4	23	4.00
9.5	23	3.61
9.6	23	3.61
9.7	23	3.57
9.8	23	3.48
9.9	23	3.61
9.10	23	4.52

Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance



These business management strategies for *manoeuvring* based on Sun Tzu's The Art of War are 3.8 in average which is close to the "very importance" ranking position. This high ranking implies that Sun Tzu's wisdom in this Book was widely used and adopted as Chinese business and management strategies in their *manoeuvring*.

In order to survive in the market, management has to be aware of the market needs and have quick response to the market. Moreover, management should promote the business to increase the business opportunities. Inside the company, top management has to develop an effective and efficient system and co-operate with the employees to overcome any difficulties.

To summarise these essential strategies for business and management excellence, the following points are identified:

1. Take the best approach during difficult market condition and stay away from difficult situations. (9.1)
2. Take the easy market approach first with adequate resources.
3. Take the challenge when your stable organisation structure is maintained.
4. Meet the competition when competitors have gone through half way of the re-organisation process.
5. Keep administrative matters simple and clear. Do things in the most easily, well-understandable way. Operations keep simple, efficient and effective.
6. Use different tactics in different situations for success. However, try to maintain stability, as people feel more comfortable to the methods, processes they understand.
7. Get away from dangerous situation as quickly as possible. (9.2)

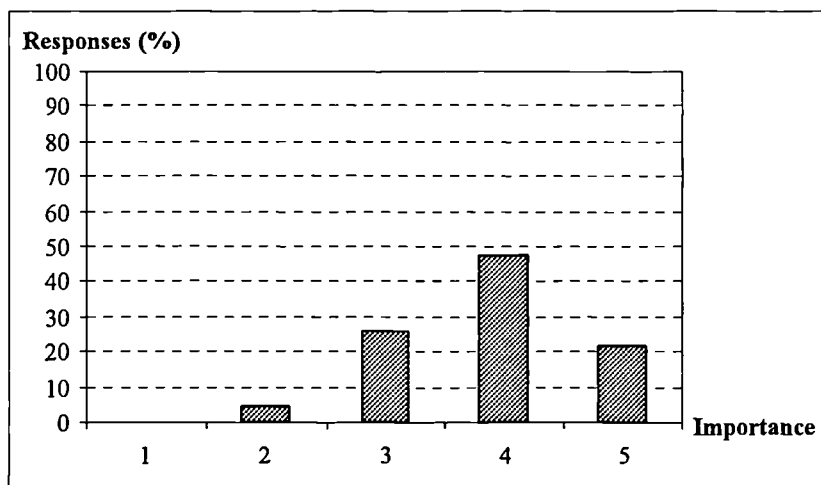
8. Position the company in the most favourable market situations with the most innovative products and market information.
9. Be alert of the environment that is uncertain and incomplete of understanding.
10. Observe competitor's position and plan strategy accordingly and better reaction. (9.3)
11. Wait until the situation clear before re-entering into market competition. Good and accurate decision makes proper investment in business. (9.4)
12. Stay away from the unfavourable and dangerous situations and let the competitors approach them.
13. Thoroughly understand the market situation to avoid potential problem and identify pitfall. (9.5)
14. Observe market indicators to identify potential problems. (9.6)
15. When competition proposes a joint venture without warning, it means that he understands his strategic position. (9.7)
16. When the competitor does not explore market potential, it means he has no extra resources. (9.8)
17. When the competitor sees the obvious advantage but not approaching, it means that he is tired and passive.
18. When the competitor uses the last available resources, it means that he is in desperate situation.
19. When the competitor has low morale, it means their leadership is poor. Prestige and authority of senior management are both essential. (9.9)
20. When the competitor hands out excessive rewards, it means that he has difficulty motivating people.
21. If everyone does what he or she should do diligently, then both the management and workforce would be benefit from and trust each other and have good relationship. (9.10)
22. Advantage in having more resources does not give absolute superiority. Never get into the market recklessly. Proper assessment of the entire market potential is essential.
23. Manage an organisation with civility and humanity, unify and control them with proper discipline and then you will be fully successful.

Detailed statistics of Book "Marches" are provided in the following:

- (i) Statement 9.1 - Be sure to stay near the valleys when going through mountains; after crossing the river you must stay far away from it. (Take the best approach during difficult market condition and stay away from difficult situations.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	6	26
4	11	48
5	5	22

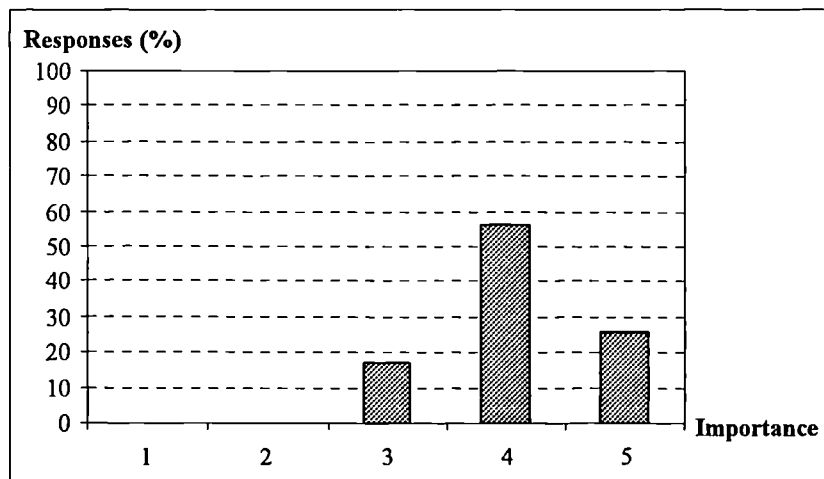
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 9.2 - Be sure to cross salt marshes quickly with no delay. (Get away from dangerous situation as quickly as possible.)

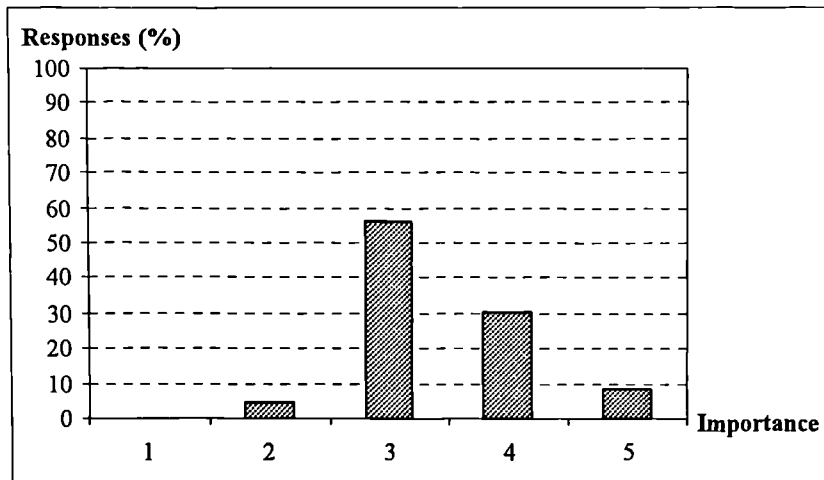
Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	4	17
4	13	57
5	6	26

5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 9.3 - All commanders prefer to station their troops on high ground rather than on low land. (Observe competitors position and plan strategy accordingly and better reaction.)

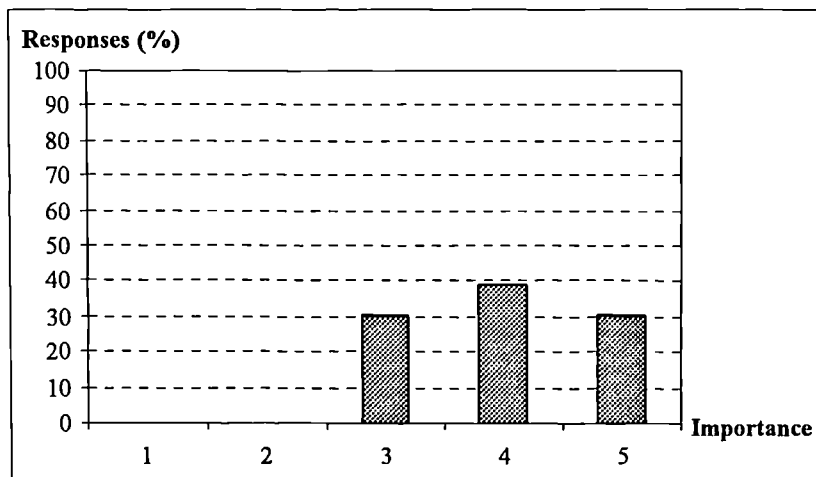
Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	13	57
4	7	30
5	2	9



- (iv) Statement 9.4 - If heavy rain falls in the upper reaches of a river and forms torrents rushing down to the lower course, never cross the river but wait until the flood subsides. (Wait until the situation clear before re-entering into market competition. Good and accurate decision makes proper investment in business.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	7	30
4	9	39
5	7	30

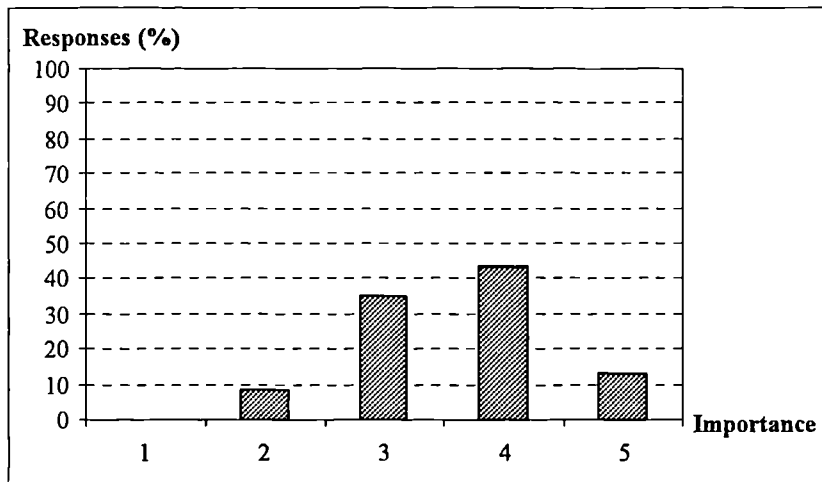
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 9.5 - You must have a thorough search to see if there are ambushes laid or spies hiding. (Thoroughly understand the market situation to avoid potential problem and identify pitfall.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	8	35
4	10	43
5	3	13

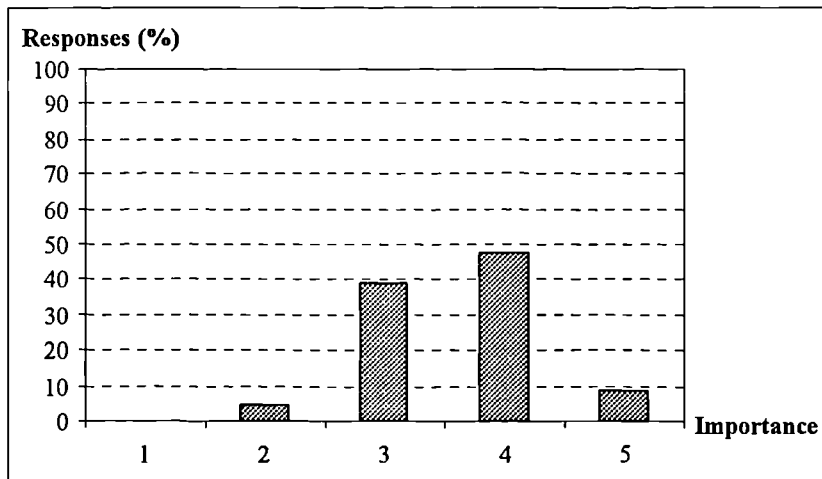
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Statement 9.6 - Birds rising in flight shows there are troops in ambush. (Observe market indicators to identify potential problems.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	9	39
4	11	48
5	2	9

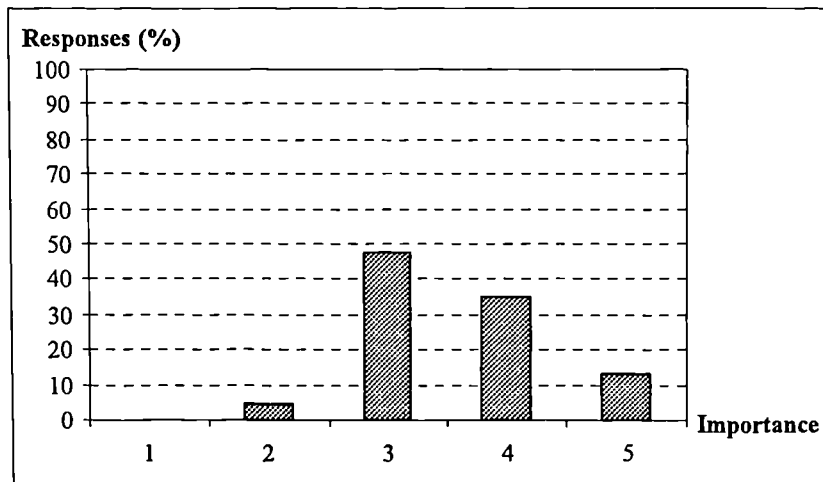
5 levels of importance: 1 is the least importance, and 5 is the most importance



(vii) Statement 9.7 - When the enemy asks for a truce without advance appointment, it mean that he must have been plotting. (When competition proposes a joint venture without warning, it means that he understands his strategic position.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	11	48
4	8	35
5	3	13

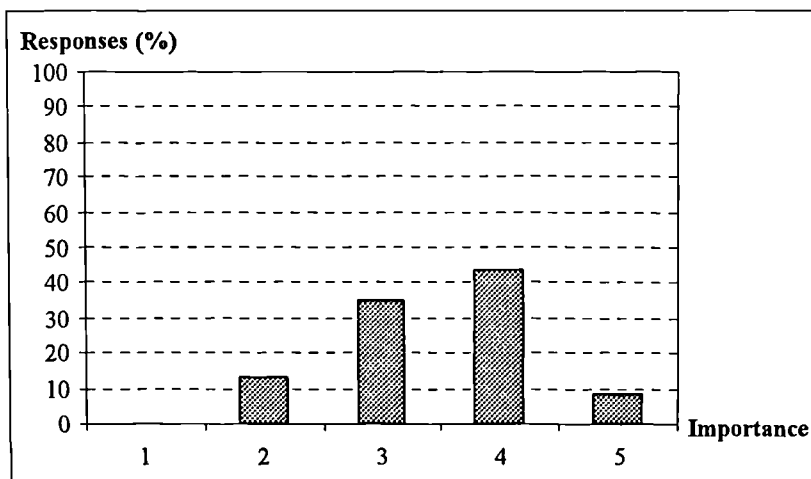
5 levels of importance: 1 is the least importance, and 5 is the most importance



(viii) Statement 9.8 - When the enemy sees some profit but does not try to obtain it, it is because he has been completely exhausted. (When the competitor does not explore market potential, it means he has no extra resources.)

Level of Importance	Responses	Responses (%)
1	0	0
2	3	13
3	8	35
4	10	43
5	2	9

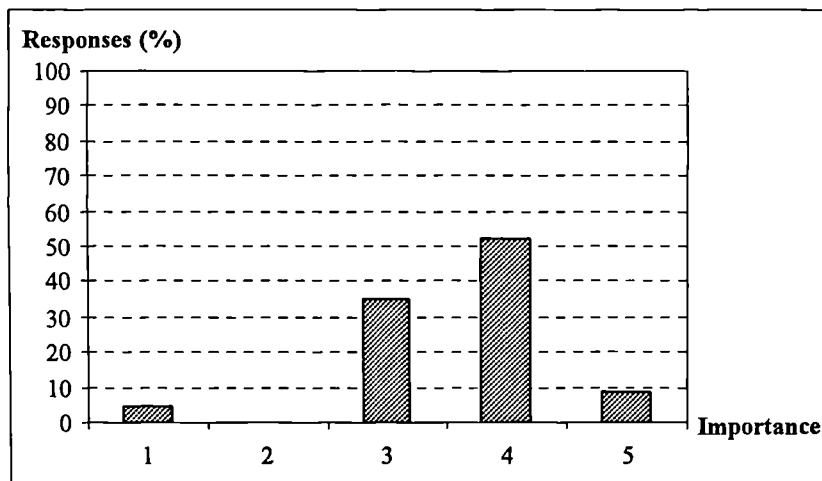
5 levels of importance: 1 is the least importance, and 5 is the most importance





- (ix) Statement 9.9 - Disturbance in the enemy's camp means his generals have lost their prestige and authority. (When a competitor has low morale, it means their leadership is poor. Prestige and authority of senior management are both essential.)

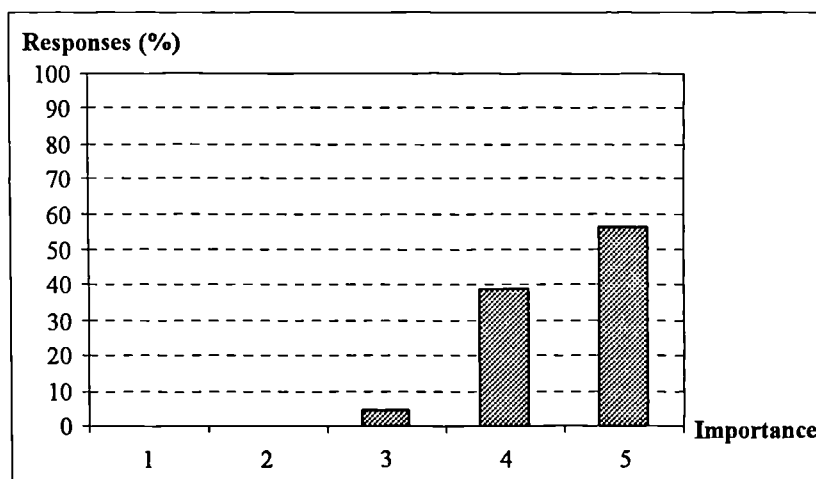
Level of Importance	Responses	Responses (%)
1	1	4
2	0	0
3	8	35
4	12	52
5	2	9



- (x) Statement 9.10 - If orders are observed constantly and conscientiously, both the commander and the soldiers will benefit and trust each other. (If everyone does what they should do diligently both the management and workforce benefit and trust each other and have good relationship.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	1	4
4	9	39
5	13	57

5 levels of importance: 1 is the least importance, and 5 is the most importance

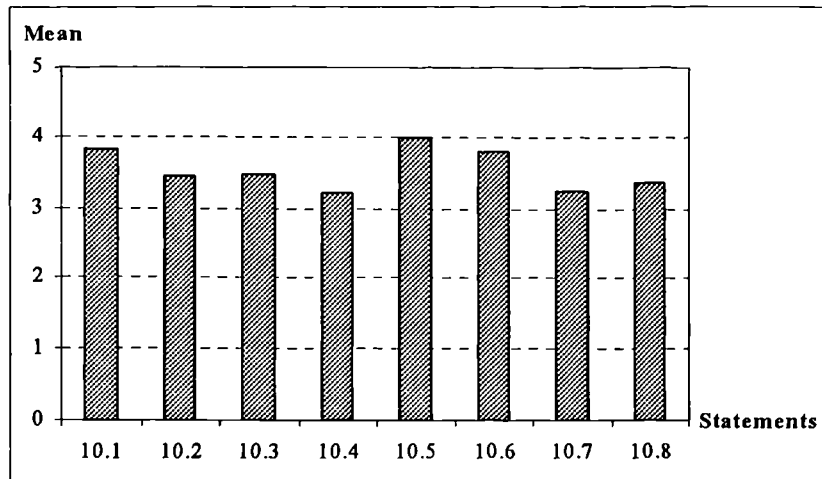


**Finding X. Terrain**

<i>Statements of Book 10 "Terrain"</i>	<b>Business Management Strategies "Competitive Situations and Causes of Failure"</b>
<i>10.1 If the enemy is unprepared, and you will defeat him.</i>	Gain advantages over the competition when they are unprepared.
<i>10.2 If you occupy such a ground that is narrow or constricted, you should block the narrow passes with strong garrisons and wait for the enemy there.</i>	Attack the competition when they have little room for manoeuvre.
<i>10.3 Make use of the ground's characteristics to defeat the enemy.</i>	Review business position and decide on plan of actions.
<i>10.4 A general should know six situations that point to the defeat of an army, these situations cannot be attributed to natural disasters, and they are the faults of the generals, which are not inevitable.</i>	Management should know of their weakness that could lead to business failure.
<i>10.5 Terrain is an important aid to a commander in military operations.</i>	Market situations help decision-making.
<i>10.6 A great commander advances, without seeking personal fame and gain, retreats without shirking responsibility.</i>	A good executive competes for the business advantage without taking personal fame and gain and admitting failure without shirking responsibility.
<i>10.7 If he dearly loves his men as he does his own beloved sons, they will be willing to die with him in battle.</i>	Treat your employees like your family and they will share your vision.
<i>10.8 A general who is skilled in military operations moves his troops without losing his direction and purpose and acts with unlimited resources and adaptations.</i>	A skilful manager reallocates his resources without losing his direction and purpose.

<b>Statements</b>	<b>Responses</b>	<b>Mean</b>
10.1	23	3.83
10.2	23	3.43
10.3	23	3.48
10.4	23	3.22
10.5	23	4.00
10.6	23	3.78
10.7	23	3.26
10.8	23	3.35

*Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance*



These business management strategies for *competitive situations and causes of failure* based on Sun Tzu's *The Art of War* are 3.5 in average which is in between the "importance" and "very importance" ranking positions. This high ranking implies that Sun Tzu's wisdom in this Book was widely used and adopted as Chinese business and management strategies in *competitive situations and causes of failure*.

This result implied that the ability of the top management in understanding the real situation was very important in the success of business management. According to the marketing situation, top management can prepare or directly compete with the competitors. Top management can also maintain the order and policy within the company by the employees' performance and loyalty.

To summarise these essential strategies for business and management excellence, the following points are identified:

1. Gain advantages over the competition when they are unprepared. (10.1)
2. Attack the competition when they have little room for manoeuvre. (10.2)
3. Review the business position and decide plan of actions. (10.3)
4. Competitive situations can be described as accessible, ensnaring, inconclusive, restricted, difficult, and speculative that are equivalent to the description of terrain as accessible, ensnaring, suspending, narrow, mountainous, and remote respectively. Determination of whether moving resources into the competitive situations requires great understanding and careful examination of the plan in light of these situations.
5. Management should know of their weakness that could lead to business failure. (10.4)

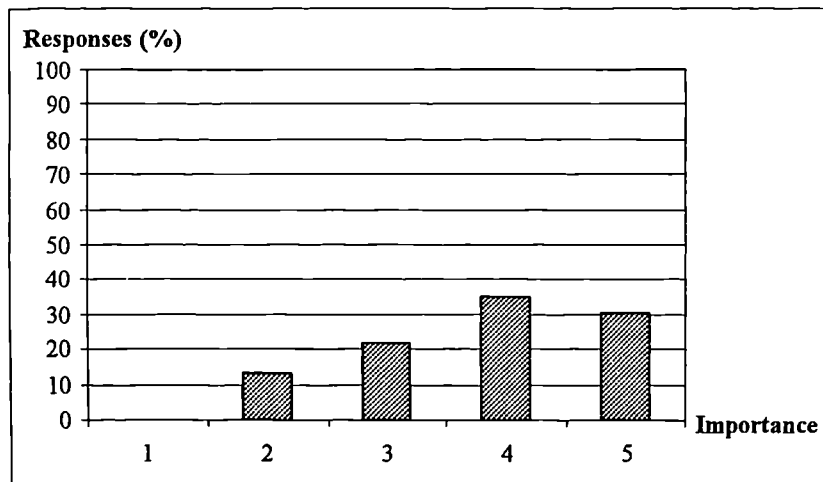
6. Competitive operations can be failure due to lack of resources, lack of direction, lack of performance, lack of discipline, lack of order, and lack of competence; these are mainly the management faults
7. Market situations help decision-making. (10.5)
8. Effective executives understand constituents, competitors and themselves well. They should estimate the resources requirements, the difficulty of all possible alternatives' strategies, assess the factors and their priorities requiring immediate or later attentions. They should also know the strengths and weaknesses of both sides. Understanding of these details and applying them properly will win.
9. A good executive competes for the business advantage without taking personal fame and gain and admitting failure without shirking responsibility. (10.6)
10. An executive whose only goal is to benefit the constituents and organisation is the company's precious asset.
11. Treat your employees like your family and they will share your vision. (10.7)
12. Be careful not to spoil the employees. Executive may be too generous and cannot use them effectively, too kind and not train them properly, disorder and not discipline them correctly.
13. A skilful manager reallocates his resources without losing his direction and purpose. (10.8)
14. If an effective executive knows well of his people, his opponent's ability, the resources and competitive situations will be ever victorious.

Detailed statistics of Book "Terrain" are provided in the following:

- (i) Statement 10.1 - If the enemy is unprepared, and you will defeat him. (Gain advantages over the competition when they are unprepared.)

Level of Importance	Responses	Responses (%)
1	0	0
2	3	13
3	5	22
4	8	35
5	7	30

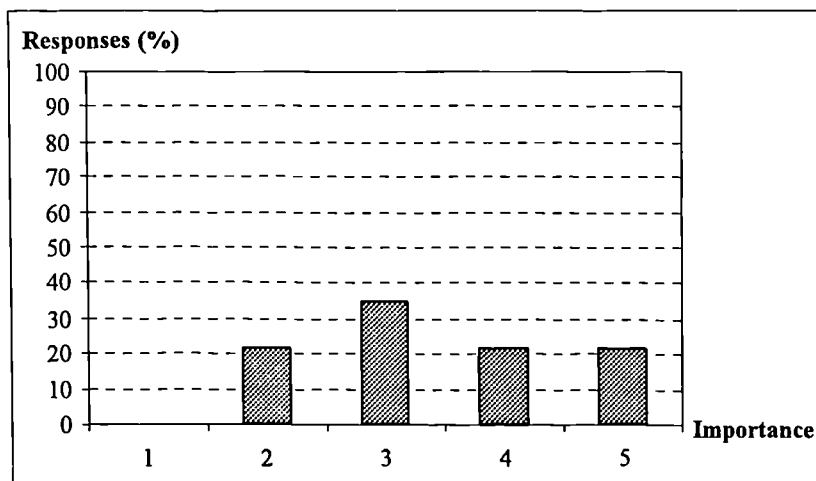
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 10.2 - If you occupy such a ground that is narrow or constricted, you should block the narrow passes with strong garrisons and wait for the enemy there. (Attack the competition when they have little room for manoeuvre.)

Level of Importance	Responses	Responses (%)
1	0	0
2	5	22
3	8	35
4	5	22
5	5	22

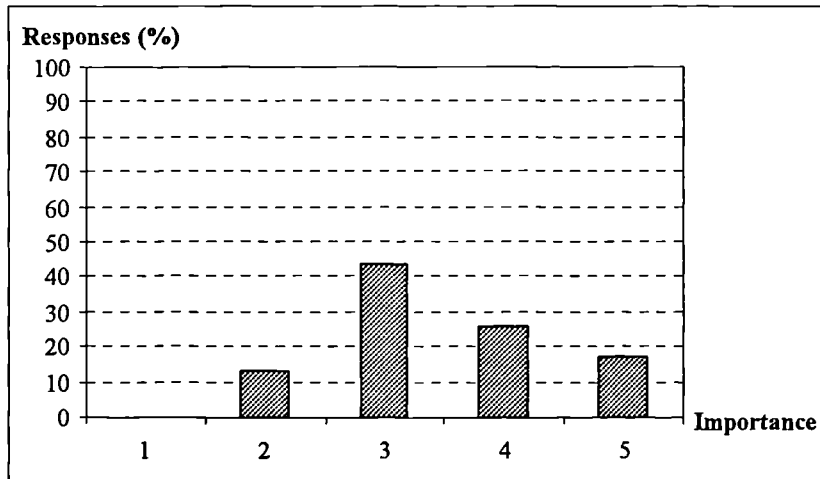
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 10.3 - Make use of the ground's characteristics to defeat the enemy. (Review business position and decide on plan of actions.)

Level of Importance	Responses	Responses (%)
1	0	0
2	3	13
3	10	43
4	6	26
5	4	17

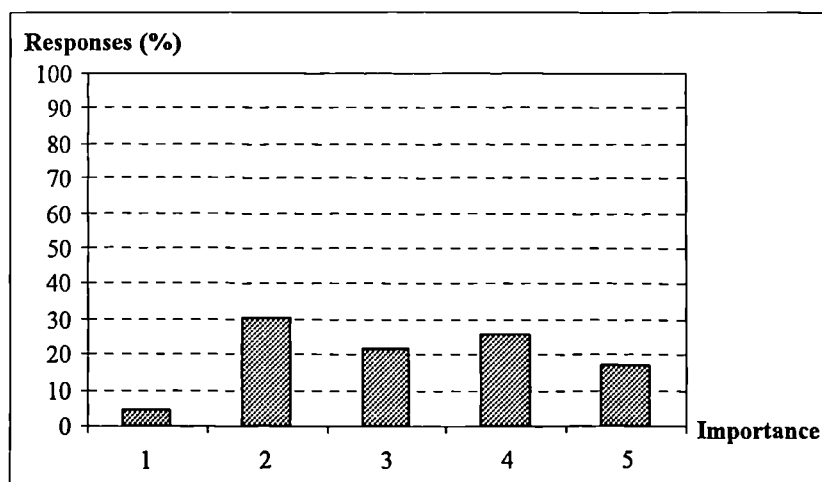
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Statement 10.4 - A general should know six situations that point to the defeat of an army, these situations cannot be attributed to natural disasters, and they are the faults of the generals, which are not inevitable. (Management should know of their weakness that could lead to business failure.)

Level of Importance	Responses	Responses (%)
1	1	4
2	7	30
3	5	22
4	6	26
5	4	17

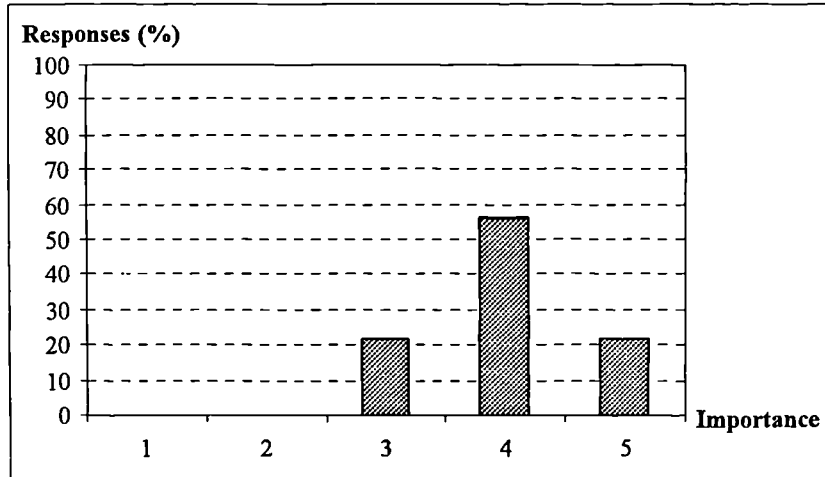
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 10.5 - Terrain is an important aid to a commander in military operations. (Market situations help decision-making.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	5	22
4	13	57
5	5	22

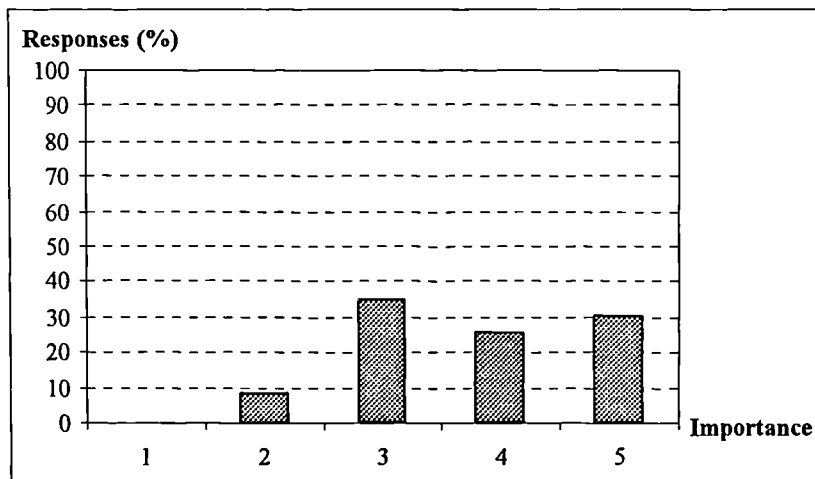
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Statement 10.6 - A great commander advances, without seeking personal fame and gain, retreats without shirking responsibility. (A good manager take the business advantage without taking personal fame and gain and admitting failure without shirking responsibility.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	8	35
4	6	26
5	7	30

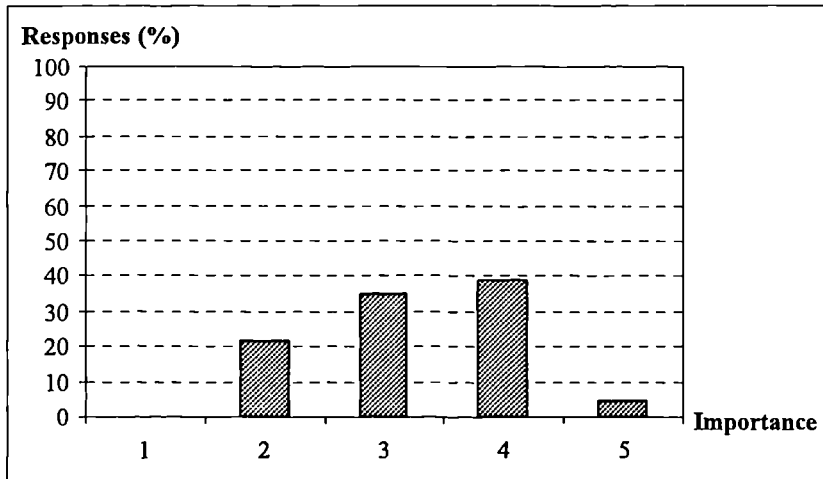
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vii) Statement 10.7 - If he dearly loves his men as he does his own beloved sons, they will be willing to die with him in battle. (Treat your employees like your family and they will share your vision.)

Level of Importance	Responses	Responses (%)
1	0	0
2	5	22
3	8	35
4	9	39
5	1	4

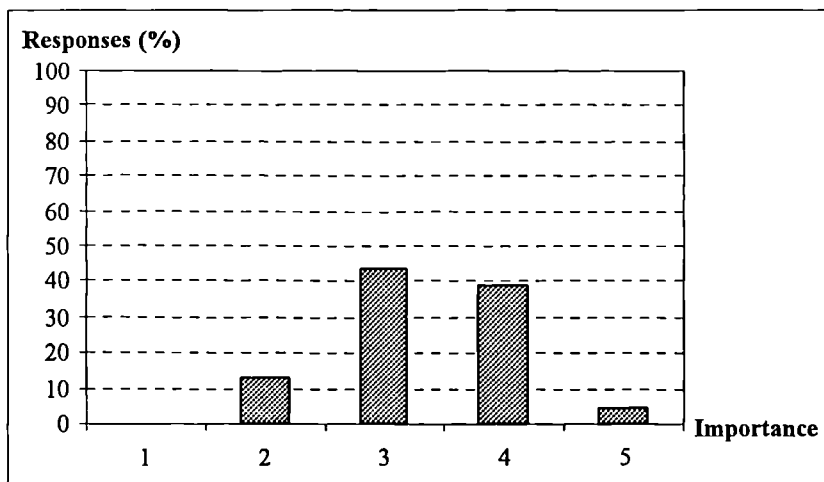
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (viii) Statement 10.8 - A general who is skilled in military operations moves his troops without losing his direction and purpose and acts with unlimited resources and adaptations. (A skilful manager reallocates his resources without losing his direction and purpose.)

Level of Importance	Responses	Responses (%)
1	0	0
2	3	13
3	10	43
4	9	39
5	1	4

5 levels of importance: 1 is the least importance, and 5 is the most importance





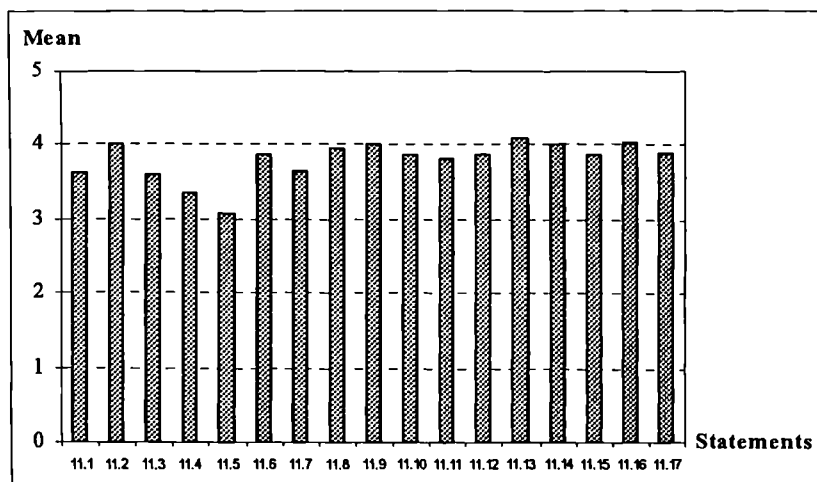
## Finding XI. The Nine Types of Battlegrounds

Statements of Book 11 "The Nine Types of Battlegrounds"	Business Management Strategies "Competitive Conditions and Offensive Strategy"
11.1 Ground can be classified into nine geographical positions according to the way of using military operations.	Competitive situations can be different according to the way business conducted.
11.2 A position, where three neighbouring states meet, and which whoever first gets control of will gain the support of other neighbouring state.	By making market alliance, stronger market control and strategy will be obtained.
11.3 Never in a disperse land; fight a last-ditch battle in desperate ground.	Never attack your competitor when your resources is not focused.
11.4 The skilled generals would advance when it was to their advantage and halt when situations were unfavourable.	In managing competitive actions, effective executives would advance when it was to their advantage and halt when situations were unfavourable.
11.5 The essence of military operations is speed, taking advantage of the enemy's not preparing, going by routes he does not expect and attacking him where he is not on ground.	Awareness of business situation and react speedily using innovative approaches and attacking competitors' weaknesses.
11.6 Nourish your men and do not exhaust them; keep them in high morale and conserve their energy.	Care and look after your people.
11.7 If there is no choice but fight a desperate battle, they will co-operate closely and consciously follow your direction.	Make business urgent to ensure co-operation and alignment of vision.
11.8 Those who are skilled in military operations should be as dextrous as the shuairan, the snake of Mount Chang.	Those who are skilful in business should ensure all the resources work together in co-operation.
11.9 Uniting the soldiers to fight bravely depends on good management and command.	Alignment of the company workforce to the vision depends on good management.
11.10 In commanding an army, a general must have a mind that is serene and unfathomable. He must administrate his troops in an impartial and upright manner.	The leader of a company should have a mind that is serene and unfathomable. He must administrate his workforce in an impartial and upright manner.
11.11 A general who leads his troops to fight a decisive battle should cut off all means of retreat. He should make his troops understand they have no alternatives.	The executive should demonstrate his commitment to the workforce and remain true to this commitment on all he does.
11.12 The way to make war in the enemy's state is as follows: the deeper your troops penetrate into hostile territory, the more they concentrate their spirit to fight.	The more successful of business, the more motivated and committed the workforce will be towards their works and make contributions.
11.13 Unify the will of your soldiers.	Align the workforce to the vision of the company.

Statements of Book 11 "The Nine Types of Battlegrounds"	Business Management Strategies "Competitive Conditions and Offensive Strategy"
11.14 A general who is ignorant of the intention of the neighbouring princes cannot form alliances with them.	Company who does not understand the intention of potential partner cannot form alliances with them.
11.15 A state with such an invincible army does not need to seek alliances with other states.	If a company is strong, it does not need to seek alliance.
11.16 You can command thousands upon thousands of horses and men as if you were leading a single man.	Unify the thinking of all people and make them work for you.
11.17 At first assume the coyness of a maiden and when the enemy gives you an opening, attack him as swiftly as running hare.	Appear not to be strong, but when opportunities arise, launch the business attack.

Statements	Responses	Mean
11.1	22	3.64
11.2	23	4.00
11.3	23	3.61
11.4	23	3.35
11.5	23	3.09
11.6	23	3.87
11.7	23	3.65
11.8	23	3.96
11.9	23	4.00
11.10	23	3.87
11.11	23	3.83
11.12	23	3.87
11.13	23	4.09
11.14	23	4.00
11.15	23	3.87
11.16	23	4.04
11.17	23	3.91

Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance



These business management strategies for *competitive conditions and offensive strategy* based on Sun Tzu's The Art of War are 3.8 in average which is very close to "very importance" ranking position. This high ranking implies that Sun Tzu's wisdom in this Book was widely used and adopted as Chinese business and management strategies in *competitive conditions and offensive strategy*.

A good management should identify the competitive situations and react to those situations. Moreover, management should plan and lead the employees to have their work done effectively and efficiently.

To summarise these essential strategies for business and management excellence, the following points are identified:

1. Competitive situations can be different according to the way business conducted. (11.1)
2. By making market alliance, stronger market control and strategy will be obtained. (11.2)
3. Never attack your competitor when your resources are not focused. (11.3)
4. Proper application of the principles of offensive strategy requires analysis of the competitive situations. The competitive situation determines what following on actions has to be taken, whether it is more advantageous to advance or retreat, and what resources have to be examined carefully. Resources include technical, financial and organisational aspects and that should be adequate.
5. When a business market competition started where we are dominant, people become less concentrated and over-confident. Then we are in a scattered or disperse situation. Immediate actions are to avoid further competition, unify the will of all people, and consolidate the available resources for future competitions.
6. When we are attempting the competitor's market, we tend to be less committed our resources. We are in an uncommitted or frontier situation where we can pull out easily and quickly. Immediate actions are to keep resources focused on the goal, strengthen the planning and observe the details of changes.
7. When either our side or the competitor tempts to occupy the same business market that will be to their advantages, both sides may pump in heavier resources in order to win. We are in a conflict or contentious situation. Immediate actions are to keep still, approach from the less obvious side, and create advantageous situation before expending resources to win.
8. When either side can advance to and retreat from the business market comfortably, both sides are free and open to operate. We are in accessible or

open situation. Immediate actions are to keep on guard and strengthen defences.

9. When the business market falls in several constituents, whoever first dominates the share will get the others support. We are in intersecting or focal situation. Immediate action is to consider forming strong alliances and sharing benefits.
10. When we have already committed heavy resources and involved deeply in the business market where we are not the major constituent, we are in critical and serious situation. Immediate action is to look for adequate resources ensuring continuous flow of provisions
11. When there are many barriers including technical, financial and organisational challenges that we have to overcome in the business market, we are in a block or difficult situation. Immediate action is to overcome these barriers quickly and press forward swiftly.
12. When we have already committed heavy resources and no easy out in the business market and competitors are likely to take over from us; we are in a surrounded or encircled situation. Immediate actions are to eliminate our weaknesses and hinder competitors from attacking constituents.
13. When we can survive only if we can win the business market quickly, we are in deadly or desperate situation. Immediate action is to let all employees' face the fact that there is no choice but reacts urgently or the business may not survive.
14. In managing competitive actions, effective executive would advance when it was to their advantage and halts when situations were unfavourable. (11.4)
15. Effective executive would make the situations difficult to competitors and their people. Their defences and co-ordination among themselves are difficult, co-operation difficult, supporting difficult, communication difficult, concentration of efforts difficult, and disorderly makes discipline difficult.
16. Awareness of business situation and react speedily using innovative approaches and attacking competitors' weaknesses. (11.5)
17. Care and look after your people. (11.6)
18. Competitive actions will succeed only if all people in the organisation committed to the same goal and have a unified objective.
19. Make sure that all employees are in excellent conditions. Keep them in good health, good spirit and good morale. Reserve their energy and never over-load them. Only those companies in these conditions that the company can meet unexpected challenges.

20. Make business urgent to ensure co-operation and alignment of vision. (11.7)
21. When the company is fully committed and has no alternative but to struggle for survival, people will stay alert, do without asking them co-operate without direct them, follow instruction without order them. All rumours should be avoided and there is no suspicion among employees. Winning the business competition will come soon.
22. Those who are skilful in business should ensure all the resources work together in co-operation. (11.8)
23. Alignment of the company workforce to the vision depends on good management. (11.9)
24. Effective executive should create a situation whereby the whole workforce committed to the same goal. He would then execute the strategic plans accordingly with clear and distinct orders
25. The leader of a company should have a mind that is serene and unfathomable. He must administrate his workforce in an impartial and upright manner. (11.10)
26. The executive of a company should demonstrate his commitment to the workforce and remain true to this commitment on all he does. (11.11)
27. The executive should also put the organisation into a *position where the highest level of performance is necessary for survival.*
28. The more successful of business, the more motivated and committed the workforce will be towards their works and make contributions. (11.12)
29. Align the workforce to the vision of the company. (11.13)
30. Company who does not understand the intention of potential partner cannot from alliances with them. (11.14)
31. Business strategic plan of actions cannot be formulated without the full understanding and awareness of the dynamic changes of current market situation and business information.
32. If a company is strong, it does not need to seek alliance. (11.15)
33. Unify the thinking of all people and make them work for you. (11.16)
34. Effective executive should lead the company by showing good examples, motivate people by giving out reward, and put them in a desperate position by committing fully or-else failure.

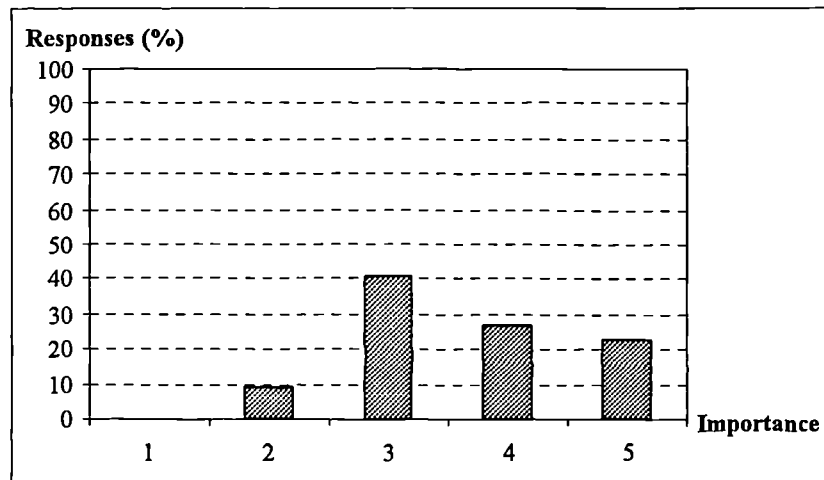
35. Appear not to be strong, but when opportunities arise, launch the business attack. (11.17)

Detailed statistics of Book "The Nine Types of Battlegrounds" are provided in the following:

- (i) Statement 11.1 - Ground can be classified into nine geographical positions according to the way of using military operations. (Competitive situations can be different according to the way business conducted.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	9	41
4	6	27
5	5	23

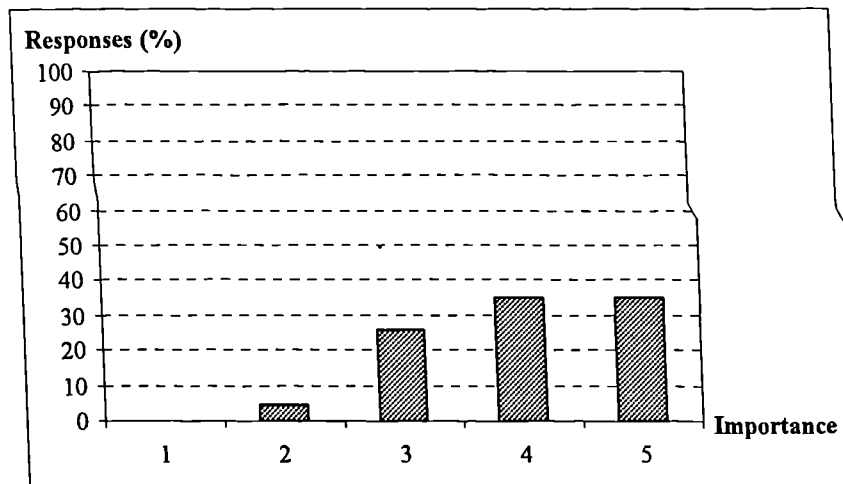
*5 levels of importance: 1 is the least importance, and 5 is the most importance*



- (ii) Statement 11.2 - A position, where three neighbouring states meet, and which whoever first gets control of will gain the support of other neighbouring state. (By making market alliance, stronger market control and strategy will be obtained.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	6	26
4	8	35
5	8	35

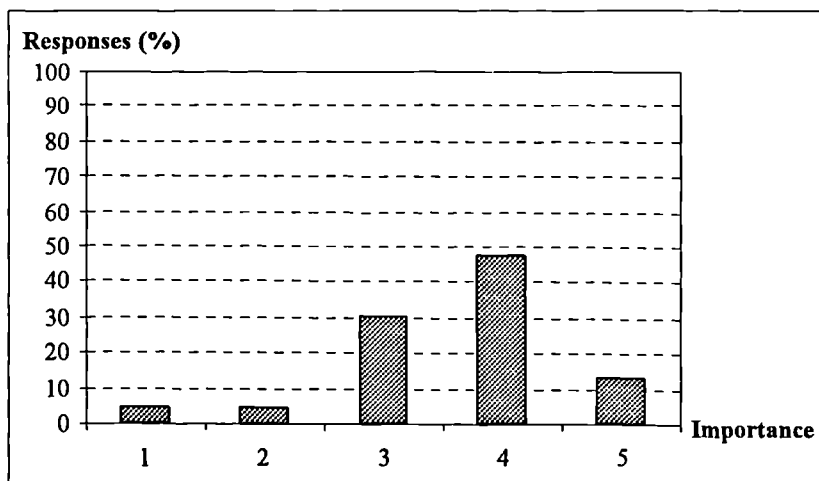
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 11.3 - Never in a disperse land; fight a last-ditch battle in desperate ground. (Never attack your competitor when your resources is not focused.)

Level of Importance	Responses	Responses (%)
1	1	4
2	1	4
3	7	30
4	11	48
5	3	13

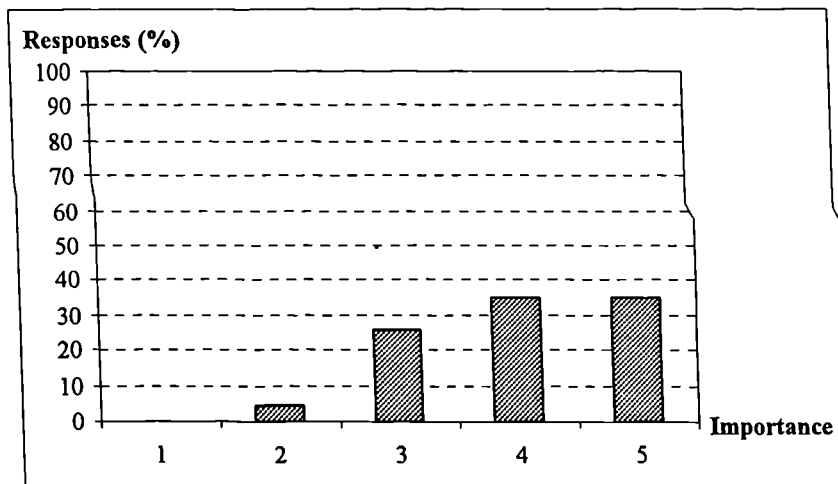
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 11.2 - A position, where three neighbouring states meet, and which whoever first gets control of will gain the support of other neighbouring state. (By making market alliance, stronger market control and strategy will be obtained.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	6	26
4	8	35
5	8	35

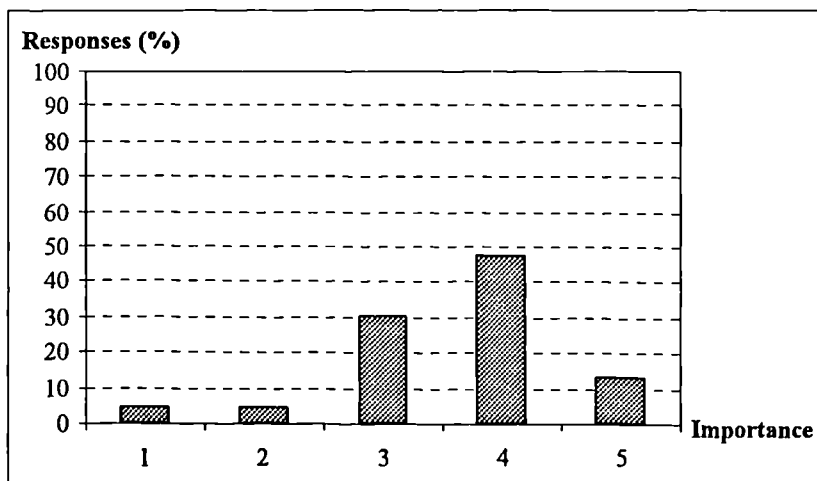
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 11.3 - Never in a disperse land; fight a fast-ditch battle in desperate ground. (Never attack your competitor when your resources is not focused.)

Level of Importance	Responses	Responses (%)
1	1	4
2	1	4
3	7	30
4	11	48
5	3	13

5 levels of importance: 1 is the least importance, and 5 is the most importance

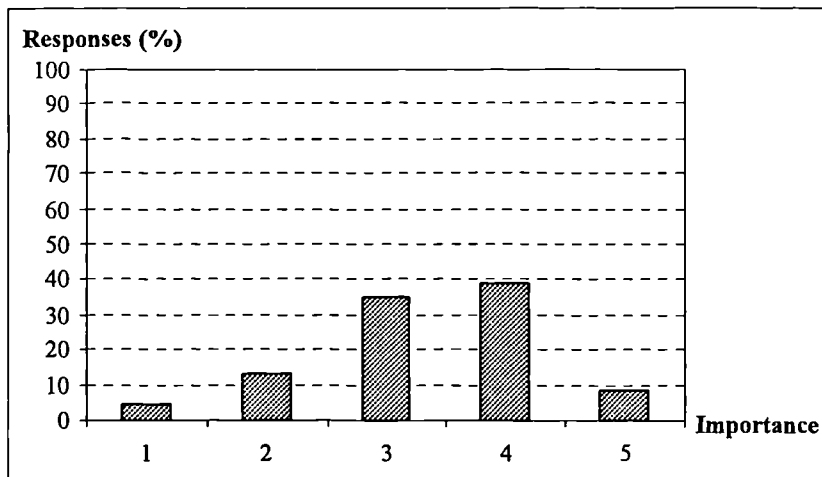




- (iv) Statement 11.4 - The skilled generals would advance when it was to their advantage and halt when situations were unfavourable. (In managing competitive actions, effective executives would advance when it was to their advantage and halt when situations were unfavourable.)

Level of Importance	Responses	Responses (%)
1	1	4
2	3	13
3	8	35
4	9	39
5	2	9

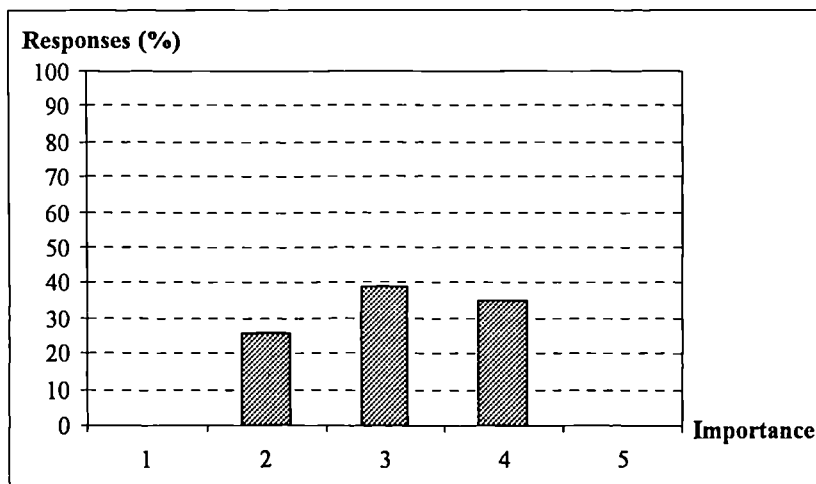
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 11.5 - The essence of military operations is speed, taking advantage of the enemy's not preparing, going by routes he does not expect and attacking him where he is not on ground. (Awareness of business situation and react speedily using innovative approaches and attacking competitors' weaknesses.)

Level of Importance	Responses	Responses (%)
1	0	0
2	6	26
3	9	39
4	8	35
5	0	0

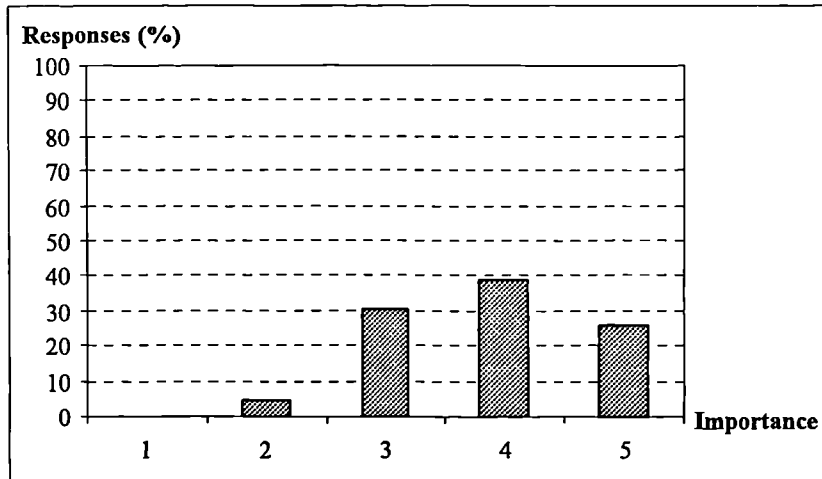
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Statement 11.6 - Nourish your men and do not exhaust them; keep them in high morale and conserve their energy. (Care and look after your people.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	7	30
4	9	39
5	6	26

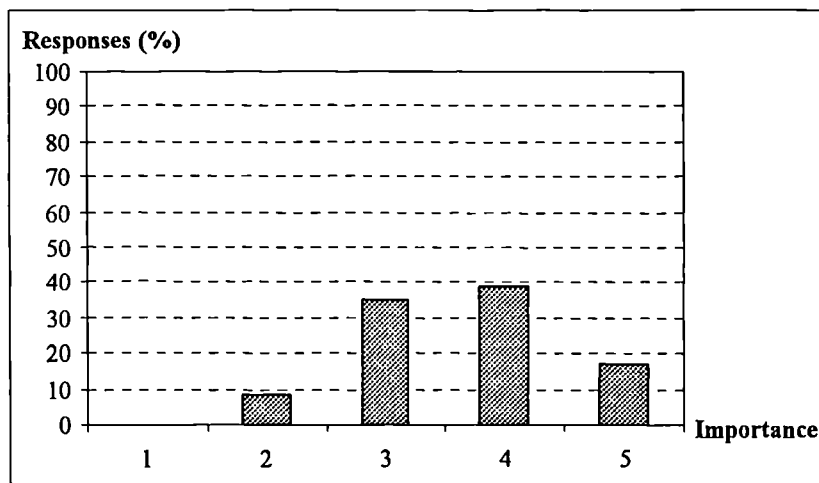
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vii) Statement 11.7 - If there is no choice but fight a desperate battle, they will co-operate closely and consciously follow your direction. (Make business urgent to ensure co-operation and alignment of vision.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	8	35
4	9	39
5	4	17

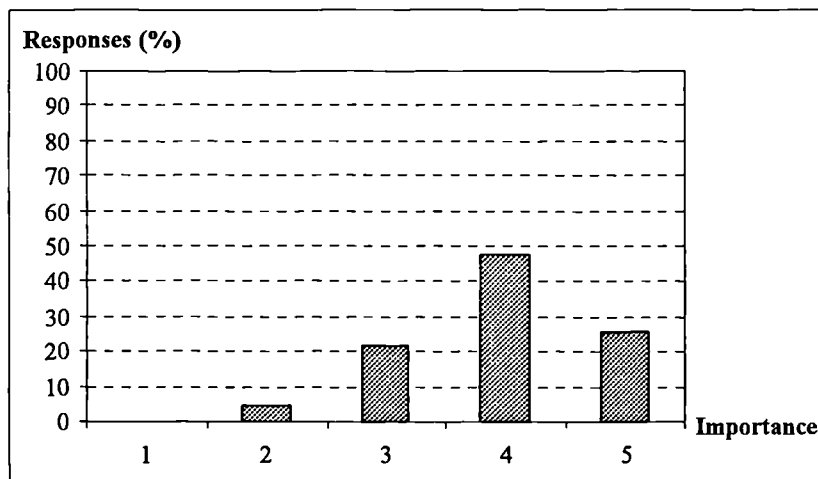
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (viii) Statement 11.8 - Those who are skilled in military operations should be as dextrous as the shuairan, the snake of Mount Chang. (Those who are skilful in business should ensure all the resources work together in co-operation.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	5	22
4	11	48
5	6	26

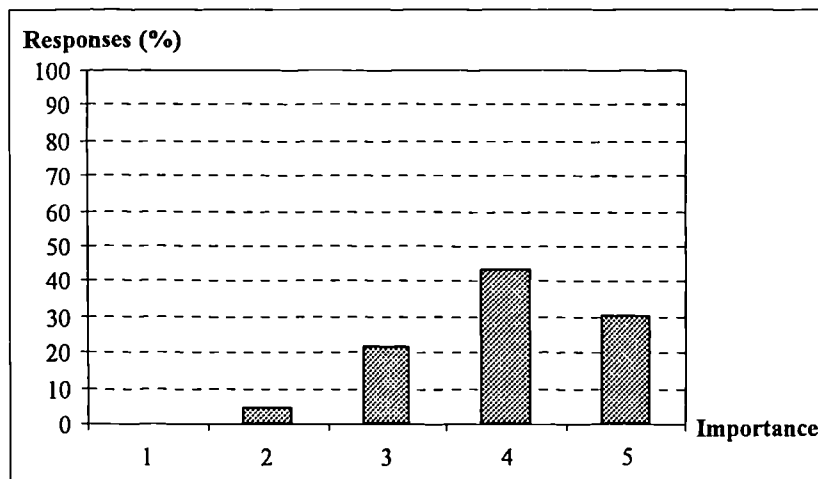
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ix) Statement 11.9 - Uniting the soldiers to fight bravely depends on good management and command. (Alignment of the company workforce to the vision depends on good management.)

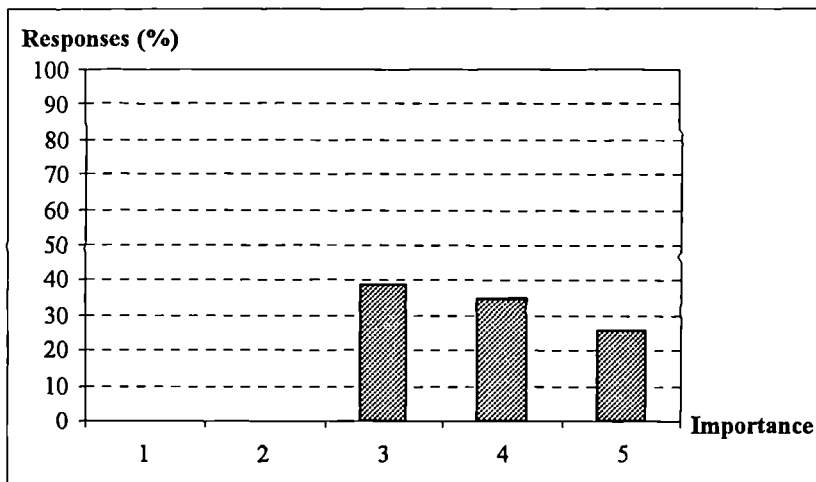
Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	5	22
4	10	43
5	7	30

5 levels of importance: 1 is the least importance, and 5 is the most importance



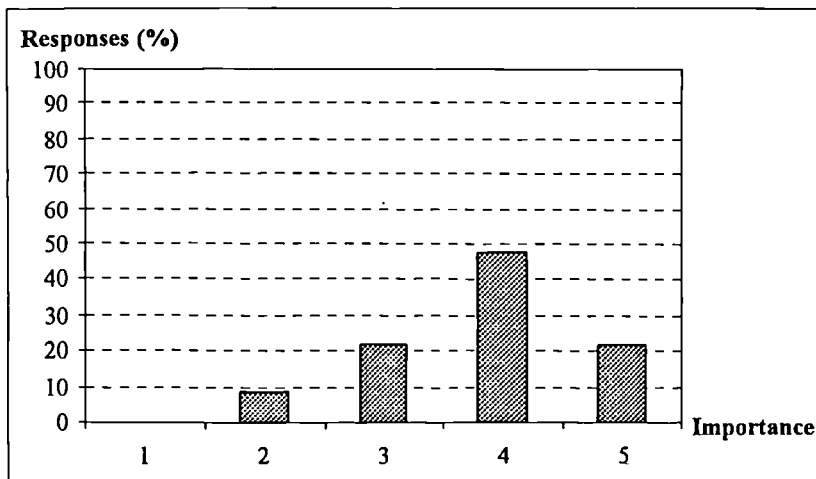
- (x) Statement 11.10 - In commanding an army, a general must have a mind that is serene and unfathomable. He must administrate his troops in an impartial and upright manner. (The leader of a company should have a mind that is serene and unfathomable. He must administrate his workforce in an impartial and upright manner.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	9	39
4	8	35
5	6	26



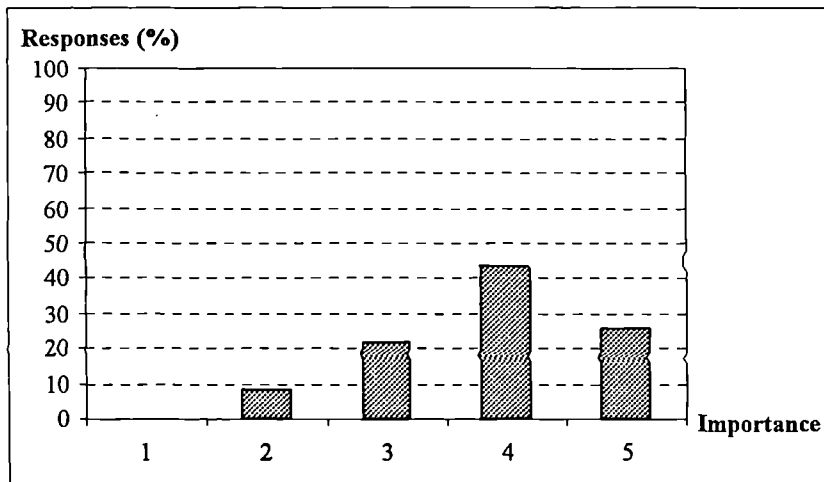
- (xi) Statement 11.11 - A general who leads his troops to fight a decisive battle should cut off all means of retreat. He should make his troops understand they have no alternatives. (The executive should demonstrate his commitment to the workforce and remain true to this commitment on all he does.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	5	22
4	11	48
5	5	22



- (xii) Statement 11.12 - The way to make war in the enemy's state is as follows: the deeper your troops penetrate into hostile territory, the more they concentrate their spirit to fight. (The more successful of business, the more motivated and committed the workforce will be towards their works and make contributions.)

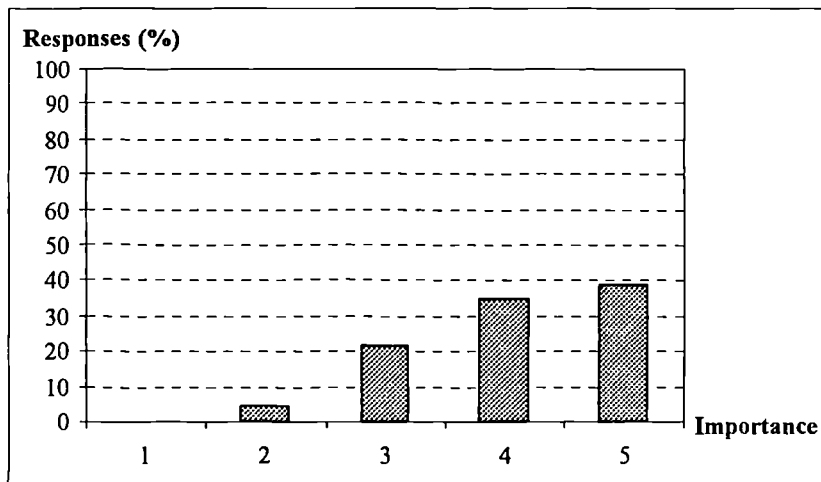
Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	5	22
4	10	43
5	6	26



- (xiii) Statement 11.13 - Unify the will of your soldiers. (Align the workforce to the vision of the company.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	5	22
4	8	35
5	9	39

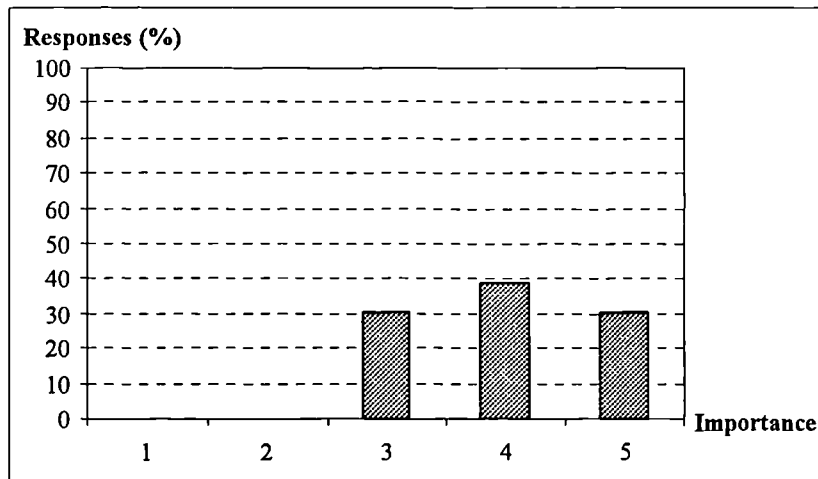
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (xiv) Statement 11.14 - A general who is ignorant of the intention of the neighbouring princes cannot form alliances with them. (Company who does not understand the intention of potential partner cannot form alliances with them.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	7	30
4	9	39
5	7	30

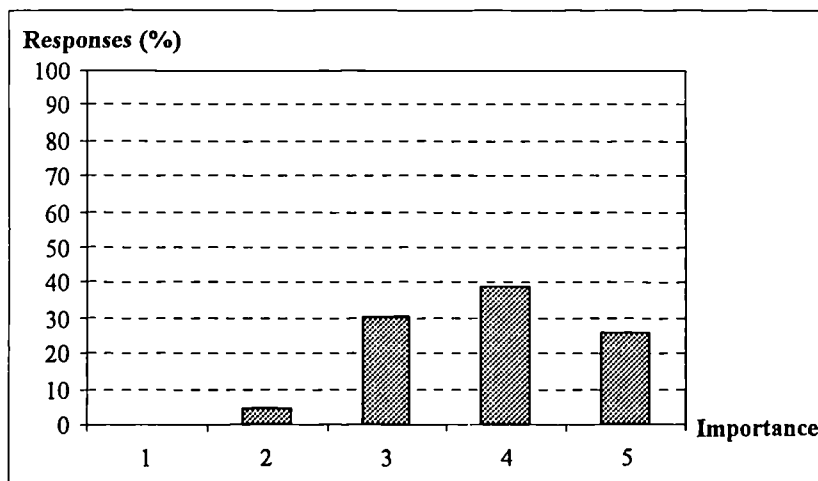
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (xv) Statement 11.15 - A state with such an invincible army does not need to seek alliances with other states. (If a company is strong, it does not need to seek alliance.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	7	30
4	9	39
5	6	26

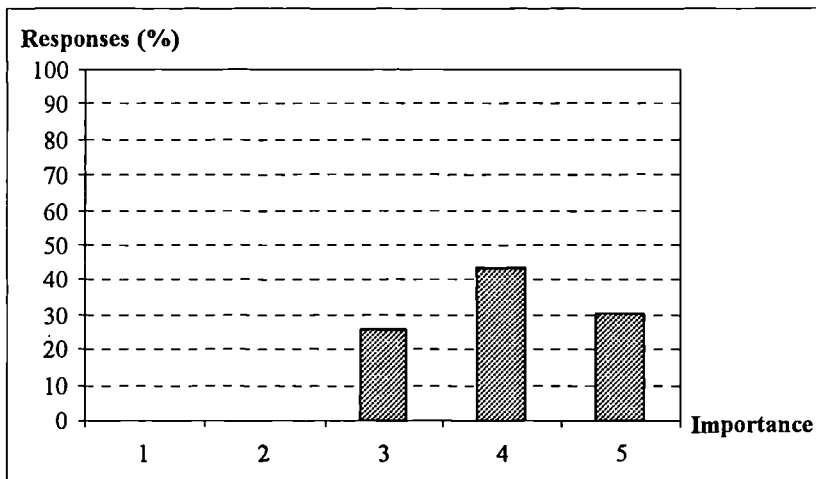
5 levels of importance: 1 is the least importance, and 5 is the most importance



(xvi) Statement 11.16 - You can command thousands upon thousands of horses and men as if you were leading a single man. (Unify the thinking of all people and make them work for you.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	6	26
4	10	43
5	7	30

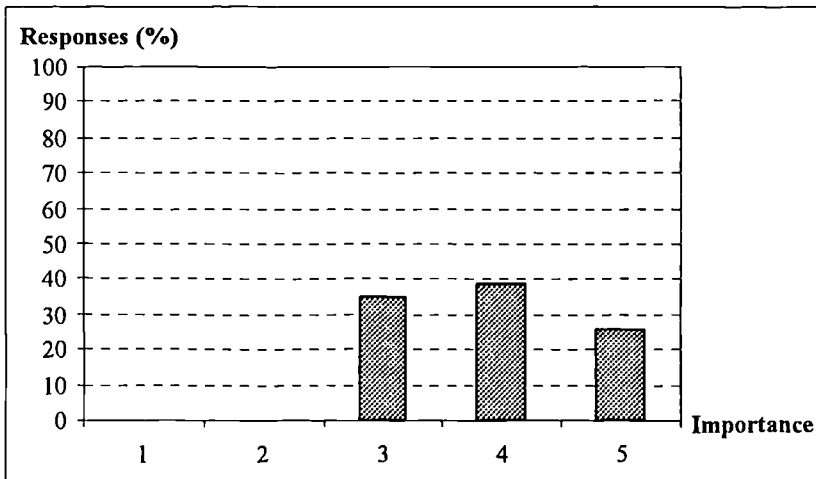
5 levels of importance: 1 is the least importance, and 5 is the most importance



(xvii) Statement 11.17 - At first assume the coyness of a maiden and when the enemy gives you an opening, attack him as swiftly as running hare. (Appear not to be strong, but when opportunities arise, launch the business attack.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	8	35
4	9	39
5	6	26

5 levels of importance: 1 is the least importance, and 5 is the most importance

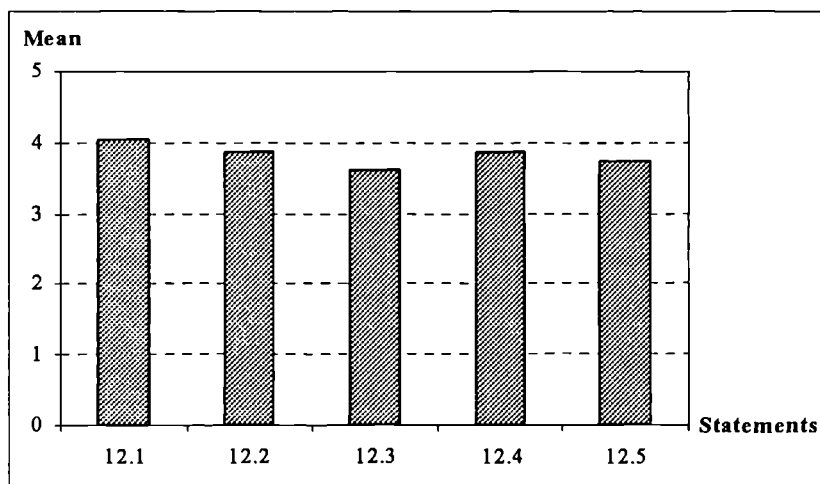


**Finding XII. Attacking with fire**

<i>Statements of Book 12 "Attacking with fire"</i>	<b>Business Management Strategies "Destroying Reputation"</b>
12.1 <i>There are suitable seasons to launch a fire attack and suitable days for starting a fire.</i>	Key to success is recognising good opportunities.
12.2 <i>If you start a fire from up-wind, never launch an attack from down-wind.</i>	Always stay ahead of your competitors.
12.3 <i>Any army must know about the varying situations under the five ways of fire attack and keep waiting for suitable time.</i>	Remains flexible and adapts accordance to the changing situation.
12.4 <i>To win a battle and capture the spoils but to fail to consolidate such achievements forebode danger. For it is a waste of effort.</i>	Build on past achievement; never sit on the present situation and continuous keep on innovation.
12.5 <i>A state that has perished can never revive, nor can a man who has died be brought back to life.</i>	A simple mistake could ruin the whole business.

Statements	Responses	Mean
12.1	23	4.04
12.2	23	3.87
12.3	23	3.61
12.4	23	3.87
12.5	23	3.74

*Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance*



These business management strategies for *destroying reputation* based on Sun Tzu's The Art of War are 3.8 in average, which is close to the "very important" ranking position. This high ranking implies that Sun Tzu's wisdom in this Book was widely used and adopted as Chinese business and management strategies in *destroying reputation*.



To summarise these essential strategies for business and management excellence, the following points are identified:

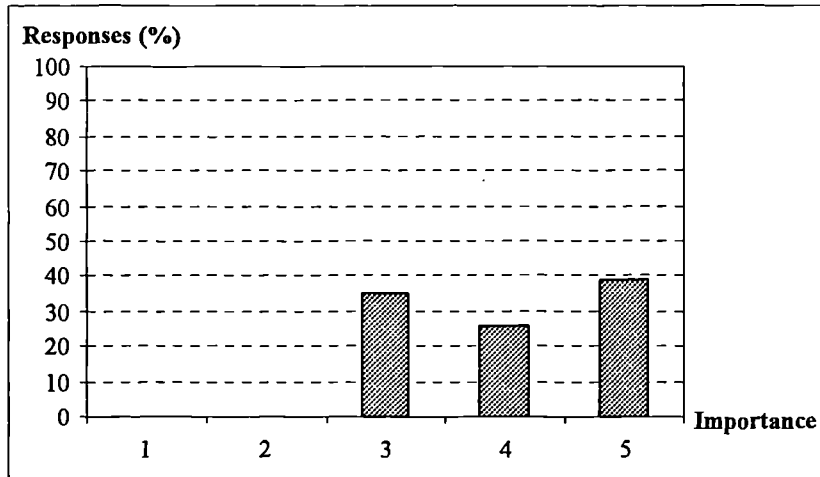
1. Destroying a competitor's reputation is the last resort that could possibly use and the most dangerous competitive operation.
2. There are five areas of attack of reputation. These include personnel, personal relationships or management structure (troop), organisational products and individual performance (provisions and property), employees and facilities (equipment), suppliers and supporters (arsenals), and capital resources and financial backing (transportation lines).
3. Key to success is recognising good opportunities. (12.1)
4. Appropriate timing for destroying competitors' reputation is when there are other difficulties present on other political and economic scene.
5. Always stay ahead of your competitors. (12.2)
6. Destroying reputation is a method of permanently defeating competitors.
7. Effective business should remain flexible and adept accordance to the changing situation. (12.3)
8. Good management practices are based on the previous achievements. It must not sit on the present situation and continuous look for innovation. (12.4)
9. Defeating a competitor without great benefit is a misfortune. Executive should weight the gained benefits before launching a challenge.
10. A simple mistake could ruin the whole business. (12.5)
11. A wise executive should not compete out of the emotion. It must be well understood that a destroyed reputation cannot be restored.

Detailed statistics of Book "Attacking with fire" are provided in the following:

- (i) Statement 12.1 - There are suitable seasons to launch a fire attack and suitable days for starting a fire. (Key to success is recognising good opportunities.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	8	35
4	6	26
5	9	39

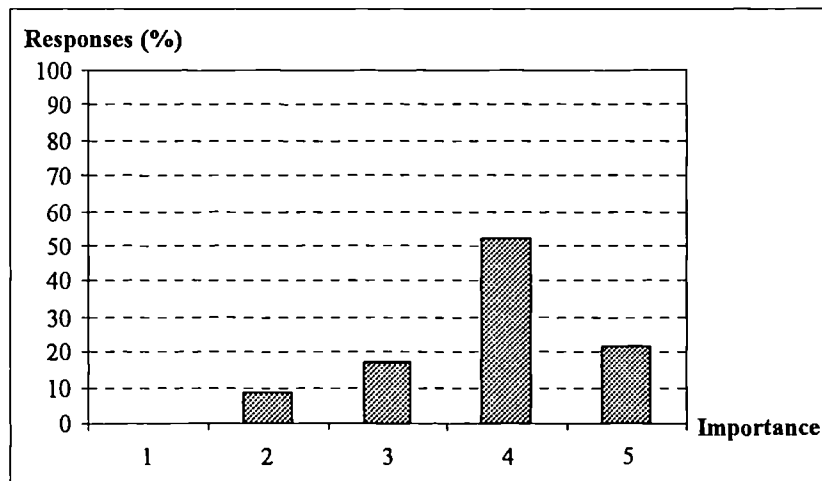
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Statement 12.2 - If you start a fire from up-wind, never launch an attack from down-wind. (Always stay ahead of your competitors.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	4	17
4	12	52
5	5	22

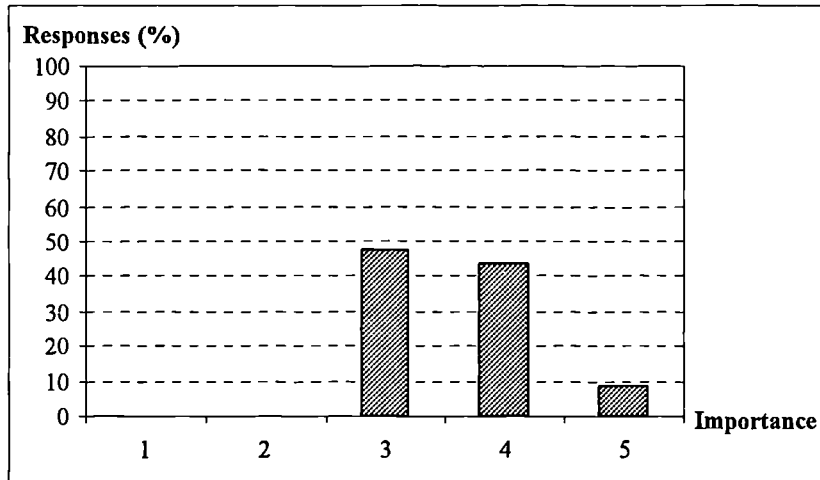
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Statement 12.3 - Any army must know about the varying situations under the five ways of fire attack and keep waiting for suitable time. (Remains flexible and adapts accordance to the changing situation.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	11	48
4	10	43
5	2	9

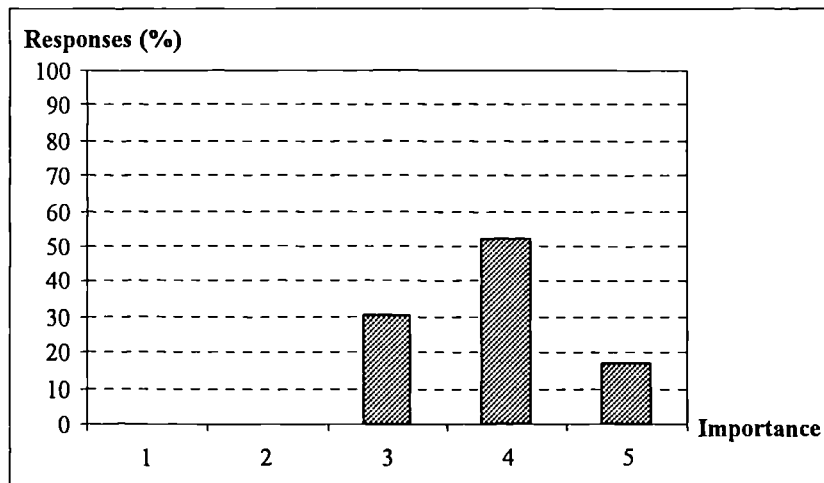
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Statement 12.4 - To win a battle and capture the spoils but to fail to consolidate such achievements forebode danger. For it is a waste of effort. (Build on past achievement, never sit on the present situation and continuous keep on innovation.)

Level of Importance	Responses	Responses (%)
1	0	0
2	0	0
3	7	30
4	12	52
5	4	17

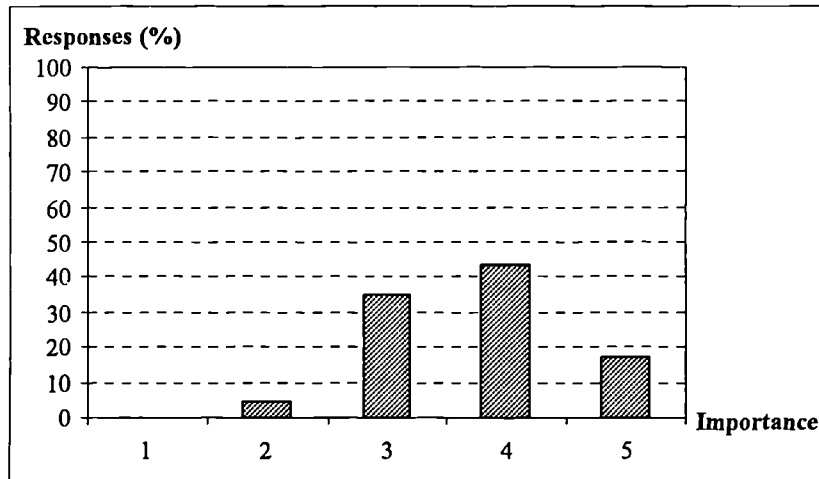
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 12.5 - A state that has perished can never revive, nor can a man who has died be brought back to life. (A simple mistake could ruin the whole business, because taking everything seriously be)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	8	35
4	10	43
5	4	17

*5 levels of importance: 1 is the least importance, and 5 is the most importance*

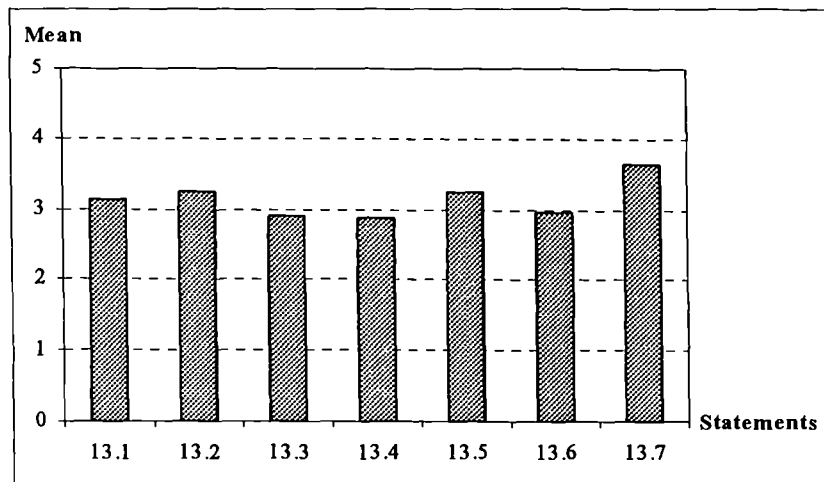


**Finding XIII. Espionage**

<b>Statements of Book 13 "Espionage"</b>	<b>Business Management Strategies "Gathering Intelligence"</b>
<i>13.1 A general emoluments to employ spies and is thus ignorant of the enemy's situations, he is, of course, completely devoid of humanity.</i>	Ignorant of the competitor's situations is danger that may lead to waste resources.
<i>13.2 An able general achieves extraordinary accomplishments because they can foresee the development of war. Such foreknowledge cannot be obtained from ghosted and spirits, it must be obtained from the people who clearly know the enemy's situations.</i>	Achieve extraordinary accomplishments by good management of people who clearly understand the market situation.
<i>13.3 When you use the five kinds of secret agents simultaneously, the enemy cannot know the principle of their operation. It is divinely intricate and becomes the greatest magic weapon for the sovereign to defeat the enemy.</i>	Use many ways of gathering information from the market, this will help to hide you intention from competition, help to make wise decision.
<i>13.4 There is no place where espionage is possible.</i>	Information gathering is always possible.
<i>13.5 You must know and instruct your spies to investigate names etc., in details.</i>	Detail information of the market is essential.
<i>13.6 You must ascertain those enemy spies who have been sent to conduct espionage against you. Bribe them, exhort and release them to serve you. At last, they will become converted spies and work for you.</i>	Recognise and try to recruit talented people to work for your company.
<i>13.7 Use the intelligent men as spies and achieve great tasks.</i>	Recognise talented people achievement in your company to achieve great task.

<b>Statements</b>	<b>Responses</b>	<b>Mean</b>
13.1	23	3.13
13.2	23	3.26
13.3	23	2.91
13.4	23	2.87
13.5	23	3.26
13.6	23	2.96
13.7	23	3.65

*Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance*



These business management strategies for *gathering intelligence* based on Sun Tzu's The Art of War are 3.2 in average which is slightly more than the "importance" ranking position. This ranking implies that Sun Tzu's wisdom in this Book was generally used and adopted as Chinese business and management strategies in *gathering intelligence*.

This Book had a fair response of importance. To be successful, it is essential to have a better understanding of the objectives, resources and activities of the competitors, customers and constituents. Understanding the competitors' business strategies, companies can avoid direct attacks or prepare for solutions. In knowing the customers' needs, companies can also easily fulfil the requirements and increase the market share.

To summarise these essential strategies for business and management excellence, the following points are identified:

1. Ignorant of the competitor's situations is danger that may lead to waste resources. (13.1)
2. Achieve extraordinary accomplishments by good management of people who clearly understand the market situation. (13.2)
3. A smart executive should try to obtain that critical and useful information of competitors; for instance, the objectives, resources, and activities. He knows the details of the competition and constituencies, further he win because he confuses the situation by providing some misleading information about his own objectives, resources, and activities.
4. This critical information or intelligence comes from people who have first hand information or knowledge of the competition.
5. Use many ways of gathering information from the market, this will help to hide you intention from competition, helps to make wise decision. (13.3)

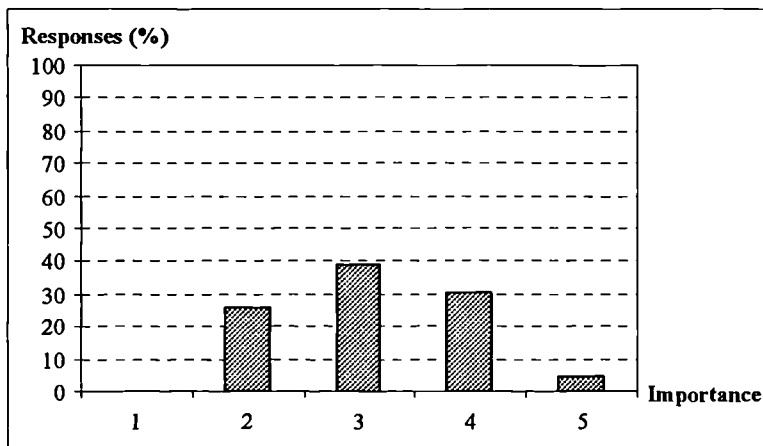
6. Intelligence information may come from difference sources: internal sources of information of the competitors, counter-intelligence from both sides and internal intelligence within the company
7. Information gathering is always possible. (13.4)
8. Detail information of the market is essential. (13.5)
9. Recognise and try to recruit the talented people to work for your company. (13.6)
10. Recognise talented people's achievement in your company to achieve great task. (13.7)

Detailed statistics of Book “Espionage” are provided in the following:

- (i) Statement 13.1 - A general emoluments to employ spies and is thus ignorant of the enemy’s situations, he is, of course, completely devoid of humanity. (Ignorant of the competitor’s situations is danger that may lead to waste resources.)

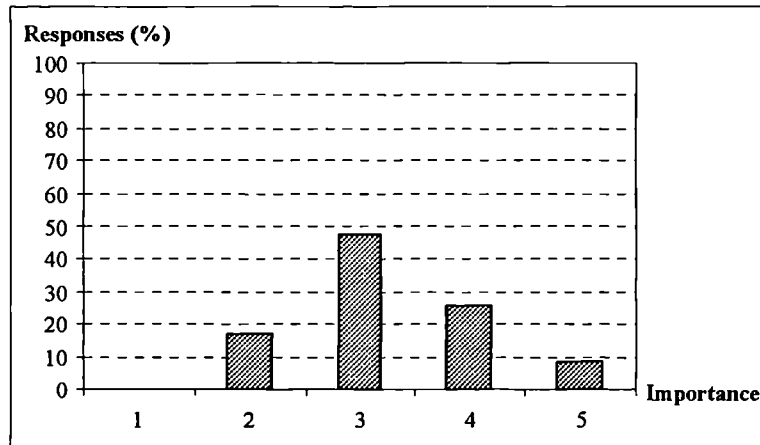
Level of Importance	Responses	Responses (%)
1	0	0
2	6	26
3	9	39
4	7	30
5	1	4

*5 levels of importance: 1 is the least importance, and 5 is the most importance*



- (ii) Statement 13.2 - An able general achieves extraordinary accomplishments because they can foresee the development of war. Such foreknowledge cannot be obtained from ghosts and spirits, it must be obtained from the people who clearly know the enemy's situations. (Achieve extraordinary accomplishments by good management of people who clearly understand the market situation.)

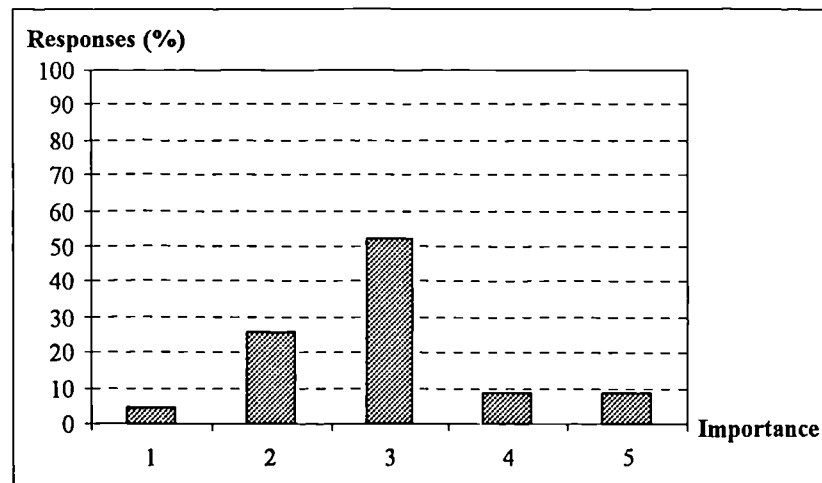
Level of Importance	Responses	Responses (%)
1	0	0
2	4	17
3	11	48
4	6	26
5	2	9



- (iii) Statement 13.3 - When you use the five kinds of secret agents simultaneously, the enemy cannot know the principle of their operation. It is divinely intricate and becomes the greatest magic weapon for the sovereign to defeat the enemy. (Use many ways of gathering information from the market, this will help to hide your intention from competition, help to make wise decision.)

Level of Importance	Responses	Responses (%)
1	1	4
2	6	26
3	12	52
4	2	9
5	2	9

5 levels of importance: 1 is the least importance, and 5 is the most importance

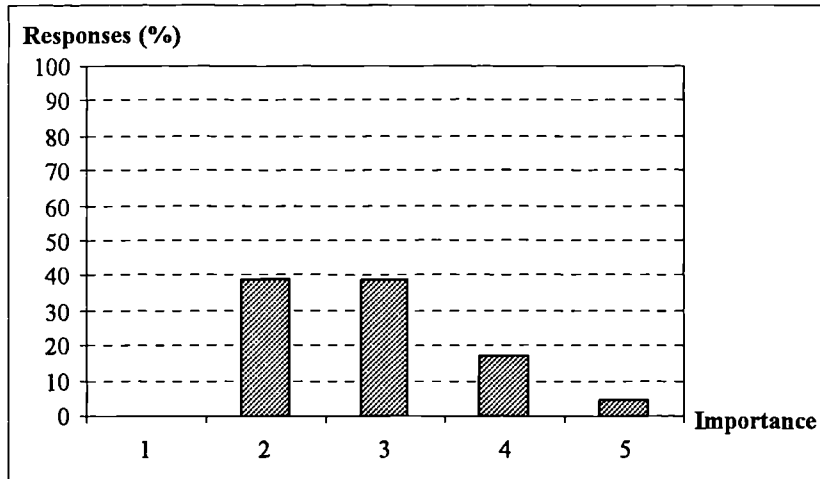




- (iv) Statement 13.4 - There is no place where espionage is not possible.  
(Information gathering is always possible.)

Level of Importance	Responses	Responses (%)
1	0	0
2	9	39
3	9	39
4	4	17
5	1	4

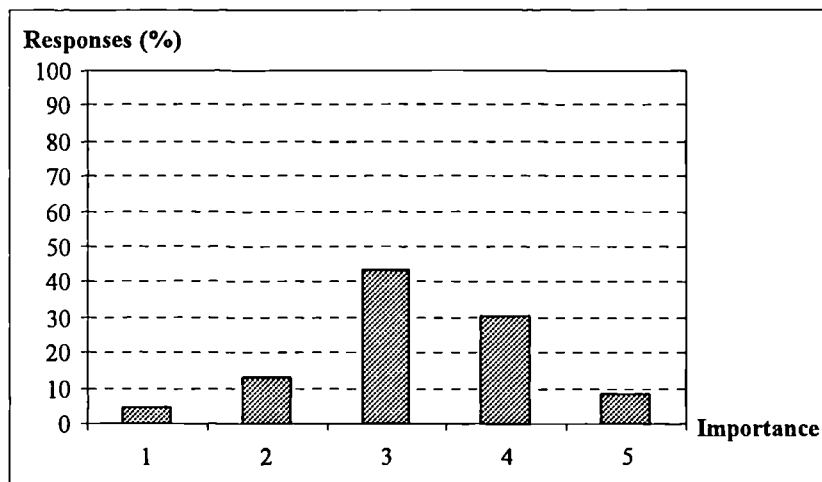
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Statement 13.5 - You must know and instruct your spies to investigate names etc., in details. (Detail information of the market is essential.)

Level of Importance	Responses	Responses (%)
1	1	4
2	3	13
3	10	43
4	7	30
5	2	9

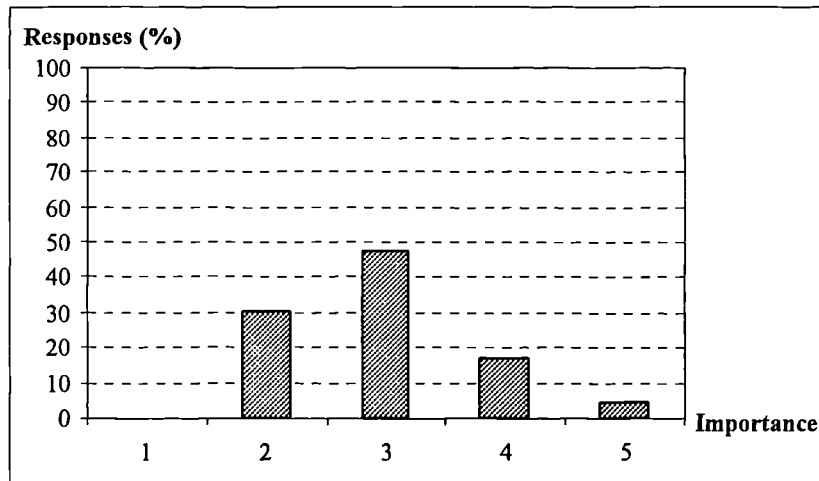
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Statement 13.6 - You must ascertain those enemy spies who have been sent to conduct espionage against you. Bribe them, exhort and release them to serve you. At last, they will become converted spies and work for you. (Recognise and try to recruit talented people to work for your company.)

Level of Importance	Responses	Responses (%)
1	0	0
2	7	30
3	11	48
4	4	17
5	1	4

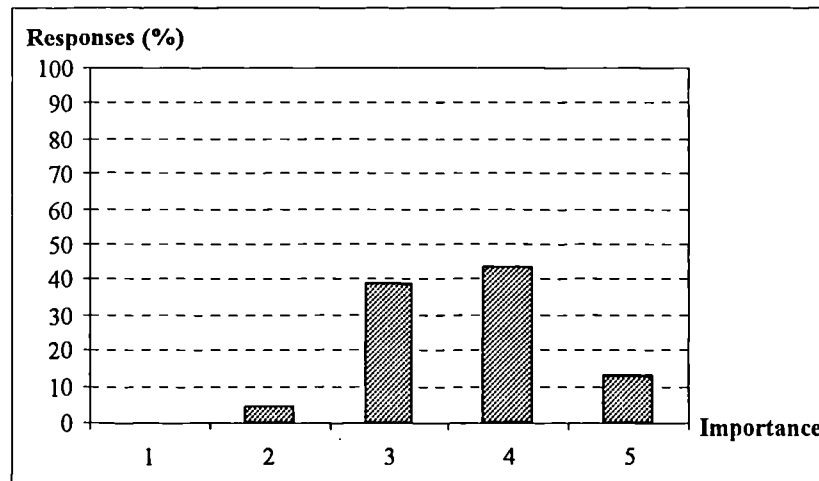
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vii) Statement 13.7 - Use the intelligent men as spies and achieve great tasks. (Recognise talented people achievement in your company to achieve great task.)

Level of Importance	Responses	Responses (%)
1	0	0
2	1	4
3	9	39
4	10	43
5	3	13

5 levels of importance: 1 is the least importance, and 5 is the most importance



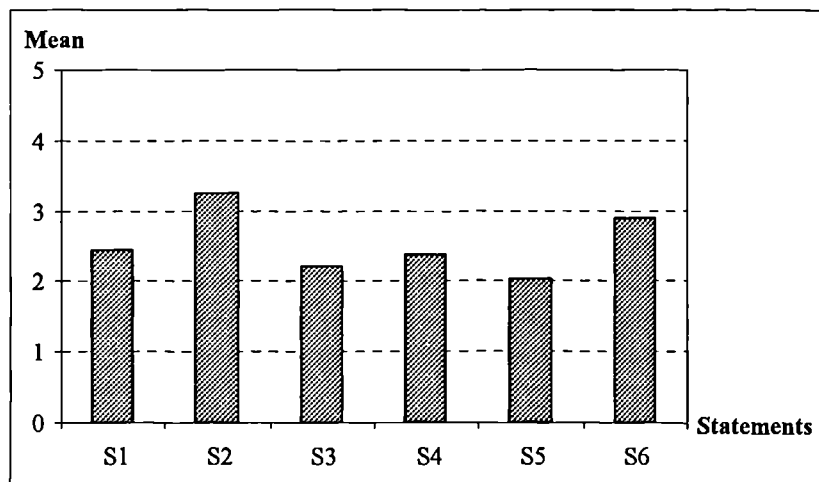
## 5. Survey on Business Management Strategies using the Thirty-six Strategies

### Finding 1. Strategies for Ensuring Win

<i>Strategies for Ensuring Win</i>
<i>S1. Cross the sea by deceiving the sky.</i>
<i>S2. Besiege Wei to rescue Zhao.</i>
<i>S3. Kill with a borrow knife.</i>
<i>S4. Relax and wait for the adversary to tire himself out.</i>
<i>S5. Loot a burning house.</i>
<i>S6. Make a feint to the east while attacking in the west.</i>

Strategies	Responses	Mean
S1	23	2.43
S2	23	3.26
S3	23	2.22
S4	23	2.39
S5	23	2.04
S6	23	2.91

*Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance*



These business management strategies for strategies for ensuring win based on The “Thirty-six Strategies” are 2.6 in average which is in between the “not importance” and “importance” ranking positions. This comparatively low ranking implies that the “Thirty-six Strategies” approaches for ensuring win were not widely adopted as Chinese business management strategies.

Statement 2 “Besiege Wei to rescue Zhao” and statement 6 “Make a feint to the east while attacking in the west” managed to get higher points compared with the others because as both of them focusing on the efficiency and probability of

success. Both strategies spread misleading information about attacking constituents giving better chance of winning another competitions. These also confirm with Sun Tzu's philosophy of employing intelligence and talent people collecting market information to ensure win. During the competitive situation, the executive should be familiar with the objectives and resources before engaging in any competition. These strategies of ensuring win would find useful when competing in business. These should be accomplished by proper staff training, better resources provisions, staff morale, better leadership, etc.,

Statement 1, 3, 4, and 5 were having relatively low scores and found to be less popular to the respondents. These strategies give people the feelings that they are more on the deceiving people's side.

To summarise these essential strategies for business and management excellence, the following points are identified:

*Strategy 1. Cross the sea by deceiving the sky.*

In business competition situations, people may try to create an atmosphere or impression of familiarity situation to their competitors, within which they are actually manoeuvring that are different to the real situations. However, this practice will give people the bad feelings of dishonesty and immorality. About 52% of the respondents ranked this strategy "not importance" or less.

*Strategy 2. Besiege Wei to rescue Zhao.*

During business competition, a strong company is about to take over a weaker company. However a third company can gain a good reputation by attacking the aggressor in apparent behave as the defender, and also eventually absorb the weakened defender to boot, without incurring the same opprobrium that would be levelled at outright aggression. At least, apparently the company is seen to be righteous and helpful to others. About 78% of the respondents ranked this strategy "importance" or above.

*Strategy 3. Kill with a borrow knife.*

When a company in a business conflict is weakening, that company may draw some other companies into the competition, thus delivering a fight back while conserving own strength. Eventually the enemy may be defeated and destroyed. Then that company may take over the whole business. The practice is not benevolent. About 78% of the respondents disagreed with this strategy and ranked "not importance" or less.

*Strategy 4. Relax and wait for the adversary to tire himself out.*

Before starting any business competition, the company tries to preserve the energy while the opponents are carrying out some things else of no importance hoping that the opponents energy are exhausted. This approach is shameful because of defeating someone in an unfair situation. About 52% of the respondents disagreed with this strategy and ranked it "not importance" or less. About 35% of them ranked this strategy "importance" probably because they considered that people should try to get hold of

opportunities in business. However, they can still be able to manage the activities in a more proper way.

*Strategy 5. Loot a burning house.*

Some company may use other companies' troubles as opportunities to gain something. This practice is immoral and shameful. On the other hand that company should try to help the opponent first and gain reputation and trust for the company. About 69 % of the respondents disagreed with this strategy and ranked it "not important" or less. Only 30% ranked it "importance" or above.

*Strategy 6. Make a feint to the east while attacking in the west.*

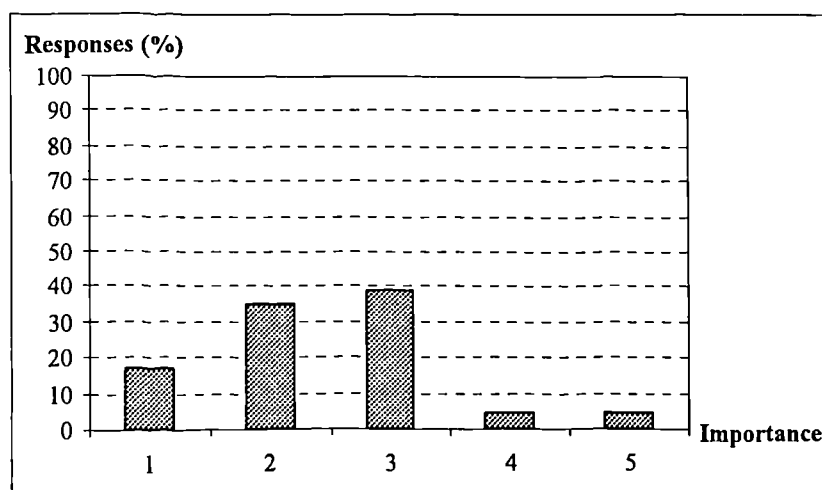
During competitive situation, company spreads misleading information about intentions, or makes false suggestions, in order to induce the opponent to concentrate his defences on one front and thereby leave another front vulnerable to attack. About 70% of the respondent considered this strategy "importance" or above. The high ranking of this strategy over the others probably due to the reason that it gives people the impression that it is a proper strategy and helps improve the efficiency and effectiveness of works.

Detailed statistics of Strategies for Ensuring Win are provided in the following:

- (i) Strategy S1. - Cross the sea by deceiving the sky. (To hide secrets in the obvious to avoid detection.)

Level of Importance	Responses	Responses (%)
1	4	17
2	8	35
3	9	39
4	1	4
5	1	4

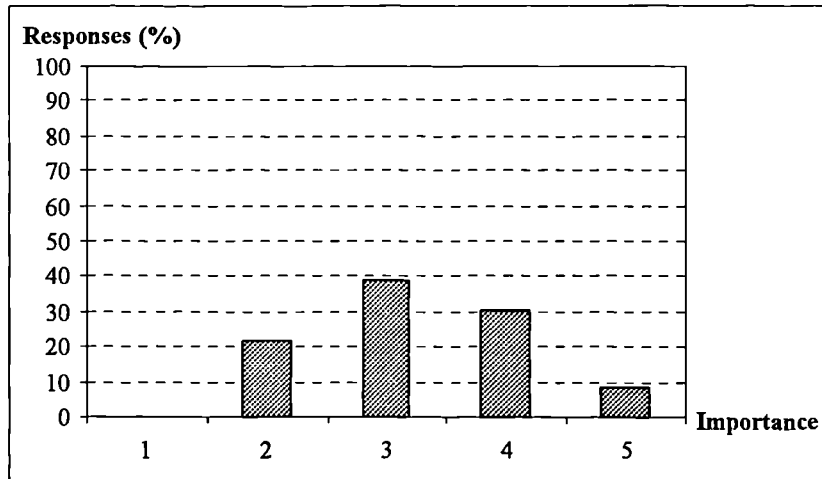
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Strategy S2. - Besiege Wei to rescue Zhao. (To attack an adversary's weakest point (e.g. attack an adversary's lieutenant), divide and rule.)

Level of Importance	Responses	Responses (%)
1	0	0
2	5	22
3	9	39
4	7	30
5	2	9

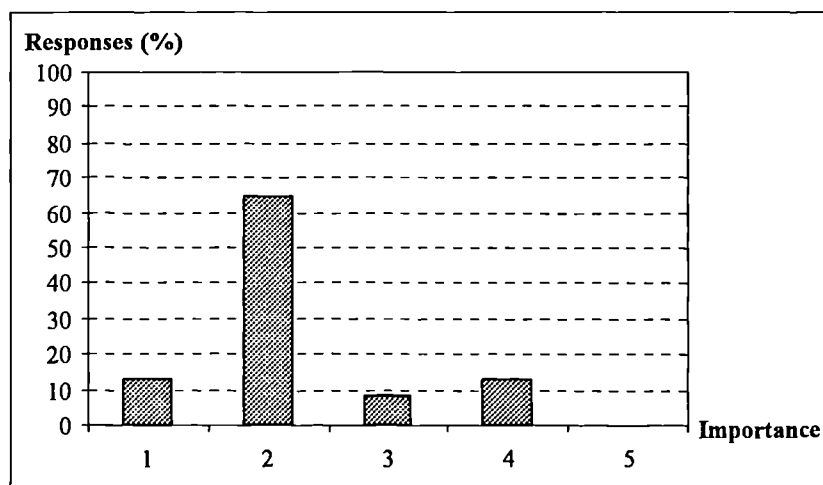
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Strategy S3. - Kill with a borrow knife. (To make use of someone else's resources to do your job.)

Level of Importance	Responses	Responses (%)
1	3	13
2	15	65
3	2	9
4	3	13
5	0	0

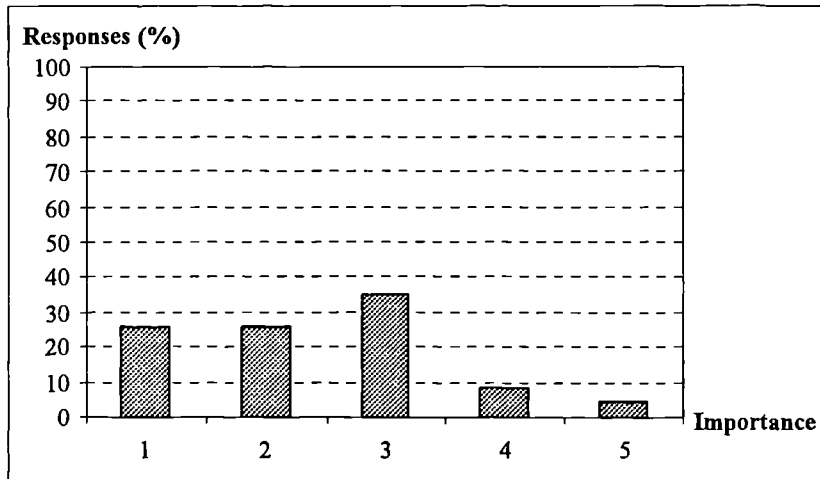
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Strategy S4. - Relax and wait for the adversary to tire himself out. (To use patience to wear down the adversary)

Level of Importance	Responses	Responses (%)
1	6	26
2	6	26
3	8	35
4	2	9
5	1	4

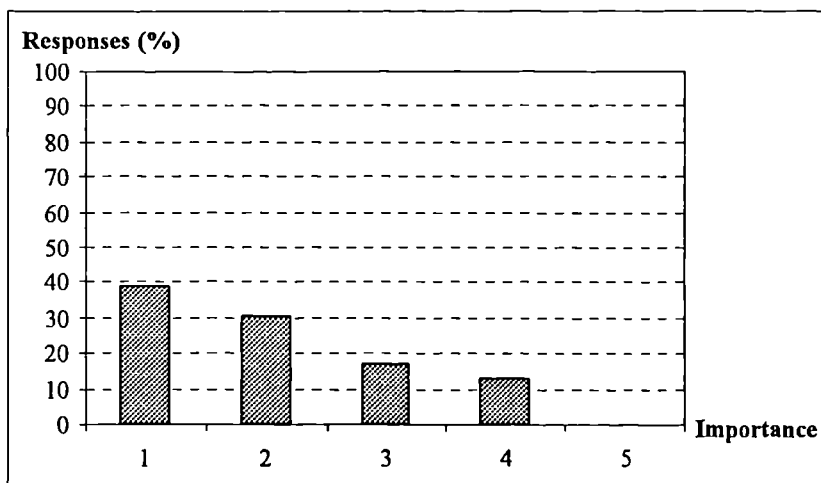
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Strategy S5. - Loot a burning house. (To exploit and capitalise on an opportunity at the expense of your adversary's chaotic situation.)

Level of Importance	Responses	Responses (%)
1	9	39
2	7	30
3	4	17
4	3	13
5	0	0

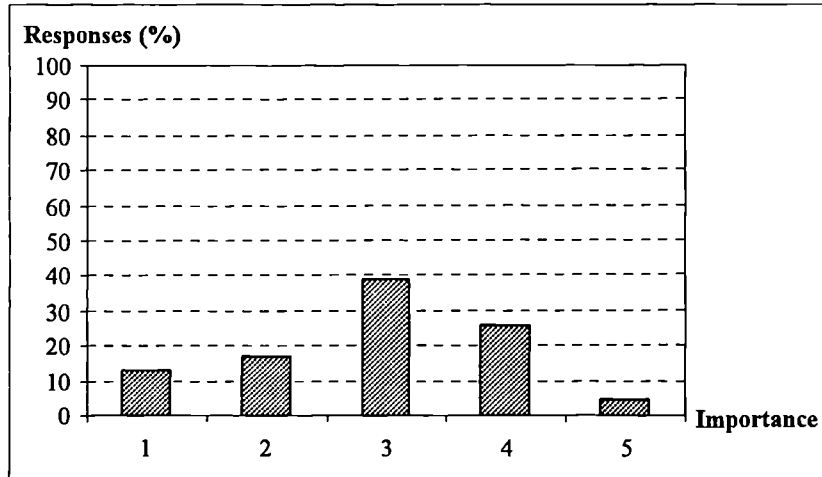
5 levels of importance: 1 is the least importance, and 5 is the most importance



(vi) Strategy S6. - Make a feint to the east while attacking in the west. (To confuse your adversary's command, and mislead your adversary.)

Level of Importance	Responses	Responses (%)
1	3	13
2	4	17
3	9	39
4	6	26
5	1	4

5 levels of importance: 1 is the least importance, and 5 is the most importance



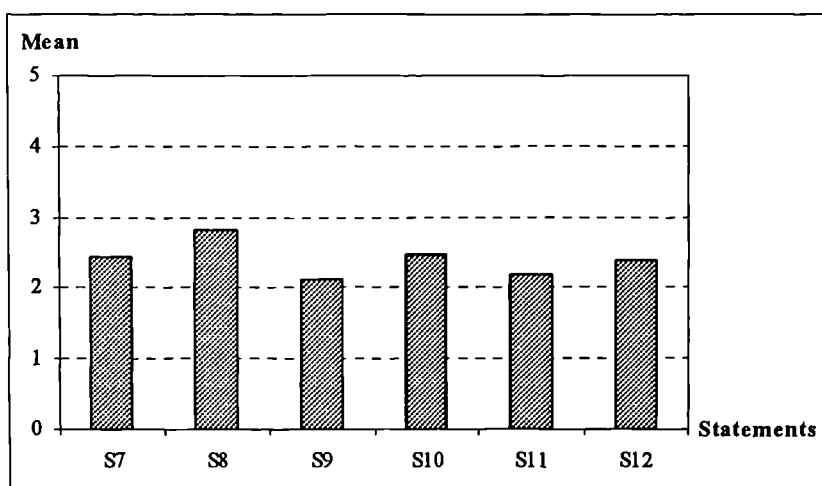


Finding 2. Strategies for Planning of Opportunism

<i>Strategies for Planning of Opportunism</i>
<i>S7. Create something out of nothing.</i>
<i>S8. Pretend to advance down one.</i>
<i>S9. Watch the fire burning from across the river.</i>
<i>S10. Conceal a dagger in a smile.</i>
<i>S11. Sacrifice the plum for the peach.</i>
<i>S12. Take a goat in passing.</i>

Strategies	Responses	Mean
S7	22	2.34
S8	22	2.70
S9	23	2.00
S10	23	1.78
S11	23	2.78
S12	23	2.17

Mean Value is defined by 5 levels of importance: 1 is the least importance, and 5 is the most importance



These business management strategies for strategies for planning of opportunism based on The “Thirty-six Strategies” are 2.4 in average which is in between the “not importance” and “importance” ranking positions. This comparatively low ranking implies that the “Thirty-six Strategies” approaches for planning of opportunism were not widely adopted as Chinese business management strategies.

Statement 8 “Pretend to advance down one” and Statement 11 “Sacrifice the plum for the peach” managed to score higher comparing with the others because these strategies focus on proper planning and execution of strategy without causing someone disadvantage.

To summarise these essential strategies for business and management excellence, the following points are identified:

*Strategy 7 Create something out of nothing*

During business competition, a false idea is created or being conveyed in the mind of the opponent as a reality. In fact the company does not have what it does. The mean score for this strategy was 2.34. About 59% of the respondents disagreed with this strategy and ranked it “not importance” or less. This strategy gives people the impression of creating something out of nothing is rather improper and dishonest.

*Strategy 8. Pretend to advance down one.*

In business operation, a company sets up a false situation distracting opponent's attention, then penetrate the opponent's market without notice. The mean score for this strategy was 2.70. This capturing the market without notice considered by the respondents as “importance” or more by 64%. This may be considered as a useful tactic in business competition.

*Strategy 9. Watch the fire burning from across the river*

In business competition, a company calmly looks on when adversary's experience troubles, waiting for them to be out of business without offering any help. Average score for this strategy was only 2.00. About 79% of the respondents disagreed with this strategy and ranked “not importance” or less. This strategy is immoral and not righteous. Probably most of the respondents believed that although engaging in business war, offering help to the competitors today may eventually receive help from them in the future.

*Strategy 10. Conceal a dagger in a smile.*

In business competition, companies ingratiates with competitors, with the objective of gaining their trust and confidence. Once their objectives are achieved, they move against them in secret. The mean score for this strategy was about 1.78, which was the lowest among all strategies. About 82% of the respondents disagreed with this strategy and ranked “not importance” or less. The disagreement on this strategy in business revealed that it is immoral and not righteous. Chinese business and management practices believe in words and deeds, sincere and co-operation. Nevertheless, business competitors should always be alert of those people whom might use some improper tricks in making business.

*Strategy 11. Sacrifice the plum for the peach.*

In business operations, some companies may have to scarify in order to achieve a greater goal. The mean score for this strategy was 2.78. About 70% of the respondents agreed with this strategy and ranked “importance” or above. Most of the respondents reckon honesty is vital and important in business. For whatever reasons, it is improper to substitute one thing for another unless the products or services to be replaced are far superior to the original one. In that case the customers will believe that the replacement was an improvement of what had been provided previously. Chinese business and management practices believe in words and deeds, sincere and honesty.

*Strategy 12. Take a goat in passing.*

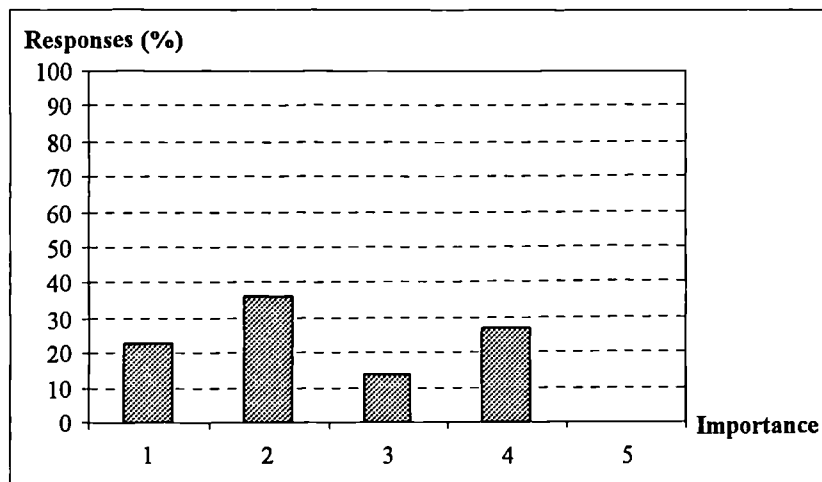
In business, some companies take advantage of any opportunity, however small, and avail themselves of any profit, however light. They behaved so calmly and naturally, as they had been doing a normal and proper thing, that their competitors never noticed them. The average score for this strategy was 2.17. About 61% of the respondents disagreed with this strategy and ranked "not importance" or less. Again it is improper to take advantage on the others, both immoral and discourtesy.

Detailed statistics of Strategies for Planning of Opportunism are provided in the following:

- (i) Strategy S7. - Create something out of nothing. (Turn something that was not sustained into reality.)

Level of Importance	Responses	Responses (%)
1	5	23
2	8	36
3	3	14
4	6	27
5	0	0

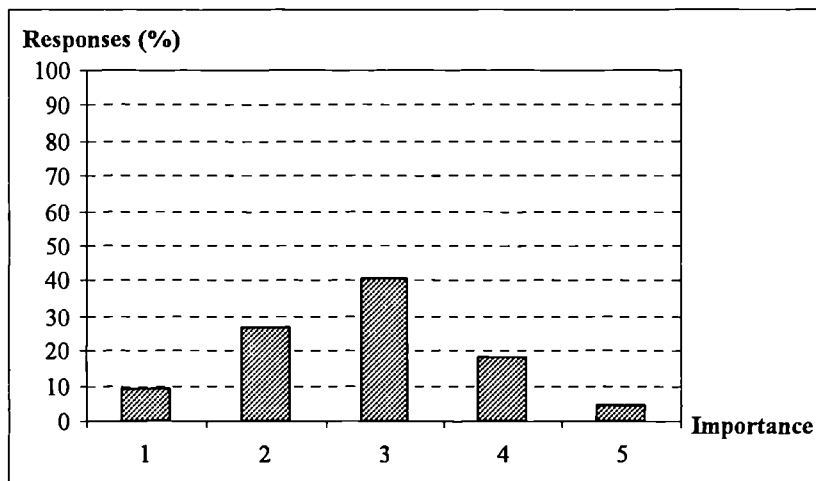
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Strategy S8. - Pretend to advance down one. (To distract the enemy by making a deliberate gesture to attack in one direction while attacking in another where the enemy does not defend.)

Level of Importance	Responses	Responses (%)
1	2	9
2	6	27
3	9	41
4	4	18
5	1	5

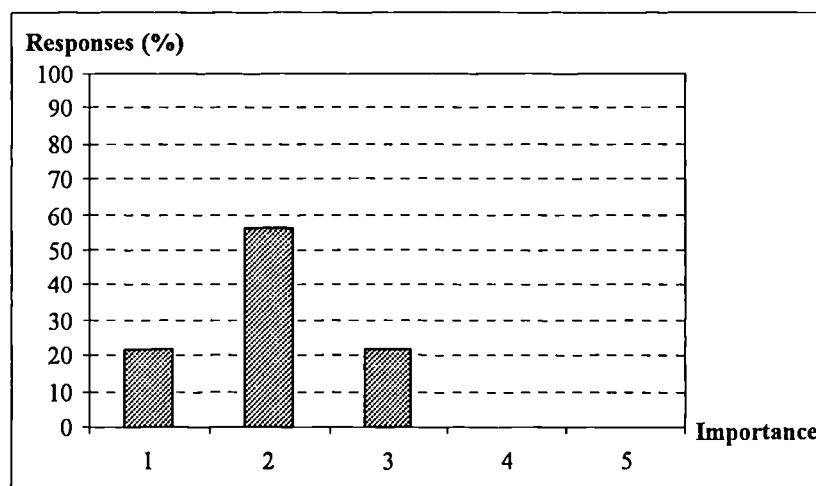
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Strategy S9. - Watch the fire burning from across the river. (To allow your adversaries to fight the enemy themselves while you rest and observe, and defeat the exhausted survivor.)

Level of Importance	Responses	Responses (%)
1	5	22
2	13	57
3	5	22
4	0	0
5	0	0

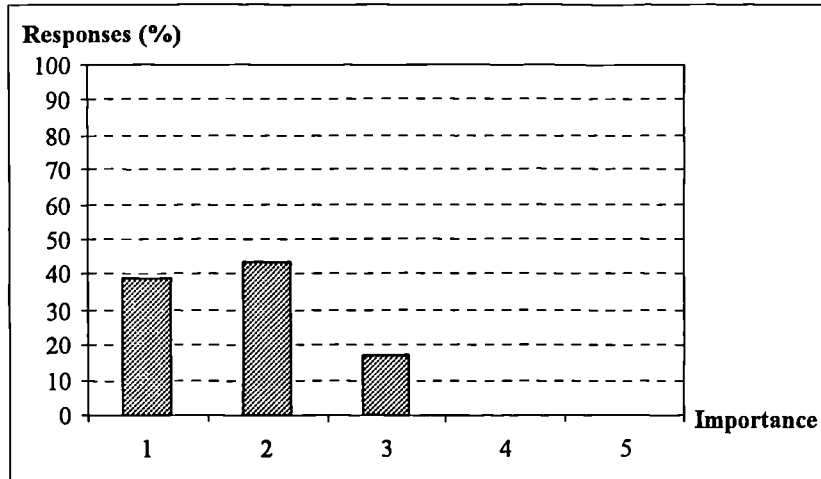
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Strategy S10. - Conceal a dagger in a smile. (To make your adversary relax and unaware of your enmity, hide hostility under friendliness.)

Level of Importance	Responses	Responses (%)
1	9	39
2	10	43
3	4	17
4	0	0
5	0	0

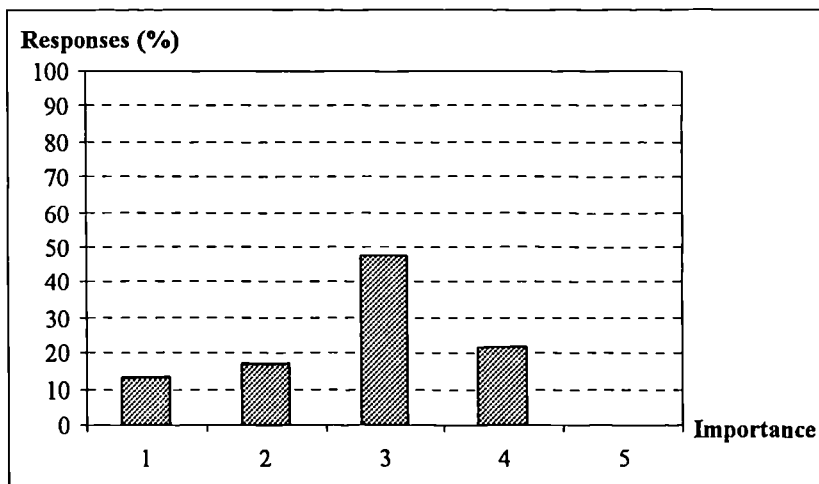
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Strategy S11. - Sacrifice the plum for the peach. (If need be, sacrifice the less important in order to preserve the vital; substitute one thing for another.)

Level of Importance	Responses	Responses (%)
1	3	13
2	4	17
3	11	48
4	5	22
5	0	0

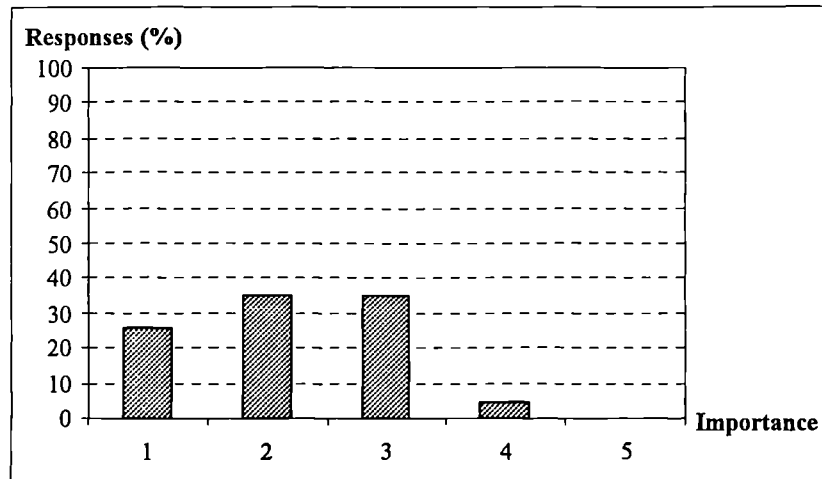
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Strategy S12. - Take a goat in passing. (To capitalise on your adversary's negligence or incompetence.)

Level of Importance	Responses	Responses (%)
1	6	26
2	8	35
3	8	35
4	1	4
5	0	0

*5 levels of importance: 1 is the least importance, and 5 is the most importance*

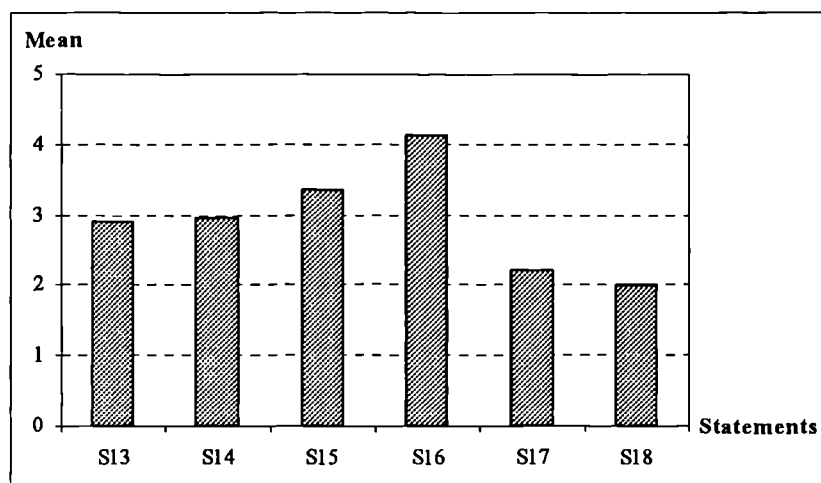


## Finding 3. Strategies for Waging War

<i>Strategies for Waging War</i>
<i>S13. Beat the grass to startle the snake.</i>
<i>S14. Raise a corpse from the dead.</i>
<i>S15. Lure the tiger out of the mountain.</i>
<i>S16. Let the adversary off in order to snare him.</i>
<i>S17. Cast a brick to attack a jade.</i>
<i>S18. To catch bandits, Nab their ringleader first.</i>

Strategies	Responses	Mean
S13	23	2.21
S14	23	2.48
S15	23	2.91
S16	23	2.96
S17	23	3.52
S18	23	3.52

Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance



These business management strategies for strategies for waging war based on The “Thirty-six Strategies” are 2.9 in average, which is close to “important” ranking position. This comparative higher ranking implies that the “Thirty-six Strategies” approaches for planning of opportunism were adopted as Chinese business management strategies.

*Strategy 13. Beat the grass to startle the snakes*

In business competition situations, when opponents are reserved and unfathomable, companies create some sort of stir to see how they will react. The average score for this strategy was 2.21. About 59% of the respondents considered this was not a good strategy in waging business war and ranked “not importance” or less. In reality, business strategy should be kept secret and not alert the competitors.

*Strategy 14. Raise a corpse from the dead.*

In business competitive situations, companies do not use everyone else is using, but use what others are not using. This can mean reviving something that has dropped out of use through neglect, or finding uses for things that had hitherto been ignored or considered useless. The mean score for this strategy was 2.48. About 61% of the respondents considered this strategy “not importance” or less. This could mean that most respondents believed that use what others aren't using might lower the quality standard and therefore consider improper.

*Strategy 15. Lure the tiger out of the mountain*

In business competition situations, the companies don't go into the fastness of powerful opponents' territory, but induce them to come out of their stronghold. In doing so, the companies have the opportunity of attacking the opponents' weak points or territory. The mean score for this strategy was 2.91 and that being considered reasonably close to the mean score of “importance”. About 65% of the respondents agreed with this strategy and ranked “importance” or above.

*Strategy 16. Let the adversary off in order to snare him.*

In business competitive situations, the defeated opponents may become the good partners and extremely useful to the future development of the company. On the other hand, if the situation is not handled properly, they may turn back again and strike desperately. After they scatter and lose their energy, then they can be taken captive without further violence. It is important to show the executive's wisdom, benevolence and sincere in handling the situation. The mean score for this strategy was 2.96 and that being considered reasonably close to the mean score of “importance”. About 66% of the respondents agreed with this strategy and ranked “importance” or above.

*Strategy 17. Cast a brick to attack a jade.*

In business competitive situations, the companies present something of superficial or apparent worth to induce opponents to produce something of real worth. The mean score for this strategy was 3.52 and that being considered reasonably high. About 82% of the respondents agreed with this strategy and ranked “importance” or above. In business operation, it is important to show initiatives and positive actions demonstrating the ability and potential of the company. To be able to attract profits would be the added advantage. This strategy show the positive view of respondents in employing strategies in business.

*Strategy 18. To catch bandits, nab their ringleader first.*

In business competitive situations, when the companies confronted with a massive opposition, take aim at its central leadership. The mean score for this strategy was 3.52 and that being considered reasonably high. About 88% of the respondents agreed with this strategy and ranked “importance” or above. In business operation, it is important to have the business focus



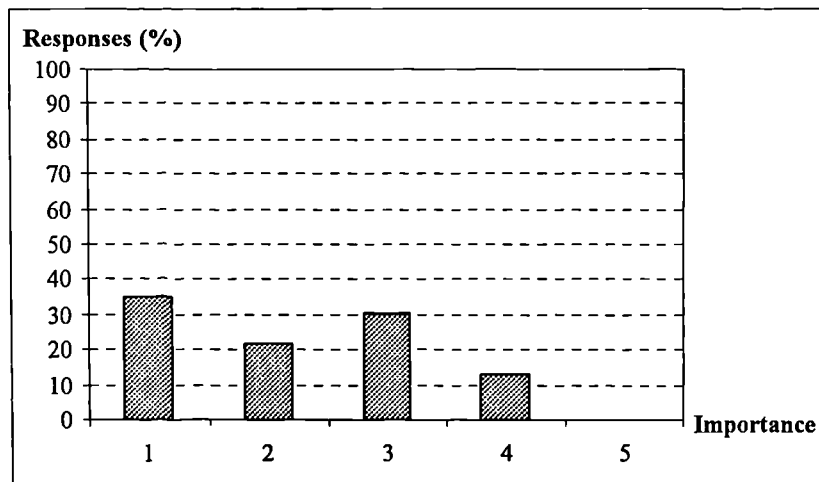
and vision; otherwise it may loose attention easily. This strategy show the positive view of respondents in employing strategies in business.

Detailed statistics of Strategies for Waging War are provided in the following:

(i) Strategy S13. - Beat the grass to startle the snake. (Do not tip off your adversary.)

Level of Importance	Responses	Responses (%)
1	8	35
2	5	22
3	7	30
4	3	13
5	0	0

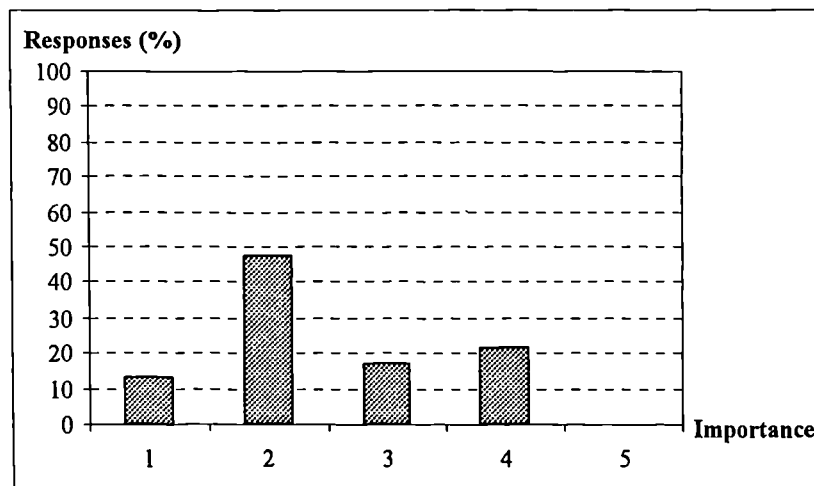
5 levels of importance: 1 is the least importance, and 5 is the most importance



(ii) Strategy S14. - Raise a corpse from the dead. (To use something dead to achieve your own ends.)

Level of Importance	Responses	Responses (%)
1	3	13
2	11	48
3	4	17
4	5	22
5	0	0

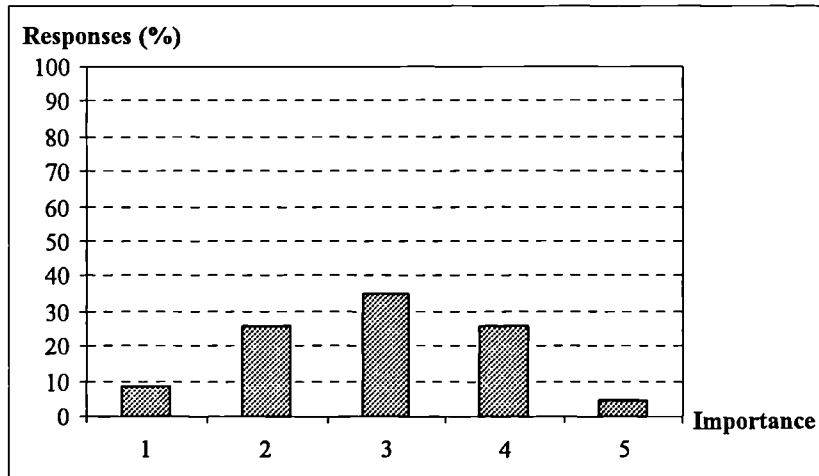
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Strategy S15. - Lure the tiger out of the mountain. (To have your adversaries deploy their strongest element away from their defence base.)

Level of Importance	Responses	Responses (%)
1	2	9
2	6	26
3	8	35
4	6	26
5	1	4

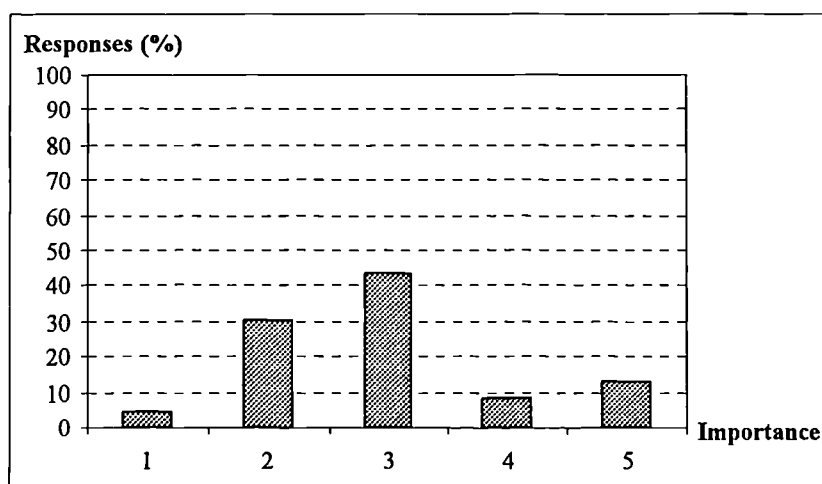
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Strategy S16. - Let the adversary off in order to snare him. (Do not arouse your adversary's spirit to fight back.)

Level of Importance	Responses	Responses (%)
1	1	4
2	7	30
3	10	43
4	2	9
5	3	13

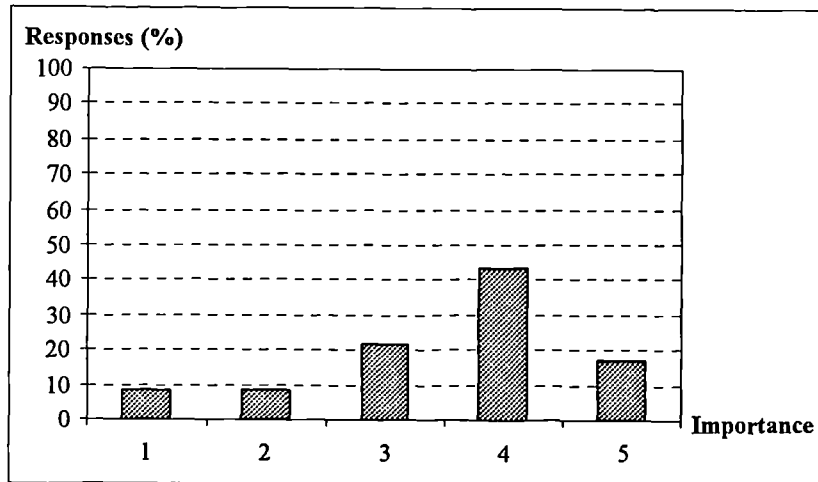
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Strategy S17. - Cast a brick to attack a jade. (To use a bait (like alike) to catch something big.)

Level of Importance	Responses	Responses (%)
1	2	9
2	2	9
3	5	22
4	10	43
5	4	17

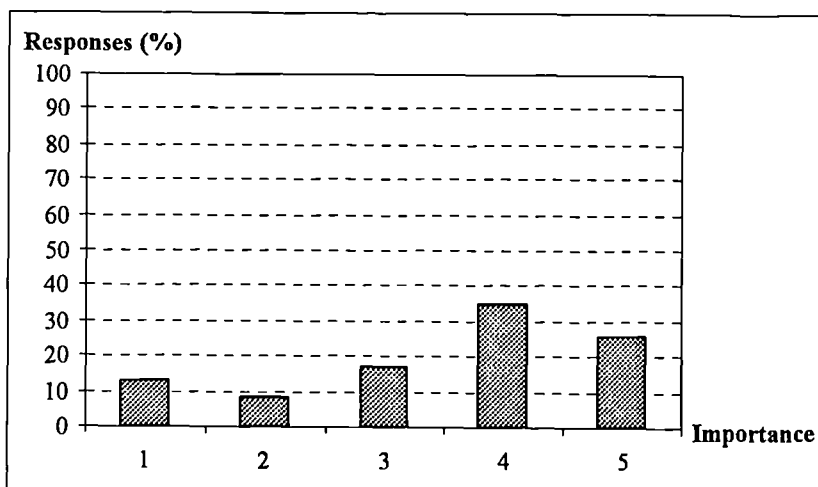
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Strategy S18. - To catch bandits, nab their ringleader first. (Shoot at the horse first in order to shoot the rider.)

Level of Importance	Responses	Responses (%)
1	3	13
2	2	9
3	4	17
4	8	35
5	6	26

5 levels of importance: 1 is the least importance, and 5 is the most importance

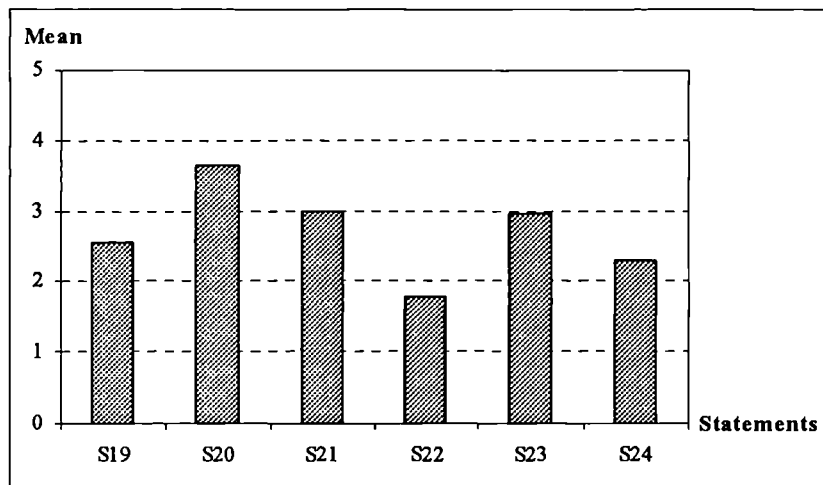


## Finding 4. Strategies for Confusing Enemy

<i>Strategies for Confusing Enemy</i>
<i>S19. Remove the fire from under the cauldron.</i>
<i>S20. Catching fishes from troubled water.</i>
<i>S21. The cicada sheds its shells.</i>
<i>S22. Fasten the door to catch a thief.</i>
<i>S23. Be friend a distant state while attacking a neighbouring state.</i>
<i>S24. Borrow a safe passage to conquer the Kingdom of Guo.</i>

Strategies	Responses	Mean
S19	23	3.34
S20	23	2.78
S21	23	3.00
S22	23	4.13
S23	23	2.39
S24	23	2.30

*Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance*



These business management strategies for confusing enemy based on The “Thirty-six Strategies” score 3.0 in average that falls in the “importance” ranking position. This comparatively higher ranking implies that the “Thirty-six Strategies” approaches for confusing enemy could be adopted as Chinese business management strategies.

*Strategy 19. Remove the fire from under the cauldron.*

During business competitive situation, companies cannot handle an adversary in head-on competition. They can still win by undermining the opponents’ resources and morale. The mean score for this strategy was 3.34. About 87% of the respondent considered this strategy “importance”

or above. The high ranking of this strategy over the others probably due to the reason that it gives people the impression that it is a proper strategy and demonstrate the good strategic planning and determination of the executive.

*Strategy 20. Catching fishes from troubled water.*

During competitive situation, the opponents were confused about their direction and goal of their business, and then other companies may take this opportunity and get advantage. It may mean taking over business uncommitted or disenfranchised. The mean score for this strategy was 2.78. About 66% of the respondents considered this strategy "importance" or above. This strategy demonstrates the flexibility in policy, speedy and positive action of the companies.

*Strategy 21. The cicada sheds its shells*

During competitive situation, companies might have to leave behind false appearances created for strategic purposes. Like the cicada shell, the facade remains intact, but the real action is now elsewhere. The mean score for this strategy was 3.00. About 61% of the respondent considered this strategy "importance" or above. The high ranking of this strategy probably it gives people the impression of a strategy confusing enemy without causing harm to their opponents.

*Strategy 22. Fasten the door to catch a thief.*

During competitive situation, companies might catch-invading predators by not letting them get away. You do not let them get back to their homeland with what they can get from you. If they escape, you don't chase them, because you will thereby fall prey to the enemy's plot to wear you. The mean score for this strategy was 4.13. About 90% of the respondent considered this strategy "very importance" or above. The very high ranking of this strategy probably it gives people the impression of a strategy confusing enemy without causing harm to their opponents.

*Strategy 23. Be friend a distant state while attacking a neighbouring state.*

During business competitive situation, companies might employ business management strategies for alliances making allies at a distance, attacking nearby. When they are more vulnerable to those close by than those far away, they can defend themselves by keeping the opponents around them off balance. In the meantime they can cut of their field of manoeuvre by securing a broader ring of alliances surrounding them. This strategy can also be interpreted as the immediate problems should be attended first than those of longer term. The mean score for this strategy was 2.39. About 66% of the respondent disagreed with this strategy and ranked "not importance" or less. The high percentage of disagreement with this strategy for alliances reflects the situation that attacking nearby neighbours in Hong Kong is rather uncommon. Contrary Hong Kong business in the past enjoys the free market and fair competition from all over the world. Because of the free market situation together with all fair legislation and policies, Hong Kong becomes one of the most prosperous and economic advanced countries in

the world. On the other hand, if the alternative interpretation of the strategy of solving the most urgent and immediately problem first, then that would lead to a fair and good strategy. That would give people proper guide and helps prioritise their business problems accordingly.

*Strategy 24. Borrow a safe passage to conquer the Kingdom of Guo.*

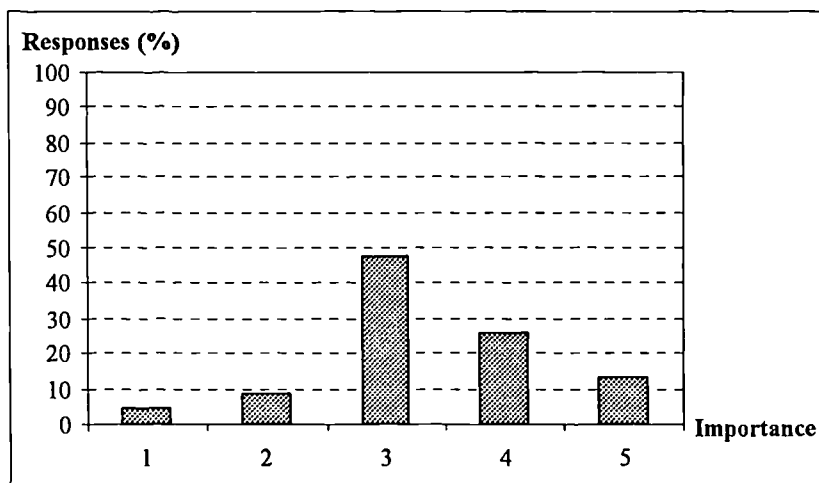
During business competitive situation, companies might use the opportunity of borrowing the right of way of a weak party to attack the strong neighbour. They secure the temporary use of another party's facilities in order to move against a mutual enemy. After having used these facilities to prevail over the enemy, they then turn and use them against the party from whom they borrow them. The mean score for this strategy was 2.30. About 61% of the respondent considered this strategy "not importance" or less and 39% "importance" and above. The high percentage of respondents disagreed with this strategy for alliances reflects the situation that alliance and then attacking in Hong Kong business is rather uncommon. However, there is still a substantiate percentage of respondent agreed on this strategy.

Detailed statistics of Strategies for Confusing Enemy are provided in the following:

- (i) Strategy S19 - Remove the fire from under the cauldron. (To wear down your adversary's resources first before attacking him; get radical measures, effect a permanent cure.)

Level of Importance	Responses	Responses (%)
1	1	4
2	2	9
3	11	48
4	6	26
5	3	13

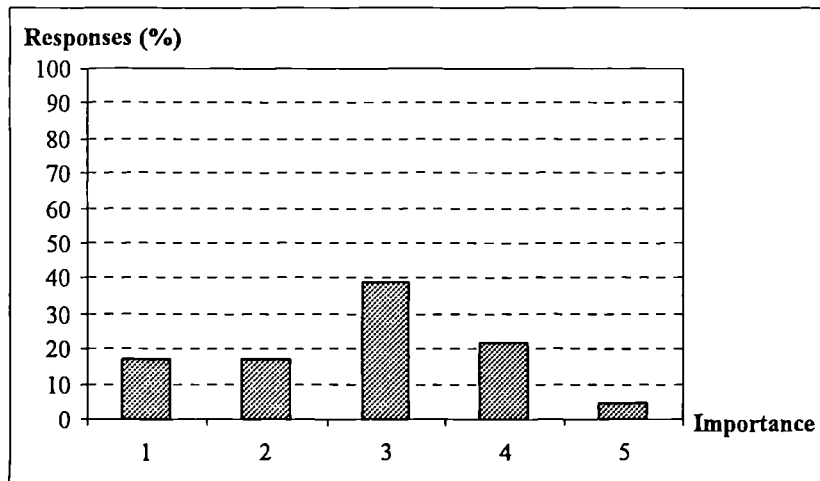
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Strategy S20. - Catching fishes from troubled water. (Fishes feel lost and disillusioned in troubled waters; therefore, they become easy prey. Create a chaotic and panicky situation, the adversary can neither think nor see clearly to respond to the pressing situation.)

Level of Importance	Responses	Responses (%)
1	4	17
2	4	17
3	9	39
4	5	22
5	1	4

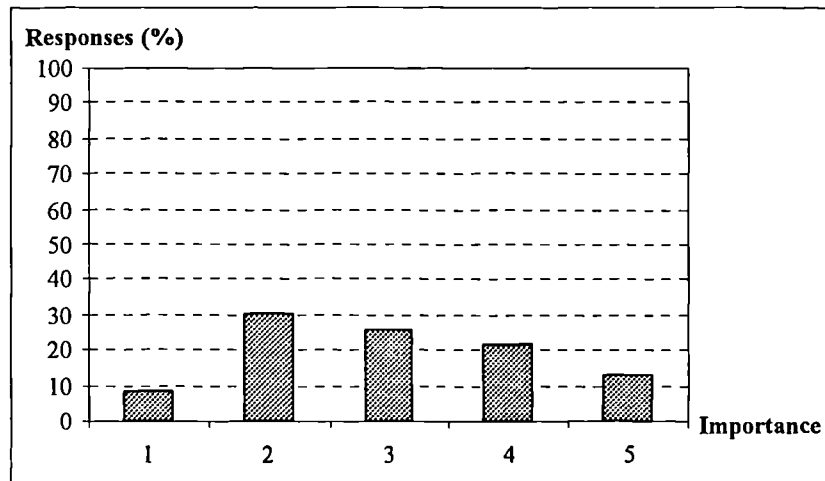
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Strategy S21. - The cicada sheds its shells. (When escaping, do so secretly without making it public. Develop a false stronghold to deter the adversary from attacking, then secretly leaving an empty nest.)

Level of Importance	Responses	Responses (%)
1	2	9
2	7	30
3	6	26
4	5	22
5	3	13

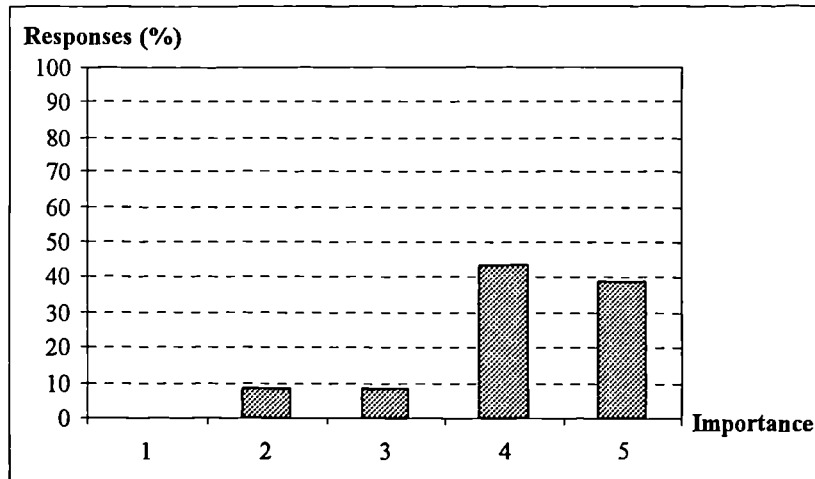
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Strategy S22. - Fasten the door to catch a thief. (To destroy a weak adversary completely, leave no loophole for escape; to use total encirclement. If you allow a weak adversary to escape, he may make a comeback in the future.)

Level of Importance	Responses	Responses (%)
1	0	0
2	2	9
3	2	9
4	10	43
5	9	39

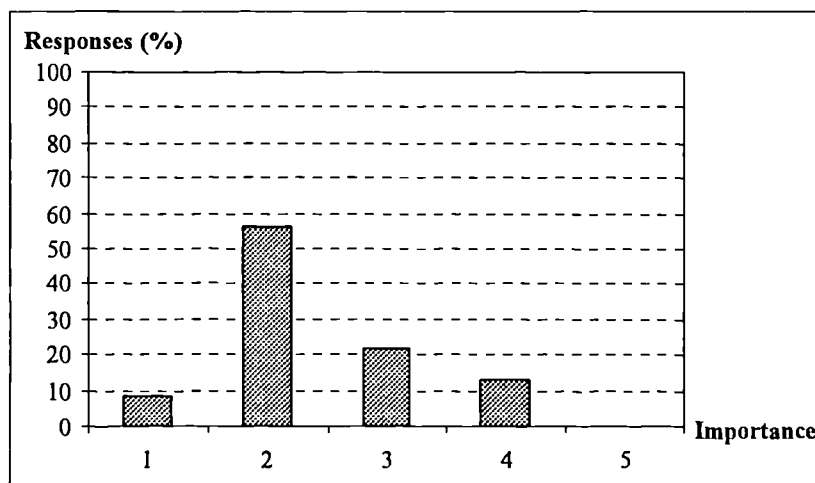
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Strategy S23. - Be friend a distant state while attacking a neighbouring state. (Adversaries at a distance can be a temporal ally. Do not attempt to take on too many enemies at any one time. Another similar idiom states that a far away supply is no good in saving a nearby fire. The immediate danger needs to be taken care of first. If there is no short term, there is no longer term to consider.)

Level of Importance	Responses	Responses (%)
1	2	9
2	13	57
3	5	22
4	3	13
5	0	0

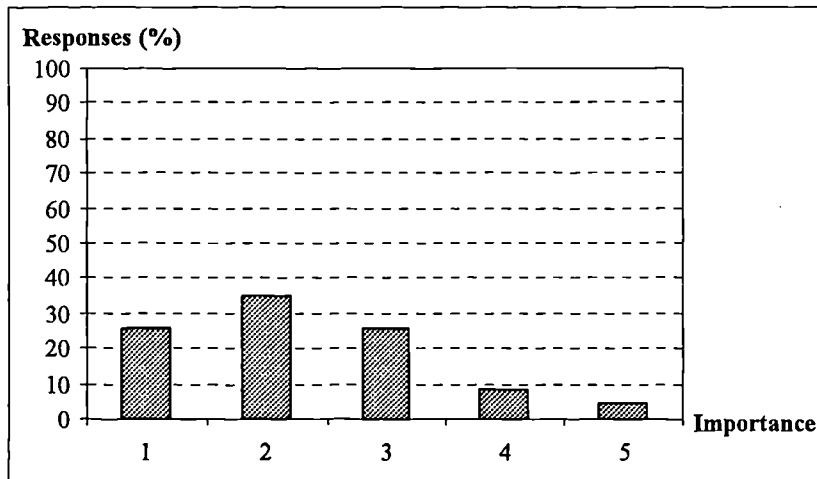
5 levels of importance: 1 is the least importance, and 5 is the most importance





- (vi) Strategy S24. - Borrow a safe passage to conquer the Kingdom of Guo.  
(Help the weak when the weak is not threatening so as to win over their support. Mere talk will not save the weak; action speaks louder than words.)

Level of Importance	Responses	Responses (%)
1	6	26
2	8	35
3	6	26
4	2	9
5	1	4

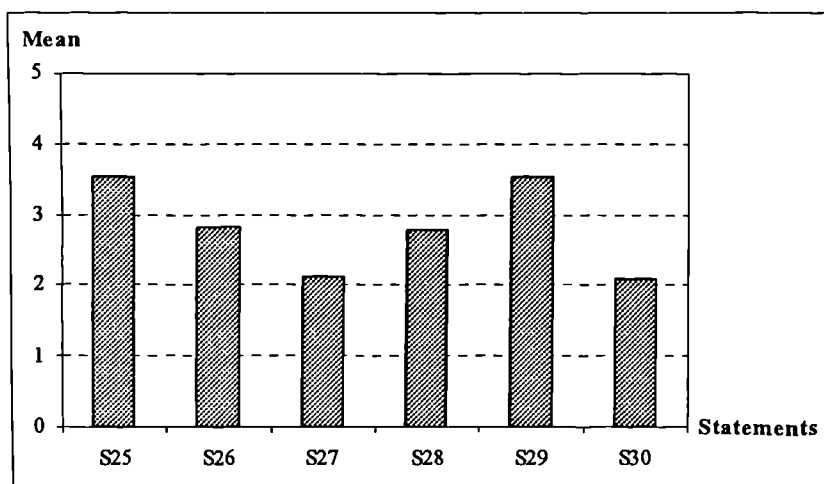


Finding 5. Strategies for Alliances

<i>Strategies for Alliances</i>
<i>S25. Steal the beams and pillars and replace them with rotten timber.</i>
<i>S26. Point at the mulberry but cause the locust.</i>
<i>S27. Play dumb.</i>
<i>S28. Remove the ladder after your ascent.</i>
<i>S29. Decorate the tree with fake blossoms.</i>
<i>S30. Turn yourself into a host from being a guest.</i>

Strategies	Responses	Mean
S25	23	3.52
S26	23	2.13
S27	23	2.83
S28	23	2.13
S29	23	2.57
S30	23	3.65

Mean Value is defined by 5 levels of importance: 1 is the least importance, and 5 is the most importance



These business management strategies for alliances based on The “Thirty-six Strategies” score 2.8 in average that is close to the “importance” ranking position. This ranking implies that these strategies for alliances originated from “Thirty-six Strategies” were less-significantly adopted as Chinese business management practices. However there are two strategies (Strategy 25 and Strategy 30) score over 3.5 that may be considered as useful strategies for alliances.

*Strategy 25. Steal the beams and pillars and replace them with rotten timber*

During business competitive situation, companies might try to recruit top talent from among allies, including them to join the companies concern the mean score for this strategy was 3.52. About 78% of the respondent agreed with this strategy and ranked “importance” or above. The high percentage of agreement with this strategy for alliances reflects the situation that recruiting the best talent people working for the company is quite proper.

Companies should be alert all the time the competitor situation even they are in alliances.

*Strategy 26. Point at the mulberry but cause the locust.*

During business competitive situation, companies might criticise the competitors indirectly, getting the point across without confrontation. It also shows that using some power would win the competition. The mean score for this strategy was 2.13. About 70% of the respondent agreed with this strategy and ranked "importance" or above. The high percentage of agreement with this strategy for alliances reflects the situation that the respondents prefer to win the business through fair competitions but not indirect tactics

*Strategy 27. Play dumb.*

During competitive situation, companies might pretend to be stupid and ignorant, and let the adversary underestimate their capabilities. The mean score for this strategy was 4.13. About 91% of the respondent considered this strategy "very importance" or above. The very high ranking of this strategy probably it gives people the impression of a strategy confusing enemy without causing harm to their opponents.

*Strategy 28. Remove the ladder after your ascent.*

During competitive situation, companies might manoeuvre enemies into a point of no return by baiting them with what look like advantages and opportunities. The mean score for this strategy was 2.13. About 74% of the respondent disagreed with this strategy and considered this strategy "not importance" or less. Probably most of the respondents believed that it is immoral and not righteous to use this strategy.

*Strategy 29. Decorate the tree with fake blossoms.*

During business competitive situation, companies might dazzle and deceive the eyes of opponents using showy business results for the purposes of business alliances, co-operation or manoeuvre. The mean score for this strategy was 2.57. About 52% of the respondent considered this strategy "not importance" or less and 48% "importance" and above. The percentage of respondents agreed with this strategy for alliances although this is not a proper strategy reflects this is still a common situation in Hong Kong business.

*Strategy 30. Turn yourself into a host from being a guest*

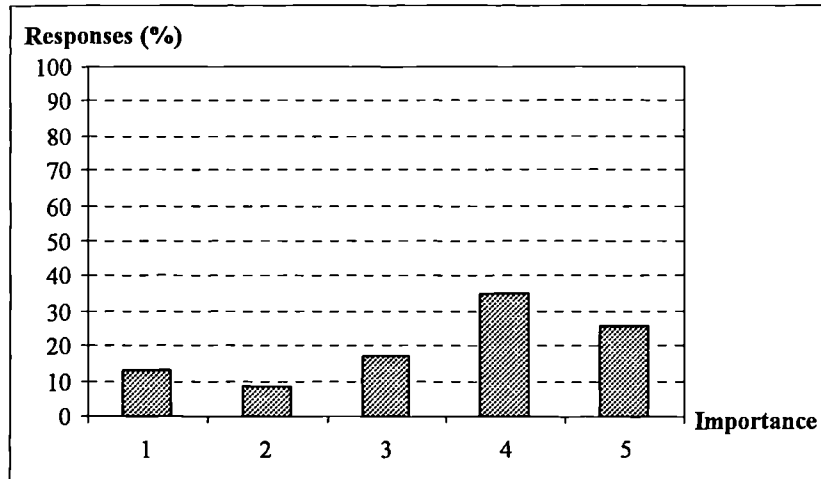
During business competitive situation, companies' business might be taken over by one of its partner purely for business decisions. This taking over of business might be due to the merging or expansion of business or change of business strategies. The mean score for this strategy was 3.65. About 88% of the respondent considered this strategy "importance" and above. The high percentage of respondents agreed with this strategy and considered important reflects a common situation in Hong Kong that merging or expansion of business are purely business decisions based on the profitability and future prospect of the business.

Detailed statistics of Strategies for Alliances are provided in the following:

- (i) Strategy S25. - Steal the beams and pillars and replace them with rotten timber. (To sabotage, incapacitate, or destroy your adversary by removing his key support.)

Level of Importance	Responses	Responses (%)
1	3	13
2	2	9
3	4	17
4	8	35
5	6	26

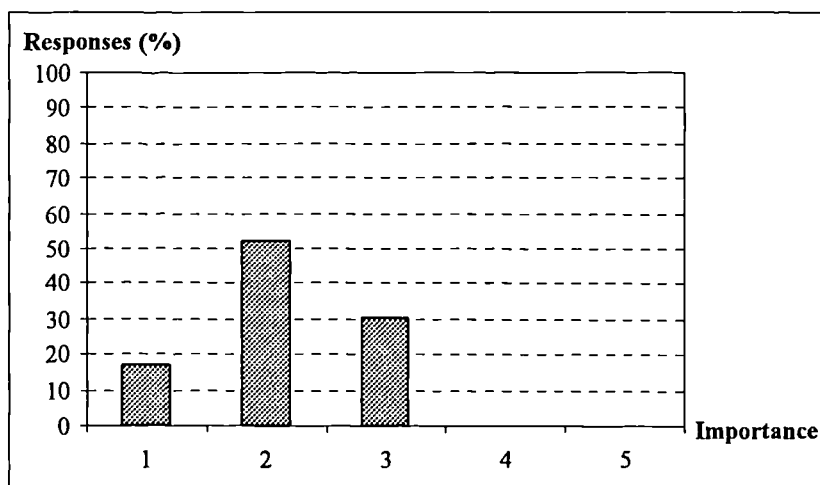
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (ii) Strategy S26. - Point at the mulberry but cause the locust. (To make use of a subject as a pretext to express one's objections.)

Level of Importance	Responses	Responses (%)
1	4	17
2	12	53
3	7	30
4	0	0
5	0	0

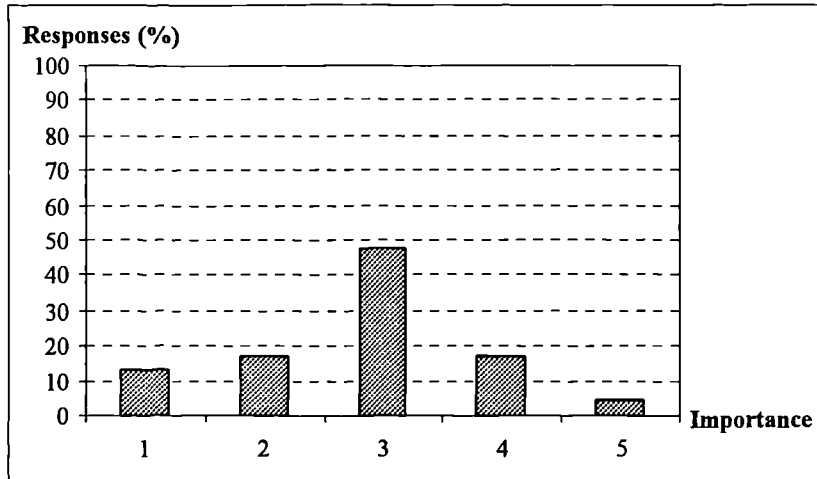
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Strategy S27. - Play dumb. (To let your adversary underestimate your capabilities.)

Level of Importance	Responses	Responses (%)
1	3	13
2	4	17
3	11	48
4	4	17
5	1	4

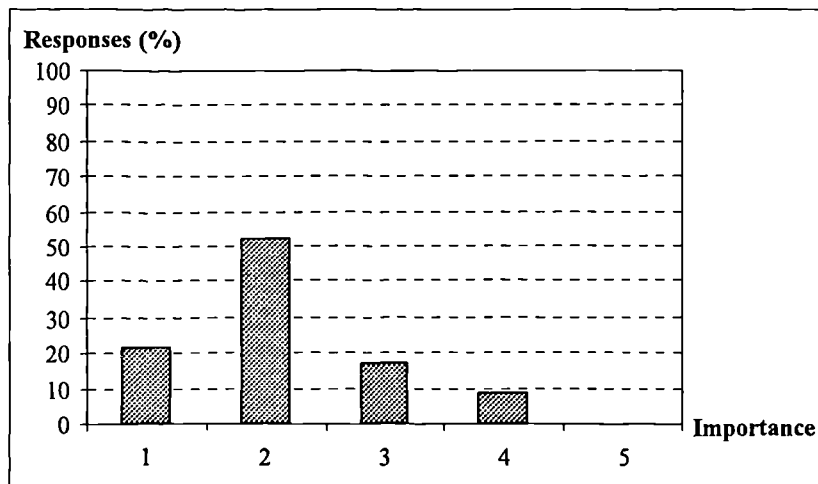
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Strategy S28. - Remove the ladder after your ascent. (To lure an adversary into a trap, and then cut him off.)

Level of Importance	Responses	Responses (%)
1	5	22
2	12	52
3	4	17
4	2	9
5	0	0

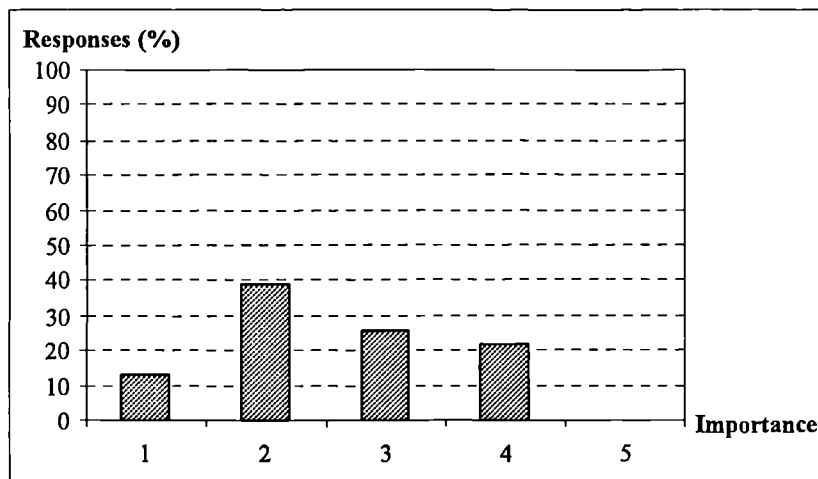
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Strategy S29. - Decorate the tree with fake blossoms. (To exaggerate in order to mislead your adversary, letting him believe that you are very strong.)

Level of Importance	Responses	Responses (%)
1	3	13
2	9	39
3	6	26
4	5	22
5	0	0

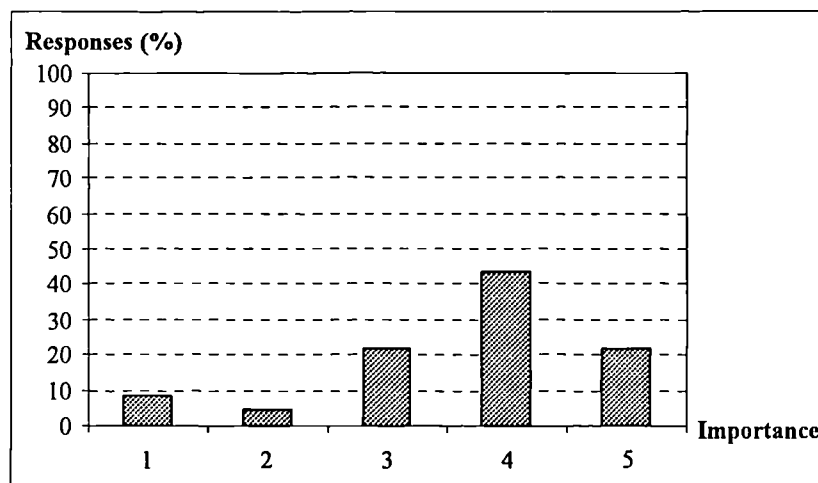
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Strategy S30. - Turn yourself into a host from being a guest. (To exchange place/ position; reverse the situation.)

Level of Importance	Responses	Responses (%)
1	2	9
2	1	4
3	5	22
4	10	43
5	5	22

5 levels of importance: 1 is the least importance, and 5 is the most importance

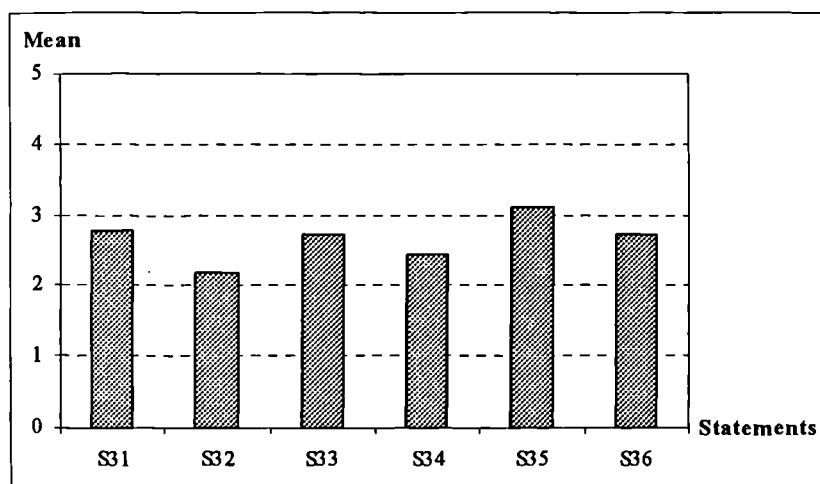


## Finding 6. Strategies for Defeating

<i>Strategies for Defeating</i>
<i>S31. Use a beauty to ensnare a man.</i>
<i>S32. Open the gate of an undefended city.</i>
<i>S33. Use adversary's spies to sow disorder in your adversary's camp.</i>
<i>S34. Inflict pain on oneself in order to infiltrate adversary's camp and win the confidence of the enemy.</i>
<i>S35. Scheme with Continuous Circles.</i>
<i>S36. Retreat is the best option.</i>

Strategies	Responses	Mean
S31	23	2.09
S32	22	2.09
S33	23	2.74
S34	23	2.43
S35	22	2.96
S36	23	2.74

Mean Value is defined by 5 levels of importance:  
1 is the least importance, and 5 is the most importance



These business management strategies for defeating based on The “Thirty-six Strategies” score 2.5 in average that is in between the “not importance” and “importance” ranking positions. This ranking implies that these strategies for defeating originated from “Thirty-six Strategies” were less-significantly adopted as Chinese business management practices.

*Strategy 31. Use a beauty to ensnare a man.*

During business competitive situation, companies in the state of defeating use the charms of women or offer advantage to influence key figures in an adversary organisation making their decisions. The mean score for this strategy was 2.09. About 70% of the respondents considered this strategy

“not importance” or less. The high percentage of disagreement with this strategy reflects the situation that in Hong Kong using the charms of women or offering advantage to influence decision making is not common. Hong Kong in the past twenty years has been very successful in fighting against corruption. The message of anti-bribery is well spread, and most people know the consequences of giving or taking a bribe. The result also reflects the situation that dishonesty, immoral behaviour, and the behaviour of being corrupt are not generally accepted in the society.

*Strategy 32. Open the gate of an undefended city.*

During business competitive situation, companies in the state of defeating pretend to be weak than they really are. Their opponents may defeat themselves or be misled by one of the three reactions to the supposed weakness. Their opponents may become conceited and complacent, leading to downfall. They may become arrogant and aggressive, leading to destruction. They may assure the companies are setting up an ambush, leading to flee. The mean score for this strategy was 2.09. About 63% of the respondent considered this strategy “not importance” or less. The high percentage of disagreement with this strategy reflects the situation that most people thought this strategy is rather passive.

*Strategy 33. Use adversary's spies to sow disorder in your adversary's camp.*

During business competitive situation, companies in the state of defeating use improper information to mislead their opponents or spies for inside information. The mean score for this strategy was 2.74. About 48% of the respondent considered this strategy “importance” or above and 52% “not importance” or less. This result shows that some people still do not feel the importance of market information in business competition.

*Strategy 34. Inflict pain on oneself in order to infiltrate adversary's camp and win the confidence of the enemy.*

During business competitive situation, companies in the state of defeating use the scheme with self-inflicted wounds and make they look like a victim as well in order to win the sympathy and confidence of opponents. The mean score for this strategy was 2.43. About 57% of the respondent considered this strategy “not importance” or less and 43% “importance” or above. Majority of the respondents disagreed with this strategy probably because they thought winning the sympathy and confidence of opponents in business is highly unlikely happened. It is essential that if business is defeated, people can withstand on their own feet, struggle for survival and start everything all over again with confidence.

*Strategy 35. Scheme with Continuous Circles*

During business competitive situation, companies in the state of defeating use this scheme with continuous circles when they face a more powerful competitor. They should not head-on confronting with competitor. They should not concentrate all their resources on only one avenue. They should keep different plans operating simultaneously in an overall scheme. The



mean score for this strategy was 2.96. About 68% of the respondent considered this strategy "importance" or above. The high ranking of this strategy over the others probably because this is a proper strategy and demonstrates the good strategic planning in use of resources and determination of the executive.

*Strategy 36. Retreat is the best option.*

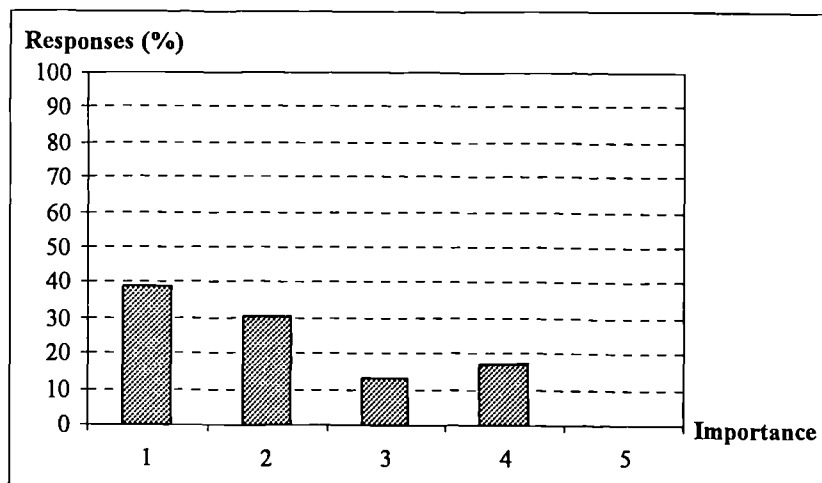
During business competitive situation, companies in the state of defeating should consider retreat strategy and reserve the resources for the future. Surrender is complete defeat, compromise is half defeat, and retreat is not defeat. The mean score for this strategy was 2.74. About 51% of the respondent considered this strategy "importance" or above and about 49% "not importance" or less. This split of opinion probably because some respondents do not realise that retreating is the best strategy to reserve the resources and energy for the future return.

Detailed statistics of Strategies for Defeating are provided in the following:

- (i) Strategy S31. - Use a beauty to ensnare a man. (To intoxicate or indulge your adversary with a time/ energy adsorbing activities thereby diminishing his spirit to fight.)

Level of Importance	Responses	Responses (%)
1	9	40
2	7	30
3	3	13
4	4	17
5	0	0

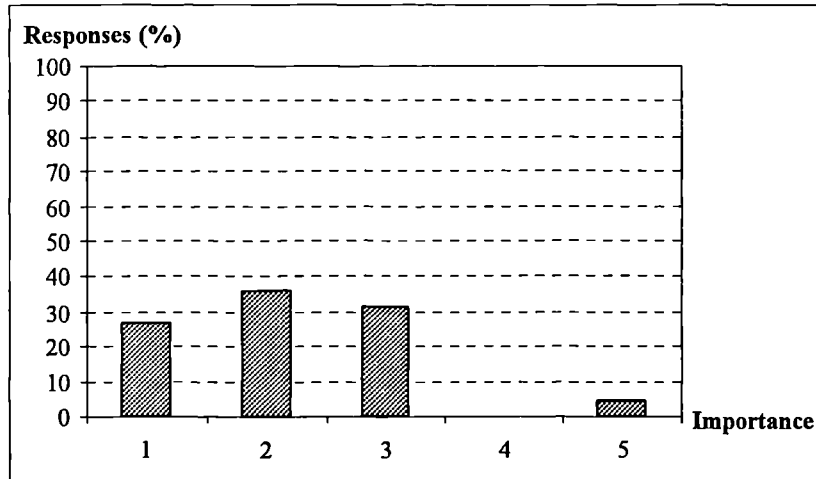
*5 levels of importance: 1 is the least importance, and 5 is the most importance*



- (ii) Strategy S32. - Open the gate of an undefended city. (To generate doubts in adversary's camp by presenting something that is really simple; let the adversary overestimate your capabilities.)

Level of Importance	Responses	Responses (%)
1	6	27
2	8	36
3	7	32
4	0	0
5	1	5

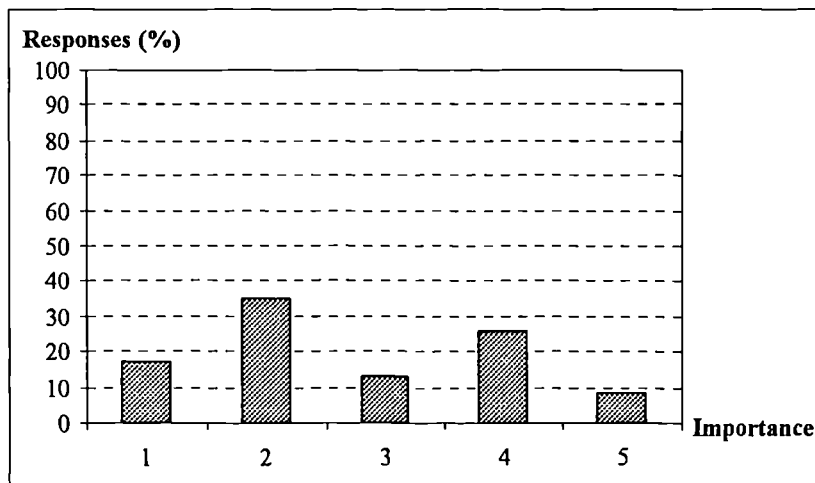
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iii) Strategy S33. - Use adversary's spies to sow disorder in your adversary's camp. (To spread wrong information; sow distrust or dissension among your adversaries; sow distrust or discord among one's enemies through one's counterespionage.)

Level of Importance	Responses	Responses (%)
1	4	17
2	8	35
3	3	13
4	6	26
5	2	9

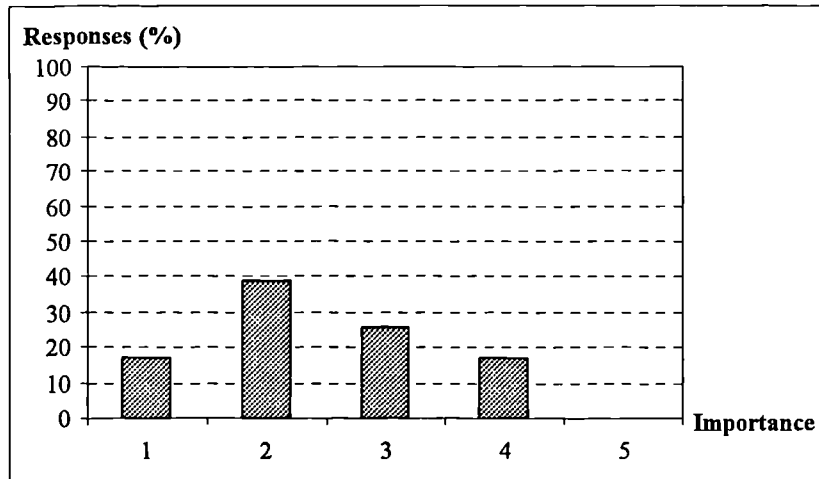
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (iv) Strategy S34. - Inflict pain on oneself in order to infiltrate adversary's camp and win the confidence of the enemy. (To absorb loss in order to win trust; inflicting an injury on oneself to win confidence.)

Level of Importance	Responses	Responses (%)
1	4	17
2	9	40
3	6	26
4	4	17
5	0	0

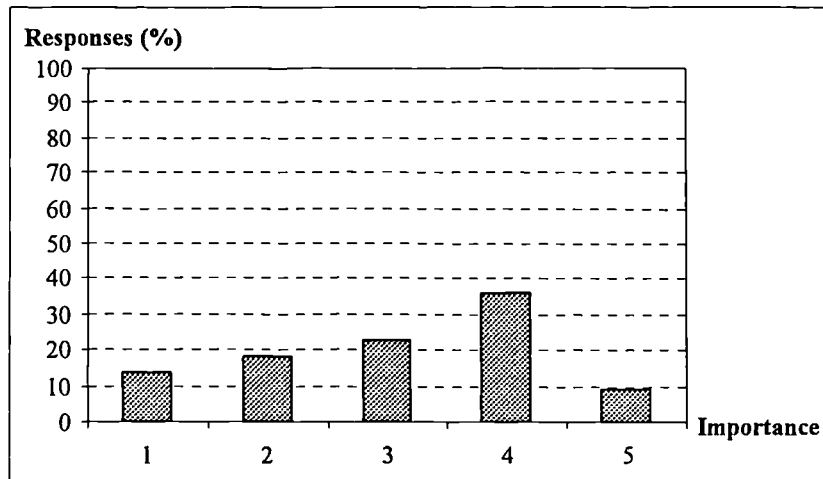
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (v) Strategy S35. - Scheme with Continuous Circles (To turn your adversary's strength into weakness; lead your adversary on until they fall by their pride; now also means, a set of interlocking stratagem (series of stratagems) leading your adversary to defeat.)

Level of Importance	Responses	Responses (%)
1	3	14
2	4	18
3	5	23
4	8	36
5	2	9

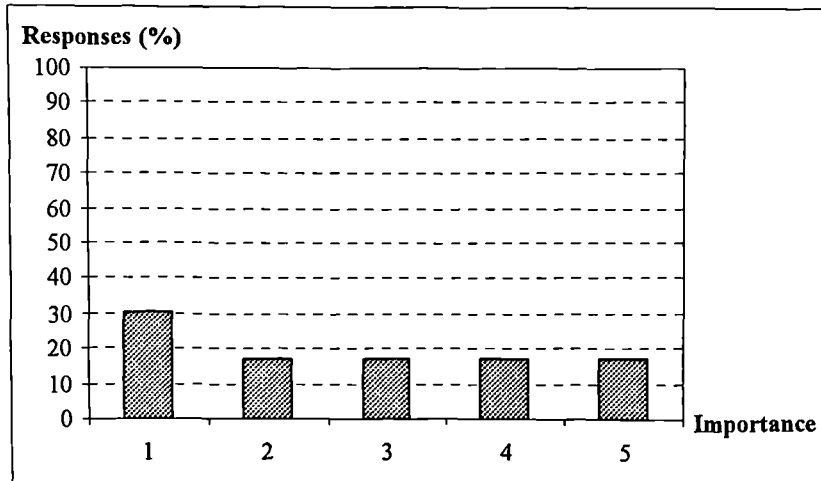
5 levels of importance: 1 is the least importance, and 5 is the most importance



- (vi) Strategy S36. - Retreat is the best option. (Opting out; not participating / not playing the game that your adversary wants you to play.)

Level of Importance	Responses	Responses (%)
1	7	32
2	4	17
3	4	17
4	4	17
5	4	17

5 levels of importance: 1 is the least importance, and 5 is the most importance



**Survey on the Effect of Chinese Culture on  
Business Management Strategies based on Sun Tzu' The Art of War and  
Thirty-six Strategy**

Please rank the given criteria according to their order of importance.

**Key of Ranking:**

- “1” is regarded as not important  
 “2” is regarded as below average important  
 “3” is regarded as average important  
 “4” is regarded as very important  
 “5” is regarded as extremely important

**a) Strategy 1: Planning of Strategies, Estimation and Leadership**

The Chapter 1 *Situation Appraisal* of Sun Tzu's The Art of War has the following main themes:

- 1.1 *What is war? It may be described as one of the most important affairs to the state.*
- 1.2 *We should analyse and compare the conditions of an enemy and ourselves.*
- 1.3 *Any military operation takes deception as its basic quality.*
- 1.4 *He who plans and prepares carefully will find himself in a favourable position and win victory.*

The equivalent business and management strategies on “Planning of Strategies, Estimation and Leadership” based on Sun Tzu's The Art of War become:

- |   | 1                        | 2                        | 3                        | 4                        | 5                        |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1.1 Understand the actual situation; decide on the plan of actions.                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.2 Analyse and compare both parties' conditions, both favourable and unfavourable. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.3 Business is very much related to tactics and strategic planning.                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.4 Correct information and proper preparation will help business make a success.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**b) Strategy 2: Resources and Competitive Actions**

The Chapter 2 *Waging War* of Sun Tzu's The Art of War has the following main themes:

- 2.1 *You have had enough money.*
- 2.2 *We have heard of criticism of a hasty campaign, we have never seen the cleverness in prolonging a war.*
- 2.3 *He who is adept in military operations never raises an army twice.*
- 2.4 *Hence a wise commander should strive to get provisions in the enemy state.*
- 2.5 *The more times you defeat the enemy the stronger you will be.*

The equivalent business and management strategies on “Resources and Competitive Actions” based on Sun Tzu's The Art of War become:

- |  | 1                        | 2                        | 3                        | 4                        | 5                        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 2.1 Make a good and realistic estimation of the actual expenses before entering into business. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.2 Speed and quick decisions help in business.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.3 Organisation structure should be clear and effective.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.4 Not to add extra burden on the head-office for any new proposal.                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.5 Unify other business by co-operation.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**c) Strategy 3: Competitive Strategy and Wisdom**

The Chapter 3 *Strategic Attacks* of Sun Tzu's *The Art of War* has the following main themes:

- 3.1 *Winning a victory and subduing the enemy without fighting is the highest excellence.*
- 3.2 *The best policy for the military operations is to gain victory by means of strategy.*
- 3.3 *He must gain complete victory all-under-heaven.*
- 3.4 *The weaker battles on stubbornly without taking its strength into account; it will surely be conquered by the stronger.*
- 3.5 *The generals assist the ruler in governing a nation.*
- 3.6 *If you know both the enemy and yourself, you will fight a hundred battles without danger of defeat.*

The equivalent business and management strategies on "Resources and Competitive Actions" based on Sun Tzu's *The Art of War* become:

- |  | 1                        | 2                        | 3                        | 4                        | 5                        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 3.1 Take over business without extra costs.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.2 Understanding strategy helps to win competition.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.3 Use wisdom and best strategy instead of aggressive tactics for success.                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.4 Understand the situation and act flexibly.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.5 Decisions should be taken at appropriate company level; more delegation of responsibility. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.6 Understand yourself and your competitor better helps you win.                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**c) Strategy 4: Positioning and Targeting, Strengths and Weaknesses Estimation**

The Chapter 4 *Disposition of the Army* of Sun Tzu's *The Art of War* has the following main themes:

- 4.1 *One may foretell a victory but cannot be sure to gain victory as one wishes.*
- 4.2 *They can, on one hand, protect themselves and, on the other hand, win a complete victory.*
- 4.3 *Those skilled in war always defeat the enemy that could easily be conquered.*
- 4.4 *They have planned for certainty of their victory and the enemy is already destined to defeat.*
- 4.5 *He who is adept in military operations always understands the principles of war and adopts the correct policies, so that victory is entirely in his hands.*

The equivalent business and management strategies on "Positioning and Targeting, Strengths and Weaknesses Estimation" based on Sun Tzu's *The Art of War* become:

- |   | 1                        | 2                        | 3                        | 4                        | 5                        |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 4.1 Strengthen yourself before entering into competition.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.2 Attack right to the target, defence kept top secret.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.3 Beware of business and situation changes; never be content with your position.                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.4 Careful planning of the whole situation enables the business to take control.                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.5 Understand the principles of business and help to adopt the correct policies and be successful. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**d) Strategy 5: Opportunity, Timing and Management Structure**

The Chapter 5 *Forces* of Sun Tzu's *The Art of War* has the following main themes:

- 5.1 *Managing a big army is in principle the same as managing a small one; it is a matter of organisation.*
- 5.2 *During a war, the general should adopt the normal way of confronting the enemy, while using special tactics to take the enemy by surprise.*
- 5.3 *Military formations are not more than the application of special and normal tactics, but their variations and combinations will give rise to an infinite series of manoeuvres.*
- 5.4 *A general who is skilled in war can exploit his own vantage position and launch a swift and sharp attack.*
- 5.5 *He can drive the enemy about with small advantages and awaits the enemy in strength.*
- 5.6 *A general can select the right persons and fully exploit the favourable situation.*

The equivalent business and management strategies on "Opportunity, Timing and Management Structure" based on Sun Tzu's The Art of War become:

- |  | 1                        | 2                        | 3                        | 4                        | 5                        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 5.1 Good organisation helps to define clear job responsibilities.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5.2 Business tactics require a flexible managing policy.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5.3 Application of special and normal tactics will give rise to an infinite series of business approaches. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5.4 Move quickly to explore business opportunities.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5.5 Offer some advantages and trap by strategy.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5.6 Right person gets the right job.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**e) Strategy 6: Control of Market Situations and Climate**

The Chapter 6 *Opportunism* of Sun Tzu's The Art of War has the following main themes:

- 6.1 *Appear at the place to which the enemy will not come; attack a place where the enemy does not expect you.*
- 6.2 *That you are certain to take what you attack is because the enemy cannot fortify it. That you are certain of success in holding what you defend is because the enemy cannot attack it.*
- 6.3 *The offensive one takes can be so strong that the enemy cannot defend just because one strikes at the enemy's weak point. One can withdraw without being overtaken by the enemy just because one moves so swiftly that the enemy cannot pursue.*
- 6.4 *If we expose the enemy's disposition and hide ours, we can concentrate our troops and divide the enemy's forces.*
- 6.5 *One who has few must take precautions against possible attacks everywhere; one who has many compels the enemy to prepare against his attacks.*
- 6.6 *If a general knows both the place and the time of a battle to come, he can lead his troops to go even a thousand 'li' away for a decisive battle.*
- 6.7 *A victory may be made even if the enemy's troops are many. We can find a way to make them unable to fight.*
- 6.8 *The way to defeat the enemy should not follow the beaten track, but change constantly according to the enemy's changing situation.*
- 6.9 *The way to fight never remains constant and water never flows in the same way.*

The equivalent business and management strategies on "Control of Market Situations and Climate" based on Sun Tzu's The Art of War become:

- |  | 1                        | 2                        | 3                        | 4                        | 5                        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 6.1 Keep ahead of competition through innovations.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6.2 Attack competitors' weak points while building on your strength.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6.3 Attack competitors' weak points with full commitment. A company should know when to withdraw from the market to reduce loses by withdrawing from the market at the right time. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6.4 Know the competition not allowing them to know you, enabling you to concentrate effectively.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6.5 If one over-diversifies, the business can easily be challenged. Concentrate your effort where you are strong.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6.6 Know the market well for success.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6.7 Even if the competition is keen, we can still win by better understanding the market requirement and prove successful.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6.8 Change constantly according to the changing market situation.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6.9 Business tactics never remain constant and should take any form.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**f) Strategy 7: Management of Conflict and Avoid Confrontation**

The Chapter 7 *Manoeuvres* of Sun Tzu's The Art of War has the following main themes:

- 7.1 *During the whole military process nothing is more difficult than to fight for a favourable position with the enemy.*
- 7.2 *There is not only disadvantage but also danger in fighting for a favourable position.*
- 7.3 *A commander who does not understand the plots and schemes of the princes cannot enter into alliances with them.*
- 7.4 *He who masters the tactics of deviation first will win victory.*

- 7.5 *They usually use gongs, drums, flags and banners as instruments to unify the army.*  
7.6 *Keep a highly disciplined army to fight the confused enemy army.*

The equivalent business and management strategies on "Management of Conflict and Avoid Confrontation" based on Sun Tzu's The Art of War become:

- |  | 1                        | 2                        | 3                        | 4                        | 5                        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 7.1 Business competition is most difficult when confronting competition head-on.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7.2 There is not only disadvantage but also danger in competing for a favourable position. Inadequate preparation will lose business and market share. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7.3 Know the potential partner well before entering into joint venture.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7.4 Keep the vision while maintaining flexibility for short-term deviation.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7.5 Motivate your people for a common goal through good communication.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7.6 Strengthen the organisation and plan business strategies.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### g) **Strategy 8: Flexibility and Adaptability**

The Chapter 8 *The Nine Variations* of Sun Tzu's The Art of War has the following main themes:

- 8.1 *Never launch an upward attack on the enemy who occupies high ground.*  
8.2 *A general or commander should thoroughly understand the tactical variables. Only if he knows them well can he know military operations.*  
8.3 *A wise general must give his consideration to both favourable factors and unfavourable factors.*  
8.4 *There are five fatal weaknesses of a general: brave but not resourceful, cowardly on the eve of a battle, quick-tempered easily provoked, honour is driven to reckless situation, benevolent but hesitant and passive.*

The equivalent business and management strategies on "Flexibility and Adaptability" based on Sun Tzu's The Art of War are:

- |   | 1                        | 2                        | 3                        | 4                        | 5                        |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 8.1 Never engage in competition if you are weak.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8.2 Market conditions should thoroughly be understood. Only if they are known well can business be operated properly. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8.3 Consider both favourable and unfavourable factors in business.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8.4 Fatal weakness of management should be understood.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### h) **Strategy 9: Observing and Manoeuvring**

The Chapter 9 *Marches* of Sun Tzu's The Art of War has the following main themes:

- 9.1 *Be sure to stay near the valleys when going through mountains; after crossing the river you must stay far away from it.*  
9.2 *Be sure to cross salt marshes quickly with no delay.*  
9.3 *All commanders prefer to station their troops on high ground rather than on low land.*  
9.4 *If heavy rain falls in the upper reaches of a river and forms torrents rushing down to the lower course, never cross the river but wait until the flood subsides.*  
9.5 *You must have a thorough search to see if there are ambushes laid or spies hiding.*  
9.6 *Birds rising in flight show there are troops in ambush.*  
9.7 *When the enemy asks for a truce without advance appointment, it means that he must have been plotting.*  
9.8 *When the enemy sees some profit but does not try to obtain it, it is because he has been completely exhausted.*  
9.9 *Disturbance in the enemy's camp means his generals have lost their prestige and authority.*  
9.10 *If orders are observed constantly and conscientiously, both the commander and the soldiers will benefit and trust each other.*

The equivalent business and management strategies on "Observing and Manoeuvring" based on Sun Tzu's The Art of War become:

- |  | 1                        | 2                        | 3                        | 4                        | 5                        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 9.1 Take the best approach during difficult market conditions and stay away from difficult situations. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.2 Get away from a dangerous situation as quickly as possible.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



- 9.3 Observe competitors' position and plan strategy accordingly with better reactions.
- 9.4 Wait until the situation is clear before re-entering into market competition. Good and accurate decisions make proper investments in business.
- 9.5 Thoroughly understand the market situation to avoid potential problems and identify pitfalls.
- 9.6 Observe market indicators to identify potential problems.
- 9.7 When competition proposes a joint venture without warning, it means that he understands his strategic position.
- 9.8 When the competitor does not explore market potential, it means he has no extra resources.
- 9.9 When a competitor has low morale, it means their leadership is poor. Prestige and authority of senior management are both essential.
- 9.10 If everyone does what they should do diligently both the management and workforce benefit and trust each other, and have a good relationship.

**i) Strategy 10: Competitive Situations and Causes of Failure**

The Chapter 10 *Terrain* of Sun Tzu's *The Art of War* has the following main themes:

- 10.1 *If the enemy is unprepared, you will defeat him.*
- 10.2 *If you occupy such a ground that is narrow or constricted, you should block the narrow passes with strong garrisons and wait for the enemy there.*
- 10.3 *A general should know six situations that point to the defeat of his army, these situations cannot be attributed to natural disasters, and they are the faults of the generals, which are not inevitable.*
- 10.4 *Terrain is an important aid to a commander in military operations.*
- 10.5 *A great commander advances without seeking personal fame and gain, retreats without shirking responsibility.*
- 10.6 *If he dearly loves his persons as he does his own beloved sons, they will be willing to die with him in battle.*
- 10.7 *A general who is skilled in military operations moves his troops without losing his direction and purpose and acts with unlimited resources and adaptations.*

The equivalent business and management strategies on "Competitive Situations and Causes of Failure" based on Sun Tzu's *The Art of War* become:

- |  | 1                        | 2                        | 3                        | 4                        | 5                        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 10.1 Gain advantages over the competition when they are unprepared.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10.2 Attack the competitors when they have little room for manoeuvre.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10.3 Management should know of their weaknesses that could lead to business failure.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10.4 Market situations help decision-making.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10.5 A good manager takes the business advantage without taking personal fame and gain and admits failure without shirking responsibility. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10.6 Treat your employees like your family and they will share your vision.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10.7 A skilled manager reallocates his resources without losing his direction and purpose.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**j) Strategy 11: Competitive Conditions and Offensive, Alliance and Vision Strategy**

The Chapter 11 *The Nine Types of Battlegrounds* of Sun Tzu's *The Art of War* has the following main themes:

- 11.1 *Ground can be classified into nine geographical positions according to the way of using military operations.*
- 11.2 *In a position where the three neighbouring states meet, and whoever first gets control of one will gain the support of other neighbouring state.*
- 11.3 *Never in a dispersive land; fight a last-ditch battle in desperate ground.*
- 11.4 *The skilled generals would advance when it was to their advantage and halt when situations were unfavourable.*

- 11.5 *The essence of military operations is speed, taking advantage of the enemy's unpreparedness, going by routes he does not expect and attacking him where he is not on guard.*
- 11.6 *Nourish your persons and do not exhaust them; keep them in high morale and conserve their energy.*
- 11.7 *If there is no choice but to fight a desperate battle, they will co-operate closely and consciously follow your direction.*
- 11.8 *Those who are skilled in military operations should be as dextrous as the shuairan, the snake of Mount Chang.*
- 11.9 *Uniting the soldiers to fight bravely depends on good management and command.*
- 11.10 *In commanding an army, a general must have a mind that is serene and unfathomable. He must administrate his troops in an impartial and upright manner.*
- 11.11 *A general who leads his troops to fight a decisive battle should cut off all means of retreat. He should make his troops understand they have no alternatives.*
- 11.12 *The way to make war in the enemy's state is as follows: the deeper your troops penetrate into hostile territory, the more they concentrate their spirit to fight.*
- 11.13 *Unify the will of your soldiers.*
- 11.14 *A general who is ignorant of the intention of the neighbouring princes cannot form alliances with them.*
- 11.15 *A state with such an invincible army does not need to seek alliances with other states.*
- 11.16 *You can command thousands upon thousands of horses and persons as if you were leading a single man.*
- 11.17 *At first assume the coyness of a maiden and when the enemy gives you an opening, attack him as swiftly as running hare.*

The equivalent business and management strategies on "Competitive Conditions and Offensive Strategy, Alliance and Vision" based on Sun Tzu's The Art of War become: 1 2 3 4 5

- 11.1 Competitive situations can be different according to the way business is conducted.
- 11.2 By making a market alliances, stronger market control and strategy will be obtained.
- 11.3 Never attack your competitor when your resources are not focused.
- 11.4 The skilled managers would advance when it was to their advantage and halt when situations were unfavourable.
- 11.5 Be Aware of the business situation and react speedily using innovative approaches and attack competitors' weaknesses.
- 11.6 Care and look after your people.
- 11.7 Make business urgent to ensure co-operation and alignment of vision.
- 11.8 Those who are skilful in business should ensure all the resources work together in co-operation.
- 11.9 Alignment of the company workforce to the vision depends on good management.
- 11.10 The leader of a company should have a mind that is serene and unfathomable. He must administrate his workforce in an impartial and upright manner.
- 11.11 The leader of a company should demonstrate his commitment to the workforce and remain true to this commitment in all he does.
- 11.12 The more successful the business, the more motivated the workforce will be towards their work and make contributions.
- 11.13 Align the workforce to the vision of the company.
- 11.14 A company that does not understand the intention of potential partners cannot form alliances with them.
- 11.15 If a company is strong, it does not need to seek alliances.
- 11.16 Unify the thinking of all people and make them work for you.
- 11.17 Appear not to be strong, but when opportunities arise, launch the business attack.

**k) Strategy 12: Destroying and Decision**

The Chapter 12 *Attacking with fire* of Sun Tzu's *The Art of War* has the following main themes:

- 12.1 *There are suitable seasons to launch a fire attack and suitable days for starting a fire.*  
 12.2 *If you start a fire from up-wind, never launch an attack from down-wind.*  
 12.3 *Any army must know about the varying situations under the five ways of fire attack and keep waiting for a suitable time.*  
 12.4 *To win a battle and capture the spoils but to fail to consolidate such achievements forebode danger. For it is a waste of effort.*  
 12.5 *A state that has perished can never revive, nor can a person who has died be brought back to life.*

The equivalent business and management strategies on "Destroying & Decision" based on Sun Tzu's *The Art of War* become:

- |   | 1                        | 2                        | 3                        | 4                        | 5                        |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 12.1 Key to success is recognising good opportunities.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12.2 Always stay ahead of your competitors.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12.3 Remain flexible and adapt in accordance with the changing situation.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12.4 Build on past achievement. Never sit on the present situation and continuously innovate.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12.5 A simple mistake could ruin the whole business; take everything seriously because once a company has perished, it cannot be revived. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**l) Strategy 13: Intelligence and Information**

The Chapter 12 *Intelligence and Information* of Sun Tzu's *The Art of War* has the following main themes:

- 13.1 *A general is ignorant of the enemy situation; he may waste resources and be devoid of humanity. He should employ spies.*  
 13.2 *An able general achieves extraordinary accomplishments because they can foresee the development of war. Such foreknowledge cannot be obtained from ghosts and spirits; it must be obtained from the people who clearly know the enemy's situations.*  
 13.3 *When you use the five kinds of secret agents simultaneously, the enemy cannot know the principle of their operation. It is divinely intricate and becomes the greatest magic weapon for the sovereign to defeat the enemy.*  
 13.4 *There is no place where espionage is impossible.*  
 13.5 *You must know and instruct your spies to investigate names, etc., in detail.*  
 13.6 *You must ascertain those enemy spies who have been sent to conduct espionage against you. Bribe them, exhort and release them to serve you. At last, they will become converted spies and work for you.*  
 13.7 *Use the intelligent persons as spies and achieve great tasks.*

The equivalent business management strategies on "Intelligence and Information" based on Sun Tzu's *The Art of War* become:

- |  | 1                        | 2                        | 3                        | 4                        | 5                        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 13.1 Ignorance of the competitor's situation is an ignorance danger that may lead to wasted resources.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.2 Achieve extraordinary accomplishments by good management of people who clearly understand the market situation.                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.3 Use many ways of gathering information from the market, this will help to hide your intention from competition, and helps to make wise decisions. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.4 Information gathering is always possible.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.5 Detailed information of the market is essential.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.6 Recognise and try to recruit talented people to work for your company.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.7 Recognise talented people's achievement in your company to achieve great tasks.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**The Thirty-six Strategies as Business Management Strategies**

- |                                      |                          |
|--------------------------------------|--------------------------|
| 1. Strategy for Ensuring Win         | (From strategy 1 to 6)   |
| 2. Strategy for Planning Opportunism | (From strategy 7 to 12)  |
| 3. Strategy for Waging War           | (From strategy 13 to 18) |
| 4. Strategy for Confusing Enemy      | (From strategy 19 to 24) |
| 5. Strategy for Alliances            | (From strategy 25 to 30) |
| 6. Strategy for Defeating            | (From strategy 31 to 36) |

**a) Strategy for Ensuring Win**

1 2 3 4 5

- |   |       |
|---|-------|
| 1. Cross the sea by deceiving the sky<br>• To hide secrets in the obvious to avoid detection.                                   | □□□□□ |
| 2. Besiege Wei to rescue Zhao<br>• To attack an adversary's weakest point, divide and rule.                                     | □□□□□ |
| 3. Kill with a borrowed knife<br>• To make use of someone else's resources to do your job.                                      | □□□□□ |
| 4. Relax and wait for the adversary to tire himself out.<br>• To use patience to wear down the adversary                        | □□□□□ |
| 5. Loot a burning house.<br>• To exploit and capitalise on an opportunity at the expense of your adversary's chaotic situation. | □□□□□ |
| 6. Make a feint to the east while attacking in the west.<br>• To confuse your adversary's command, and mislead your adversary.  | □□□□□ |

**b) Strategy for Planning Opportunism**

1 2 3 4 5

- |  |       |
|--|-------|
| 7. Create something out of nothing.<br>• Turn something that was not sustained into reality.   | □□□□□ |
| 8. Pretend to advance down one.<br>• To distract the enemy by making a deliberate gesture to attack in one direction while attacking in another where the enemy does not defend. | □□□□□ |
| 9. Watch the fire burning from across the river.<br>• To allow your adversaries to fight the enemy themselves while you rest and observe, and defeat the exhausted survivor.     | □□□□□ |
| 10. Conceal a dagger in a smile.<br>• To make your adversary relax and unaware of your enmity, hide hostility under friendliness.  | □□□□□ |
| 11. Sacrifice the plum for the peach.<br>• If need be, sacrifice the less important in order to preserve the vital; substitute one thing for another.                            | □□□□□ |
| 12. Take a goat in passing.<br>• To capitalise on your adversary's negligence or incompetence when the choice is right.  | □□□□□ |

**c) Strategy for Waging War**

1 2 3 4 5

- |  |       |
|--|-------|
| 13. Beat the grass to startle the snake. | □□□□□ |
|--|-------|

- Do not tip off your adversary
  - 14. Raise a corpse from the dead. □□□□□
    - To use something dead to achieve your own ends.
  - 15. Lure the tiger out of the mountain. □□□□□
    - To have your adversaries deploy their strongest element away from their defence base.
  - 16. Let the adversary off in order to snare him. □□□□□
    - Do not arouse your adversary's spirit to fight back.
  - 17. Cast a brick to attack a jade. □□□□□
    - To use a bait to catch something big.
  - 18. To catch bandits, nab their ringleader first. □□□□□
    - Shoot at the horse first in order to shoot the rider.
- d) *Strategy for Confusing Enemy* 1 2 3 4 5
- 19. Remove the fire from under the cauldron. □□□□□
    - To wear down your adversary's resources first before attacking him; get radical measures, effect a permanent cure.
  - 20. Catching fishes from troubled water. □□□□□
    - Fish feel lost and disillusioned in troubled waters; therefore, they become easy prey. Create a chaotic and panicky situation, the adversary can neither think nor see clearly to respond to the pressing situation.
  - 21. The cicada sheds its shells. □□□□□
    - When escaping, do so secretly without making it public. Develop a false stronghold to deter the adversary from attacking, then secretly leaving an empty nest.
  - 22. Fasten the door to catch a thief. □□□□□
    - To destroy a weak adversary completely, leave no loophole for escape; to use total encirclement. If you allow a weak adversary to escape, he may make a comeback in the future.
  - 23. Befriend a distant state while attacking a neighbouring state. □□□□□
    - Adversaries at a distance can be a temporal ally. Do not attempt to take on too many enemies at any one time. Another similar idiom states that a far away supply is no good in saving a nearby fire. The immediate danger needs to be taken care of first. If there is no short term, there is no longer term to consider.
  - 24. Borrow a safe passage to conquer the Kingdom of Guo. □□□□□
    - Help the weak when the weak is not threatening so as to win over their support. Mere talk will not save the weak; action speaks louder than words.
- e) *Strategy for Alliances* 1 2 3 4 5
- 25. Steal the beams and pillars and replace them with rotten timber. □□□□□
    - To sabotage, incapacitate, or destroy your adversary by removing his key support.
  - 26. Point at the mulberry but causes the locust. □□□□□
    - To make use of a subject as a pretext to express one's objections.
  - 27. Play dumb. □□□□□
    - To let your adversary underestimate your capabilities.

28. Remove the ladder after your ascent. □□□□□  
 • To lure an adversary into a trap, and then cut him off.
29. Decorate the tree with fake blossoms. □□□□□  
 • To exaggerate in order to mislead your adversary, letting him believe that you are very strong.
30. Turn yourself into a host from being a guest. □□□□□  
 • To exchange place/ position; reverse the situation.

*f) Strategy for Defeating*

1 2 3 4 5

31. Use a beauty to ensnare a man. □□□□□  
 • To intoxicate or indulge your adversary with a time/ energy adsorbing activities thereby diminishing his spirit to fight.
32. Open the gate of an un-defended city. □□□□□  
 • To generate doubts in adversary's camp by presenting something that is really simple; let the adversary overestimate your capabilities.
33. Use adversary's spies to sow disorder in your adversary's camp. □□□□□  
 • To spread wrong information; sow distrust or dissension among your adversaries; sow distrust or discord among one's enemies through one's counterespionage.
34. Inflict pain on oneself in order to infiltrate adversary's camp and win the confidence of the enemy. □□□□□  
 • To absorb loss in order to win trust; inflicting an injury on oneself to win confidence.
35. Lead your adversary to China together with worships. □□□□□  
 • To turn your adversary's strength into weakness; lead your adversary on until they fall by their pride; now also means, a set of interlocking stratagem (series of stratagems) leading your adversary to defeat.
36. Retreat is the best option. □□□□□  
 • Opting out; not participating / not playing the game that your adversary wants you to play.

**Testing the significant difference of the average opinion of a specified subject between the managerial level and the technical level**

**Method**

t-test

Null Hypothesis : mean ranking of managerial level = mean ranking of technical level

(i.e.  $H_0 : \mu_{mgr} = \mu_{tech}$ )

Alternative Hypothesis : mean ranking of managerial level  $\neq$  mean ranking of technical level

(i.e.  $H_1 : \mu_{mgr} \neq \mu_{tech}$ )

**Objective**

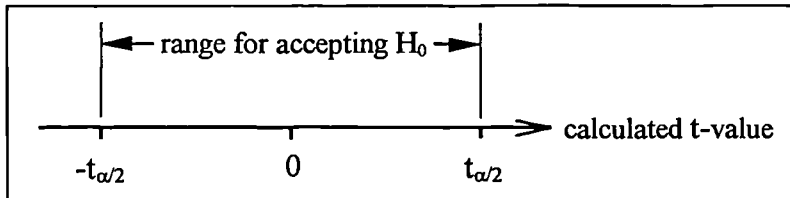
To determine whether validity of null hypothesis ( $H_0$ ) is consistent with the sample data.

The classical way of accomplishing this is to specify a value  $\alpha$ , the level of significance of the test. Whenever  $H_0$  is true, the probability of being rejected is never greater than  $\alpha$ .

**Result Interpretation**

Accept  $H_0$  if  $|\text{calculated t-value}| \leq t_{\alpha/2, \text{total samples number} - 2}$

Reject  $H_0$  if  $|\text{calculated t-value}| > t_{\alpha/2, \text{total samples number} - 2}$



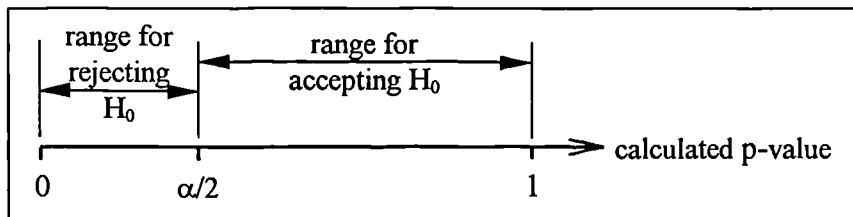
The two-sided t-test

The common way of presenting this is to specify a p-value, the probability that the absolute value of a calculated t-value with (total samples number of Mgr. and Tech. - 2) degrees of freedom exceeds the critical t-test value of the two-sided test at the significant level of  $\alpha$ .

That is,

accept  $H_0$  if the calculated p-value  $\geq \alpha/2$

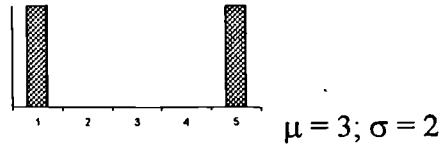
Reject  $H_0$  if the calculated p-value  $< \alpha/2$



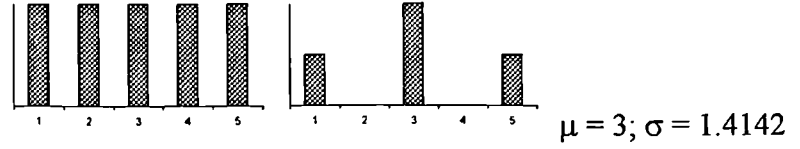
The two-sided t-test

**Some Special Spreads in the Ranking of Importance**

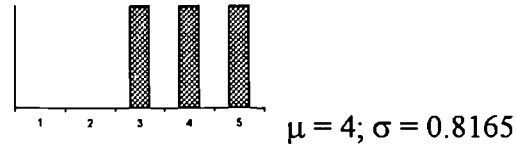
Extremely difference in the opinions, which results in the greatest spread of 2 in  $\sigma$ .



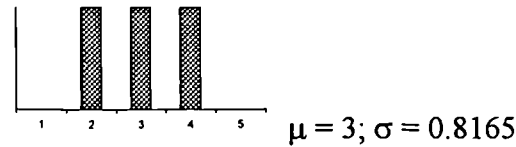
The response's mean is 3 but the opinions can be evenly distributed in all importance categories, or spread normally.



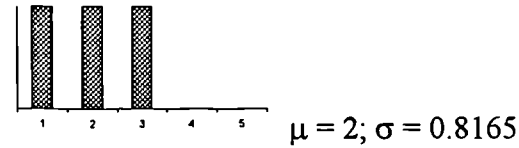
A trend of a great importance.



A trend of neutral importance.



A trend of less importance.



Opinions are normally spread in each importance categories and have a mean of 3.

