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ARRANGEMENT OF DIGITAL LEADERSHIP STRATEGY BY CORPORATE STRUCTURES: A REVIEW[5]

An ecosystem model of effective solution of the customer management quality issue based on the platforms' (internal and external) interaction is proposed, which indicates that digital platforms are the main tool of digital corporate transformation and regeneration. The key elements of the digital leadership strategy based on the "business model-ecosystem" interaction were identified, allowing determining the main features of the digital leadership strategy and forming the deployment direction within the corporate structure. The "road map" model of digital leadership strategy formation is introduced, the stages' sequence of digital strategy formation is systematised, and its key elements are outlined.
Keywords: company strategy; strategic vision; digital leadership; digital solutions; digital platform; the business model of a company
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1. Introduction

A new round of technological progress, inherited from the digitalisation of all sectors of the world economy today, aims to accumulate and process information. Under those conditions, the economies of all countries and their sectoral structures face a critical choice (Bukht, Heeks, 2018): development of services and forming new production relations. These principles form the dilemma of the choice of strategies by corporate business structures and

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models of national economic development. According to the work (Bonvillian, 2017), the competitiveness largely depends on which vectors the national economic system chooses, which decisions leading companies make in the national economy, how society sees future consumption (as a source of economic growth) and in what state it meets the digital transformation of the corporate sector, will largely depend on the country's competitiveness and strategic development of the microeconomic base.

Janicki and Goździewska-Nowicka (2018), in their research, show that due to the use of the latest technological developments in informatics, extended data exchange and integration of IT-systems of different organisations increased the competitiveness of the industry. Many scientists research how digitalisation allows to use in the choice of management of two different types of firm-specific assets that are apt to internationalisation – technologies and human capital (Strange, Humphrey, 2018; Banalieva, Dhanaraj, 2019; Gaur, Pattnaik, Singh, Lee, 2019; Wang, Li, 2019).

Additionally, as pointed out (Gillani et al., 2020), today, a serious challenge is that the consumer is beginning to shape their expectations in digital dimensions, preferring digital support, digital promotion, and digital services in cooperation with the manufacturing and service sectors economy.

The external area of the digital economy affects corporate strategy through competitive components. This is expressed in the fact that the factors of increasing the competitive advantage of the corporation become a suitable source of increasing market positions and obtaining strategic advantages.

That approach was used (Kotler, Keller, 2007) to justify the market activity importance (Powell, 2017) to determine the competitive strategy determinants and ways to respond to threats to internal and external changes in a company (Snow et al., 2017), in the feasibility of applying positioning in the digital environment. In this regard, special attention should be made to work (Dodgson et al. 2008), where the transition from the initial identification of strategy as a plan to balance the internal and external environment of a company to the formation of strategies aimed at creating competitive advantage, which, became the result of strategic management. Concurrently, another area of strategic management was developed, the information approach that considered only the importance of the company's internal resources, which became the basis of its efficiency and achievement of planned results (Cano-Kollmann et al., 2016). According to Koch and Windsperger (2017), based on the network-centric view, the firms may achieve competitive advantage by actively shaping the digital environment and by value co-creating of the interconnected firms in the digital environment.

In the digital revolution, industrial companies find themselves in the middle of the digital value chain. At the same time, digital transformations affected both the primary links of such chains (suppliers) through cooperation or cooperation and logistics and the final links of the chains – through logistics systems (Xiaojuan, 2020). With this view of the value chain, one can say that if companies do not take significant steps to digitalise the business, the value creation control will be "in the hands" of the initial or final links within the business chain (Kenney, Zysman, 2016). In today's world, one can see such transformations clearly in the oil and gas sector of the world economy, when all subsequent links are dependent on primary raw materials and the profitability level of finishing units is also inversely proportional to the

original cost of raw materials. The research relevance is that modern industrial structures in developing development strategies must consider changes in the physical nature of the production means, so the digitalisation strategy becomes a tool for realising the new role of a company in transformations under the influence of digital technologies.

2. Literature Review

In the initial version, researchers in strategic management (David, 2013; Dess et al., 2005) note that the object of strategic management is not static and changes under processes in its internal and external environment, which fits into the reality of current digital corporate transformations.

Several scientists (Anderson, Markides, 2007; Grinold, Richard, Kahn, 2000) proceed from the evolution criterion of strategic management, arguing that the most acceptable is the provision of the initial ideas about the company's strategy, as a result of long-term goal setting with limited external and internal conditions. Therefore, when a company finds a compromise between external and internal compliance, it becomes its goal in the long run and is reflected in corporate strategy.

According to Richardson & Bissell (2019) and Tidd & Bessant (2014), the digital economy leads to the destruction and crisis of a single concept of development without a concept or model that describes the information interaction of all economic agents for "national prosperity". The "data economy" growth only increases the enormous cost of chaotically collecting unreliable economic information, which overburdens managers at all levels, thus increasingly turning the digital economy into a catalyst for global development. That model is presented in the general concept of the "ecosystem-business model" that balances a company's environment.

Research (Corey et al., 2014; Myers et al., 2012) states that the widespread use of digital technologies features the economy, and this is what began to change the ideology of companies, when strategy became not just a goal rather than "a perspective or business concept", reflected in the business model, providing a new value as a mechanism for long-term development and corporate goals achievement.

According to the research of Larjovuori and colleagues, digital leadership is an ability to expose and develop skills and talents, necessary for engaging all employees of the business in the process of digitising. Within the framework of digital transformation, digital leadership includes "demonstration of the proper behaviour of enterprises and business-ecosystems for strategic digitalisation" (Larjovuori, Bordi, Mäkiniemi, Heikkilä-Tammi, 2016).

Fisk (2002) was the first who advanced the idea of "digital leadership" as the object of research 20 years ago. He claims that the companies are digital if headed by people with qualities necessary for digital leadership. Since then, a great number of researchers investigated the different aspects of digital leadership (Eberl, Drews, 2021).

Also, Eberl and Drews (2021) in their work also presented a nomological network, which defines 13 determinants of digital leadership, structured into categories of organisational

level, individual level and digital leader. Hanafi, Daud & Baharin (2018) proved that there is a significant relationship between leadership style in new modern markets and the emotional intelligence of leaders. Peng (2021) argues that individuals or organisations in the digital age can completely transform companies using digital leadership to ensure the achievement of their goals.

The development of modern digital business requires firms to operate at two different speeds (Bossert, Laartz, Ramsoy, 2014). Firms must continue to operate with traditional speed to meet existing market needs and be faster to explore the new opportunities presented by digitalisation. Operating at higher speeds, firms must use entrepreneurial thinking to generate innovative ideas that create value for customers, quickly develop digital or IT services using advanced technologies, and build organisational capabilities to deliver such services according to customer expectations.

Digital transformation is successful in the long term when the organisation's general goals correspond to the need to introduce new digital tools. In the same way, people accept technological progress only when they understand that it is relevant to their tasks. Managers, especially top managers, have an important responsibility to manage this strategic alignment and the spread of digital culture (Cortellazzo, Bruni, Zampieri, 2019). Through their digital knowledge and experience, digital leadership can help reduce the chances of digital transformation projects failing (Sağbaş, Erdoğan, 2022).

The evolution of corporate strategies and their transformation into a business model is presented in (Geschka, 2015; Lederer, 2016), and researchers (Pedersen, 2018; Seidel et al., 2012) substantiate the position of how companies update their strategy if they implement new technologies, recognising the expediency of a strategy radical update according to the market position. According to them, there is a positive relationship between the change degree in strategy and the implementation stage of advanced digital technologies in general, which implies a close relationship between the technological structure of a company and its development strategy. That close relationship is characteristic of most industries' services, regardless of the implementation stage of those technologies.

The works (Jain, Mnjama, 2016; Volberda et al., 2010) discuss which strategy elements will be updated or redesigned according to the impact of digitalisation and other technological changes. Thus, if new technology emerges, a company must decide whether to adapt to new circumstances (and to what extent) or not and assess the danger of technological shift and the threat of breakthrough innovation.

At the same time, modern scientific literature has not assessed the feasibility of digital solutions and also their consequences in typical corporate strategies. This is necessary to organise the selection of projects focused on the strategy of digital services of companies.

3. Methodology

The methodological basis of this study is built based on the following methodological approaches and concepts.

1. The concept of environmental impact on a company. The importance of digital environment analysis for the transformation strategy formation is that the central element of most strategies was and remains the environment concept. That concept develops dynamically in the modern model of strategic plans and means abandoning a representative view of the environment, where the goals and tools for their achievement are considered consistently. The results of the study provide adaptation to the environment. In general, "strategic planning is a process aimed at preparing decisions considering the projected conditions of the internal and external environment, and serves as a tool for preparing such decisions so that they are made quickly, economically and at a minimal cost". The following provisions (Johnson et al., 2006) are highlighted within the concept: a) the strategy development process begins with an environmental analysis. In strategic management, the environment is considered the first element to be studied; b) the environment has an ontological reality. The environment components are considered to be objective and, above all, those that impose restrictions on the company's activities; c) the basic environment elements include micro/meso/macro environment and indicators of the industry development dynamics; d) ensuring the compliance of the internal environment with the external is the key to the success of all activities.

2. The concept of ecosystems and business models. New attention to the environment has led to the revival of the concept of the ecosystem in recent years. A sign of ecosystem differences is the refusal to support the determined concept of the environment, which is a prerequisite for the work. Depending on the strategic choice of the business model, the company integrates activities into the available ecosystem or may create a new ecosystem, determining which part of the environment is relevant to the corporate business structure. Major trends such as digitalisation or new social problems fuel the need for a new approach to value creation and considering corporate value in the digitalisation of the economy. From that perspective, aggregate indicators, such as industries, value chains, or markets, are no longer the ultimate benchmarks. Horizontal and vertical structures are increasingly replaced by ecosystem thinking.

3. Method of system analysis. According to this method, the basic requirements for the development of business strategies remain in force for digital transformation strategy. Those include the next requirements: a) systematic and continuous analysis of the external environment (technological, economic, and political factors, consumer preferences, and competitors); b) considering the internal capabilities and competencies of a company, its digital maturity; c) formation of the company's future vision (services provided, sources of creation and obtaining value, market differentiation factors); d) targets specification based on key performance indicators.

4. The concept of creating corporate value. Within this concept, value creation and value use are correlated with the company's competitive advantages. The key provisions of the concept form a competitive position in available and emerging markets (e.g., replacing goods with services), which design begins. How regulation develops in such markets and how equilibrium is achieved remains the subject of the corporate value creation concept, and the very possibility of achieving equilibrium in digital markets should be included in the company's strategies.

5. Methodological approach to creating/increasing corporate value. The strategic vision is formed based on the value of new digital technologies, so it requires consideration of how value can be created for business by new technology: 1) more efficient resources are used more efficiently; 2) services are provided as efficiently as possible; 3) new business models create a stable generation of cash flow. If the task of efficient resource application is under business intelligence, the effective provision of services shapes the ecosystem development. Creating a new business is the most difficult strategy due to the lack of any significant guidelines for the future, so for an industrial company operating in the market, this approach is not targeted, and the company can participate in such decisions, but within the output of physical products/provision of services. As a result, a "strategy-figure" model is formed, embodied in digital transformation projects. Companies with implemented stages of digital transformation show better results in profits and market value. The essential component of transformation is eliminating problems of processes and systems and the problems that did not create additional value.

4. Results

The advent of digital technology has coincided with a wave of companies' initiatives for strategic change and increased stress from widespread technological change. Thus, the peak of globalisation processes, the spread of information and communication technologies, global aging, exacerbation of environmental problems, general digitalisation from industry and public services to the vital activity determine the feasibility of adjusting the current mechanism of strategic management of companies (Kuzmenko, et al., 2014; López García et al., 2019). Those processes may simply coincide in time, but digital technologies cause some changes in both the strategy and its design tools. Among the expected effects of the implementation of digital strategies for the corporation, we can state: 1) strengthening of current competitive positions; 2) increasing the level of consumer satisfaction; 3) expanding the range of goods or services on the market; 4) reducing the level of corporate expenses; 5) increasing the level of economic security and investment attractiveness of the corporation; 6) increasing the level of activity and the field of startup projects and shortening the terms of creation and introduction of new goods/services. The strategy (including digital) is its own project formed based on available corporate long-term plans, development programs, investment, and innovation programs (Pelser, 2014); it cannot result from copying. In this regard, the development methods that answer "how?" and "what?" become increasingly important. Hence, in the classical strategy, "how" is determined by known methods, and "what" is the environment in the digital strategy; both issues become variable.

4.1. The dilemma of combining traditional company strategies and digital business environment

To conduct a comparative analysis of strategies that enable integration with digital solutions, including artificial intelligence, from a variety of business strategies, one can select three basic strategies: 1) growth strategy, 2) cost reduction strategy, 3) blue ocean strategy; (Terblanche, De Villiers, 2019). When those strategies were initially declared as equal in

capacity, several companies initially chose a cost-cutting strategy for digitisation. However, it proved its worth only on a large scale. Fast-growth companies have achieved the greatest success either through a growth strategy (often) or through a blue-ocean strategy (not often). It turns out that the impact of individual digitalisation factors on the overall set of strategies is heterogeneous because of the differences in value creation and shaping of different processes. A significant factor in the effectiveness of the implementation of the digital solutions was the speed of updating new solutions when the new effective solution emerged much faster than the previous solution reached its payback. Hence, in digitisation, one can see that innovation reduces the process's efficiency, but when assessing the automation impact on strategies, that fact should also be considered (Sardak et al., 2021).

Considering the choice of strategies, one can outline two different solutions: 1) the correspondence matrix formation of factors and typical strategies and 2) the formation of a mesh of models when for each factor, a separate model is formed with further integration. In our opinion, program-targeted methods are more suitable for the first approach, and for the second option, the coordination of models is closer to forming the company's business portfolio concept. Given that artificial intelligence and digital solutions are generally manifestations of the digital economy, there could be different effects on business performance under the same factor. Therefore, it is more appropriate to apply matrix models in today's economy, whereas portfolio models will prevail in data collection (Table 1).

First, a general conclusion should be drawn, noting that the greatest advantage is the growth strategy involving intensive development of a company. The high cost of implementing digital solutions harms the choice of cost-reduction strategy because the scale must be very large, which is not yet possible for many businesses (Makedon et al., 2019). The analysis shows that more successful strategies increase revenue (sales) based on digital solutions. Moreover, it is impossible not only to confirm in practice but also to theoretically justify that a one-time reduction in costs as a result of intelligent tools implementation will lead to lower costs (excluding mutual settlements and the Internet of Things) (McAfee, Brynjolfsson, 2017).

The development and implementation of a digital transformation strategy have become a key issue for many pre-digital companies in traditional sectors of the economy, but how such a strategy can be developed remains open (Holfmann, 2010). To form a digital leadership strategy for a modern corporation, we can use the classical approach of J. Schumpeter, which is based on the fact that the strategic task of an entrepreneur is to reform the structure of production due to innovations and new technological solutions (Kholiavko et al., 2020).

For almost a century, the goal remained virtually unchanged, despite numerous interpretations of this view. Therefore, the digital leadership strategy is also within the frameworks of this approach. Despite the repeated enumeration of various benefits, all the changes associated with the digital economy result in the need to reform the production structure. We can conclude that the digital ecosystem has finally combined all the features and came close to revolutionary production transformations. According to the digital model, business benefits from the adaptation speed inside a new environment is the ability to quickly identify relevant trends and make evidence-based fast decisions with their fast implementation.

Thus Meissner et al. (2017) argue that success is driven not so much by technology as by organisational capabilities. These studies introduce the concept of digital leadership of two types: the development of opportunities that develop and implement business models and the probability of transforming the business model. In general, digital leadership can be represented as the development of ecosystem capabilities, and digital leadership strategy can be determined economically by estimating the share of control over the value chain. Figure 1 depicts the author's view on the leadership strategy for the digital economy.

Table 1

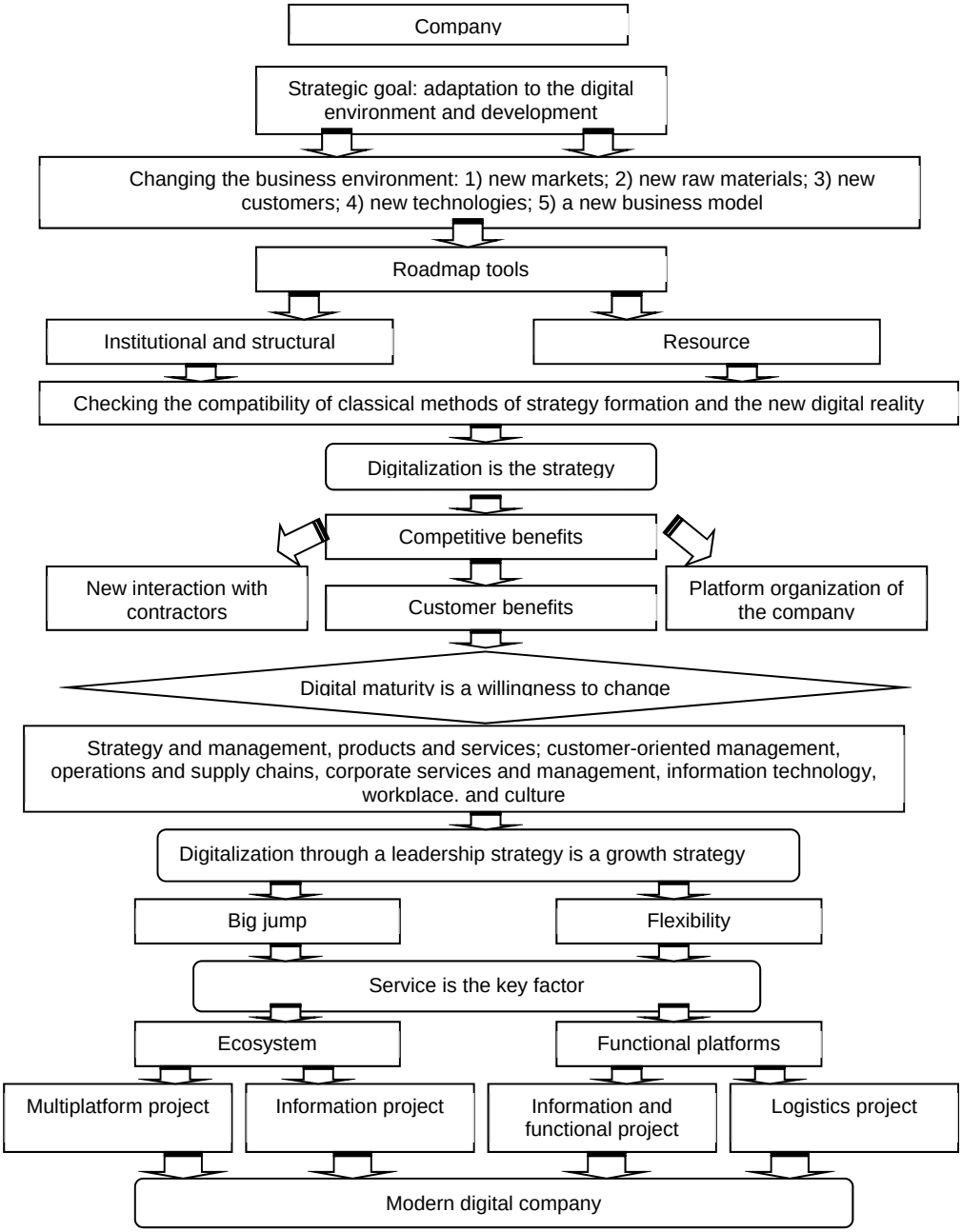
Matrix for assessing the digital solutions feasibility or their consequences in typical corporate strategies

Digital solutions or their consequences are known	growth strategy	cost reduction strategy	blue ocean strategy
1. Digital resources:			
• databases;	+	-	-
• data processing algorithms;	+	-	-
• 5G network;	+	-	+
• Internet of Things;	+	+	+
2. Digital costs:			
• jobs replacement with machines;	-	+	-
• jobs replacement by algorithms;	-	+	+
• retraining in connection with automation;	-	+	-
• retraining in connection with the release;	-	+	+
• new jobs (IT and AI).	+	-	+
3. Digital financing:			
• cryptocurrency;	+	-	-
• digital settlements (financial sector);	+	+	-
• attracting money to the economy for technological trends implementation;	+	-	+
4. Digital consumption:			
• pricing based on artificial intelligence;	-	+	-
• needs assessment;	+	-	-
• needs formation;	+	-	+
• the transition of trade to virtual reality;	+	-	+
• the transition of trade to augmented reality.	+	-	-
5. Digital decision making:			
• Artificial Intelligence;	+	-	-
• augmented artificial intelligence;	+	-	+
• virtual reality;	-	-	+
• augmented reality.	+	-	+

Source: Hanna, 2020; Ternai et al., 2017.

Figure 1

Formation of digital leadership strategy within "strategy-digital technologies" concept



Source: Author's own visualisation.

The proposed vertical sequential structure of the formation of the corporation's leadership strategy has structural graphic elements of combination (arrows-transitions). These arrows show the meaningful and logical content of the process of formation and further development of the digital leadership strategy. Such an approach contains systematic and justified variability of the operational behaviour of the corporation when implementing and deploying elements of digitalisation of economic activity.

Digital solutions and especially artificial intelligence depend on the strategy type of the company that implements digital technologies. Reasons analysis for the strategies' ineffectiveness proved that the proposed and detailed digital tools, despite their widespread support and promotion, are quite expensive solutions requiring high initial costs and additional current inflows (especially when developing the complementary management concept). The justification degree of such costs attempts to predict them is not entirely reliable due to the experimental nature.

4.2. New strategies development based on digital solutions and products

Despite the widespread popularity of "digital solutions", the artificial intelligence implementation should be addressed by professionals in strategic management, especially in not the first (e.g., medicine and education) but the second or third wave of digitalisation – aircraft, robotics, mechanical engineering, microelectronics (Makedon et al. 2021). The top management functionality, which is responsible for digitalisation in a company, is essential. Enthusiasm for local tools, including digital marketing, does not currently lead to unequivocal confirmation of digital analysis effectiveness. The current view of the evaluation of digital solutions does not yet demonstrate any significant assessment of the artificial intelligence interaction possibility of different companies, which can lead not only to a loss of competitive advantage but also to commercial data leaks (Shelukhin et al., 2021). Given the above problems, a roadmap is proposed for the development of such a strategy (Figure 2).

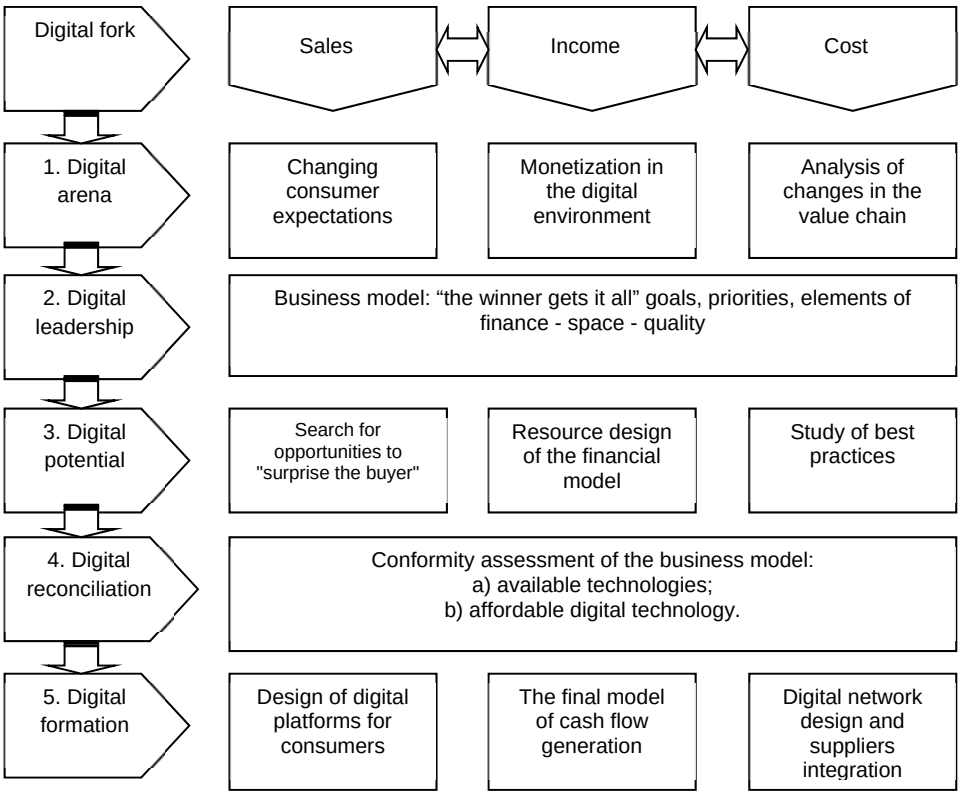
The roadmap is a logical continuation of the "strategy-digital technology" model and demonstrates that the business model becomes a central essential element. We present the "road map" model in the form of a simplified matrix, the title of which is the element – "digital fork". It is the "digital fork" that shows variations in the development and assessment of the leadership strategy by the directions of digital components vertically and basic microeconomic indicators horizontally (sales volume, income, size of corporate value). We believe that this method of strategy formation allows us to step by step identify the most valuable components of the digitalisation of the corporation's activities and see their current or forecasted economic evaluation.

Over the past 15 years, the term "business model" has become more common. Business models paved the way for new business concepts, but they also stimulated the transformation of available businesses. Business models also influence various areas at the research level, such as information systems management or technology management. Today, the term can be used to denote several things that are a source of confusion. Thus, a business model can denote a real attribute of a company, a cognitive scheme, or a conceptual representation of

an activity (Dirican, 2015; Metelenko et al., 2019). In addition to these ontological issues, in our opinion, depending on the context, the business model may indicate a concept, boundaries, or the company's new view and its commercial efficiency. Thus, the perspective expanded in strategy leading to so-called "business model thinking".

Figure 2

The company's roadmap model for developing a digital leadership strategy



Source: Author's own visualisation.

Valuation becomes a vital part of the business model. For companies, one can identify three main ways to create business value:

1) more efficient resources to reach maximum effect;

2) more efficient end customers in the value chain are better;

3) new business models create sustainable value.

According to Bayer et al. (2020), the cost proposal is essentially a positioning declaration explaining the benefits provided, for whom, and how to do it exceptionally well. Gawer & Cusumano (2014) note that the cost proposal describes the target customer profile, the

problem to be solved, and why the company will be significantly better than available alternatives. To create a value proposition, it is proposed to implement four steps at the corporate level: 1) defining the tasks to understand whether they should be solved; 2) assessing the problem(s): is the solution to the problem viable? Is this an urgent problem? Is it immediate, covert, or critical? Does this allow open space opportunity (niche); 3) measurement: the rationale is to measure profits, compared to costs, i.e., to attract technologies that offer benefits with minimal change for available processes or environments; 4) creating a value proposition: after passing the stages of definition, evaluation and measurement, the company is ready to formulate its value proposition. Thus, one can form a conceptual idea of the digital business model's elements (Table 2).

Table 2

Components of the company's digital business model

Components	Component element
Value	Achieving the company's development goals
Results	Key performance indicators of the company considering the digital transformation directions
Key processes	Big Data, consumer preferences based on digital platform data analytics
Key resources	Human potential, access to technology, information
Key trends	Technological trends along with business digital transformation considering the potential risks of expansion and implementation

Source: Bayer et al. (2020).

Digital innovators can base their value proposition on when implementing additional marketing channels. The Internet and related networks are the main, but not the only, channels for customers. Additional channels expand market access, make products and services more accessible and create added value for customers.

4.3. Service model and digitalisation at the company strategy level

Nowadays, many traditional companies seek to supplement their offerings with various services, a process commonly referred to as "service". Digitalisation is becoming a key factor for service n, as digital technologies ease to connect products, services, processes, and systems, and today the production of many products without proper servicing is almost impossible. Information technology is becoming an integral part of many products. The obtained data can improve the product's functionality or increase productivity in other parts of the value chain. As mentioned, the company's preparation for digital transformation requires many complex changes and affects almost the entire management structure and the applied business models. The adaptation stage is considered the most important in digital transformation at the company level.

Service leads to higher productivity, but the combination of service and digitalisation leads the company to two strategic challenges. On the one hand, there is a need to adapt the platforms that can or offer to implement a service approach within production; on the other hand, it is necessary to assess how the current corporate business model is evolving. The above leads to two interrelated directions of adaptation processes of the company's strategies to the service concept: 1) production organisation of "product-service" complexes based on

traditional industrial companies, and 2) change of business model considering platform potential (Constantinidies et al., 2018; Velychko et al. 2019).

"Service", in our opinion, is a concept that says that the companies that produce marketable products increase the services share provided to consumers, and digitalisation becomes an external environment that implements the service strategy. The main problem, in our opinion, is that not all companies understand the importance of progressive changes in the business model before the implementation of changes in digital production support. Thus, the key task of adapting the company to service should be developing practical recommendations based on the relationship among service, platforms, and business models. Directions of service can be systematised as follows:

- comprehensive offers (product plus service);
- considering the consumer's needs that leads to increased customer loyalty and increase the period of cooperation with customers;
- the combination of "product plus service" creates great value increasing the manufacturer's share in the overall value chain;
- strengthening the manufacturer's competitive position due to the integrated offer, which is especially evident in the service of products with a longer service life;
- continuation of interaction with a customer by production update (replacement by more modern model) at service unity;
- continuing the interaction with a customer by expanding the range of products from one manufacturer with the service unity;
- cash flow stability in the economic dynamics due to continued service.

The services offered in the market can range from fairly simple, like training or basic services for available products, to very advanced, such as when customers no longer buy a real product but pay for the result that creates such a product. To create and provide various services, companies need a set of opportunities that correspond to the new cost situation.

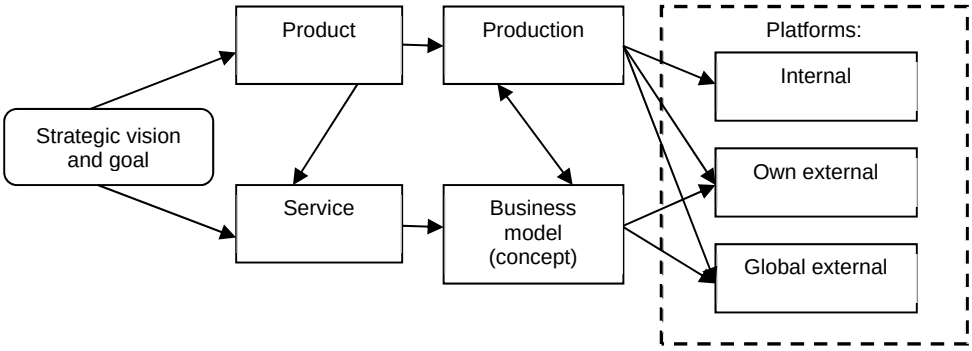
Digitalisation is a key factor in creating services because it allows more complex services to ensure their automatic continuation and succession. Today, the most progressive (and recognised) way to sell services is a platform that provides services, already determining the necessary set of goods that can create new services or ensure succession (Spulber, 2019). The value of the services created by the platforms can exceed available sales opportunities of goods from one manufacturer and provide, under the guise of one service sales of many products from different manufacturers when cooperation becomes digital (Makedon et al., 2020). There is no doubt that all available companies use any business model that is an idea of how value is created, delivered to the consumer, and returned (as part of the value created) as a profit within the cash flow generation.

Another strategic problem is that companies implementing a service strategy must engage in both service and technological innovation. This dilemma leads to private problems implementing a new business model, which manufacturers refuse to accept with the

subsequent risk of increased costs and lack of synergies. The identified dilemma is the key to the organisational support of the digital business model (Stallkamp & Schotter, 2019). Digital service platforms begin to dominate the pressure on the manufacturer, monopolising the market information, while platform information can stimulate the development of new service offerings and limit them. Companies are forced, in the absence of their own platform, to use market information only provided by the platform. In this regard, there is an essential thesis that industrial companies should implement a mixed strategy (Figure 3).

Figure 3

The dilemma of production and business models of a company within digitalisation



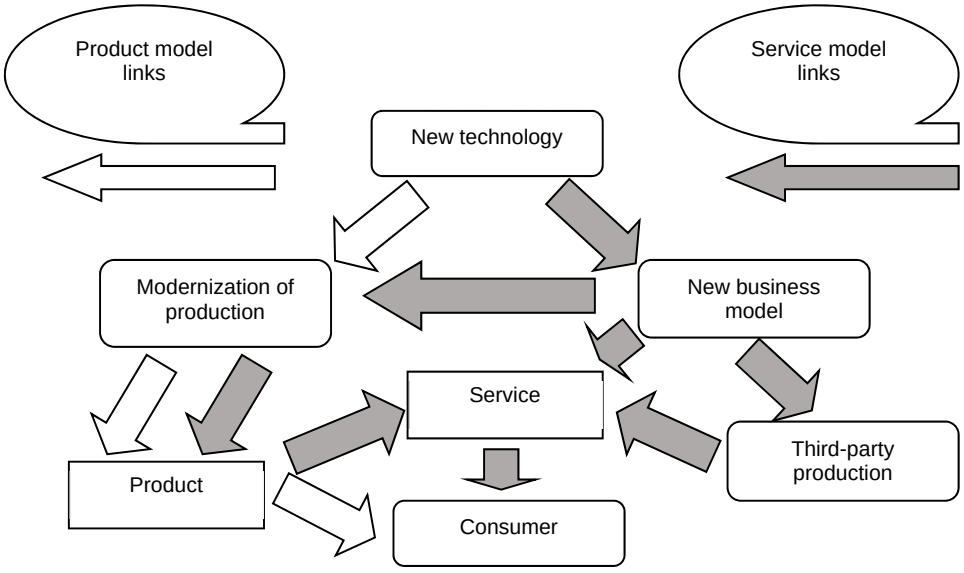
Source: Author's own visualisation.

- develop internal platforms to ensure demanded diversity and product renewal;
- develop own external platforms for obtaining reliable market information;
- work with global digital platforms to maintain a competitive advantage in global markets.

In order to build a service platform, companies need to understand how to adapt production to a new strategy and how to manage a new business model for the development of digital platforms (Zhang et al., 2021). While platforms are generally well-known among product strategy-focused vendors, procedures for adapting to service strategies need to be addressed. The fundamental difficulty is the traditional thinking about used business models that requires additional efforts for their reorientation. The importance of including the contours of the future business model is well established in marketing; the triple model (new technologies, new service format, and new business model) requires consideration (Figure 4).

The most important issue is that the early assessment of the new platform business model presented in Figure 4. is essential for deciding on the right volumes and focusing on functionality that delivers value to customers. The coloured arrows show a direct and undeniable causal effect. The uncoloured arrows show a possible or additional (tangent) influence that improves the consequential position, but is not decisive or leading. This type of graphic modelling of the interaction of the transition from the product model to the service model in the activities of the corporation makes it possible to show all the variations and projections of the interaction of the service and product components in a certain strategy.

Figure 4
Changing interaction in the transition from product to service model in companies



Source: Author's own visualisation.

According to the business model early assessment, it is necessary to start with a minimum viable platform, which focuses only on the most important part of the platform. In our opinion, this statement is partly contrary to the logic of top-down design used in the centralisation of platform sales, but there is a platforms' conservatism. It is worth noting that available business models seek to limit any change, requiring certain measures to destroy. Such destruction of the current production process and sales model can occur only within the initiative (often entrepreneurial) or a significant local crisis (Ezrchi, Stucke, 2016; Goldfarb, Tucker, 2019).

According to the theory (Thoben et al., 2017), for companies that prefer available market offers, it is difficult to create fundamentally new business models. That points to a paradoxical situation that requires new organisational mechanisms that provide both sufficient autonomy to create new business models and a way to ensure implementation (Williams et al., 2019). Possible organisational decisions can be systematised into four types of strategic adaptation projects of the service model within the company:

1. Initiative ("Type I"), within one unit (available, newly created, or invited external team) based on the idea of one or more initiators who are directly involved in the provision of the services;
2. Initiative plus functional ("Type F"), when at the initiative of external suppliers, the developed concept is implemented in several divisions of a company, usually related to sales;

3. Logistics ("Type L") with the principles of product sharing economics, both in warehouses and in individual consumers. This project type is virtually independent of the main business process and can be launched both inside and outside the company, using only access to resources (finished products and logistics);
4. Multiplatform ("Type M"), fully focused on customer needs and allowed integrating both own business processes and third-party suppliers.

Some initiative project types contribute to operational excellence in after-sales service and services delivery with digital sources. Such digital platforms may be needed to support services, not create new value. In addition, such a platform may be linked to the internal organisation of control over the services provision. Nevertheless, this type of platform and solution occurs only in the secondary market, when buyers' contacts purchase the product.

The multiplatform project type is the most advanced but also the most expensive solution. The cost recovery for such a project, and its success, is not obvious at the initial stage, unlike the first three types of projects. However, in the end, that type of project is a manifestation of the digital economy, which is said to be "the winner gets everything" if the market recognises it. A key feature (distinction) of such projects is connecting different data sources, reusing information, sharing components, and helping integrate information into new solutions. Analysing the four types of projects, one can conclude that those can become the core of the practical strategic adaptation of service for a company, considering the possibilities of the corporate cooperation concept.

One of the key findings is that early cost assessment increases by incorporating features into the business model (before production changes) is crucial. Moreover, the consistent build-up (from Type I to Type M) suggests that a minimally operational platform can yield more results than expecting the most efficient platform, provided there is enough time to create a Type I project. Nevertheless, it is notable that minimalism provides efficiency but limits the completeness of new transformations. The advantage of Type F projects is that they create new business opportunities supported by digital product platforms using a separate business development feature. It is worth noting that those remain conservative for the idea of early integration into a single platform.

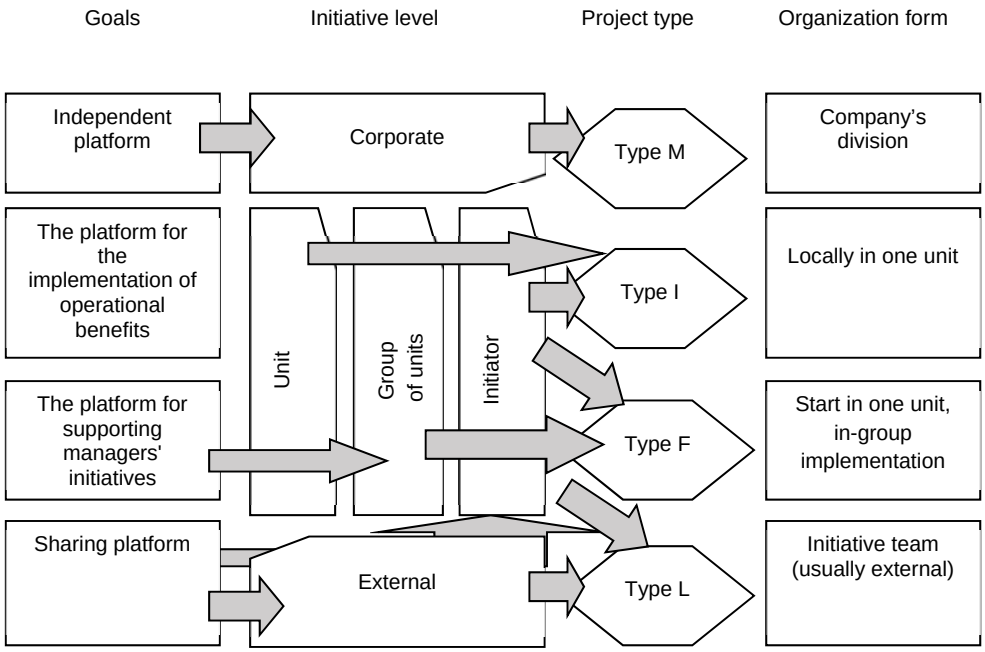
There is no doubt that Type I and Type F projects cannot be implemented without entrepreneurial initiative. Such a necessity at the initial stage is caused not just by the company's internal process or management level. Therefore, for companies, focused on product strategies (and relevant platforms), it is necessary to recommend such organisational forms where the inherited strategic approach can coexist with a more independent entrepreneurial spirit. From our perspective, the companies need "diversity and order in their strategic activities to maintain their viability" and use a corporate entrepreneurship model whereby autonomous strategic behaviour can coexist with more traditional strategic behaviour (Thun, Sturgeon, 2019).

The contradictions between the Type L and Type M projects are radical because, in the first case, the business model initiative does not affect production, and in the other, it is its element. On the other hand, for Type I and Type F projects, the potential synergy between old and new in the company will not be realised, but instead, the need to create the right

conditions for new product offerings increases. Those conclusions allow recommending the following: if resources are available, the Type L project can be a different business solution while implementing another project or running independently. Figure 5 demonstrates the process of arranging the selection of projects focused on the company's service strategy.

Figure 5

The arrangement model of a projects' choice focused on the strategy of the company's digital servicing



Source: Author's own visualisation.

In general, the sequence of actions for companies to adapt the service strategy can be presented by the following sequence: 1) results from analysis of digital maturity assessment and conclusions on the readiness of: a) individual units, b) entire corporation, c) interaction with the external environment; 2) choice of leadership strategy; 3) justification of the need for product servicing (as a minimum service level); 4) justification of the need to refuse to purchase and the possibility of purchasing a service (as a higher service level); 5) determining the possibility of cooperation with competitors based on the service platform; 6) assessment of changes in the business model; 7) choosing the type of service platform implementation project; 8) substantiation of organisational forms; 9) integration into a single system of implemented projects.

The proposed sequence of actions indicates the areas where companies should contribute to the strategic adaptation of service platforms. The proposed solutions indicate the areas where

companies should potentially contribute to the advent of new strategic opportunities based on the adjustment of the chosen leadership strategy. Thus, in our opinion, the basic service strategy should be the minimum possible platforms open to further complication and expansion (projects such as "Type I" and "Type L"), despite the attractiveness of multiplatform solutions. At the same time, the projects' implementation should begin with the search for a new business model, rather than the digitalisation of relationships, confirming that their business models correspond to the platform's development, including integration of their platform or the platforms with current business operations. In the future, after implementing platform projects, the company may consider an alternative to creating an ecosystem (mini-ecosystem) or a global system.

5. Discussion

As a point of discussion, it is hypothesised a change in all strategy elements in the "digital arena", namely that a new reality surrounds companies – a new business environment, and rapid changes in a digital approach to the environment, abandonment of understanding the environment and the transition to environmental design within the ecosystem. Considering a new view of the environment when adaptation to it is replaced by the interaction design in the digital business environment.

Modern corporations have to choose between the well-known classical set of strategic methods and the digital pressure that is increasingly exerting on business, including state funds. At the same time, the choice of approaches to the formation of strategies has a significant effect on their quality and compliance with the processes taking place, which in turn will affect the results of economic activity. First of all, it is necessary to talk about the change in the strategic corporate landscape and the need to take into account those changes that have arisen in the course of digital development. As it was shown in the literature review, we consider the evolution of development strategies, there have been changes both in the elements of the strategic model and in the methods of tying the elements into a single structure. When solving this task, it turned out to be very important to identify an effective, not theorised, strategic model, on the basis of which the design of strategic relations for a corporation in the digital era is possible. As the analysis showed, two key approaches were formed that confirmed their effectiveness: structural, based on the structure of competitive relations in market segments (sectors) or in industry in general, and resource-based, based on strategic opportunities.

In the digital environment, the strategy development process begins with the business model's effectiveness analysis (as opposed to classical environmental analysis), as the basic blocks of the strategy can choose value chain participants and end with the design of their own environment in a classical approach). We believe that the new in digital leadership strategy is the abandonment of the process of searching for one optimal solution and the transition to broad modelling of market behaviour using digital technologies. Furthermore, the main focus of digitalisation in the near future will be manufacturing companies, while so far, the leaders are info-communication and trading companies (although it is assumed that digital technologies in the public sector may be given priority).

6. Conclusions

The paper highlights that competitive advantage in the digital economy is a business model based on the proposition that strategy creates a competitive advantage. It is proved that companies form the potential value of new technologies and digital transformations that they need to implement but cannot instantly transform the business model. The business model of a company becomes an essential reflection of production communication as a relationship among all participants in making a profit.

It was substantiated that the formation of the company's business model is inextricably linked with customer-oriented management based on the interaction of platforms (internal and external). It is shown that platforms are heterogeneous in their structure, and within the strategic choice, one can use several types of platforms (from product to sharing, from knowledge transfer to joint design). Understanding the properties of the business model allows concluding that in the rapid growth of new technologies, horizontal integration strategies (value chains) are preferred. The greatest advantage is given to those companies that can combine digital cooperation within ecosystems with the sincerity of their intentions. At the same time, there will remain vertically integrated companies as those will stimulate the creation of ecosystems to maintain their leadership in the future.

It was shown that evaluating the possibility of creating value for the transition to digital strategy, after analysing the new business environment, understanding competitive advantages, assessing the prospects of customer management, and finding the relationship between cooperation and collaboration, the company must begin to implement a digital strategy, solving three main tasks: 1) assessment of digital maturity; 2) development of a roadmap for leadership strategies; 3) justification of a set of projects to achieve the strategy.

The interaction "business model-ecosystem" concept was developed that defines the main features of the strategy and sets the direction of its development, which is reflected in the developed roadmap for digital leadership strategy and systematisation of the stages sequence of digital strategy and its key elements. It is determined that the most valuable proposal and the most effective business model is service, i.e. the services provision instead of product consumption.

It was demonstrated that the prospect of developing the proposed methods of strategy formation (including digital maturity assessment, development of a roadmap of digital leadership strategy, and formation of a set of projects based on competitive advantage as a service) is an economic evaluation of strategies. Strategies effectiveness assessment should be performed only after the approaches' practical implementation, especially within the interaction "business model-ecosystem". However, methodologically, that assessment should form the ability to measure control in the value chain based on the evidence that the interaction is built on the impact of each participant in the value chain and the success of such impact directly in the business model.

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