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TRANSFORMATION OF THE STRATEGIC CONTROLLING SYSTEM UNDER THE INFLUENCE OF THE DIGITAL ECONOMY: THE EXPERIENCE OF UKRAINIAN ENTERPRISES

Olena Kyzenko, Olena Hrebeshkova

Vadym Hetman Kyiv National Economic University (Ukraine)
Department of Enterprise Strategy

Abstract: The article analyzes the preconditions for the transformation of the strategic controlling system in enterprises in response to the challenges of the digital economy. The authors reveal why it is necessary to modernize the accounting system of companies. To increase the argumentation of the authors' working hypotheses, the experience of using managerial technologies to provide strategic control functions at Ukrainian enterprises is generalized. The key transformation trends of the strategic control system according to the results of the Ukrainian business management survey are determined.

Keywords: digital economy, management accounting, management technologies, strategic controlling, strategic management

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Introduction

The rapid penetration of digital technology into all spheres of life has created new challenges for society, which we have just begun to realize and respond to accordingly. In the coming decades, these processes will intensify as we approach technological singularity (Kurzweil 2005). Accordingly, the economic system of society is transformed, including the widespread introduction of cloud technologies and Business Intelligence analytics as the result of the intensive application of new technologies for collecting and processing unstructured information.

Responding to the challenges of the digital transformation of the economy, corporate business models began to acquire characteristics such as granularity in relation to the needs of a particular consumer, reduction in mass production processes, targeting marketing and refusal to unify the product in favor of individual offers, and strengthening service orientation. According to a study by the Hackett Group (The Hackett Group's Annual Key Issues Study 2018), the following results were obtained regarding key management tasks: 74% of companies expect digital transformation to disrupt their industry and change the competitive landscape, while even higher percent (82%) expect it to fundamentally change their business model (Essaides, Willman, O'Connor 2018, p. 1). Consequently, digital transformation changes, first of all, the structure of competition and operating system of organizations by the destruction of traditional

industries, and the emergence of new business models and creation of innovative products. Of course, in response to these changes, management systems must also be adapted.

Naturally, the most active digital technologies have begun to change the marketing processes in companies. Today, we can observe the first results of this transformation. For example, smarketing is an active interaction between sales and marketing services. It is about integrating marketing goals and sales processes in a company, as well as the general sales funnel, cross-cutting analytics, and information exchange. Large companies are already transforming organizational structures, uniting marketing, customer and commercial divisions, as well as introducing Chief Revenue Officers (Fukolova 2018).

However, only 56% of the respondents from the above-mentioned Hackett Group's survey (The Hackett Group's Annual Key Issues Study 2018) agreed that their finance function was developed and was implementing a digital transformation strategy. 35% agreed that their financial function had the resources and competencies in place to execute a digital transformation strategy (Essaides, Willman, O'Connor 2018, p. 2). Given that the financial function of the enterprise today provides for the collection and registration of information to determine the CRI and the effectiveness of the strategy, the issue of balance between financial and non-financial indicators in determining the effectiveness of the strategy and information support for control procedures within the strategic control system is of particular relevance.

Analysis of recent research and publications

The concept of strategic control as a direction in scientific research integrates and explores the issues of strategic management, economic analysis and control of the company's effectiveness on a qualitatively new level. In this study we rely on the approach of the modern German controlling school, presented by D. Han and H. Hunenberg (Hahn, Hunenberg 2001), A. Daille (Daille 2001), E. Mayer and R. Mann (Mann, Mayer 2004), in which the concept of strategic control, its function in the enterprise as an element of the enterprise management system is presented. It should be noted that most scholars identify the strategic level of controlling in the organization (for example, Vikhanskiy 1998), but we must admit that there is no unified approach to defining strategic control in the enterprise management system. These issues were discussed in detail in our previous publications on clustering control systems (Grebeshkova, Kyzenko 2014).

The results of testing a number of Performance Measurement methods, the most well-known of which are Balanced Scorecard, Total Quality Management, Key Performance Indicators, Six Sigma for formalizing the strategic goals to further evaluate the degree of their implementation, have also been widely reported in scientific sources. Each of these methods is based on a specific set of indicators, and the focus is on defining these indicators rather than on their registration, systematization, and analysis in the enterprise accounting system. The surplus of indicators and the complexity of gathering factual information do not contribute to

focusing the strategic control system on determining the effectiveness of the strategy, because collecting necessary information is today a difficult task, despite the availability of specialized software. These issues are analyzed in detail in a previous publication (Kyzenko, Hrebeshkova, Grebeshkov 2017). Consequently, despite the significant contribution of scientists, business consultants, and practitioners to developing the theory and applied controlling tools, further methodological development of the organization's strategic control system under the influence of firmware as a defining trend of changes in the economic system is needed.

The goals and objectives of the study

In this study, we aim to identify the necessary changes in the enterprise strategic control system through the prism of the latest strategic management trends, in particular, the modernization of the company's accounting system in the context of digital transformation. To strengthen the argumentation of the authors' working hypotheses, we summarize the experience of Ukrainian enterprises in using managerial technologies to provide strategic control functions by examining how adequate they are for improving applied business models.

To achieve the research goal, the following tasks were set: 1) determine which approaches to enterprise strategy development are priorities in the context of the digital transformation of the economy and what information they require; 2) analyze how collecting and processing information in enterprises need to be changed for strategic control, what innovations are brought by information technologies for data processing tools to create innovative strategies; 3) generalize the experience of Ukrainian enterprises in using managerial technologies in the strategic control system and determine how adequately they support the strategy with information in the conditions of the digital economy.

Trends in strategic management that promote the development of innovative strategies and change business models of enterprises

According to D. Khan, the main function of strategic control in an enterprise is the preparation of strategic decisions and strategic planning (Hahn, Hungenberg 2001, p. 223). The subject of strategic planning is planning the company size, which is expressed in the volume of attracted resources and capital structure since the size of the enterprise is limited only by the possibilities of attracting external financing. In a competitive environment, all monetary and non-monetary objectives of the enterprise are considered as the goal of achieving competitive advantages. Consequently, in the process of strategic planning, the specific structure of its resources is determined: structure of production and capacities, organizational structure, information management system (Hahn, Hungenberg 2001). Strategic control provides management information on the market situation and the financial state of the enterprise, its competitiveness in the long run, the benefits of consumers and technological innovations.

In recent years, there has been a general trend of lagging behind the pace of changes in the accounting system which serves as an information base of strategic control on the speed of transformation of the enterprise operating system, within which strategic initiatives are implemented. Companies face the need to change their business models in the 3-5 year horizon. The need to adapt to technological changes necessitates the dissemination of innovative solutions in such areas of strategic management as innovation management (design thinking), organizational design (the concept of "color organizations"), the nature of competition ("blue oceans"), etc. Even a superficial familiarity with the essence of these innovations gives the researcher a wide scope to reaveal transformation zones that will be reflected in all, without exception, subsystems of the enterprise, and first of all – in the strategic control system, which not only captures the "movement" of the organization, but also describes the "vector" of this movement. Under the conditions of total recurrence, the strategic control system is called upon to ensure the adequacy of result-oriented management information; coordination of the company goals, registration, and analysis of information about the state of the enterprise's internal and external environment.

Changes in the strategic control system of the organization's accounting subsystem

The basic elements of the accounting system, on which the effectiveness of strategic controlling depends, are the company's financial structure, information flows and communication channels, document management and management technologies for the processing and registration of information. This component of the accounting system is characterized by the general, uneven development and mismatch of the speed at which the functions are executed with the elements of the system. The more complex the system, the more unevenly these components develop. There is always a discrepancy between the pace at which functions are executed and the elements of any management system. However, in the context of rapid technological development and information saturation, such a discrepancy may endanger the integrity of the strategic control system until the business is terminated. Currently, the requirements for accounting information systems change. The critical influence on the transformation of strategic control information systems is provided by IT technologies and cloud services. Instead of a traditional accounting management system based on a chart of accounts, which analyzes information that is already historical at the moment of making strategic decisions, software packages provide the enterprise with the collection and analysis of relevant information in the strategic control system.

That is why, in the digital economy, on the one hand, the information base of controlling changes resulting from operating data from management accounting is relevant to the strategy development, on the other hand, new communication channels and modern information technology data visualization extend the possibilities of the strategic controlling system to get new knowledge. Correspondingly, changes in such enterprise parameters as employee loads and

load on information processing systems decrease the burden on the traditional system of management accounting. These findings are corroborated by the Hackett Group's research because 97% of the respondents expect digital transformation to alter the model of delivering financial services. Significant changes are already visible in business units, where finance is reducing its headcount and activity level by 1.6% and 0.6% respectively. At the same time, it is significantly increasing headcount in Centers of Excellence (COE) and Global Business Service (GBS) organizations (Essaides, Willman, O'Connor 2018, p. 10-11). This trend toward using GBS and COE is as much, if not more, about improving service quality and customer satisfaction as it is about efficiency. Specialized entities can perform the same amount of work, using new technologies that deliver better results with less personnel; they can also be situated in lower-cost locations. Leveraging highly trained or scarce talent in COE allows companies to avoid having to hire staff with advanced skills to do the same work in multiple functions.

For example, take the case of advanced analytics: more companies are choosing to bring together analytics experts and niche technologies into COE that can provide high-end analytics support to other functions. COE can deliver advanced analytics to support the business and use their technological know-how to automate updates to recurring reports and provide answers to enterprise-level queries. The 2018 Key Issues Study shows that analytics is increasingly going to be performed by standalone entities. In some cases, finance will act as the analytics hub of the enterprise. In two other common scenarios, analytics will be handled by COE that either report to finance or are independent from a particular function (Essaides, Willman, O'Connor 2018, p. 11).

Creating information databases suitable for completing tasks of strategic controlling is a specific task. The value of such data depends on the relevance of the information to be collected and on the methods of its encoding, which must provide cross-references within the single information array of the accounting system. The development of strategic plans is characterized by a high level of uniqueness, which requires specific background information to transform it into unique knowledge by means of BI systems. Due to the rapid technological changes in the digital economy, less relevant information for developing a strategy can be obtained from the ERP system, which records information about individual financial transactions for past periods. Therefore, when formalizing the strategic control systems in an enterprise, efforts should be directed, first of all, to creating a set of interrelated indicators that reflect the strategic business perspective.

The practice in Ukraine

In enterprises operating in Ukraine, strategic control as a management system only begins to be distinguished. In order to identify the strategic component, we will use the previously proposed approach to clustering control systems, according to which three clusters are distinguished: 1) controlling as a system of internal production accounting; 2) controlling as an information system; 3) controlling as a management system (Grebeshkova, Kyzenko 2014). Within each of these clusters,

controlling is based on various managerial technologies that we aim to generalize and analyze their effectiveness in developing strategies.

If controlling in an enterprise is organized as a system of internal production accounting, the development strategy of an enterprise is developed taking into account internal accounting data and is directed to finding ways to achieve a given level of profitability and liquidity of the enterprise in conjunction with the achievement of its market and social goals. Now the most common tool of information management support is the ERP-system. However, standard ERP systems no longer meet the needs of the enterprise, as most of the registered information is not suitable for the creation of qualitatively new knowledge relevant to the development of the strategy. Such systems will be effective only at the level of operational control.

The controlling system with the information support function of the company is designed to meet the information needs of all participants in the management process. In this case, strategic controlling is the activity of the employees (controllers) in collecting, analyzing and systematizing the information needed for strategic management decisions, based on a set of techniques for applying modern cognitive processing technologies to transform information into a bank of systematic technical and economic knowledge to support strategic planning. Today, cognitive processing technologies remain capital-intensive, which significantly limits their widespread use, and the practice of using cloud services is not widespread.

The essence of the control system as an integrated management system is to support the development of the enterprise on the basis of system integration of planning, control and information support functions. According to this approach, strategic controlling is an effective mechanism for self-organization and self-study in the enterprise. According to the results of the previous study (Kyzenko 2017), such a system is not widespread in Ukraine due to the low practical adaptability of strategic management tools and the rather hierarchical organizational structure of most enterprises. The main problem faced by domestic companies is to determine indicators which are truly relevant for the strategic management and organization of gathering primary information for their calculation.

To identify the transformation dynamics of the strategic control system in Ukrainian enterprises, we will analyze the changes that occur over time in using managerial technologies. According to the results of the survey of managers of 50 Ukrainian enterprises in 2008-2017, the prevalence of various strategic management technologies was revealed (*Figure 1*). Analyzing the information received, we have made several conclusions, which are presented below.

1. domestic enterprises have a tendency to extend the use of modern management technologies in their strategic management. In addition, we can state that switching management focuses on current management issues to ensure that strategic issues are resolved, as evidenced in particular by the introduction of Total Quality Management (TQM) and Six Sigma in enterprises.

2. The distribution of Balance Scorecard and Knowledge Management is gaining momentum, indicating the search for the optimal combination of financial

and non-financial (including cognitive) indicators of business success and its organization, which is especially relevant in the context of the digital transformation of the economy.

3. In the aspect of business organization, the technology of business process reengineering was updated, which is explained by the need to move from functional model to process management, aimed at the most comprehensive satisfaction of clients' needs.

The revealed tendencies in the transformation of management technologies in Ukrainian companies testify to a somewhat slow but steady modernization of management with an emphasis on the introduction of such tools and approaches that constitute the methodological basis for controlling as an integrated system for implementing strategic decisions.

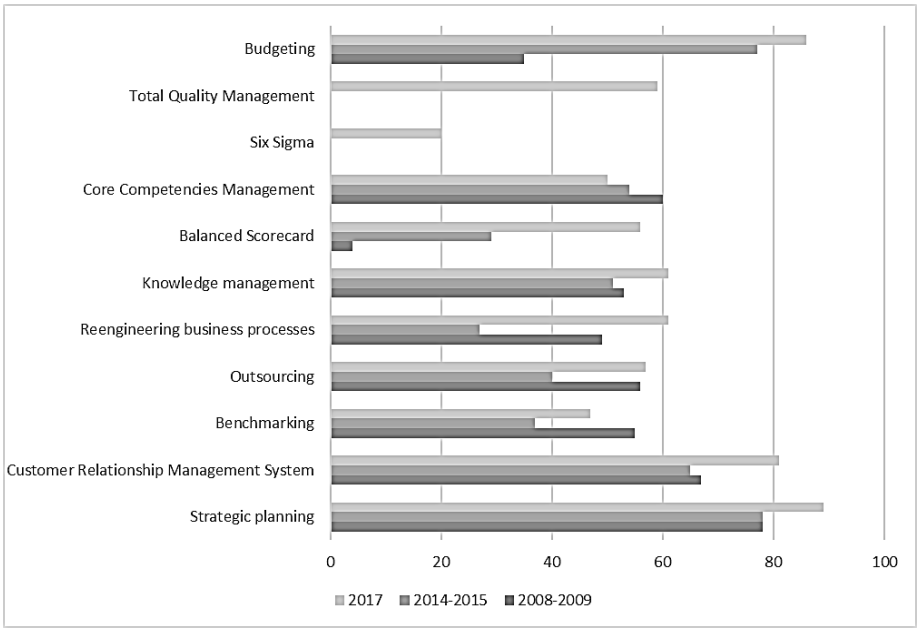

Figure 1. Distribution of managerial technologies in the strategic management of Ukrainian enterprises in 2008-2017 (in % of respondents)

Source: Compiled by the authors according to their own research

Conclusions

According to the results of the study, the system of strategic controlling in a modern enterprise is actively transformed in view of the new requirements for the development of innovative strategies in the digital economy.

In the context of the study on the transformation of the strategic control system through the prism of the accounting system, it can be argued that the methodology for developing and translating the strategy into the operational level is highly developed and well-established. However, monitoring the success of the strategy

through the effectiveness analysis of strategic measures remains methodologically less developed. Until recently, the approach in which the efficiency of an enterprise can be estimated purely (or mainly) through financial indicators was a dominating one.

In the digital economy, characterized by a rapid approach to technological singularity, financial indicators are becoming increasingly limited to informational support for strategy development; therefore, there is a tendency to reduce control indicators in the managerial accounting system and to introduce visualization methods for the analysis of unstructured information.

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WPŁYW TRANSFORMACJI CYFROWEJ NA SYSTEM CONTROLLINGU STRATEGICZNEGO: DOŚWIADCZENIA UKRAIŃSKICH PRZEDSIĘBIORSTW

Streszczenie: W artykule poddano analizie warunki transformacji systemu controllingu strategicznego w przedsiębiorstwach w odpowiedzi na wyzwania gospodarki cyfrowej. Pokazano powody konieczności modernizacji systemu rachunkowości przedsiębiorstw. Określono również drogi transformacji systemu controllingu strategicznego. Postawione hipotezy zostały rozważone w oparciu o informacje zawarte w kwestionariuszu ankiety przeprowadzonej wśród doświadczonej kadry zarządzającej w przedsiębiorstwach ukraińskich.

Słowa kluczowe: gospodarka cyfrowa, rachunkowość zarządcza, technologie zarządzania, controlling strategiczny, zarządzanie strategiczne