

Integration of flexibility concepts in the management, accounting and financial accounting system: effectiveness of the Agile methodology

Integración de conceptos de flexibilidad en el sistema de gestión, contabilidad y contabilidad financiera: efectividad de la metodología Agile

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Abstract

In a highly competitive, changing environment, organizations face the challenge of ensuring a high level of flexibility and stability. A particularly difficult task is to ensure the flexibility of organizations in the management, accounting and financial accounting subsystem. In this study, the main statement is that the flexibility of management accounting provides flexibility to other subsystems of the organization, forming a generally adaptive structure of the organization to environmental conditions. This article is based on the concept of organizational flexibility and Agile philosophy, which reflects the implications and principles of integration of methodology in accounting systems. A qualitative-empirical approach based on the secondary analysis of publications for 2017-2020 and methods of analysis and generalization was used to conduct the study. The results demonstrate the indirect impact of Agile methods on management accounting through the provision of management flexibility, supply systems, sales, production. This transforms financial accounting through the flexibility of human resources in management processes. Accounting remains the least flexible system due to legal constraints. In general, the transformation of accounting automatically occurs through the integration of technology and process automation: the structure of the organization changes, financial workers and accountants are more flexible in making decisions about planning costs, revenues, profits. Thus, automation has provided a transition from a limited, regulated, chaotic management accounting system to a flexible, hybrid one. Accounting information is the basis for economic control and organization of its process. As a result, control information is formed to make effective management decisions by managers at different levels. Skills and competencies of accountants are expanded, roles move from current to operational, tactical, strategic.



Keywords: Concepts of Flexibility of Organizations, Economic Control, Flexibility of Management Accounting, Agile Methodology in Accounting, Agile Methods.

Resumen

En un entorno cambiante y altamente competitivo, las organizaciones enfrentan el desafío de asegurar un alto nivel de flexibilidad y estabilidad. Una tarea particularmente difícil es garantizar la flexibilidad de las organizaciones en el subsistema de gestión, contabilidad y contabilidad financiera. En este estudio, la afirmación principal es que la flexibilidad de la contabilidad de gestión proporciona flexibilidad a otros subsistemas de la organización, formando una estructura generalmente adaptativa de la organización a las condiciones ambientales. Este artículo se basa en el concepto de flexibilidad organizacional y filosofía ágil, que refleja las implicaciones y principios de la integración de la metodología en los sistemas contables. Para realizar el estudio se utilizó un enfoque cualitativo-empírico basado en el análisis secundario de publicaciones para 2017-2020 y métodos de análisis y generalización. Los resultados demuestran el impacto indirecto de los métodos ágiles en la contabilidad de gestión a través de la provisión de flexibilidad de gestión, sistemas de suministro, ventas y producción. Esto transforma la contabilidad financiera a través de la flexibilidad de los recursos humanos en los procesos de gestión. La contabilidad sigue siendo el sistema menos flexible debido a limitaciones legales. En general, la transformación de la contabilidad ocurre automáticamente a través de la integración de la tecnología y la automatización de procesos: la estructura de la organización cambia, los trabajadores financieros y los contadores son más flexibles en la toma de decisiones sobre costos de planificación, ingresos y ganancias. Por lo tanto, la automatización ha proporcionado una transición de un sistema de contabilidad de gestión limitado, regulado y caótico a uno flexible e híbrido. La información contable es la base para el control económico y la organización de su proceso. Como resultado, la información de control se forma para que los gerentes de diferentes niveles tomen decisiones de gestión eficaces. Las habilidades y competencias de los contadores se amplían, los roles pasan de los actuales a los operativos, tácticos y estratégicos.

Palabras clave: Conceptos de Flexibilidad de Organizaciones, Control Económico, Flexibilidad de Gestión Contable, Metodología Ágil en Contabilidad, Métodos Ágiles.



Introduction

The Risk Survey of the Association for Financial Professionals 2020 (AFP, 2020) proves the importance of ensuring the stability and flexibility of organizations: in 2020-2023, financial risks will have the greatest impact on the profits of organizations. In a highly competitive changing environment, organizations face the problem of ensuring a high level of flexibility and stability. A particularly difficult task is to ensure the flexibility of organizations in the subsystem of management, accounting and financial accounting. "Managerial flexibility is a catalytic element of agile organizations that can provide long-term balance to a business" (Bran, Tiganoaia & Ionescu, 2017). This means the priority of management accounting, the flexibility of which determines the flexibility of financial and accounting. Accounting systems are the most limited due to the legal regulation at the international and national levels. At the same time, due to the legal regulation, accounting is almost always not stable and is characterized by a low level of flexibility. This limits the flexibility of accounting processes with the simultaneous problem of ensuring the stability of income of organizations. Therefore, organizations integrate the Agile concept into management to form flexible teams, innovative business models, transform organizational structure, effective planning, and reduce operating costs. Flexible operating models require transparent flexible management, financial, accounting (Taipaleenmäki, 2017). Agile methodology is a tool to ensure flexible processes, procedures, autonomy of the subsystems of the organization, which at the same time ensures informed decision-making and forms a culture of responsibility (Taipaleenmäki, 2017). "Agility aims to increase the flexibility of organizations in a variable and evolving environment" (Nicoletti, 2018). Agile's methodology reduces costs and regulates accounting processes, creating a flexible financial system controlled by management. "Agile methodologies are a methodological way to respond to the inevitable change and to enhance management accounting adaptability" (Stormi, Laine & Korhonen, 2019).

The **aim of the article** is to analyze the effectiveness of the Agile methodology in the context of integrating the concepts of flexibility in the system of management, accounting and financial accounting.

Literature review

The concept of flexibility is in its infancy (Qamar, Hall & Collinson, 2018). In the scientific literature there are almost no full-fledged studies of the effectiveness of Agile methodology in the context

of integrating the concepts of flexibility in the system of management, accounting and financial accounting. At the level of integration of philosophy, Agile methodology in the projects of organizations there are many studies of effectiveness (Hobbs & Petit, 2017), but at the level of organizational research is limited (Sońta-Drączkowska, 2018). "The concept of agility is one of the major trends influencing project management discipline in the last decade" (Sońta-Drączkowska, 2018). "Agility is the complex concept, and its components synergistically contribute to the expected effect: ability to thrive and prospect in the contemporary market, meet changing customer demands" (Stachowiak & Oleśków-Szłapka, 2018). It can be argued that this concept will be relevant for organizations in the next twenty years.

"The agile organization is a new system built in a shorter time, consisting of verified components, which is quicker from the operational point of view and has low costs and few errors" (Bran, Tiganoaia & Ionescu, 2017). The concept of flexible organization provides for adaptability and coordination of the most important principles in the face of growing risks, globalization, competition, economic imbalances. It also means flexibility of labor resources, in particular in the subsystem of management, accounting and financial accounting. This includes planning threats and risks, the ability to adapt, maintaining a balance between future risks and productivity in an unstable environment. "The ability for a firm to be flexible has often taken priority over other performance indicators". Organizations that use flexible production methods provide a higher level of flexibility overall compared to others.

Studies show that Agile methodology in accounting subsystems provides performance measurement, integration of information technology into accounting processes, increases the efficiency of management functions, reduces costs and controls financial results, planning and forecasting financial performance of projects in the performance of financial managers, increases the level of accounting efficiency (Mistry, 2005; Tan et al., 2017; Stormi, Laine & Korhonen, 2019; Oliva et al., 2019; Qamar et al., 2020).

The analysis of scientific publications shows the lack of research on the integration of flexibility concepts in the system of management, accounting and financial accounting and the impact of Agile methodology on the financial performance of organizations. Agile methods have been studied in the context of supply chain flexibility, while their effectiveness in management accounting has been little studied (Hald & Thrane, 2016). In this study, the main statement is that the flexibility of



management accounting provides flexibility to other subsystems of the organization, forming a generally adaptable to the environment structure of the organization.

Methodology

This article is based on the concept of organizational flexibility (Taipaleenmäki, 2017; Cherniyavskiy et al., 2020) and the Agile philosophy, which reflects the implications and principles of methodology integration in accounting systems. A qualitative-empirical approach of Fuchs (2019) based on the secondary analysis of publications for 2017-2020 and methods of analysis, generalization was used for the study. The research hypothesis is to increase the level of flexibility of organizations, in particular the subsystems of management, accounting and financial accounting. The results of content analysis served as a basis for conceptualizing the effects of using Agile methodology in accounting.

At the first stage of the research the search and selection of scientific publications by keywords in the databases Science Direct, Tandfonline, Google academy: the concept of organizational flexibility, flexibility of organizations and Agile methodology, Agile methodology in accounting, Agile methodology in management accounting, Agile methodology in financial accounting, Agile methodology in accounting, efficiency of Agile methodology in accounting. In the second stage of the study, annotations were processed and re-publications were excluded from the analysis. At the third stage, a content analysis of the results of scientific publications, the effects of integration of

flexibility concepts and Agile methodology in the system of management, accounting and financial accounting of organizations.

Results

Integration of the concept of flexibility in the organization involves a change in organizational structure: there is a transition from functional, linear, staff to design, adaptive, flexible structures. In such structures, staff roles are flexible: each employee can participate in the development of a new product. Financial managers and accountants are also involved in the planning and development of new products in a changing environment due to the need for detailed financial planning, cost and revenue accounting.

Thus, the concept of flexibility provides for: 1) integration of new technologies; 2) integration of new management methods; 3) automation of business processes; 4) transformation of the structure of organizations as a result of the above changes. As a result, management, financial and accounting are integrated, forming a hybrid subsystem.

The integration of new management methods involves the use of philosophy, the concept of Agile to ensure flexibility and stability, support the strategy of organizations, reduce operating costs (Mistry, 2005), the flexibility of costing and revenue (Table 1). "Agility is the strategy that allows contemporary companies to cope with dynamics and turbulence of the contemporary market" (Stachowiak & Oleśków-Szlapka, 2018).

Table 1. The effectiveness of Agile methodology in the system of management, accounting and financial accounting of organizations

Author, year	Sector of activity of the organization	Agile methods	Integration of Agile methodology into the accounting subsystem	Research limitations
Taipaleenmäki (2017)	Cross-sectoral analysis in various areas of operation	Organizational, technical, behavioral methods of Agile	Adapted hybrid roles of accountants: strategic and operational. Implemented advanced analysis in the accounting system. Skills and competencies have been expanded.	Qualitative methodology for studying the effectiveness of Agile methods, there are no specific cases of Agile integration. Emphasis on conceptualization of Agile methods.
Busco, Giovannoni and Riccaboni (2017)	Company of the sector "brain-computer interface technology".	No specification	Agile's innovative methods ensured the materialization of innovations in the accounting and control system. Accounting has ensured the integration of innovations.	Company's operating sector is under development, not providing a complete study of Agile's effectiveness in other sectors



Rahimi et al. (2019)	Defense industry, Iran	62 practices of Agile methodology integration in order to increase process flexibility are considered	41 Agile methods were used to improve and integrate accounting processes in the subsystems: supply, customer interaction, personnel management	Confidentiality does not provide a complete study of the effectiveness of Agile's methodology in the defense sector: maritime, land, air
Stormi, Laine and Korhonen (2019)	Not detailed	Scrum methodology	Integration of Scrum into the performance measurement system. Adaptability and flexibility of management accounting.	Organizational functions of management accounting, which have been improved as a result of Scrum integration, are not detailed
Dilger et al. (2020)	Not detailed	Flexible methodology of Scrum "Continuous Planning and Forecasting Framework (CPFF)"	Flexible project management in management. Support for a team working in a flexible environment to ensure stability in the changing environment of the COVID-19 pandemic	Lack of practical verification of the developed CPFF method, lack of data from stakeholders on the effectiveness of the method

Source: author research

Financial costs are becoming more predictable, and accounting is being integrated into other systems: resource planning, supply, sales, marketing (Hoogveld & Koster, 2016), personnel management (Malakouti, Rezaei & Shahijan, 2017). Accounting provides flexible cost planning in these subsystems depending on environmental conditions.

The Agile methodology is implemented in the management accounting system and provides:

1. Efficiency of decision-making under conditions of sufficient amount of information on operating costs in accounting information systems, integration of information from all subsystems. Because project structures are integrated, the team works on an inter-functional approach, where each project participant has access to data.

2. Data is aligned through automation and constant collection, updating of information, which provides additional value and flexibility in decision-making. The work of a team of financiers, accountants, and managers on data aggregation provides additional flexibility. The facts are documented by the whole team, the IT infrastructure ensures the storage and updating of data. The main obstacle to automation is excessive internal and external bureaucracy: "the prevalence of bureaucracy and organizational silos are often contradictory to agile principles and values" (Karvonen, Sharp & Barroca, 2018). This means that the possibilities of the concept of flexibility are limited by bureaucracy in the accounting subsystem.

3. Integration of technologies (cloud for data storage, fast access, ERP-information management system, personnel) provides centralized, but flexible team management.

4. Technologies provide resource management, rapid response to consumer demand and behavior, management of production processes, cost planning, sales and more.

5. Staff skills and competencies are improved by focusing on complex processes, automating routine work. Financiers have the ability to plan resources and costs instead of simply documenting operations, processes, or finding data. Thus, the accountant, financier is integrated into the team as responsible for financial planning, rather than documenting transactions after their implementation. Operational business processes are complemented by strategic objectives, tasks.

The scientific literature defines the concepts of "agile management" and "Enterprise agility" (Karvonen, Sharp & Barroca, 2018), which means a clear strong interaction with customers and the ability of the organization to respond quickly to changing market conditions compared to competitors through new products (Stachowiak & Oleśków-Szłapka, 2018), innovation and dynamic integration of technologies. These features are the competencies of companies in the next twenty years, which will determine its competitiveness in the market. "However, acquiring those capabilities, such as continuous delivery and scaling agility to product programmes, portfolios and business models, is challenging in many organisations" (Karvonen, Sharp & Barroca, 2018). To develop



these competencies, organizations integrate and use the Agile methodology. As a result, there is an Agile strategy that provides flexibility due to changing external and internal conditions.

The integration of flexibility concepts leads to the emergence of new approaches and assessments of the competitiveness of organizations in the market. Enterprise agility can be measured through the Competitive Agility Index, which is based on information about the stability and growth and profitability of companies, which allows you to determine the impact of an integrated growth strategy on profitability. The Competitive Agility Index was proposed by Accenture Pearson and Theofilou (2020), which develops integrated growth strategies for multinational companies in the global market.

Innovation is seen as the key to achieving organizational flexibility. "The mapping of the Competitive Agility Index reveals four broad categories of companies and identifies where companies should start on their journey to competitive agility" (Figure 1). 28% of the analyzed companies need to use an aggressive strategy to keep profits on the road to survival. 22% of companies are overestimated by the market, whose positioning is under threat, which requires a transition to an integrated growth strategy. Underestimated 21% of companies that use integrated growth strategies, but did not provide their own value in the market. Disruptive competitors occupy 26% of the market, which thanks to integrated growth and flexibility strategies have taken a niche in the market, but require systematic use of flexibility through the creation of new products.

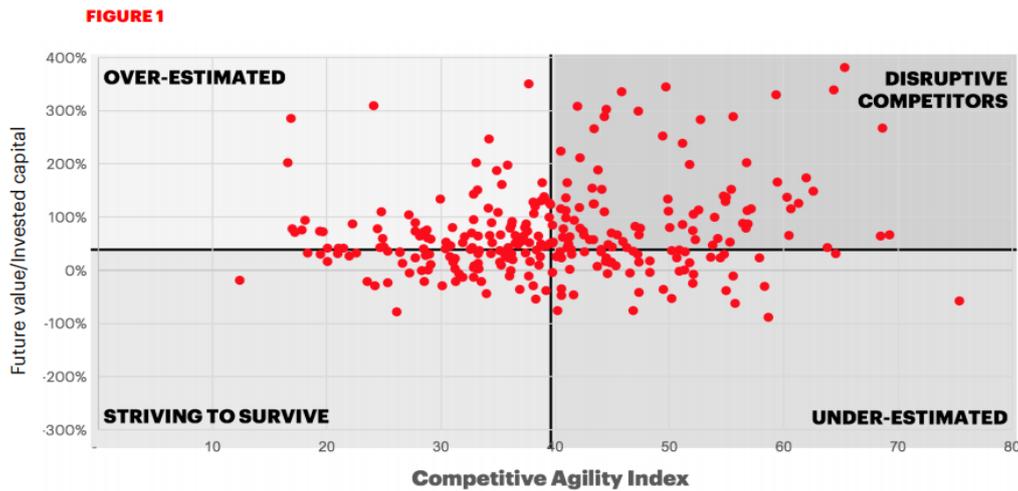


Figure 1. Competitive Agility Index

Source: Pearson and Theofilou, (2020)

In fact, thanks to the concept of flexibility, technology and innovation, organizations implement an integrated growth strategy to ensure revenue stability, growth, profitability and competitiveness in an environment where the old strategies do not ensure market share. This requires the active participation of financiers and accountants, changing their functions, because the implementation of costs in changing conditions is one of the most threatening risks of loss of income. As a result, the integration of technology into financial planning processes allows to shift the emphasis from the traditional role of financier, accountant, documenting transactions and calculating to a fundamentally new role: resource planner in all subsystems of the enterprise.

Conclusion

Agile methodology in the system of management, accounting and financial accounting of organizations remains a little-studied subject in

scientific circles. This is due to the lack of practice of applying the methodology in certain subsystems of organizations. As a result, the impact of Agile methods is indirect and occurs through the provision of management flexibility, supply systems, sales, production. The positive experience of companies in these subsystems allows you to partially integrate this experience to adapt to management. This indirectly transforms financial accounting through the flexibility of human resources in management processes. Accounting remains the least flexible system due to legal constraints. At the same time, financial planning becomes more flexible due to the flexibility of human resources (financial analysts, managers, accountants). In general, the transformation of accounting automatically occurs through the integration of technology and process automation: the structure of the organization changes, financial workers and accountants are more flexible in making decisions about planning costs, revenues, profits. Technologies and new management



methods have solved the problem of overburdening financial staff with routine tasks and processes. Thus, automation has provided a transition from a limited, regulated, chaotic management accounting system to a flexible, hybrid one. Skills and competencies of accountants are expanded, roles are transferred from current to operational, tactical, strategic, there is an implementation of advanced analysis in the accounting system.

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