

DIGITALES ARCHIV

ZBW – Leibniz-Informationszentrum Wirtschaft
ZBW – Leibniz Information Centre for Economics

Kirian, Svtlana; Radchenko, Oksana

Article

The impact of the economy digitalization on the development of the accounting multi-paradigm for the purposes of financial analysis

Reference: Kirian, Svtlana/Radchenko, Oksana (2022). The impact of the economy digitalization on the development of the accounting multi-paradigm for the purposes of financial analysis. In: Technology audit and production reserves 3 (4/65), S. 11 - 19.
<http://journals.uran.ua/tarp/article/download/261323/258487/603477>.
doi:10.15587/2706-5448.2022.261323.

This Version is available at:
<http://hdl.handle.net/11159/9010>

Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics
Düsternbrooker Weg 120
24105 Kiel (Germany)
E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)
<https://www.zbw.eu/econis-archiv/>

Standard-Nutzungsbedingungen:

Dieses Dokument darf zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden. Sie dürfen dieses Dokument nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen. Sofern für das Dokument eine Open-Content-Lizenz verwendet wurde, so gelten abweichend von diesen Nutzungsbedingungen die in der Lizenz gewährten Nutzungsrechte.

<https://zbw.eu/econis-archiv/termsfuse>

Terms of use:

This document may be saved and copied for your personal and scholarly purposes. You are not to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public. If the document is made available under a Creative Commons Licence you may exercise further usage rights as specified in the licence.

UDC 657.1.012(338.2)

JEL Classification: M41, O33, F21, E27

DOI: 10.15587/2706-5448.2022.261323

Article type «Original research»

**Svitlana Kirian,
Oksana Radchenko**

THE IMPACT OF THE ECONOMY DIGITALIZATION ON THE DEVELOPMENT OF THE ACCOUNTING MULTI-PARADIGM FOR THE PURPOSES OF FINANCIAL ANALYSIS

The object of research is the process of formation of accounting paradigms in the digital economy and their compliance with the information support of financial analysis for management needs. The prospects of research are due to the fact that one of the most problematic places is debugging the relationship between accounting practice and science. The regulation of this process is associated with the complexity of identifying individual accounting objects that arise as a support for the digitalization of services and the standardization of this process. There is a transformation of the established accounting paradigm into a multi-paradigm, since traditional and regulatory requirements for data sources are preserved and completely new ones, of a different economic and social orientation, are emerging. To determine the needs of information support for financial analysis, the institutional and legal field for the development of the digital economy in Ukraine, the state of development of the information society have been studied. The volumes of implementation of digitalization of individual corporations are analyzed. The analysis of the current state of theoretical developments in accounting in conjunction with the development of digital technologies in financial and economic processes is carried out. It has been determined that the accounting paradigm is the prevailing interpretation among researchers, practitioners, in regulatory documents and accounting standards of the position/state of the theory of accounting and its economic doctrine, generalizing by the time. The main characteristics of the digital economy and spending on innovation are identified as the leitmotif of the use of knowledge as capital, which is associated with a qualitatively new type of information and telecommunication technologies, inclusive sustainable development, and extends to the methodology of social sciences and management. In the course of the study, multidisciplinary chain links were identified: digital economy – accounting paradigms – methods of financial analysis. A working hypothesis of the influence of these connections on the accounting paradigms and the crystallization of the latter in the multiparadigm has been developed. The risk vectors associated with the advanced development of the digital economy against the tools of its analysis are identified: regulatory, socio-economic, technological and managerial. Subsequently, the stages of financial analysis procedures were adjusted by expanding accounting information on the state of the market and corporate processes in the context of new technologies for making strategic decisions. By clarifying the methodology of financial analysis as a reaction to the multidisciplinary of the accounting paradigm, an assessment is made of the use of innovative technologies by corporations. It has been proved that the penetration of transactions inherent in the digital economy into the financial system entails its reaction and requires appropriate changes in the methods and methodology of financial analysis. Since the basis of information support for financial analysis is accounting, the development of its paradigm as a multi-paradigm affects the quality of financial data produced for management.

Keywords: accounting multi-paradigm, information support, digital information technologies, accounting theory, financial analysis, digital economy.

Received date: 17.05.2022

Accepted date: 28.06.2022

Published date: 30.06.2022

© The Author(s) 2022

This is an open access article
under the Creative Commons CC BY license

How to cite

Kirian, S., Radchenko, O. (2022). The impact of the economy digitalization on the development of the accounting multi-paradigm for the purposes of financial analysis. *Technology Audit and Production Reserves*, 3 (4 (65)), 11–19. doi: <http://doi.org/10.15587/2706-5448.2022.261323>

1. Introduction

The digitalization of the economy has changed the system of economic relations, most of all due to the influ-

ence of information technologies, which have significant capabilities for collecting, summarizing and analyzing information about social phenomena. The methodology of financial analysis responds to the growing influence of the

digitalization of the economy, technology and other factors. Traditional approaches to the implementation of financial analysis based on accounting data no longer meet the growing demand and expectations of management, do not meet the requirements of management to improve efficiency and profitability by analytical methods. There is a development of informatization, the spread of the use of the IT sphere, an increase in the share of production of virtual goods and services in the gross product, the development of financial technologies (FinTech), etc. The choice of a strategy for responding to new trends in the digitalization of the economy involves improving the theory of accounting and the methodology of financial analysis carried out on this basis. Also, in a detailed study, connections are required: the digital economy – the accounting paradigm – the information environment of financial analysis in terms of their interpenetration and mutual influence.

2. The object of research and its technological audit

The object of research is the process of formation of accounting paradigms in the digital economy and its compliance with the needs of information support for financial analysis for different levels of management. Attention is focused on the substantiation of multi-paradigm, the problems of adapting accounting systems to the requirements of digital information technologies at the applied levels of analysis.

3. The aim and objectives of research

The aim of research is to study approaches to the formation of accounting paradigms in conjunction with the development of the digital economy to provide information support for financial analysis. Achieving the set goals of the study involves the formation and testing of a scientific hypothesis about the existence of a connection between the digital economy, accounting paradigms and the methodology of financial analysis. The task of the study is:

1. Description of the features of the digital economy within the prevailing economic doctrines and their integration into the system of accounting theory.
2. Clarification of the essence of the current (transitional) paradigm of the theory of accounting in the conditions of the formation of the digital economy and substantiation of the multi-paradigm of its current state.
3. Development of information support for monetary analysis and methods for its implementation through expanding the boundaries of the accounting paradigm of the era of the digital economy.

4. Research of existing solutions to the problem

The institutional and legal field for the development of the digital economy in Ukraine has been formed within the framework of:

- Decree of the Cabinet of Ministers of Ukraine «On approval of the strategy for the development of the information society in Ukraine» dated May 15, 2013 No. 386-r;
- Conceptual foundations of the «Digital Agenda of Ukraine-2020» dated January 17, 2018 No. 67-r;

- Law of Ukraine «On electronic trust services» dated 05.10.2017 No. 2155-VIII;
- «The Concept for the Development of the Digital Economy and Society of Ukraine for 2018–2020» dated 17.01.2018, etc.

According to the glossary of the above regulations, the digital economy is a type of economy where the key factors and means of production are digital data (binary, informational, etc.) and network transactions. Using them as a resource allows significantly increasing the efficiency and productivity of activities and increasing the value of products and services.

According to the decision of the Eurasian Economic Union dated October 11, 2017 No. 12 «On the main directions of the implementation of the digital agenda of the Eurasian Economic Union until 2025» [1], the main directions are digital transformation:

- sectors of the economy and intersectoral transformation;
- markets for goods, services, capital and labor;
- management processes, development of digital infrastructure and security of digital processes.

The main international tool for assessing the state of the digital economy is the digital scoreboard, on the basis of which reports are generated, including the Digital Economy and Information Society Index (DESI) and the European Digital Progress Report (EDRP).

The economic theory of the digital economy is associated with a qualitatively new type of information and telecommunication technologies, sustainable inclusive development, extending to the methodology of social sciences and management. Researchers believe that the strategic management paradigm requires a change in the traditional accounting system to a strategically oriented one in order to assess the impact on the performance of an enterprise of external factors and actions, risks and uncertainty, change management, generation or creation of knowledge [2]. Accordingly, the formation of the accounting theory paradigm occurs as an accumulation of knowledge. Scientists have determined that the paradigm in accounting is a set of generalized ideas, hypotheses, methodological approaches shared by this scientific community, acceptable to other institutions and formalized in the form of scientific theories [3]. Or a metatheoretical construction of accounting, consisting of symbolic generalizations, metaphysical parts that define the basic methodological principles of accounting as a science, accounting values that establish ideals and norms for building accounting scientific knowledge [4]. As early as 2006, scientists drew attention to the need to form a post-industrial accounting paradigm, which ensures an increase in the efficiency of functioning and competitiveness of enterprises in the transition to a post-industrial economy [5]. It is also believed that this is a disciplinary matrix, consisting of four elements: symbolic generalizations; metaphysical assumptions; values; exemplary research results [6].

Currently, the role of information and communication technologies in assessing the state of the digital economy has been studied [7]. In the conditions of the sixth and seventh technological orders, the accounting system requires significant changes, the catalyst of which is information technology [8]. It has been determined that significant technological and informatization shifts, as well as the growth of the information potential of the digital economic space, stimulate the modernization of accounting

science [9], namely through the transformation of policies, tools and technologies for accounting and taxation in the digital economy [10]. Therefore, it is proposed to form a modern paradigm for the development of accounting through the use of network theory [11].

In general, researchers are unanimous that a paradigm is a conceptual scheme that provides for the reconstruction and reorganization of theoretical accounting knowledge in accounting, provides for the formulation of the problem and its solution, research methods that prevail during a certain historical period in the scientific community. The paradigm for the purposes of this study is the prevailing interpretation among researchers, practitioners, in regulatory documents and accounting standards of the position/state of accounting theory and its economic doctrine that generalizes by the time.

As a generalization of the research review, accounting needs further theoretical and methodological substantiation of its rules, concepts and paradigms, taking into account the international practice of using the relevant standards and possible ways to improve it in the context of the progress of innovative technologies [12]. The notable narrowness of contemporary accounting research is raised, identifying it as a threat to scientific developments in the field, emphasizing the importance of supporting the paradigm debate in order to promote multidimensional openness and genuine science in accounting research [13]. Let's give proof of the representation of a number of paradigms that show a balanced knowledge of the multi-paradigmatic state of accounting records, and the system of compilation of accounting knowledge is recognized as socially constructed, one that plays an important role in management [14].

With the addition of theoretical and methodological aspects in the development of information security analysis and yogo implementation to the accounting form, it is important to manage finances as a way of disclosing information, how to manage finances in ambush monitoring and analysis of their flow of information [15]. The very conceptual model of the financial management system will require the development of modern information technologies [16] too.

Consequently, certain issues of the influence of the accounting paradigm on the development of financial analysis in the era of digitalization of the economy are associated

with the growth of information flows on virtual goods and services and need to be considered in more depth.

5. Methods of research

The work used general scientific and special research methods:

- the dialectical method of cognition and the basic principles of economic research to determine the accounting paradigm;
- general empirical, theoretical methods: statistical, comparative and system analysis and synthesis for preliminary coverage of the state of the problem, determining the objectives of the study, architecture and contours of the proof of the hypotheses put forward;
- a method of comparisons for the study of the current state of various types of information systems produced by accounting for the purposes of management and financial analysis;
- induction, deduction, methods of systematization, abstraction to determine the characteristics of implementation, the ratio of costs and cost estimates of existing corporate enterprise management systems;
- decomposition for scientific knowledge of the fundamentals of the digital economy and their impact on the development of the information accounting paradigm.

6. Research results

The report on the state of informatization in Ukraine [17] according to the DESI rating shows 45th place in 2020 against 50th in 2017 out of 131 assessment positions, which indicates positive trends in the technological development of Ukraine. In the digital economy, the information product itself can be a source of creating a new product, with the participation of knowledge as a catalyst, at the time of the implementation of knowledge in the information product [7]. The digital economy primarily provides competitive advantages for the innovative development of economic systems at different levels [12]. The overall impact of digitalization and information technology on the economy is shown in Table 1.

Innovative development can be partly assessed by the dynamics and structure of expenditures on innovation by type of economic activity (Table 2).

Spheres of influence of digitalization and information technologies on the economy

Table 1

Area of influence	Features of the manifestation of influence in the economy
Data as a competitive advantage	The collection, description, storage and processing of data makes it possible to obtain information for use in business processes, public life, and the work of the state. Data becomes an asset. The ability to work with data and analyze it is an opportunity to be more competitive
Sphere «Internet of Things»	Networks consisting of interconnected physical objects (or things) or devices that have built-in sensors and sensors, as well as software that allows physical things to interact with computer systems and networks
Digital transformations	Digital technologies have become the basis for the creation of new products, values, properties. This transformation leads to the emergence of new, unique systems and processes that make up their new value essence (for example, Uber, Airbnb, digital banking)
Economy of «common use»	Thanks to the use of «shared» platforms and the replacement of physical processes with program-controlled systems, it allows local companies to conduct economic activity cheaper, more conveniently and better in the regional and global markets
Virtualization of physical infrastructure IT systems	Allows to significantly reduce the amount of initial capital costs for deploying the necessary digital infrastructure through the use of «cloud» technologies and software-defined architecture

Note: based on [18]

Table 2

Dynamics and structure of expenditures on innovation by type of economic activity of Ukraine in 2018 and 2020, million USD

Kind of activity	2018		2020		2020 to 2018, %
	million USD	%	million USD	%	
Total	920.1	100	865.3	100	93.21
Industry	556.6	60.49	572.4	66.15	101.94
Extractive industry	43.2	4.70	60.9	7.03	139.50
Oil and gas	22.2	2.41	44.0	5.08	196.18
Mining of metal ores	14.0	1.52	13.8	1.60	97.95
Processing industry	484.8	52.69	495.1	57.21	101.21
Food production	47.8	5.20	108.6	12.55	225.12
Beverage production	6.0	0.65	21.6	2.49	355.62
Textile production	2.7	0.29	1.4	0.16	50.69
Manufacture of wearing apparel	0.7	0.08	3.1	0.36	436.32
Wood processing	16.3	1.77	16.2	1.87	98.51
Paper production	3.9	0.43	6.4	0.74	161.12
Printing activity	10.1	1.10	1.9	0.22	18.40
Production of chemical products	19.0	2.06	38.0	4.39	198.41
Pharmaceutical production	22.2	2.41	69.3	8.01	309.44
Metallurgical production	143.4	15.58	71.4	8.25	49.34
Manufacture of electronic and optical products	17.7	1.93	13.0	1.50	72.47
Machine manufacturing	49.1	5.33	50.4	5.82	101.79
Vehicle manufacturing	6.9	0.75	10.3	1.19	147.85
Furniture manufacture	5.9	0.65	2.4	0.28	40.84
Repair and installation of machines	1.0	0.11	2.7	0.32	266.30
Supply of energy, gas	23.3	2.53	13.9	1.61	59.18
Water supply; sewerage	5.3	0.57	2.6	0.30	48.88
Wholesale	20.5	2.23	24.0	2.78	116.39
Transport	121.5	13.21	87.7	10.13	71.53
Infomtelecommunications	25.2	2.74	31.2	3.60	122.42
Publishing	1.1	0.12	1.1	0.12	96.66
Telecommunications	11.5	1.25	10.6	1.22	91.33
Computer programming	10.9	1.19	18.9	2.19	171.57
Provision of information services	1.6	0.17	0.5	0.05	29.21
Financial activities	23.7	2.58	0.9	0.11	3.86
Insurance	0.2	0.02	0.6	0.08	364.58
Scientific research	166.8	18.13	139.6	16.13	82.92
Advertising activity	0.8	0.08	4.4	0.50	555.66

Note: based on [19]

According to the State Statistics Service of Ukraine [19], as of 2020, the processing industry is the leader in their structure – 57 %, followed by transport – 10 %, information – 3.6 %. Spending on innovation in 2020 decreased by 6.8 % against the level of 2018. With regard to industries by type of activity, the costs increased in advertising – 5.6 times, information and telecommunications – by 22 %, wholesale trade – by 16 %; a significant reduction in financial activities – by 96 %, scientific research – by 17 %. Industrial innovation spending grew by only 2 %, with

the extractive industry growing by 40 %, including oil and gas production by 96 %.

The processing industry grew by only 1 %, but growth is observed in industries:

- 4.6 times in the production of clothing;
- 3.6 times in the beverage industry;
- 3 times in pharmacy;
- 2.3 times in food production and machine repair;
- 1.98 times in the production of chemical products;
- 1.6 times in paper production.

The decrease is observed in printing activities by 72 %, textile production by 50 %.

A graphic representation of the structure of innovations by types of activity in 2018 and 2020 and the share of activities in gross value added (GVA) in 2020 are shown in Fig. 1.

The largest gap in the cost of innovation and GVA produced by type of activity is observed in the processing industry, scientific research, and transport. Almost balanced situation in the extractive industry, water and gas supply. Trade and infocommunications have a higher level of added value created than the costs incurred for innovation.

Statistical data reveal the state of the use of innovations by type of activity. Based on an analytical study of the space of the digital economy (in particular [20]), the rating of the activities of corporations leading digitalization is given (Table 3). Corporations specializing in the production of digital products and the provision of digital services, and corporations from various sectors of the economy that implement digital technologies in their activities are taken into account.

Let's observe that the flagships of digital technologies belong to different areas, which does not always correspond with the statistics. At the same time, according to the strategic plans, digitalization in Ukraine will allow:

- create at least 11 % (in 2021E) up to 95 % (2030E) of additional GDP per year;
- over 10 years to additionally create up to 1260 billion USD of GDP;

– to increase budget revenue by 240 billion USD over 10 years;

– to create 700 thousand new jobs (excluding the export IT industry) [21].

As a result of innovativeness, corporations are faced with the difficulty of conducting multi-level analysis and evaluating performance.

The main changes in the digital economy relate to the growing role of information technologies, which are becoming objective factors in the life of society. It is in this connection that researchers of recent years believe that whole groups of factors can influence the emergence of new accounting paradigms [6, 22]. And since the development of accounting as a functional science depends on a significant number of interrelated parameters, it is a multi-paradigm science, suggesting the possibility of the simultaneous existence of a significant number of paradigms.

The implementation of the principles of digitalization of the economy is impossible without the use of tools that can ensure continuous work to make changes to the existing economic system. Such a tool is accounting in regulatory, financial, infrastructural and technological changes (Fig. 2).

It is believed that the emergence in the digital economy of the latest specific business transactions and activities requires an adequate response of the accounting system in reflecting rather special objects [26]. Then accounting relies on an intermediate paradigm, as the maintenance of new requirements follows a trial path.

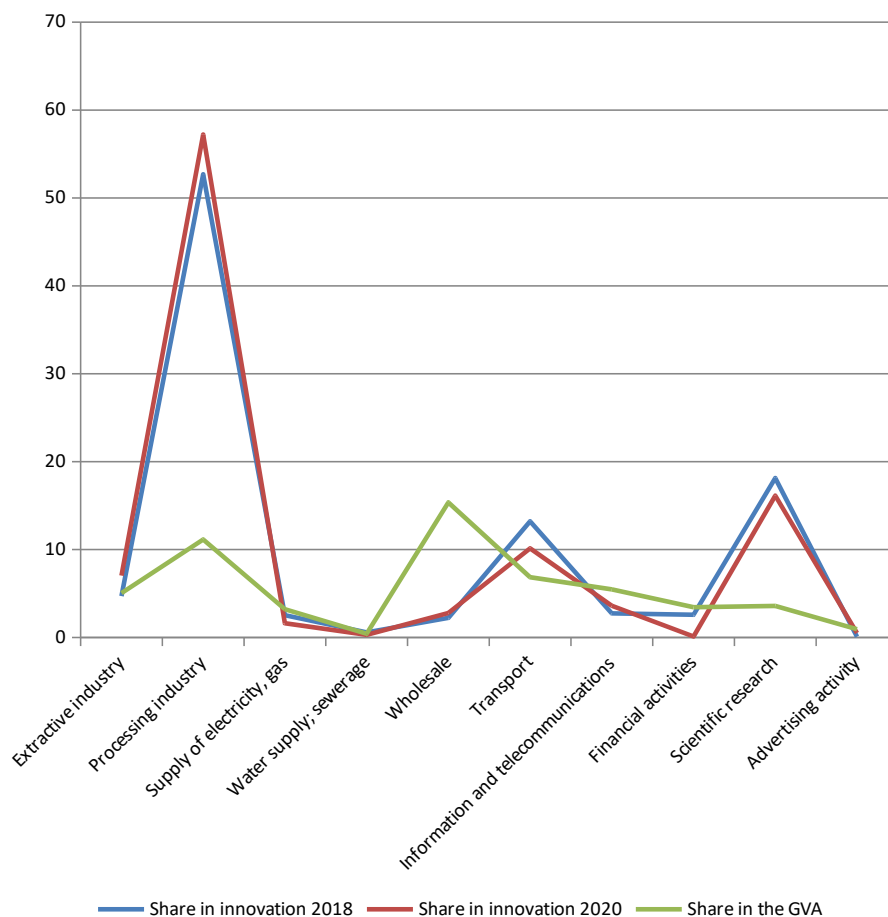


Fig. 1. Structure of innovations by types of activity in 2018 and 2020 and the share of activities in gross value added (based on [19])

Table 3

Implementation of digitalization by types of activity of individual corporations operating in Ukraine

Corporation	Kind of activity
AB INBEV EFES UKRAINE	An international brewing company that has responded to the «digital challenge» of our time with the successful operation of the industry's first B2B Multi-vendor portal «VyBEERray» – a service that allows company partners to order products online 24/7
OOO BASF T.O.V.	The world's largest chemical group with a portfolio that includes chemicals, plastics, specialty products, crop protection products, agricultural solutions, and oil and natural gas. Over the past few years, 9 billion Euros have been invested in digital technologies
OOO FC EVO	A product IT company that creates marketplaces where goods and services are sold, develops such projects as Prom.ua, Deal.by, Satu.kz, Bigl.ua, IZI.ua, Kabanchik.ua, Shafa.ua, Crafta.ua. Created a service of digital solutions for business «On Time», an Internet platform for public and commercial tenders and auctions. Develops an online service for buying tours Rozetka Travel, as well as fintech
KERNEL-TRADE	One of the leaders in the Ukrainian agro-industrial complex in terms of investments in digital technologies. The IT team of the company digitized logistics, trading, workflow, increased mobility and speed of decision-making based on Microsoft Dynamics NAV 2018, a single IT complex of HR services, reporting and solving business tasks Employee Data Center is functioning
WOG RETAIL LLC	One of the largest networks of filling stations and the largest fuel importer in Ukraine. The service process is digitalized through the WOG PRIDE mobile application, the WOG PAY service operates
UkrAVTO	The largest car manufacturer, distributor and service provider in Ukraine. We have implemented a system for dispatching service processes, a comprehensive IT solution that allows to control and analyze all stages of service
JSC «PHARMAK»	The pharmaceutical market leader digitalizes all production and management processes. It conducts all purchases only on a special electronic platform, a transparent IT system for reporting, budgeting, production planning, sales, document management, personnel assessment and training has been introduced

Note: based on [20]

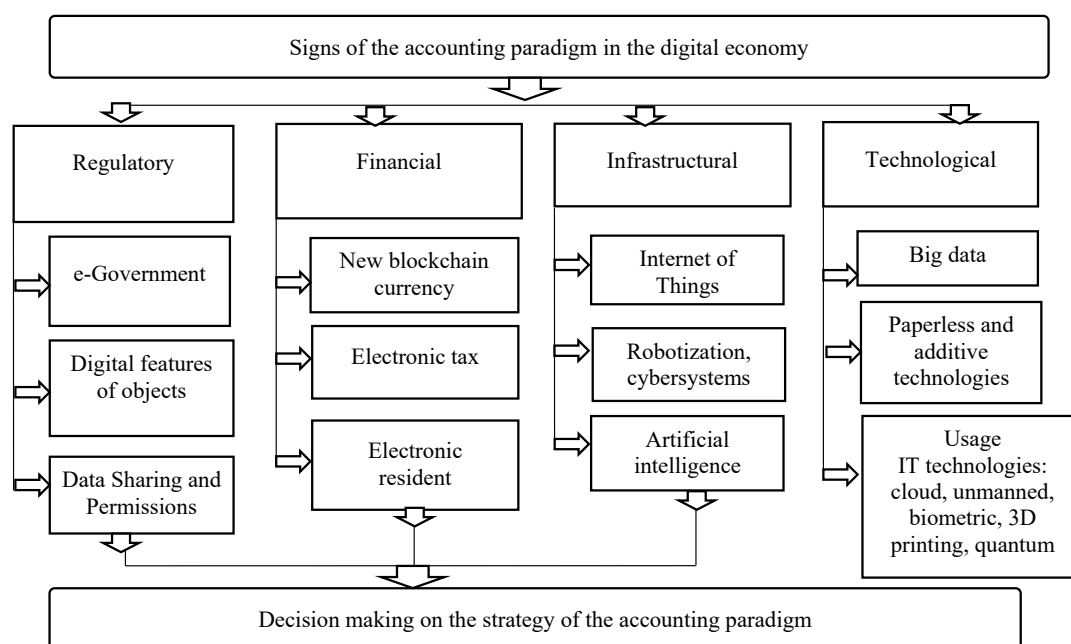


Fig. 2. Signs of the accounting paradigm in the digital economy (based on [7, 23–25])

At the same time, accounting retains the role of the main means of determining objects, collection technology, processing processes and forms of providing financial and economic information on the economic activities of corporations and generating information for management. There is a need to expand the permanent accounting paradigm to the needs of reflecting the processes of the information economy through the means of an intermediate paradigm, which has signs of a multiparadigm due to the growth of multi-vector requirements of users of reporting information.

Thus, according to the presentation of practitioners [27], data is now distributed around the world using a growing

set of sensors, applications and business models. To manage them, the formation of assets and data flows in terms of strategic, financial, technical and human resources is required. The highest level of data governance is the creation of fully data-driven bionic organizations.

The impact of digitalization on the methodological, methodological and organizational aspects of accounting is so significant that scientists associate it with a new paradigm in the development of accounting theory, which is due to the Fourth Industrial Revolution [22]. The essence of the paradigm is to clarify the content and components of new objects – intellectual capital, natural

resource potential, redistribution of economic resources and information on the procedure for their recognition, identification and evaluation, and reporting features. In general, the main attention is paid to the management of the intellectual and information component of capital at different levels of management.

The development of a new paradigm is caused by a change in management approaches associated with the growing requirements of the digital economy, new regulatory standards for accounting and reporting information, the need for expanded data generation for management and financial analysis, and increased social demands. The existing solutions to the problem of developing the accounting information support paradigm in the era of digitalization of the economy are in the plane:

- improvement of accounting techniques using information technology;
- implementation of the mission of accounting as information support of the new economic order and the formation of a new methodology for measuring values, recognition of accounting as a means of production [9].

Accounting methods, including its fundamentals: qualitative principles, double entry, parameters for reflecting the facts of economic life, the structure of accounting registers, reporting forms, concepts for the formation of accounting policies are subject to transformation. This concerns the technological and functional aspects, the use of mathematical tools (graphs, matrices, algorithms, etc.).

Approaches to documenting business transactions, conducting settlement transactions using QR codes, and structuring the chart of accounts have also been changed. The use of programs and information technologies, the preparation and publication of digital financial statements created using XBRL technology are practiced.

Accounting plays a dominant role in the adaptation of business models, as it creates digital databases with relevant information. At the same time, it becomes possible to form dashboards, personalized disclosure of reporting information at the request of stakeholders, making realistic financial forecasts in real time using appropriate digital platforms, etc. That is, while serving the growing needs of the digital economy, the accounting paradigm gravitates toward multidisciplinary. This is facilitated by the nature of the data processed by the accounting system, which involves the involvement of both individual components and types of accounting, as well as modern methods and means of scientific and technical and technological generalization.

With the expansion of the accounting paradigm, the targets of financial analysis for corporations need to justify the choice of indicators to improve the methodology (Table 4) and form the most acceptable set of coefficients. Final financial analysis after the collection of accounting data by means of substantiating economic decisions, the feasibility of investments; management quality assessments; forecasting tool.

Table 4

Methods of financial analysis of digital corporations

Directions	Structural components	Techniques
Market assessment	Market analysis	Exponential analysis
	Choice of a niche of activity	Business opportunity analysis
	Position evaluation	SWOT analysis
Evaluation of business processes	Concept	Layout bath
	Technical task	Modeling solution
	Program of activities	Organizational model
	Resource allocation	Matrix of voters and permissions
	Risks	Interface analysis
Assessment of the feasibility of financial decisions	Financial networking	Afterword diagrams
	Artificial financial intelligence	Expert systems
	Financial algorithmic trading	Formal logic
	Electronic banking	Executive information systems
	Financial blockchain	Expert systems
	Electronic trading in financial instruments	Plumbing diagram and tree growth
	Cryptographic financial processes	Model optimization
	Crowd funding in the service sector	Factor analysis
	Digital securities	DuPont system
Options evaluation	Evaluation of alternatives	Business case
	Calculation of forecasts	Canvas business model
	Implementations	Classic financial analysis
Making decisions	Solution support	Group system props
	Optimization	Multiplier analysis
	Development forecast	Financial forecasts

Note: based on [8, 12, 20, 23, 24]

Financial analysis needs to be enriched with social reporting data, namely those that relate to the expansion of the list of indicators, parameters, coefficients and multipliers that give an objective assessment of the state of the financial management system in conjunction with social phenomena. Its role is reduced to the effective maintenance of the movement of financial and cash flows, taking into account the laws of behavioral economics and the formation of a basis for the implementation of state financial policy based on social justice.

Options for evaluating performance through digital design and engineering, including the implementation of a prototype, the creation of a platform, and an architectural solution for strategic data design, are introduced into the methodology for conducting financial analysis. New areas of analysis are:

- IT risk management, Agile and DevOps approaches, data strategy; creation of a target operating model for data management and analytics, adapted to the needs of management.
- Digital Acceleration Index (BCG) for an objective assessment of the current digital maturity of a corporation compared to market peers.
- Rapid assessment of the architecture of data and digital platforms in order to identify technological gaps that need to be addressed in order to achieve excellence in data and digital platforms [27]. Based on this expansion, it is possible to develop a structured and informed value assessment, the data of which for corporations can bring additional advantages in the market.

So, the current stage of digitalization of the economy has determined the trends and directions for the development of the field of accounting, but at the same time, it has revealed challenges and threats, primarily in the field of providing financial analysis information. Therefore, the priority tasks should include the need to prioritize digital initiatives and establish their clear alignment with the corporate development strategy of corporations. In addition, the impact of digital initiatives should be reflected in key performance indicators, as well as in assessing the increase in business value before and after the introduction of financial innovations.

7. SWOT analysis of research results

Strengths. The strengths of the study lie in the fact that the scientific problem of identifying chain links has now been formulated: digital economy – accounting paradigms – information support for financial analysis. Compared with other approaches, a multidisciplinary study of the state of the economy using analytical and accounting methods has been announced. Therefore, the proposed approaches make it possible to respond more flexibly to the challenges of digitalization. Compared with analogues, the proposed approach allows introducing interconnected analytical blocks into the accounting and analysis system.

Weaknesses. The analysis of the process of information support for financial analysis showed that there is a risk factor associated with the rapid development of the digital economy and the lag in the practice of its analysis. Risks include groups of risks: regulatory, socio-economic, technological and managerial.

Opportunities. It should be noted that in the future, the penetration of innovative technologies inherent in

the digital economy into the financial system entails its reaction and requires appropriate changes in the methods and methodology of financial analysis. Since the basis of information support for financial analysis is accounting, the development of its paradigm directly affects the quality of financial data produced for management.

Threats. The problems of risk management include the fact that even having carried out the optimal financial analysis, corporations do not always have a chance to use its results. The situation is complicated by a narrow approach to the problem, the high cost of implementing information collection and analysis systems.

8. Conclusions

1. Based on the analysis of the features of the digital economy within the framework of economic doctrines, the characteristics of one of the parties to its assessment by the method of corporate spending on innovation in conjunction with the produced GVA have been clarified. It has been established that the assessment of the financial condition of corporations is hampered by the slow adaptation of accounting paradigms to management requirements, the lack of targeted data monitoring.

2. The essence of the current paradigm of accounting theory in the development of the digital economy can be called transitional. The prerequisites for building an accounting system for the needs of the digital economy that meet the needs of users are highlighted, it contains information about internal business processes and the state of the external environment regarding technological and functional aspects.

3. Information support of financial analysis, despite the development of software and the possibility of data analysis, is hampered by the limits of the transitional paradigm. For its compliance, the methodology of financial analysis, expressed in financial and non-financial indicators, has been refined, taking into account socio-humanitarian priorities, using the latest information technologies and data collection.

References

1. EAEU approved Action Plan for implementing Strategy-2025. Available at: <https://eec.eaunion.org/en/news/glavy-gosudarstv-eaes-dali-vysokuyu-otsenku-tempam-ispolneniya-strategii-2025/>
2. Semaniuk, V. Z. (2012). Oblik dlia stratehichnoho upravlinnia: problemy teoretychnoi kontseptualizatsii. *Menedzhment ta pidpriemnytstvo v Ukraini: etapy stanovlennia i problemy rozvytku*, 722, 236–241.
3. Zhuk, V. M. (2009). Paradyhma bukhhaltenskoho obliku ekonomiky harmoniinoho rozvytku. *Zbirnyk naukovykh prats Ekonomichni nauky. Seriya: Oblik i finansy*, 6 (24), 171–182.
4. Legenchuk, S. F. (2011). *Accounting theory and methodology development in postindustrial economy conditions*. Zhytomyr: ZhDTU, 55.
5. Lehenchuk, S. F. (2006). Rozvytok bukhhaltenskoho obliku v umovakh postindustrialnoi ekonomiky. *Visnyk ZhDTU Ekonomichni nauky*, 4 (38), 141.
6. Vakun, O., Zarudna, N., Fursa, T. (2020). Strategic accounting paradigm. *Galician economic journal*, 6 (67), 67–78. doi: http://doi.org/10.33108/galicianvisnyk_tntu2020.06.067
7. Vyshnevskiy, V. P., Harkushenko, O. M., Kniaziev, S. I., Lypnytskyi, D. V., Chekina, V. D.; Vyshnevskiy, V. P., Kniaziev, S. I. (Eds.) (2020). *Tsyfrovizatsiia ekonomiky Ukrainy: transformatsiyni potentsial*. Kyiv: Akadempriodyka, 188.
8. Makurin, A. (2020). Development of Accounting in the Conditions of Introduction of Modern Information Technologies. *Accounting and Finance*, 1 (87), 52–58. doi: [http://doi.org/10.33146/2307-9878-2020-1\(87\)-52-58](http://doi.org/10.33146/2307-9878-2020-1(87)-52-58)

9. Spilnyk, I., Paliukh, M. (2019). Accounting in the digital economy conditions. *The institute of accounting, control and analysis in the globalization circumstances*, 1-2, 83–96. doi: <http://doi.org/10.35774/ibo2019.01.083>
10. Rohova, N. (2020). Transformation of policy, instruments and technologies of accounting and taxation in the conditions of the digital economy. *Financial Space*, 2 (38), 103–116. doi: [http://doi.org/10.18371/fp.2\(38\).2020.209296](http://doi.org/10.18371/fp.2(38).2020.209296)
11. Hrylitska, A. V., Kryvoruchko, M. Yu. (2018). Modern paradigms and progress of record-keeping trends are in network society. *Naukovyi visnyk Poltavskoho universytetu ekonomiky i torhivli. Seriya: Ekonomichni nauky*, 4, 88–93.
12. Shkulipa, L. V. (2020). *Rozvytok bukhhalterskoho obliku u vymiri mizhnarodnykh standartiv finansovoi zvitnosti ta innovatsiynykh tekhnolohii: metodolohiia ta praktyka*. Nizhyn: FOP Luk'ianenko V. V., TPK «Orkhidea», 616.
13. Lukka, K. (2010). The roles and effects of paradigms in accounting research. *Management Accounting Research*, 21 (2), 110–115. doi: <http://doi.org/10.1016/j.mar.2010.02.002>
14. Locke, J., Lowe, A. (2008). Evidence and implications of multiple paradigms in accounting knowledge production. *European Accounting Review*, 17 (1), 161–191. doi: <http://doi.org/10.1080/09638180701819881>
15. Paienko, T. V., Fedosov, V. M. (2018). Financial management: controlling at the micro level. *Finansy Ukrainy*, 3, 80–96.
16. Kurkov, M. (2019). Conceptual model of enterprise financial management system with application of modern information technologies. *Scientific Notes of Taurida National V. I. Vernadsky University. Series: Economy and Management*, 30 (5 (69)), 142–148. doi: <http://doi.org/10.32838/2523-4803/69-5-25>
17. *Dopovid pro stan informatyzatsii v Ukraini za 2020 rik*. Available at: https://dostup.pravda.com.ua/request/dopovidi_pro_stan_informatyzatsii
18. *Informatsiia pro rozvytok mekhanizmiv elektronnoho uriaduvannia, stan informatyzatsii, tsyfrovizatsii, tsyfrovoho rozvytku ta zabezpechennia rozvytku informatsiino-komunikatsiynykh tekhnolohii ta informatsiynykh resursiv Ukrainy*. Available at: https://dostup.pravda.com.ua/request/84703/response/238839/attach/3/2%203843%20part%201.pdf?cookie_passthrough=1
19. *Cait Derzhavnoi sluzhby statystyky Ukrainy*. Available at: <http://www.ukrstat.gov.ua/>
20. Stadzhi, D. (2021). *Top-25 lideriv didzhytalizatsii*. Available at: <https://www.dsnews.ua/ukr/reitingi/top-25-liderov-didzhytalizatsii-26042021-423158>
21. Amelin, A., Fishchuk, V., Lavryk, Ya., Yurchak, O., Cherniev, Ye., Matiushko, V. (2019). *Ukraina 2030E – kraina z rozvyntoiu tsyfrovoiu ekonomikoiu*. Available at: <https://hvylya.net/analytiks/economics/ukraina-2030e-kraina-z-rozvinutoju-cifrovoju-ekonomikoiu.html>
22. Savchenko, V. M., Yurchenko, O. V., Kononenko, L. V., Palchuk, O. V., Smirnova, I. V., Smirnova, N. V., Hai, O. M.; Savchenko, V. M. (Ed.) (2021). *Conceptions and paradigms are in development of theory and methodology of account*. Kropyvnytskyi, 362.
23. Yershova, N. Yu. (2020). Rozvytok bukhhalterskoho obliku v umovakh perekhodu do tsyfrovoi ekonomiky. *Visnyk Natsionalnoho tekhnichnoho universytetu «KhPI»*. *Ekonomichni nauky*, 2 (4), 75–80.
24. Mazina, O. I., Oliinyk, V. S., Rohoznyi, S. A. (2020). Digitalization as the most important tool for the development of the accounting and reporting system. *Internauka. Series: Economic Sciences*, 2 (5 (37)), 59–66. doi: <http://doi.org/10.25313/2520-2294-2020-5-6028>
25. Kulyk, V. A. (2017). Qualitative characteristics of the accounting information under the conditions of using the information and communication technologies. *Naukovyi visnyk PUET*, 5, 57–62.
26. Nazarenko, I. M., Sokolenko, L. F.; Plaksienko, V. Ya. (Ed.) (2021). *Tsyfrovizatsiia yak vektor modernizatsii systemy bukhhalterskoho obliku. Bukhhalterskyi oblik yak nauka: vid osnov do naukovo kartyny*. Kyiv: Tsentr uchbovoi literatury, 196–208. Available at: <http://repo.snau.edu.ua/bitstream/123456789/8936/1/4.pdf>
27. *Digital, Technology, and Data. Data and Analytics*. Available at: <https://www.bcg.com/capabilities/digital-technology-data/data-analytics>

✉ **Svitlana Kirian**, PhD, Associate Professor, Department of Finance, Accounting and Taxation, Private Higher Educational Establishment «European University», Kyiv, Ukraine, ORCID: <http://orcid.org/0000-0002-0434-0577>, e-mail: svitlana.kirian@e-u.edu.ua

.....
Oksana Radchenko, PhD, Senior Researcher, Associate Professor, Leading Researcher, Department of Financial Credit and Tax Policy, National Science Center «Institute of Agrarian Economics», Kyiv, Ukraine, ORCID: <http://orcid.org/0000-0003-4892-7764>

.....
 ✉ Corresponding author