ECONOMICS OF DEVELOPMENT
Journal homepage: https://ecdev.com.ua/
Vol. 23, No. 3
2024

UDC 658:004.9
DOI: 10.57111/econ/3.2024.32

Bella Goderdzishvili*
PhD in Business Administration, Associate Professor
Georgian Technical University
0160, 77 Kostava Str., Tbilisi, Georgia
https://orcid.org/0009-0005-7650-5712

Tamar Rostiashvili
PhD in Economics, Associate Professor
Georgian Technical University
0160, 77 Kostava Str., Tbilisi, Georgia
https://orcid.org/0009-0008-0343-5401

Maia Soselia
PhD in Business Administration, Associate Professor
Georgian Technical University
0160, 77 Kostava Str., Tbilisi, Georgia
https://orcid.org/0009-0008-8433-1347

David Podiashvili
PhD in Business Administration, Associate Professor
Georgian Technical University
0160, 77 Kostava Str., Tbilisi, Georgia
https://orcid.org/0009-0002-8819-1560

Medea Chelidze
PhD in Business Administration, Associate Professor
Georgian Technical University
0160, 77 Kostava Str., Tbilisi, Georgia
https://orcid.org/0000-0002-3686-4201

Digital transformation management in Georgian business: Growth strategies and competitive advantages

Abstract. Innovative development is one of the key factors in a company's competitiveness. Ensuring a higher level of development and utilisation of the latest company technology is important and therefore the search for new methods is relevant. The study aimed to describe the current trends in digital business transformation in Georgia. The study analysed many different types of statistics describing both the state of digitalisation and innovative technologies in the country and the current describing the state of entrepreneurship. Based on the analysis, the study concluded that the situation with digital transformation in Georgia is improving, which correlates with the direction of development of enterprises. In Georgia, the government actively supports digital transformation through various initiatives aimed at developing digital infrastructure and offering e-services. This is evident in the level of existing projects in this area

Article's History: Received: 29.03.2024; Revised: 23.07.2024; Accepted: 30.09.2024

Suggested Citation:
Goderdzishvili, B., Rostiashvili, T., Soselia, M., Podiashvili, D., & Chelidze, M. (2024). Digital transformation management in Georgian business: Growth strategies and competitive advantages. *Economics of Development*, 23(3), 32-41. doi: 10.57111/econ/3.2024.32.

*Corresponding author

and the pace of change in the development of enterprises in the field of digitalisation. However, it is found that while the number of research and development institutions in the nation is rising, the expenditures (adjusted for inflation) are falling. New fintech businesses are starting to appear, providing cutting-edge services for online financing. Due to a mix of public policies, private funding, and international collaboration, Georgia is becoming progressively more digital. Nevertheless, the country needs to accelerate the pace of development of this area in companies, which indicates the need for more active stimulation of this area by the state. The findings of this study can be used to formulate both the company's long-term development strategy and to create a state policy in this area

Keywords: entrepreneurship; innovative technologies; macroeconomics; market relations; finance

INTRODUCTION

Implementation of the latest technologies is one of the main methods to achieve a better market position among companies. The need for businesses to implement innovative technologies is driven by several factors that include increasing efficiency, improving competitiveness, customer satisfaction, and long-term sustainability. The latest technologies make it possible to automate certain processes, making them less labour-intensive and more efficient, but importantly, they also provide an opportunity to reduce the cost of production. In this regard, the development of innovative technologies by companies and their subsequent implementation is extremely important to improve the performance of such companies. The problem of the research is the need to analyse how digital transformation affects the development of Georgian businesses and their ability to form competitive advantages. The importance of this topic is justified by the fact that in the current global changes, companies that do not adapt to digital technologies may lose their competitiveness in the market. Despite the significant benefits that can be achieved through digital technologies, many Georgian businesses face challenges associated with their implementation, including high integration costs, lack of skilled labour, and resistance to change within companies. The study focuses specifically on the adoption of digital technologies in Georgia, particularly in the context of opportunities for shaping growth and management strategies.

The possibility of using clusters to increase innovativeness in the region was addressed by M. Chechelashvili *et al*. (2023). The study highlighted the importance of cluster mechanisms in promoting the socio-economic development of Georgian regions, emphasising innovative territorial development, and the need for support from the central and regional government in developing clusters that serve as centres of economic growth. Recommendations for the government were also formed, including in terms of financial support, tax incentives, and support for the development of business incubators in general. M. Chechelashvili *et al*. (2021) also investigated changes in modern management paradigms. Three management paradigms were identified: production, bureaucratic, legal, and service paradigms. The modern paradigm is the service paradigm, which is crucial for achieving leadership in the service sector and economic well-being: shifting business to its foundations is crucial for maximising managerial performance (Ihnatenko *et al*., 2023). E. Sepashvili (2020) assessed the possibilities of achieving national goals in the context of the competitiveness of the economy through its digital transformation. The scientist noted that information and communication technologies (ICTs) play a central role in this transformation. The success of countries in this direction depends on how effectively governments can coordinate businesses and individuals to navigate digital technologies. Thus, policymakers should collaborate with stakeholders – businesses, academics, and individuals – to develop policies that support infrastructure development and adapt the environment to maximise the benefits of ICTs. National governments need to improve infrastructure for digital economic growth (Abdullayev *et al*., 2024).

N. Sachaleli (2021) described the role of digital technologies in tourism development in general and during COVID-19 using Georgia as an example. The scholar noted that the digital system offers significant advantages, including access to a large market, uniqueness, minimal investment requirements for partners, and a clear match between supply and demand. In such an environment, both producers and consumers benefit significantly more from the production and consumption of products. T. Bitchikashvili *et al*. (2023) addressed how the latest technologies can be utilised in business, improving the efficiency of its functioning. M. Vanishvili (2022) focused more on what opportunities exist to provide funding for innovative technologies in Georgia. The peculiarities of the digital business environment in the country were considered by T. Makasarashvili *et al*. (2023). Researchers studied how the use of online services in Georgia is developing. They were able to conclude that there is a steady trend of growth in the use of this kind of technology in the country, especially for the population between 18 and 35 years of age, which indicates the gradual digitalisation of business. T. Zhghenti & G. Gedenidze (2022) concluded that business models of the sharing economy are gaining popularity in Georgia. This is caused among other things by rapid digitalisation. Researchers have shown that in modern conditions, the extent to which a business can fulfil its specific needs is beginning to play a special role. Thus, despite the current research on the development of innovation and the introduction of digital technologies in Georgia, it is still necessary to study the current state of implementation of digital technologies. The study aimed to assess what are the trends of digital transformation in business in Georgia. The objectives of the study were to assess the level of digital transformation in Georgia, compare it with the level of business development in the country, and thus analyse the impact of digital technologies on businesses.

MATERIALS AND METHODS

Information from several main statistical sources was used to analyse the selected indicators. The main source was the

National Statistics Office of Georgia (Business statistics, n.d.; Science, n.d.). This source provided an opportunity to analyse the bulk of statistical data generated at the state level, allowing accurate and reliable information necessary to analyse the economic, social, demographic, and environmental situation in Georgia. Information from individual publications of this office was also used, which provided some more detailed information on how the digital economy is developing in Georgia (Non-survey based measurement..., 2023). Another source of statistical data was Statista, which is one of the global leading statistical information providers specialising in providing data on a variety of areas, including digital transformation (Digital & connectivity indicators..., n.d.). The study assessed a variety of data in the context of digitalisation development in Georgia. In particular, information on the number of researchers by level of education (doctors, masters, bachelor and short-cycle higher education), by age, by field of research (natural sciences, engineering and technology, medical and sanitary sciences, agricultural and veterinary sciences, social sciences, humanities), by "status" (researcher, technician or support staff of another kind), the number of institutions that engage in research and development (R&D) and the amount of money that has been spent to develop research in this area (adjusted for inflation) was analysed.

Furthermore, an assessment of metrics that characterise the development of infrastructure in the field of digital transformation was included. These indicators included the number of secure internet services, average internet speed, exports of ICT services, equipment costs, and the use of bank accounts and debit cards. Such indicators characterise a country's readiness and ability to integrate and use digital technologies in everyday life and business, which can be used to conclude in this area. In addition, data were assessed in the context of the development of digital technologies in entrepreneurship, but there were few such metrics in the public domain: share of enterprises with access to the Internet, share of enterprises with sales on the Internet, share of enterprises with sales on the Internet on several services at once. Nevertheless, data on the development of digitalisation in Georgia is quite limited, both in terms of the period for which data is available (most of the data is available only from 2019 to 2022, and the longest period is between 2016 and 2023, which is not enough to conduct a sufficiently detailed statistical analysis) and in terms of the indicators that are available. This, in turn, limits the possibility of conducting a more detailed and long-term statistical analysis, which should be accounted for results interpretation.

RESULTS

Digital transformation is the process of integrating digital technologies into all aspects of an organisation's operations, leading to fundamental changes in the way the organisation operates and delivers value to its customers. This process affects not only technology, but also business models, processes, culture, and the experience of employees and customers (Vaska *et al.*, 2021; Kraus *et al.*, 2022). One of its most important aspects is the use of cloud computing, artificial intelligence, the Internet of Things, big data, and other innovative technologies to optimise and automate business processes. It also involves the revision of existing business models, and the creation of new ones based on digital technologies (Van Veldhoven & Vanthienen, 2021; Kraus *et al.*, 2021). This may include a shift from selling physical goods to providing digital services or subscriptions. This is also the case in the context of automating existing business processes to increase efficiency, reduce costs, and improve the quality of products or services. It is necessary to create more personalised and convenient customer interactions using data and analytics, to create a new corporate culture that supports innovation, and to use data more effectively to make informed decisions and create new business opportunities. Digital transformation plays a key role in business transformation, affecting various aspects of its operation and providing competitive advantages (Ciarli *et al.*, 2021; Owoseni *et al.*, 2021). Some of the main roles of digital transformation in business as already mentioned, aim to increase the efficiency of processes (their automation), improve customer interaction, implement new business models, strengthen competitiveness, improve corporate culture and structure, and reduce security risks.

The development of business digitalisation in Georgia is currently characterised by several key aspects that contribute to a more competitive and sustainable economy. The Georgian government is actively promoting digitalisation through various programs and initiatives. The focus is on the development of digital infrastructure and the introduction of e-services. For example, the project "My.Gov.Ge" provides a wide range of government services in electronic form, facilitating the interaction of citizens and businesses with government agencies. An example of this is the official state portal of Georgia, which provides citizens, residents, and businesses with online access to various state services. This portal is designed to facilitate interaction between citizens and government agencies, offering a convenient and fast way to receive services without having to visit physical offices. Many electronic government services are available on it, including document retrieval, vehicle registration, tax filing, payment of fines, and business registration: the portal is integrated with various government agencies, allowing users to receive services from different sources through a single platform. Key benefits of using the platform include time savings, 24/7 availability of services, and transparency of processes, which allows users to track the stages of processing their requests.

One of the priorities is to improve the telecommunications infrastructure. The country is actively deploying a network of fibre-optic lines providing high-speed (5G) Internet access. At the same time, the country is preparing for the introduction of fifth-generation networks, which will be a significant step forward in the development of telecommunications. This creates the basis for the further development of digital services and technologies. E-commerce in Georgia is showing significant growth, with more and more companies starting to offer their goods and services via online platforms, driven by the growing internet penetration and the increasing number of mobile device users. Support from the government and the private sector to improve digital infrastructure, as well as programs to encourage small and medium-sized enterprises to enter the online market, play an important role (Sokil *et al.*, 2020). Payment systems are also actively developing, making online shopping convenient and secure.

Technology parks and start-up development centres are actively developing in Tbilisi and other major cities. They provide young entrepreneurs with access to resources, advice, and investment. Examples of such initiatives include the Tbilisi Technology Park and the Centre for Innovation and Technology of Georgia. This park provides startups and information technology (IT) companies with access to modern office space and laboratories, as well as educational and consulting services. The Technology Park regularly organises events aimed at developing entrepreneurial skills. This contributes to the formation of a community of technology entrepreneurs ready to work on the creation of products and services with high added value. In addition to Tbilisi, technology parks are being actively developed in other major cities of Georgia, such as Kutaisi and Batumi. Startup support centres are also being established in these regions to attract young entrepreneurs and specialists from different fields of technology. These technology parks serve as platforms for interaction between businesses, academic institutions, and government agencies, which helps to create new jobs and attract investment to the regions. Education in IT and digital technologies are also prioritised. Universities and specialised training centres are introducing programs aimed at training specialists in programming, cybersecurity, data analysis, and other key areas. This helps create a base for the skilled labour force needed to develop the digital economy.

With increasing digitalisation, there is a growing focus on cybersecurity. Georgia is implementing standards and best practices in data protection and information security. Specialised units and response centres are being established to respond to problems that arise in the context of personal data protection. Georgia is actively cooperating with international organisations and investors to attract financial and technical resources. This includes projects supported by the World Bank, the European Bank for Reconstruction and Development, and other institutions. Financial technologies are becoming an important part of business digitalisation. New fintech companies are emerging in the country, offering innovative solutions in mobile payments, online lending, and financial management. The digitalisation of business in Georgia continues apace, thanks to a combination of government initiatives, private investment, and international cooperation. This contributes to a more innovative and sustainable economic environment, ready for the challenges of the modern world. Data that characterise the current state of digital transformation in the country is noteworthy. Hence, information describing the state of science development in the country is shown in Tables 1-3.

Table 1. Number of researchers by degree, 2019-2022

Year	2019	2020	2021	2022
Total	10,191	11,859	12,030	12,991
Doctoral degree (ISCED 8)	7,277	7,992	8,393	8,909
Master's degree (ISCED 7)	2,726	3,599	3,324	3,719
Bachelor's degree (ISCED 6)	188	266	310	359
Short-cycle higher education (ISCED 5/4)	–	2	3	4

Note: ISCED – international standard classification of education
Source: compiled by the authors based on Science (n.d.)

Table 2. Number of researchers by age, 2019-2022

Year	2019	2020	2021	2022
Total	10,191	11,859	12,030	12,991
< 25	111	170	1,012	1,066
25-34	1,197	1,530	1,704	1,841
35-44	1,907	2,172	1,967	2,202
45-54	2,102	2,475	2,309	2,555
55-64	2,045	2,439	2,419	2,592
65+	2,829	3,073	2,619	2,735

Source: compiled by the authors based on Science (n.d.)

Table 3. Number of people in R&D by area, 2019-2022

Year	2019	2020	2021	2022
Total	10,191	11,859	12,030	12,991
Natural sciences	2,398	2,277	2,294	2,587
Engineering and technology	1,781	2,107	2,136	2,199
Medical and health sciences	1,369	1,887	1,880	1,898
Agricultural and veterinary sciences	442	474	420	472
Social sciences	2,324	2,769	3,065	3,167
Humanities and the arts	1,789	2,308	2,234	2,668
Not identified	88	37	1	0

Source: compiled by the authors based on Science (n.d.)

Notably, all metrics are gradually increasing, which indicates the development of science in Georgia, which has a positive impact on the development of digital technologies. Other data is shown in Tables 4-5.

Table 4. Number of researchers in R&D by status, 2019-2022

Year	2019	2020	2021	2022
Total	13,732	14,589	14,040	15,099
Researchers	10,191	11,859	12,030	12,991
Technicians and equivalent personnel	1,790	1,380	1,162	1,168
Other support staff	1,742	1,322	848	922
Not specified	9	28	0	18

Source: compiled by the authors based on Science (n.d.)

Table 5. Number of R&D institutions and expenditures (with and without inflation), 2019-2022

Year	2019	2020	2021	2022
Institutions	48	58	59	63
Total R&D expenditure, GEL	140.2	139.9	151.1	171
Total R&D expenditure adjusted for inflation, GEL	140.2	132.98	131.1	132.6

Source: compiled by the authors based on Science (n.d.)

As can be seen from Table 4, the number of researchers in the field is gradually increasing in general, which is a positive indicator. At the same time, the number of technicians and other support staff is declining, indicating that the growth of researchers is primarily driven by sciences that do not require direct experimentation. Table 5 also shows that although the number of institutions in the country engaged in R&D is increasing, the cost of R&D (adjusted for inflation) is decreasing. Since the downward trend has been visible since 2020, this can be attributed to the onset of the COVID-19 crisis; it also indicates the need to allocate more funds to this type of research to at least be able to cover the depreciation of the national currency. The indicators that characterise the development of digital infrastructure in the country are shown in Table 6.

Table 6. Data describing the development of digital infrastructure, 2019-2028

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Secure Internet servers, thousands	10.3	13	13	14.5	16.2	17.8	19.5	21.1	22.7	24.2
Average broadband connection speed, thousands kbps	8	13.8	14.2	15.6	19	20.3	21.5	22.6	23.6	24.5
Exports of ICT services per capita, USD	30.1	30.3	57.5	160	151	180	219	266	320	381
ICT equipment – consumer spending, USD million	148	173	218	240	293	318	348	377	408	439
Utilisation of bank accounts, %	58.2	60.9	63.4	65.9	68.3	70.6	72.8	74.8	76.8	78.7
Use of debit cards, %	41.1	41.7	42.3	42.1	42.9	43.7	44.6	45.5	46.3	47.2

Note: data from 2024 projected based on forecasts from Statista and National Statistics Office of Georgia
Source: compiled by the authors based on Digital & connectivity indicators – Georgia (n.d.), Non-survey based measurement of e-commerce and the digital economy (2023)

As can be seen from Table 6, most of the indicators that characterise the development of digital infrastructure in Georgia have been increasing over the selected period. Moreover, such growth is expected to continue in the future (at least until 2028). Data characterising the development of digitalisation in business are shown in Table 7.

Table 7. Data characterising the development of digital technologies in business, 2016-2023

Year	2016	2017	2018	2019	2020	2021	2022	2023
Share of enterprises with access to the Internet	97.5	98.4	98.5	93	94	95	84.2	84.4
Share of enterprises selling goods or services via the Internet, %	–	–	–	–	3	2.7	2.9	–
For e-commerce websites or applications used by multiple businesses to trade goods or services (e.g. Booking, eBay, Amazon, etc.)	–	–	–	–	1.1	1.9	1.9	–

Source: compiled by the authors based on Digital & connectivity indicators – Georgia (n.d.), Non-survey based measurement of e-commerce and the digital economy (2023)

As can be seen from Table 7, the number of enterprises with access to the Internet in Georgia is gradually decreasing. This is primarily because small and medium-sized enterprises in this sector do not have access to such technologies, while the share of medium and large enterprises has only increased. This indicates that the country has certain problems in providing new small businesses with access to the Internet, which is quite unusual for modern companies. To determine the overall situation in the context of entrepreneurship development in the country, it is also worthwhile to evaluate some data describing its formation and development in the country. This is shown in Tables 8-9.

Table 8. Key data characterising business development, 2017-2022

Year	2017	2018	2019	2020	2021	2022
Turnover, billion GEL	71.7	86.6	109	114.3	150.4	181.8
Value of manufactured products, billion GEL	38.2	41.6	47.5	46.2	57.6	71.8
Value added, billion GEL	19	20.9	24.2	24	29.8	36.2
Intermediate consumption, billion GEL	34.9	33.8	36.8	44.7	46.8	35.6
Fixed assets, GEL billion	34.9	33.8	36.8	38.7	44.7	46.8
Number of employees, thousand people	708.2	734.2	756.9	703.9	744.3	779.4
Average monthly salary of employees, GEL	1,019.7	1,101.3	1,161.7	1,222.9	1,347.6	1,605.9

Source: compiled by the authors based on Business statistics (n.d.)

Table 9. Key data characterising business development (inflation-adjusted), 2017-2022

Year	2017	2018	2019	2020	2021	2022
Turnover, billion GEL	71.7	84.4	101.3	101	121.3	131
Value of manufactured products, billion GEL	38.2	40.5	44.1	40.8	46.4	51.7
Value added, billion GEL	19	20.4	22.5	21.2	24	26.1
Intermediate consumption, billion GEL	34.9	32.9	34.2	39.5	37.7	25.7
Fixed assets, GEL billion	34.9	32.9	34.2	34.2	36	33.7
Number of employees, thousand people	708.2	734.2	756.9	703.9	744.3	779.4
Average monthly salary of employees, GEL	1,019.7	1,073.2	1,079.7	1,080.4	1,086.6	1,157.1

Source: compiled by the authors based on Business statistics (n.d.)

As can be seen from Tables 8 and 9, the country is experiencing business development, as evidenced by the growth of most of the indicators that characterise it, including inflation-adjusted ones. This is a positive indicator, and it also correlates with most of the data describing the country's digital transformation. Nevertheless, it is difficult to state how strong the correlation between different indicators is, as this requires more data to build a longer time series. It is therefore necessary to conduct a similar study in the future.

DISCUSSION

A recent study showed that digital transformation has a positive impact on business development. A study of the impact of international markets and new digital technologies on business innovation in emerging markets was conducted by L. Dana *et al*. (2022). The researchers noted that digital technologies have a significant impact on business innovation by reorganising economic activities, reducing costs, increasing trust, and transforming business processes. It was also concluded that early internationalisation, driven by market conditions and strategic entry decisions, had a positive impact on business innovation. Companies using new digital technologies are more successful in innovation, as noted by O. Tsapova *et al*. (2024). The results highlight the need to improve interaction with international markets and adopt new digital technologies to achieve business innovation in emerging markets, thereby contributing to business sustainability and survival. Recommendations were also made to review and adapt operational processes to consider the impact of digital technologies and international markets, to use new digital technologies and focus on international markets to drive innovation, and to identify the entrepreneurial skills of employees to drive innovation. The conclusions drawn by these scholars are the same as those formed in the current study in the context of the impact of digital transformation on business development.

The study concluded that digital transformation does have a positive impact on business development. However, not all statistical indicators confirmed this relationship. Disclosure of the impact of digital technology adoption on firms' innovation activities was also addressed by A. Usai *et al*. (2021). They noted that previous studies often assume a direct positive effect of digital technologies on innovation but do not distinguish between different types of digital technologies and their actual effects, but they obtained different findings. Researchers showed that digital technologies have a limited impact on innovation performance compared to R&D activities. While digital technologies can increase efficiency, they often standardise knowledge, which can undermine creativity and reduce competitive advantage (Bochko *et al*., 2024). The study thus challenges the notion that digital technologies are key drivers of innovation. It emphasises the need to focus on innovation for significant improvements in innovation and suggests that digital technologies should be seen as complementary rather than primary drivers of innovation. The results highlight the need for a more nuanced understanding of how digital technologies and R&D interact to influence innovation development. Thus, the findings from both the current study and these papers are similar. The work points out the role of digital transformation both to improve the

efficiency of the functioning of enterprises and to achieve better success in the direction of developing their innovative development capabilities. Thus, the findings of the study above, although different from those of the current study on transformation in Georgian business, have a basis for being true. Further research in this area should be conducted in the future to conclude the extent to which innovative technologies are drivers of innovation.

The possibilities of using digital technologies in the current conditions in Georgia were partially described in the current study. In particular, the study demonstrated how this kind of technology is currently used in enterprises in the country. Digital technologies and firm performance were addressed by E. Martínez-Caro *et al*. (2020). The scholars wrote about how digital technologies are modifying modern business. In the conclusions, the scholar writes that the digitisation of business stimulates the activities of enterprises, but its full potential is only realised if there is a supportive digital culture. The study highlights the important role of organisational culture in achieving successful digital transformation. The scholar highlights the importance of developing a digital culture to overcome the challenges and maximise the benefits of digital transformation. As part of their study, M. Yang *et al*. (2021) evaluated the adoption of digital technologies in supply chains. The scholars reasoned on the increasing influence and importance of digital technologies, identified the main drivers in the direction, and developed a model for digital technology adoption. However, scholars have noted that despite the benefits, digital technology adoption may fail due to the gap between the adoption strategy and its subsequent implementation. The use of digital technologies by small and medium-sized enterprises was examined in a study by T. Papadopoulos *et al*. (2020). The scientist stated that crises (in the framework of the work, the evaluation was carried out on the example of COVID-19), create problems in supply chains and for the functioning of the business in general, which can be solved with the help of digital technologies. Business risk management has a particularly important role to play, as noted by I.V. Pashaeva *et al*. (2020). Thus, the study emphasises the need for small and medium-sized enterprises to adopt a sociotechnical approach to digital transformation implementation strategies. In other words, both papers conclude that although there is a trend in Georgia to reduce internet usage among small and medium-sized enterprises, these problems need to be addressed to significantly improve the quality of their work.

Although not emphasised in the current study, the use of digital technologies is highly relevant for achieving sustainable development goals. Digital technologies catalysing business model innovation for the circular economy were addressed by V. Ranta *et al*. (2021). The study analysed how digital technologies improve value creation in the circular economy in different industries. Researchers concluded that digital technologies optimise internal processes such as inventory management and material handling. Digital sustainable entrepreneurship in the context of business model perspectives on the adoption of digital technologies to create social and environmental value was addressed by P. Gregori & P. Holzmann (2020). The scholars concluded that digital practices support the integration of environmental, social, and commercial logic, but also introduce tensions. They stated that digital technologies can increase convenience, and efficiency and reduce the cost of sustainable products and services, leading to more balanced value propositions for customers; digital technologies facilitate community engagement, co-creation, and greater stakeholder integration; and platform approaches help manage diverse stakeholder relationships and create dynamic, open business models. The researchers also concluded that digital applications help to scale socio-environmental and financial value, although there may be conflicts with environmental and social goals. Digital technologies also create awareness and educational value beyond direct sales, influencing a wider audience and supporting socio-environmental impact. Despite all the benefits that digital technologies bring, scholars stated that it is quite difficult to apply and implement them effectively, especially in the context of raising additional money and managing the formation of these processes. Thus, the use of these technologies in enterprises is important not only to achieve results in the direct functioning of enterprises in the market but also to improve the quality of life of the local population and reduce the burden on the external environment.

CONCLUSIONS

Thus, digital transformation in Georgia is developing rapidly, becoming a key factor in shaping the country's economic landscape and societal progress. The integration of digital technologies in various sectors has led to significant improvements in efficiency, customer engagement, and innovation of business models. This process is characterised by the widespread adoption of cloud computing, artificial intelligence, the Internet of Things, and big data, which together increase the automation of business processes and facilitate the creation of new digital services. The government of Georgia played a crucial role in facilitating this transformation through strategic initiatives aimed at improving digital infrastructure, promoting e-services, and supporting the digitalisation of small and medium-sized enterprises. Telecommunications infrastructure in Georgia has advanced significantly with the expansion of fibre-optic networks and the upcoming introduction of 5G technology, laying a solid foundation for the further development of digital services.

The growth of e-commerce in Georgia, driven by increasing internet penetration and the use of mobile devices, is further evidence of national digital progress; government and private sector initiatives have played an important role in promoting online business. In addition, the establishment of technology parks and startup incubators in Tbilisi and other major cities has created a favourable environment for innovation and entrepreneurship, as has education in innovative technologies, the increasing role of cybersecurity, and international cooperation. The statistical data characterising the development of digital technologies in the country were examined, and their dynamics are positive, and on par with the pace of business development. Nevertheless, there is currently insufficient statistical data to make a thorough assessment. For future research, it is necessary to assess the possibility of introducing and developing innovative technologies by Georgian enterprises to achieve better results in the process of

their activities and better results in the context of international competition. Moreover, it is worth repeating the assessment of the relationship between digital transformation and the level of business development in the country in the future, when the amount of available data will be large.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

None.

REFERENCES

[1] Abdullayev, K., Aliyeva, A., Ibrahimova, K., Badalova, S., & Hajizada, S. (2024). Current trends in digital transformation and their impact on the national economy. *Scientific Bulletin of Mukachevo State University. Series "Economics"*, 11(1), 9-18. doi: 10.52566/msu-econ1.2024.09.

[2] Bitchikashvili, T., Petriashvili, L., & Kavtelishvili Jang, L. (2023). Digitalization of management of a higher educational institution, national and international challenges and ways of solution. *World Science*, 3(81). doi: 10.31435/rsglobal_ws/30092023/8032.

[3] Bochko, O., Zarichna, O., & Kuziak, V. (2024). Transformation of business ecosystems of the energy sector enterprises. *Development Management*, 23(1), 62-71. doi: 10.57111/devt/1.2024.62.

[4] Business statistics. (n.d.). Retrieved from https://www.geostat.ge/en/modules/categories/195/business-statistics.

[5] Chechelashvili, M., Koghuashvili, P., & Babunashvili, T. (2023). Cluster as a means of increasing innovation in the region. *Annali d'Italia*, 45, 15-20. doi: 10.5281/zenodo.8184235.

[6] Chechelashvili, M., Malania, E., & Berikashvili, L. (2021). Changing management paradigms. *European Journal of Economics and Management Sciences*, 2, 39-41. doi: 10.29013/EJEMS-21-2-39-42.

[7] Ciarli, T., Kenney, M., Massini, S., & Piscitello, L. (2021). Digital technologies, innovation, and skills: Emerging trajectories and challenges. *Research Policy*, 50(7), article number 104289. doi: 10.1016/j.respol.2021.104289.

[8] Dana, L., Salamzadeh, A., Mortazavi, S., & Hadizad, M. (2022). Investigating the impact of international markets and new digital technologies on business innovation in emerging markets. *Sustainability*, 14(2), article number 983. doi: 10.3390/su14020983.

[9] Digital & connectivity indicators – Georgia. (n.d.). Retrieved from https://www.statista.com/outlook/co/digital-connectivity-indicators/georgia.

[10] Gregori, P., & Holzmann, P. (2020). Digital sustainable entrepreneurship: A business model perspective on embedding digital technologies for social and environmental value creation. *Journal of Cleaner Production*, 272, article number 122817. doi: 10.1016/j.jclepro.2020.122817.

[11] Ihnatenko, M., Kotsur, V., & Aranchii, V. (2023). Development of e-commerce in the context of digitalisation of social life. *University Economic Bulletin*, 18(3), 84-90. doi: 10.31470/2306-546X-2023-58-84-90.

[12] Kraus, S., Durst, S., Ferreira, J.J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63, article number 102466. doi: 10.1016/j.ijinfomgt.2021.102466.

[13] Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N., & Roig-Tierno, N. (2021). Digital transformation: An overview of the current state of the art of research. *SAGE Open*, 11(3). doi: 10.1177/21582440211047576.

[14] Makasarashvili, T., Giguashvili, G., & Orjonikidze, N. (2023). Peculiarities of the digital business environment in post-pandemic Georgia. *Grail of Science*, (28), 27-34. doi: 10.36074/grail-of-science.09.06.2023.01.

[15] Martínez-Caro, E., Cegarra-Navarro, J.G., & Alfonso-Ruiz, F.G. (2020). Digital technologies and firm performance: The role of digital organisational culture. *Technological Forecasting and Social Change*, 154, article number 119962. doi: 10.1016/j.techfore.2020.119962.

[16] Non-survey based measurement of e-commerce and the digital economy. (2023). Retrieved from http://surl.li/oirwnj.

[17] Owoseni, A., Hatsu, S., & Tolani, A. (2021). How do digital technologies influence the dynamic capabilities of micro and small businesses in a pandemic and low-income country context? *The Electronic Journal of Information Systems in Developing Countries*, 88(2), article number e12202. doi: 10.1002/isd2.12202.

[18] Papadopoulos, T., Baltas, K.N., & Balta, M.E. (2020). The use of digital technologies by small and medium enterprises during COVID-19: Implications for theory and practice. *International Journal of Information Management*, 55, article number 102192. doi: 10.1016/j.ijinfomgt.2020.102192.

[19] Pashaeva, I.V., Aliyeva, M.S., Atakishiyeva, N.N., Babashirinova, E.M., & Musayeva, N.M. (2020). Digital models of income and expenditure management and accounting. *TEM Journal*, 9(2), 590-600. doi: 10.18421/TEM92-22.

[20] Ranta, V., Aarikka-Stenroos, L., & Väisänen, J.-M. (2021). Digital technologies catalysing business model innovation for circular economy – multiple case study. *Resources, Conservation and Recycling*, 164, article number 105155. doi: 10.1016/j.resconrec.2020.105155.

[21] Sachaleli, N. (2021). The role of digital technologies in tourism development generally and during COVID19 (example of Georgia). In *ICESSER 1st international congress* (pp. 175-190). Ankara: ICESSER.

[22] Science. (n.d.). Retrieved from https://www.geostat.ge/en/modules/categories/194/science.

[23] Sepashvili, E. (2020). Supporting digitalization: Key goals for national competitiveness in digital global economy. *Economia Aziebdale Online*, 11(2), 191-198. doi: 10.13132/2038-5498/11.2.191-198.

[24] Sokil, O., Zvezdov, D., Zhuk, V., Kucherkova, S., & Sakhno, L. (2020). Social and environmental costs: The impact of accounting and analytical support on enterprises' sustainable development in Germany and Ukraine. *Economic Annals-XXI*, 181(1-2), 124-136. doi: 10.21003/ea.V181-11.

[25] Tsapova, O., Zhailaubayeva, S., Kendyukh, Y., Smolyaninova, S., & Abdulova, O. (2024). Industry specifics and problems of digitalization in the agro-industrial complex of the Republic of Kazakhstan. *Journal of the Knowledge Economy*. doi: 10.1007/s13132-024-02283-3.
[26] Usai, A., Fiano, F., Petruzzelli, A.M., Paoloni, P., Briamonte, M.F., & Orlando, B. (2021). Unveiling the impact of adopting digital technologies on firms' innovation performance. *Journal of Business Research*, 133, 327-336. doi: 10.1016/j.jbusres.2021.04.035.
[27] Van Veldhoven, Z., & Vanthienen, J. (2021). Digital transformation is an interaction-driven perspective between business, society, and technology. *Electronic Markets*, 32, 629-644. doi: 10.1007/s12525-021-00464-5.
[28] Vanishvili, M. (2022). Sustainable financing of innovative technologies in Georgia: Challenges and prospects. In *Proceedings of the 7th international scientific and practical conference "Science, education, innovation: Topical issues and modern aspects"* (pp. 51-61). Tallinn: InterConf.
[29] Vaska, S., Massaro, M., Bagarotto, E.M., & Mas, F. (2021). The digital transformation of business model innovation: A structured literature review. *Frontiers in Psychology*, 11, article number 539363. doi: 10.3389/fpsyg.2020.539363.
[30] Yang, M., Fu, M., & Zhang, Z. (2021). Adopting digital technologies in supply chains: Drivers, process and impact. *Technological Forecasting and Social Change*, 169, article number 120795. doi: 10.1016/j.techfore.2021.120795.
[31] Zhghenti, T., & Gedenidze, G. (2022). Sharing economy platforms in Georgia: Digital trust, loyalty and satisfaction. *Marketing and Management of Innovations*, 2, 209-219. doi: 10.21272/mmi.2022.2-19.

Белла Годердзішвілі
Доктор філософії з бізнес-адміністрування, доцент
Грузинський технічний університет
0160, вул. Костава, 77, м. Тбілісі, Грузія
https://orcid.org/0009-0005-7650-5712

Тамар Ростіашвілі
Доктор філософії з економіки, доцент
Грузинський технічний університет
0160, вул. Костава, 77, м. Тбілісі, Грузія
https://orcid.org/0009-0008-0343-5401

Майя Соселія
Доктор філософії з бізнес-адміністрування, доцент
Грузинський технічний університет
0160, вул. Костава, 77, м. Тбілісі, Грузія
https://orcid.org/0009-0008-8433-1347

Давид Подіашвілі
Доктор філософії з бізнес-адміністрування, доцент
Грузинський технічний університет
0160, вул. Костава, 77, м. Тбілісі, Грузія
https://orcid.org/0009-0002-8819-1560

Медея Челідзе
Доктор філософії з економіки, доцент
Грузинський технічний університет
0160, вул. Костава, 77, м. Тбілісі, Грузія
https://orcid.org/0000-0002-3686-4201

Управління цифровою трансформацією в грузинському бізнесі: стратегії зростання та конкурентні переваги

Анотація. Інноваційний розвиток є одним із ключових факторів конкурентоспроможності компанії. Забезпечення більш високого рівня розвитку та використання новітніх технологій компанії є важливим, а тому пошук нових методів є актуальним. Метою дослідження було описати сучасні тенденції цифрової трансформації бізнесу в Грузії. У дослідженні було проаналізовано багато різних типів статистичних даних, що описують як стан цифровізації та інноваційних технологій в країні, так і поточні дані, що описують стан підприємництва. На основі проведеного аналізу зроблено висновок, що ситуація із цифровою трансформацією в Грузії покращується, що корелює з напрямком розвитку підприємств. У Грузії уряд активно підтримує цифрову трансформацію через різні ініціативи, спрямовані на розвиток цифрової інфраструктури та надання електронних послуг. Це видно з рівня існуючих проєктів та темпів змін у розвитку підприємств у сфері цифровізації. Однак виявлено, що тоді як кількість науково-дослідних установ у країні зростає, витрати на них (з урахуванням інфляції) зменшуються. З'являються нові фінтех-бізнеси, які надають передові послуги з онлайн-фінансування. Завдяки поєднанню державної політики, приватного фінансування та міжнародної співпраці Грузія стає дедалі діджиталізованішою. Тим не менш, країна потребує прискорення темпів розвитку цього напряму в компаніях, що свідчить про необхідність більш активного стимулювання цього напряму з боку держави. Результати цього дослідження можуть бути використані як для формування довгострокової стратегії розвитку компанії, так і для створення державної політики в цій сфері

Ключові слова: підприємництво; інноваційні технології; макроекономіка; ринкові відносини; фінанси