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Digitization as a factor in improving business performance

Vladyslav Ioanno
An Entrepreneur in the Field of Marketing and IT, Odesa, Ukraine.
Corresponding authour: mail@ioanno.com

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Abstract: This paper undertakes a comprehensive conceptual exploration of the transformative impact of digitalisation on the operational efficacy of business processes. The relevance of the research stems from the increasing structural complexity of intra-corporate operations, the continuous expansion of business activity domains, and the dynamic reconfiguration of paradigms governing communicative interactions with target consumer segments. In light of these tendencies, institutional attention is progressively directed toward digital technologies, which not only facilitate managerial optimisation but also provoke a fundamental redefinition of the ontological underpinnings of business itself. Leading global corporations, operating within hypercompetitive environments, predominantly rely on advanced techno-innovations as a strategic fulcrum for decision-making processes that safeguard and enhance competitive advantage. The principal objective of the study is to analytically elucidate the influence of digital transformation on the efficiency parameters of business operations. The object of scholarly inquiry is Ukrainian cultural heritage, examined through the analytical prism of business process dynamics. The research methodology is anchored in a synergistic assemblage of complementary heuristic instruments, encompassing descriptive methods, comparative analysis, analytical-synthetic procedures, hermeneutic interpretation of relevant literature, and processes of generalisation. The paper extrapolates the phenomenon of digital transformation onto the contemporary business matrix, articulates the multifaceted essence of the term "digital transformation", and delineates the principal determinants shaping restructured business processes in the digital era. It identifies prevailing trends informing the current discourse of entrepreneurial activity and provides a critical assessment of pertinent scholarly contributions. The author's epistemological stance on the influence of digital technologies is explicated, and the source base of the study is substantiated as a legitimate foundation for further academic exploration. Finally, the dominant trajectories of digital metamorphosis within the business environment are examined, with emphasis on the proliferation of cloud-based platforms, digital services, big data analytics, and network infrastructures as instruments of operational integration. Advantages derived from their adoption are outlined, while the financial and infrastructural expenditures associated with implementation in Ukrainian enterprises are scrutinised. Empirical data on digital transformation across Ukrainian corporate processes in 2023 (expressed in percentage terms) are synthesised, and the prevailing structural trends are systematically identified.

Keywords: business processes, digital evolution, information and communication technologies, techno-innovation, transformation

Introduction

In the context of the perpetual evolution of the business environment – driven by both endogenous and exogenous factors – the necessity for continuous reengineering of business processes emerges as a fundamental mechanism of organizational adaptability. Whereas entrepreneurial activity in the temporal framework of the 18th and 19th centuries predominantly entailed direct, personalized oversight of enterprises by their proprietors, the contemporary globalization paradigm is characterized by a systematic shift toward the delegation of both strategic and operational prerogatives to qualified personnel capable of administering complex organizational systems [1]. Concurrently, the

aspiration of corporate entities to attain the status of transnational corporations induces processes of institutional segmentation, manifesting in the establishment of multilayered structural units – branches, departments, and other organizational-functional components [2]. This developmental vector necessitates the involvement of highly skilled human capital capable of conducting analytical forecasting and making effective managerial decisions amid crisis conditions and a volatile macroeconomic landscape [3]. Against this backdrop, increasing emphasis is placed on the digital transformation of business processes, which is viewed not merely as an instrument for operational optimization, but as a catalyst for the innovative advancement of economic entities within the framework of the digital economy [4]. Information and communication technologies, acting as agents of managerial convergence, possess the potential not only to extend their influence across corporate management systems but also to facilitate effective oversight of the implementation of managerial decisions and the hierarchical delegation of responsibilities [5]. Moreover, the digital environment – functioning as a virtual analogue of the organizational sphere – establishes the prerequisites for the efficient administration of the operations of structural units within large multinational corporations, including their foreign representative offices, through the prism of integrated business systems [6, 7].

Literature review

Within the contemporary discourse on transformative processes in the business environment, considerable scholarly attention – both domestic and international – has been directed toward examining the ramifications of digital transformation on the efficacy and structural configuration of business processes.

Baldassarre [8], Ross and Maynard, [9], Kravchenko and Salabai [10], Kresnawidiansyah [11], as well as Peterson and Fogelberg [12] emphasize that digital transformation involves the conversion of entrepreneurial activities into so-called 'digital enterprises', which are expected to operate based on new business, economic, and management principles – principles that digital technologies alone cannot implement. Digital transformation implies a fundamental rethinking of how entrepreneurial structures function and how they interact with their environment. A key focus is the collaboration and interconnection between consumers and economic agents, which forms the basis of the economy.

As articulated by Masoud and Basahel [13], digital business is a new form of enterprise, created from scratch and in unconventional niches, where existing stereotypes and limitations have been discarded, the needs of a generation accustomed to smartphones and the virtual world have been taken into account, and the full potential of breakthrough technologies has been realized. The unprecedented depth of the upcoming changes opens up new opportunities and poses a critical challenge – the need to support digital transformation with fundamentally new types of competencies.

Ross and Maynard, [9] note that the transformation of the business environment is undoubtedly occurring across all industries, though its specific forms and pace vary significantly. These differences depend on the type of product, the regulatory environment, and the position of economic agents within the value chain. Understanding these variations plays a crucial role in developing an effective digital transformation strategy for a particular enterprise – one that is aimed at achieving ambitious yet realistic goals and ensuring economic efficiency.

In the scholarly contributions of Kravchenko and Salabai [10], encapsulated in the article “The role of digital transformations of business processes of enterprises”, the authors emphasize the inescapable necessity of digital implementation as a precondition for the evolution of a competitive business entity. They posit that digital modernization functions as a catalytic agent for productivity enhancement, which in turn facilitates the intensification of production rhythms, cost optimization, and acceleration of distribution processes. The delegation of managerial functions, synergized with digital feedback mechanisms, engenders a novel model of organizational interaction wherein information technologies operate not merely as auxiliary tools but as structuring agents of transformation. Consequently, business actors are increasingly investing in digital innovation, perceiving it as a prerequisite for future financial growth. The article “The role of digital transformation in driving sustainable business value” by Peterson and Fogelberg [12] offers a comprehensive analytical overview of the advantages afforded by digital mechanisms in organizational practice. The authors assert that digital technologies possess the capacity to radically restructure a firm’s internal logistics – from the reduction of transactional costs to the cumulative amplification of profitability through improvements in product quality, enhancement of intra-organizational communication, and the accrual of competitive advantages. The integration of digital protocols enables enterprises to manifest heightened responsiveness to external perturbations, thereby preserving client loyalty and transforming business operations in accordance with emergent market dynamics.

Baldassarre [8] highlights that global energy consumption is continuously increasing, the use of alternative energy sources is expanding, and the extraction of oil and gas from both existing and new fields is becoming increasingly difficult. A typical consequence of the worsening external and intra-industry competitive environment is the necessity to reduce capital investment and improve operational efficiency. Lastly, in “The impact of digital transformation on

business models and competitive advantage", Kresnawidiansyah [11] articulates the notion that digital transformation precipitates fundamental modifications within the structure of a business model.

Research Objective. The principal objective of this study is to elucidate the impact of digital transformation on the operational efficiency of business processes. The relevance of this inquiry is predicated upon the accelerating dynamics of globalization within the international business environment, which, in turn, catalyze the widespread dissemination and integration of information technologies across diverse spheres of commercial activity.

Methods

The modeling of business process resilience and the practical implementation of situational management methods represent an urgent issue in enterprise economics and require both theoretical and practical advancement of management tools and methods. The comparative method serves to juxtapose digital transformation practices across various corporate entities. Analytical and synthetic methods are deployed to identify and systematize the prevailing trends in the evolution of digital transformation within business processes. The literature review method facilitates the identification of divergent scholarly perspectives concerning the integration of digital technologies within organizational frameworks. Finally, the generalization method is employed to synthesize the research findings and formulate comprehensive conclusions based on the accumulated evidence.

Results and discussion

At the core of the concept of 'digital transformation' (DT) lie fundamental changes in technological processes that are observed across all areas of life. In business, digital transformation leads to a revision of business strategies, models, operations, products, marketing approaches, and goals. It accelerates sales and business growth. An integral part of the digital transformation of the economy is the digital transformation of the banking sector. Its objectives include increasing the speed of decision-making, enhancing the variability of processes depending on the needs and characteristics of the client, and reducing the number of employees involved in the process. Consequently, the so-called digital corporate culture evolves as well, since professional agents increasingly focus their activities on technocratic imperatives, ultimately shaping a distinctive reputational matrix of the organization within the dichotomy of digital communications. The procedural digitalization of corporate activity is implicitly oriented toward the hyperintensification of the enterprise's competitive potential, which, under conditions of total informational turbulence, is capable – through the implementation of analytical and automation technologies – of adapting swiftly to the dynamics of exogenous changes while simultaneously optimizing resource expenditures and temporal costs across production cycles. Thus, a binary effect is achieved: a reduction in operational costs is paired with an increase in organizational productivity, generating a synergistic advantage in the marketplace.

A focal point of the majority of transformation processes lies in the extensive deployment of cloud computing systems, which have become a near-axiomatic instrument of contemporary corporate existence. The strategy of storing data on external server environments is regarded as the most secure method for long-term archiving of critical information, minimizing the risks of physical destruction or distortion. Consequently, the financial barriers to the creation or adaptation of software tools for remote data storage are significantly reduced. In the case of large-scale corporations operating with massive volumes of data, cloud infrastructures serve as a foundational element in maintaining the integrity and confidentiality of informational assets. Another vector of digital evolution within the business environment is the expansion of the analytical component, particularly through the deployment of systems for extrapolative data collection from multiple informational sources. Such monitoring enables the identification of latent correlations and non-obvious interdependencies within corporate structures, thereby contributing to the empirically grounded renewal of managerial practices. The precise application of information-analytical technologies enables real-time data analysis, facilitating the formulation of well-reasoned decisions in situations marked by uncertainty.

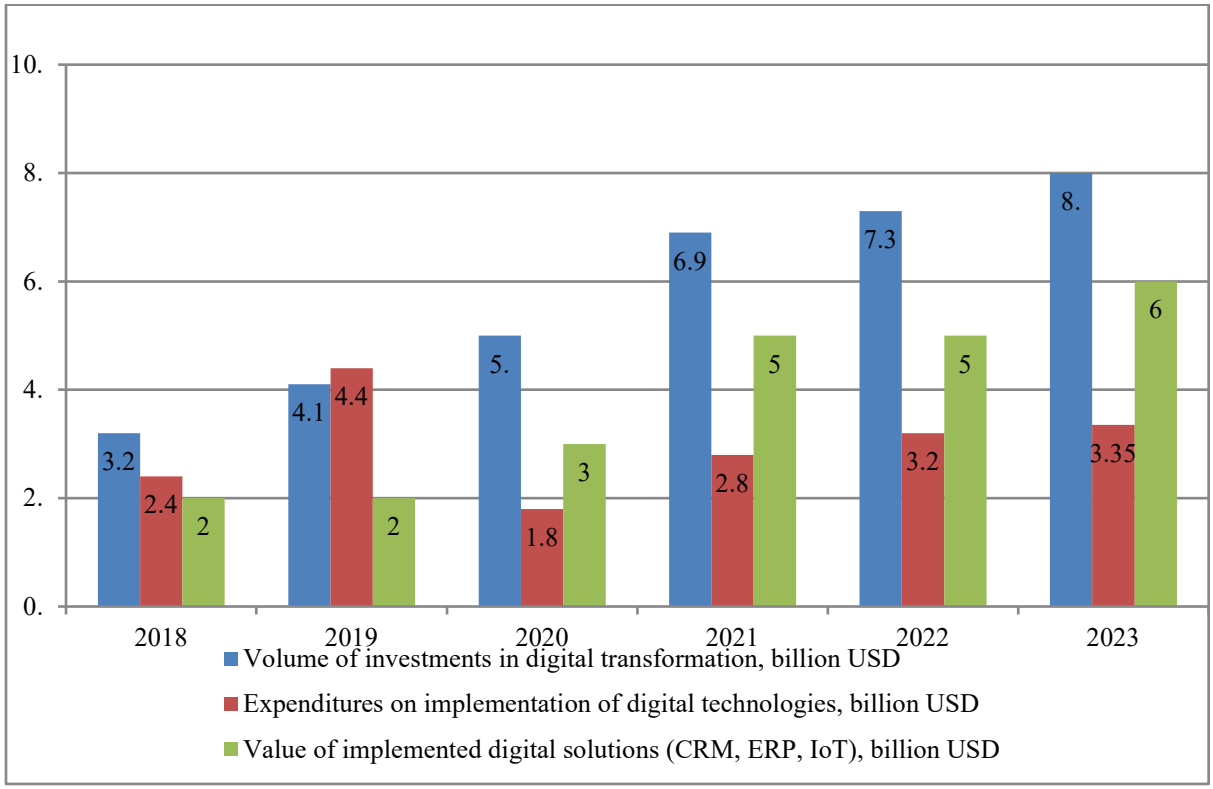
In contemporary discourse, a digital service is conceptualized as a polystructural complex of virtual platforms that aggregate and integrate disparate business processes within a unified digital continuum. This system permits management entities to access a visualized functional cross-section of various organizational vectors, thereby allowing for the prompt adoption of stratified decisions. For example, should an executive seek to expand the client base, they can – within such a digital service – access comprehensive data regarding logistics parameters, warehouse inventories, and production forecasts, thereby providing clients with timely and accurate information that fosters engagement. Beyond the aforementioned digital instruments, the establishment of an autonomous digital network infrastructure constitutes an equally effective component of transformation. Such a network,

functioning as a closed-loop informational ecosystem, operates solely within the corporate structure and on devices under the control of its personnel, thereby significantly restricting the potential for external interference. Access is granted exclusively to authorized individuals, ensuring a high degree of informational hermeticism and reinforcing client trust in the inviolability of their data.

Nevertheless, the initiation of digital transformation, despite its strategic expediency, is accompanied by considerable capital investment, which is, however, offset in the medium- and long-term perspective by a substantial increase in financial performance. According to empirical data published by the analytical platform Vox Ukraine, Ukrainian companies invested billions of U.S. dollars in the digitalization of business operations between 2018 and 2023, thereby underscoring both the relevance and inevitability of digital modernization in the national corporate sector (Figure 1).

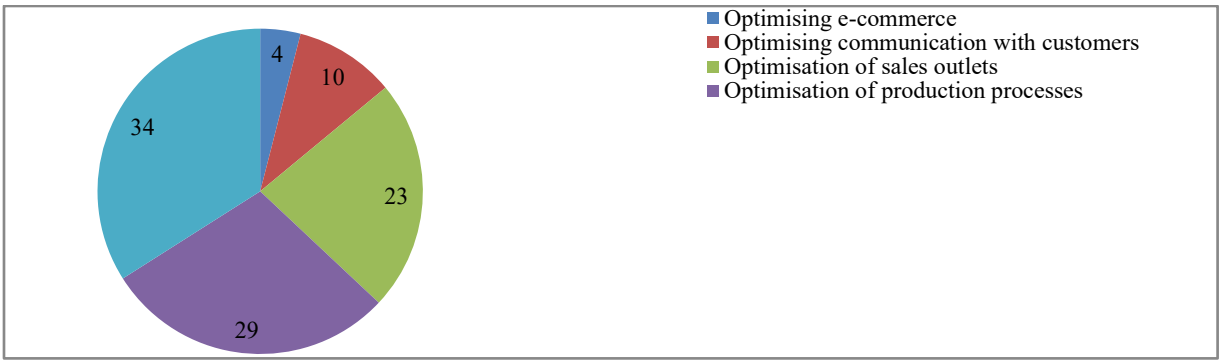
Empirical evidence unequivocally indicates a progressive intensification of financial investments by domestic business entities in the implementation of information and communication technologies within the core vectors of their operational activities. This dynamic serves as an indicator of the high efficacy of digital transformation processes across the principal sectors of economic activity, as reflected in the positive correlation with the intensification of client inflows, cumulative growth in turnover, and an elevated level of commercialization of the production assortment. The diagram below, presented as a percentage distribution, provides a pertinent visual representation of the predominant motivations that underpinned the integration of digital innovations into business processes throughout the year 2023 (Figure 2).

Figure 1: Investments by Ukrainian companies in the implementation of digital technologies within business processes (in billions of dollars)



Source: IT Research Ukraine [14]

Figure 2: Distribution of Digital Transformation Domains within Business Processes of Ukrainian Enterprises in 2023



Source: IMD World Digital Competitiveness Ranking [15]

Digital transformation, in its contemporary paradigm, functions as a complex multivector strategy that determines and modifies heterogeneous business processes, thereby demonstrating the efficacy of virtualized technologies across multifaceted socio-economic conglomerates. Information and communication technologies exert a predominant influence primarily on the manufacturing sector, wherein processes of automation and digitalization of routine operations induce an acceleration in the temporal parameters of operational efficiency. Simultaneously, the significance of digital tools in the stratified mechanisms of identifying and penetrating new product distribution markets must not be underestimated. In present-day conditions, the business process assumes the characteristics of a polystructural and polysemantic system – an intricate, multifactorial entity that necessitates a stratified division into numerous structural components. Among such immanent elements are the articulation of needs, regulatory and organizational policies, client satisfaction indexing, logistical infrastructures, CRM platforms, resource bases, product matrices and informational-analytical services, human capital, business process analytics, and functional management of operational architectonics. This dichotomous structure is visually illustrated in the diagram presented as Table 1.

Table 1: Business Process Components – Analytical Overview

Component	Analytical Commentary
Resources (human, material, financial)	A conglomeration of human, material, and financial resources constitutes the infrastructural matrix underpinning the synergistic operability of the organizational organism.
Products and services	The nomenclature of product-service offerings serves as a materialized extrapolation of the enterprise's innovative imperatives.
Organisation policy	Institutionalized paradigms of organizational policy delineate the normative-value vector of corporate governance and strategic regulation.
CRM system	The customer relationship management system epitomizes a client-centric framework engineered to optimize perceptual loyalty and experiential continuity.
Logistics	Logistical algorithms function as orchestrated vectors facilitating the transposition of resource flows within a spatiotemporal optimization matrix.
Business process analysis	Business process analytics represents a cognitive deconstruction of operational architecture aimed at strategic reengineering.
Customer needs	The latent and articulated desiderata of clientele constitute the foundational impetus for strategic value orchestration, necessitating a nuanced apprehension of psychographic variabilities and contextual consumption patterns.

Source: Business processes [16]

Within the current phase of the evolutionary trajectory of business practices – characterized predominantly by the pervasive digitalization of organizational processes – the operational viability of corporate entities appears increasingly untenable in the absence of integrated, specialized CRM platforms. These platforms function as instrumental-informational nexuses, facilitating the accumulation, processing, and intra-organizational transmission of corporate

knowledge. In view of the aforementioned, the following CRM systems have emerged as particularly prominent within applied business discourse, owing to their extensive deployment across diverse operational domains:

CRM systems in modern business are seen as complex integrated platforms for managing customer interactions, providing data consolidation, analytical support for decision-making, and automation of marketing, service, and sales processes. Their scientific value lies in the ability to build consumer behavior models based on machine learning, customer base segmentation, and customer lifecycle forecasting. Thanks to their modular architecture, CRM systems integrate with ERP, SCM, and BI solutions, forming a single information and analytical circuit for the enterprise, which increases the level of personalization of offers, reduces transaction costs, and contributes to the formation of long-term customer loyalty [17, 18].

Salesforce is positioned as a high-tech, analytically driven management solution, functioning as a universal instrument of control and strategic forecasting for entities operating within education, marketing, healthcare, and auto-trading ecosystems. The platform is inherently tailored to accommodate the idiosyncrasies of users' operational environments, enabling proactive procedural reconfiguration to optimize organizational output. Core functionalities encompass the configurability of modular components, automated generation of analytical reports, dynamic monitoring of deal execution, and expansive interoperability with a broad array of external business services.

Zendesk constitutes an infrastructural platform that has found optimal utility within institutional structures of public administration, media enterprises, and transportation-logistics conglomerates. Its functional paradigm is oriented towards the systematization of communicative dynamics between the organization and its target constituencies. This includes the retention of individualized client data, real-time responsiveness to inquiries, and supervisory oversight of contractual progression. The pace of digital transformation in banks is restrained by the fact that a deep restructuring of the entire IT systems complex requires significant expenditures. However, despite this, the digital development of the financial sector will accelerate, and rational management of digital transformation in the banking sector will become an essential competitive advantage: 'both individuals and organizations want to interact with banks more simply and cheaply, therefore, in the context of the digital economy, the banking sector must be ready to offer the most modern services'. The advancement of technologies in the financial sector has led to the formation of a new financial-technology ecosystem (FinTech) [19].

Creatio emerges as an innovation-centric CRM solution, strategically oriented toward the incorporation of contemporary algorithmic paradigms in the identification of prospective clients. Its functional nucleus supports not only the visualization of aggregate and manager-specific contractor data but also real-time analytics on deal closure dynamics across daily, weekly, and cumulative timeframes. The user interface is augmented by visual tools such as graphs, diagrams, and numerical dashboards, whose metaphorically constructed design – reminiscent of speedometers – enhances cognitive accessibility and facilitates the prompt assessment of organizational efficiency in absolute, financial, and percentage-based metrics.

While alternative CRM platforms do indeed exist, it is these aforementioned systems that constitute the conceptual nucleus of the business-technological landscape, furnishing both foundational and specialized support for organizational workflows, while simultaneously contributing to the emergence of an adaptive corporate milieu (Table 2).

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Table 2: Analytical Overview of Digital Transformation Trends Affecting the Operational Efficiency of Ukrainian Business Entities

Trend	Essence of the Trend
Increase in costs associated with the implementation of digital technologies	Over the past half-decade, a persistent trend has been observed indicating an escalation in corporate capital expenditures directed toward the integration of advanced information-digital solutions, driven by the imperative of technological modernization within institutional frameworks.
Application of digital technologies in production processes	The incorporation of information technologies into the production domain predicates the automation of technological chains and substantively contributes to the elevation of standardized output quality.
Growth of digital transformation indicators in 2021	A comparative analysis of investment dynamics in digital innovation between 2020 and 2021 reveals a remarkable increment of $1.9 billion, serving as empirical evidence of the accelerated adoption of transformative digital initiatives.
Low rate of e-commerce optimization	Merely a marginal proportion (4%) of Ukrainian business entities employ digital instruments to enhance e-commerce mechanisms, indicating a fragmented and underdeveloped character of digitalization within this specific economic sector.
Utilization of digital technologies for core business processes	The predominant segment of enterprises confines the application of information and communication technologies to principal operational functions, while secondary processes remain embedded within conventional operational paradigms.
Use of only selected digital tools	Corporations predominantly limit themselves to the utilization of one or two digital tools, a phenomenon intrinsically linked to financial constraints and the inherent complexity of full-scale technological deployment.
Lagging behind the level of digital transformation in leading countries	Notwithstanding the vigorous integration of digital paradigms within entrepreneurial frameworks, Ukrainian enterprises persist in manifesting a conspicuous deficit in the velocity of their digital metamorphosis, particularly when held in comparative relief against the vanguard of their global contemporaries.

Source: compiled by the author

As the world becomes increasingly digital, businesses are seeking ways to leverage technology to improve their processes and maintain competitiveness. Companies that fail to dedicate sufficient time to studying and implementing digital transformation within their structure are rapidly losing ground in the market due to decreased productivity and lower levels of customer service. The digitalization of business processes is evolving at a swift pace, and a delay in integrating technology into an organization today can result in being permanently left behind by companies that began their digital transformation earlier. This is especially critical for companies engaged in innovative activities, where staying one step ahead is essential for success.

The digitalization of business processes is the transition from analog workflows to electronic counterparts [20, 21]. This typically takes place during the optimization of business processes [22, 23, 24, 25]. A clear digitalization strategy is an essential prerequisite for a sustainable and successful transition to digital technologies [26, 27]. Repetitive processes or routine tasks that require significant time can be automated, which greatly minimizes sources of errors [29–33]. This also makes operations transparent, while intelligent systems make data centrally accessible through a cloud-based data storage. Any authorized employee can access it anytime and anywhere. In this way, medium-sized businesses save both financial and time resources. The digitization of processes means that employees need to spend less time and effort on routine tasks and can utilize the freed-up resources to address more important issues. This is directly linked to improving the company's efficiency, as supported by the findings of Bala [25], Boom-Cárcamo et al. [7],

Czerska [26], Durica [27], and Wu [28]. According to their analyses, only isolated technological elements are incorporated into core managerial modules, while auxiliary functional areas remain largely excluded from the scope of digital transformation – thereby impeding the formation of a comprehensive digital business ecosystem. The digitalization of business processes in companies involved in innovative activities should always be carried out comprehensively and on a regular basis, as part of an interconnected workflow [34–38].

Hence, the conceptual dissonance prevailing in the scholarly discourse concerning the efficacy of digital transformation illustrates the complexity and multidimensionality of the phenomenon, which necessitates further critical inquiry and interdisciplinary investigation. Accordingly, it is prudent to articulate the following recommendations aimed at enhancing the effectiveness of digital integration into corporate structures: systematic incorporation of digital technologies into both core and auxiliary business processes, with an emphasis on transformation comprehensiveness; cultivation of digital literacy and competencies among professionals through intensive educational interventions and certification programs; implementation of an extensive informational campaign addressing the paradigmatic shifts associated with digital evolution; integration of innovative digital-based pedagogical practices into the curricula of institutions of higher learning [39–43].

Conclusion

Within the scope of this scholarly inquiry, a multifaceted analysis has been carried out to elucidate the transformational influence of digitalisation on the intensification of business-process functioning. Digital transformation is construed as a complex, multidisciplinary phenomenon that receives conceptual elaboration in the works of both domestic and foreign scholarly authorities. The academic discourse accentuates the essential characteristics of the term digital transformation, particularly its integrative dimensions, mechanisms of implementation and the dominant vectors of corporate digitalisation. The semantic scope of digital transformation has been refined as a broad paradigm of organisational evolution that presupposes the incorporation of high-tech IT solutions into every stratum of an enterprise's functional existence. This encompasses not only strategically pivotal production elements but also the previously marginalised auxiliary links of business mechanisms. Under the impetus of globalisation imperatives and the ceaseless acceleration of techno-economic dynamics, the deployment of digital technologies has become a sine qua non for preserving entrepreneurial relevance within a turbulent marketplace.

The study delineates the priority vectors of technological intervention in the domain of Ukrainian entrepreneurship, wherein cloud computing, virtualised services, multilevel big-data analytics and decentralised digital networks predominate. Converging into a single synergetic system, these digital instruments constitute a fundamentally novel milieu for corporate operation that gravitates toward total digitalisation. Empirical evidence corroborates a progressive trend of escalating investment flows into digital technologies among Ukrainian firms, manifesting in the vigorous incorporation of IT instruments into the production sphere. Concurrently, institutional inertia is observed with respect to the modernisation of auxiliary processes which, despite their significance, remain confined within a traditional managerial paradigm.

Ultimately, digital transformation emerges as an intrinsic catalyst for augmenting business-process efficiency, necessitating a holistic, systemically structured approach to its implementation. It therefore appears expedient to execute a series of strategic measures: the ubiquitous integration of IT solutions into every component of the business architecture; the deliberate enhancement of personnel's digital competence; the initiation of outreach interventions aimed at popularising digital approaches; the revision of educational paradigms within higher education, with a pronounced focus on IT competencies. The implementation of the foregoing measures is capable of radically transforming the functional efficiency of business structures by unfolding a fully-fledged digital continuum.

The practical value of the results obtained is formed within the framework of their use for the development of corporate strategies for the digital transformation of enterprises. Businesses can justify investment programs for the creation of integrated data management platforms, the implementation of CRM and ERP systems to increase process transparency, and the use of big data analytics to forecast demand and optimize costs. Based on the research conducted, the optimal solution is to develop internal programs to improve the digital competencies of personnel, strengthen cybersecurity, and ensure the compatibility of technological solutions within the supply chain for enterprises in specific sectors of the national economy. It is advisable to form partnership ecosystems with IT companies for the joint implementation of innovations, which will increase business flexibility, reduce time to market, and strengthen the competitive position of enterprises.

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