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DIGITAL MANAGEMENT OF FINANCIAL, PRODUCTION, AND MARKETING ACTIVITIES OF THE ENTERPRISE

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ЦИФРОВЕ УПРАВЛІННЯ ФІНАНСОВОЮ, ВИРОБНИЧОЮ ТА МАРКЕТИНГОВОЮ ДІЯЛЬНІСТЮ ПІДПРИЄМСТВА

Наразі управління діяльністю підприємств проходить значні трансформації, що спричинені поглибленням процесів її цифровізації. Ця цифровізація спрямована на стрімке впровадження технологій та інновацій для оптимізації бізнес-процесів та підвищення ефективності управління. Зокрема, мова йде про впровадження різноманітних технологій, методів збору, обробки та аналізу даних, серед яких такі, як штучний інтелект та Великі дані, Інтернет речей (IoT), блокчейн та інші, що дозволяють реалізувати комплексні рішення, які об'єднують будь-яку управлінську діяльність в єдину, добре злагоджену і взаємодіючу структуру. Відповідно до вищенаведеного, метою статті є визначення особливостей цифрового управління фінансовою, виробничою та маркетинговою діяльністю підприємства, а також тих їх перетворень та ускладнень, які виникають внаслідок численних еволюційних змін та технологічних ускладнень. Досягнення поставленої у статті мети реалізоване за допомогою таких методів дослідження, як логічне узагальнення та наукова абстракція. У межах дослідження було доведено, що цифрова трансформація призводить до специфічних змін не лише у змісті управління фінансовою, виробничою та маркетинговою діяльністю підприємств, але й у змісті відповідних управлінських бізнес-процесів. При цьому зроблено висновок, що перетворення та ускладнення продукуються: змістовними змінами структурованих, покрокових алгоритмів дій співробітників (у частині розв'язання керівних завдань з планування, визначення, розподілу обов'язків та контролю за їх виконанням); розширенням аналітичних, прогностичних та інших можливостей, які трансформують підходи до планування, визначення, розподілу відповідальності та контролю фінансових, виробничих та маркетингових завдань; змінами у гнучкості рішень з управління бізнес-процесами; насиченням процесу управління електронно-цифровими пристроями, засобами, системами та налагодженням електронно-комунікаційного обміну між ними, а також застосуванням саморегульованих дій. Перспективи подальших досліджень полягають у розширенні розуміння та детальному аналізі впливу цифрової

трансформації на конкретні аспекти управління фінансовою, виробничою та маркетинговою діяльністю.

Currently, enterprise management is undergoing significant transformations driven by the deepening processes of its digitization. Digitization is characterized by the rapid implementation of technologies and innovations to optimize business processes and enhance management efficiency. In particular, the discussion revolves around the implementation of diverse methods for collecting, processing, and analyzing data, including artificial intelligence, the Internet of Things (IoT), blockchain, and others, which allow for the realization of comprehensive solutions that integrate any managerial activity into a unified, well-coordinated, and interactive structure. According to the above, the purpose of the article is to identify the characteristics of digital management in the financial, production, and marketing activities of the enterprise, as well as to explore the transformations and complexities arising from numerous evolutionary changes and technological advancements. The achievement of the stated goal in the article is realized through research methods such as logical generalization and scientific abstraction. Within the study, it has been demonstrated that digital transformation leads to specific changes not only in the management of financial, production, and marketing activities of enterprises but also in the content of their associated managerial business processes. In conclusion, it has been deduced that transformations and complexities arise through: substantial changes in the structured, step-by-step algorithms of employees' actions, particularly in solving managerial tasks related to planning, defining, assigning responsibilities, and monitoring their execution; expanding analytical, predictive, and other capabilities that transform approaches to planning, defining, allocating responsibilities, and controlling financial, production, and marketing tasks; flexibility changes in managing business processes; saturating the management process with electronic and digital devices, tools, and systems, and establishing electronic communication exchange between them, as well as application of self-regulated actions. The prospects for further research lie in expanding the understanding and conducting detailed analyses of the impact of digital

transformation on specific aspects of financial, production, and marketing management activities.

Ключові слова: *управління; бізнес-процеси; управлінські рішення; мобільні фінанси, мобільний маркетинг, мобільне виробництво.*

Keywords: *management; business processes; managerial decisions; mobile finance; mobile marketing; mobile production.*

Target setting. Currently, enterprise management is undergoing significant transformations driven by the deepening processes of its digitization. This digitization is characterized by the rapid implementation of technologies and innovations to optimize business processes and enhance management efficiency. In particular, the discussion revolves around the implementation of diverse methods for collecting, processing, and analyzing data, including artificial intelligence, the Internet of Things (IoT), blockchain, and others, which allow for the realization of comprehensive solutions that integrate any managerial activity into a unified, well-coordinated, and interactive structure. In an enterprise management context, it means creating a comprehensive and intelligent digital infrastructure that encompasses all business processes directing the functioning of financial, production, and marketing systems. The relevance of the research is driven by the fact that this structure is not constant; on the contrary, it rapidly evolves and becomes more complex due to the expansion of data analysis capabilities, automation of routine tasks, increased accuracy in decision-making, and facilitation of constant changes in the management of financial, production, and marketing activities within the enterprise.

Analysis of research and publications. The theoretical and methodological foundation of the research is based on scientific studies and practical developments by both foreign and domestic scholars dedicated to the issues of digital enterprise management, including O.V. Olshansky, V. Bannikov, T. Lobunets, I. Buryak, O. Maslyhan, and L. Shevchuk. Despite the sufficient development of issues related to digital enterprise management, questions regarding the identification of specific

characteristics and the content of transformations and complexities generated by the processes of digitization are currently not investigated.

The wording of the purposes of article (problem). According to the above, the purpose of the article is to identify the characteristics of digital management in the financial, production, and marketing activities of the enterprise, as well as to explore the transformations and complexities arising from numerous evolutionary changes and technological advancements.

The paper's main body with full reasoning of academic results. The authors focus on digital management, which signifies the use of modern digital technologies and information systems for efficient and innovative management of enterprise business processes. Therefore, within the outlined research, attention is drawn to the fact that digital transformation acts as a trigger for changes not only in the context of managing financial, production, and marketing activities of enterprises but also in the content of their associated managerial business processes.

The content of such transformations and complexities manifests itself in the following areas:

1. Structured, step-by-step algorithms of actions by employees transform the context of solving managerial financial, production, and marketing tasks. It includes planning, defining responsibilities, and monitoring their execution, as outlined in the specificity highlighted in Table 1.

The outlined changes are considered effective if they have led to improvements in the quality of technological and analytical support for management in each of the areas and have facilitated the process of achieving the set goals.

Table 1. The specificity of structuring and defining the steps of employees within the framework of solving managerial financial, production, and marketing tasks involves planning, defining responsibilities, and monitoring their execution

The direction of transformations and complexities	The structures of algorithms for employees' actions within the framework of solving managerial tasks	Characteristics of transformations and complexities
Management of financial tasks (or the development of a solution aimed at achieving various financial goals of the enterprise)	Task planning: defining financial goals and strategies, and addressing tasks; developing financial plans and budgets	Implementation of digitized methods for financial planning and budgeting.
	Task definition: establishing key financial indicators for measuring task performance; assessing risks and opportunities for task execution	
	Assignment of responsibilities and task execution control: defining roles and responsibilities in the financial department/service; systematic analysis of financial reports and results.	New step-by-step algorithms and automated financial processes
Management of production tasks (or the development of a solution aimed at achieving various goals in the production activities of the enterprise)	Task planning: development of production and resource plans (involving defining production volumes, timelines, resource allocation, developing production process plans, and production schedules); defining technical requirements and standards for task planning	Implementation of digitized methods for production and resource planning
	Task definition: creating detailed specifications and quality plans; monitoring and analyzing production processes executed within specific production tasks	
	Assignment of responsibilities and task execution control: distributing tasks and responsibilities among production personnel; conducting regular audits of production processes	New step-by-step algorithms and automated production processes
Management of marketing tasks (or the development of a solution aimed at achieving various marketing goals)	Task planning: development of marketing strategies and campaigns; defining the target audience and competitors	Implementation of digitized methods for conducting marketing campaigns.
	Task definition: creating advertising materials and identifying advertising channels; analyzing the results of marketing initiatives	
	Assignment of responsibilities and task execution control: distributing tasks and responsibilities among members of the marketing department/service; monitoring the market response to marketing initiatives	New step-by-step algorithms and automated marketing processes.

Source: formed based on [1-2; 5]

2. The overall expansion of analytical, predictive, and other capabilities transforms approaches to planning, defining, distributing responsibilities, and controlling financial, production, and marketing tasks within the specified framework highlighted in Table 2;

Table 2. The specificity of expanding analytical, predictive, and other capabilities transforms approaches to planning, defining, distributing responsibilities, and task control

The direction of transformations and complexities	The specificity of expanding analytical, predictive, and other capabilities transforms approaches to management	Components that form the basis of transformations and complexities
Management of financial tasks (or the development of a solution aimed at achieving various financial goals of the enterprise)	Using analytical tools for a deeper understanding of the financial condition of the enterprise, identifying key financial indicators, and risks. Developing predictive models to forecast financial trends and optimize financial management strategies.	Finance analytics Predictive financial models Integrated electronic payment and transaction systems, as well as mobile finance
Management of production tasks (or the development of a solution aimed at achieving various goals in the production activities of the enterprise)	Utilizing analytical tools to optimize production processes, enhance efficiency, and reduce costs. Forecasting inventory needs through data analysis, enabling effective inventory management and avoiding unnecessary expenses	Analytics in production Predictive models for inventory
Management of marketing tasks (or the development of a solution aimed at achieving various marketing goals)	Using analytical tools to understand consumer behavior, assess the effectiveness of marketing campaigns, and personalize strategies. Developing predictive models to forecast product demand and plan marketing strategies	Marketing analytics Predictive sales models

Source: formed based on [1; 3; 5]

The outlined changes are effective if they have generated expanded analytical and predictive capabilities for business process owners, thereby enhancing their ability to more accurately analyze information, make informed decisions, and adapt quickly to changes in the internal and external environment.

3. Flexibility in business process management decisions (considering that management decision is understood as the result of the subject's choice of actions aimed at problem solution, the outlined flexibility should manifest in planning, defining, distributing responsibilities, and task control).

In this context, the main directions of flexibility in managerial decisions and the specifics of its formation are outlined in Table 3.

Table 3. The main directions of flexibility in management decisions and the specifics of its formation within the framework of digital enterprise management

Directions of flexibility in management decisions	Components that form the basis of flexibility enhancement	The specifics of forming flexibility in business process management decisions	Characteristics of managerial decision flexibility
Real-time planning systems	Scenario planning systems	The ability to develop various scenarios for events and action plans for different conditions	Gradual enhancement of the enterprise's adaptability to changes. Increased speed of response to external and internal challenges. Elevated level of efficiency in all aspects of business process management.
	Dynamic planning systems	The capability to quickly make changes to the enterprise's strategies and plans in response to changes in the internal and external environment.	
	Integrated analytical tools	Utilization of analytics for ongoing adjustment of strategies and plans, resulting in rapid modifications	
Systems for determining the content of managerial decisions.	Modular architecture of business processes	The use of modular structures that allow for quickly changing individual parts of business processes	Elevated level of efficiency in all aspects of business process management.
	Flexible work methods	Ability to adapt methods and approaches to task resolution depending on the specific situation	
Real-time responsibility allocation systems	Dynamic team formation	Ability to quickly compose and redistribute teams based on needs and tasks.	Elevated level of efficiency in all aspects of business process management.
	Collective decision-making systems	Use of interactive tools to involve the team in the decision-making process.	
Real-time control systems	Real-time monitoring	Utilization of real-time monitoring and analysis systems for operational control of efficiency.	Elevated level of efficiency in all aspects of business process management.
	Adaptive analytical approaches	Application of analytical tools for swift correction of strategies and actions based on input data	

Source: formed based on [5; 6]

The outlined changes are effective if they have strengthened the adaptability and flexibility of business processes, increased responsiveness to external and internal challenges in all aspects of business process management.

The specificity of forming flexibility within digital management is based on the extensive application of digital technologies and innovations, including the integration of digital platforms, automation of business processes, artificial intelligence algorithms, and tools for forecasting and optimization, electronic reporting, and communication.

4. The structure of management business processes is increasingly digitized and automated, encompassing a set of sequential interrelated operations in the following directions:

- Identification of the owner of the management business process. So, the process of identifying the person or team responsible for developing, executing, and optimizing the business process can be carried out through interactive responsibility matrices. The process of defining strategic goals and directions for process optimization and achieving positive results is facilitated through the use of digital analytical tools;

- Formation of input data structures. In this process, describing the sources from which input data is obtained for initiating the business process is linked to digital environmental analysis, the use of the Internet of Things, and other digital technologies that facilitate automatic collection and processing of information;

- Formation of output data structures of the business process. In this case, the formation of output data structures, including results and information generated during the process execution, and their proper presentation to internal and external users is automatically carried out with the ability to adjust the process in real time;

- Process management. In this case, the possibilities of digitizing the steps and stages of executing the business process are deepened, responsibilities are allocated, and the relationships between participants are defined through full or partial automation of monitoring processes in managing financial, production, and marketing activities.

There is a saturation of the process of managing electronic-digital devices, tools, and systems, and the establishment of electronic communication exchange between them, as well as dissemination of practices for self-regulated actions.

The outlined changes are effective if they result in the transformation of the business process into a digitized and fully or partially automated structure, characterized by the following features:

1. Emphasis on maximizing the use of electronic-digital devices and systems.
2. Electronic communication data exchange between various electronic-digital devices and systems, as well as business process owners.
3. Self-regulated managerial actions at specific stages of the business process.

4. Electronic accounting and reporting (enabling the collection, analysis, and presentation of data in electronic format, providing convenient and quick access to necessary information).

5. Digital security.

Implemented in a comprehensive and intelligent digital infrastructure, the essence of the transformations and complexities of digital management outlined above (Figure 1) allows for a consolidated view of the author's perspective on the inherent digital solutions and tools for digital management within the enterprise.

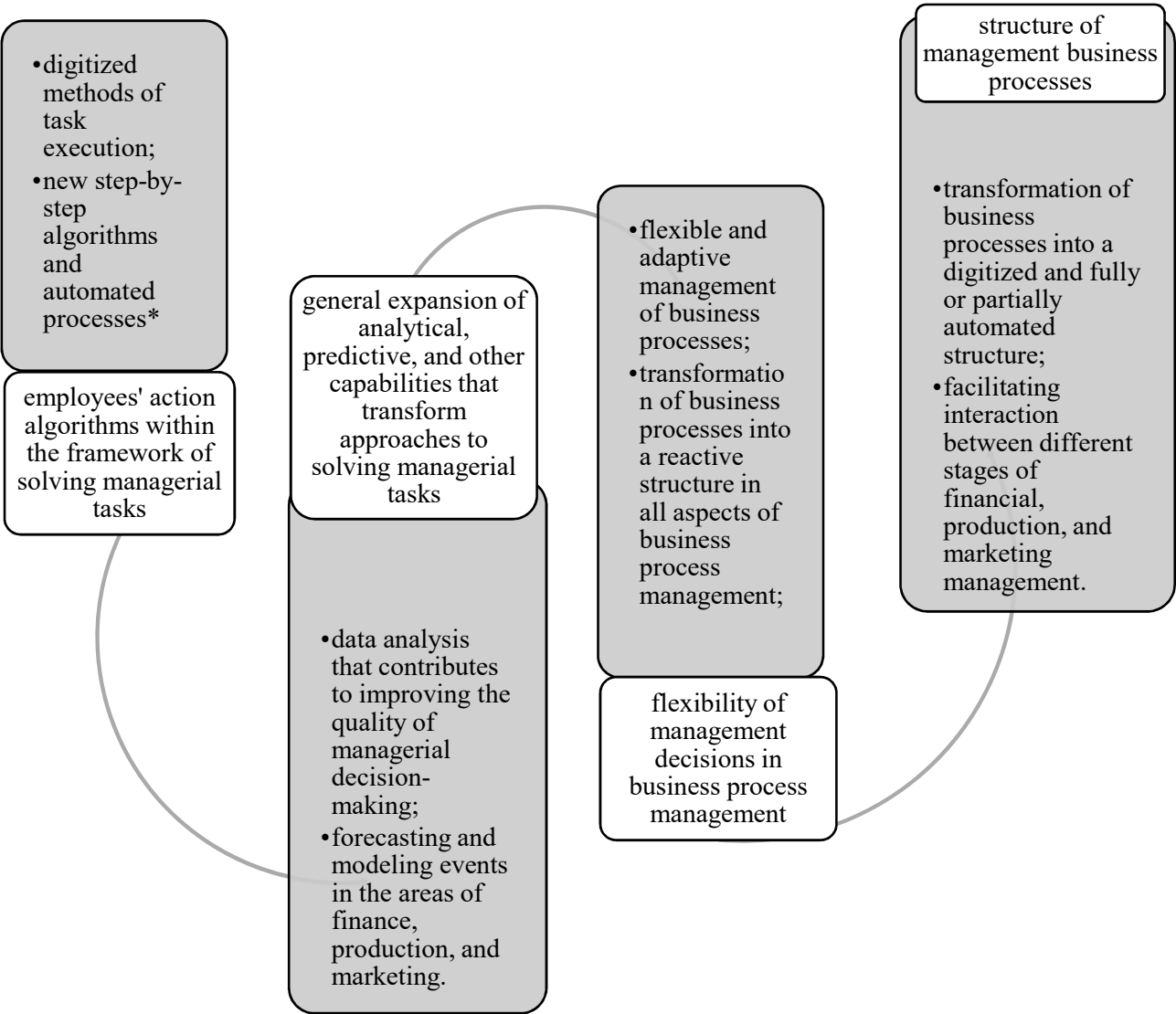


Figure 1. A perspective on digital solutions and tools for digital management of financial, production, and marketing activities within the enterprise

Source: formed based on [1-2; 4-5]

At the same time, each of the identified planes of transformations and complications manifests itself differently.

So, in the context of digital management of financial activities, the acquisition by it and its relevant business processes of such key features as (Figure 2):

integration and interaction with electronic payment and transaction systems, as well as mobile finances;

integration with cloud financial platforms;

electronic reporting and analytics;

various degrees of automation in financial processes/

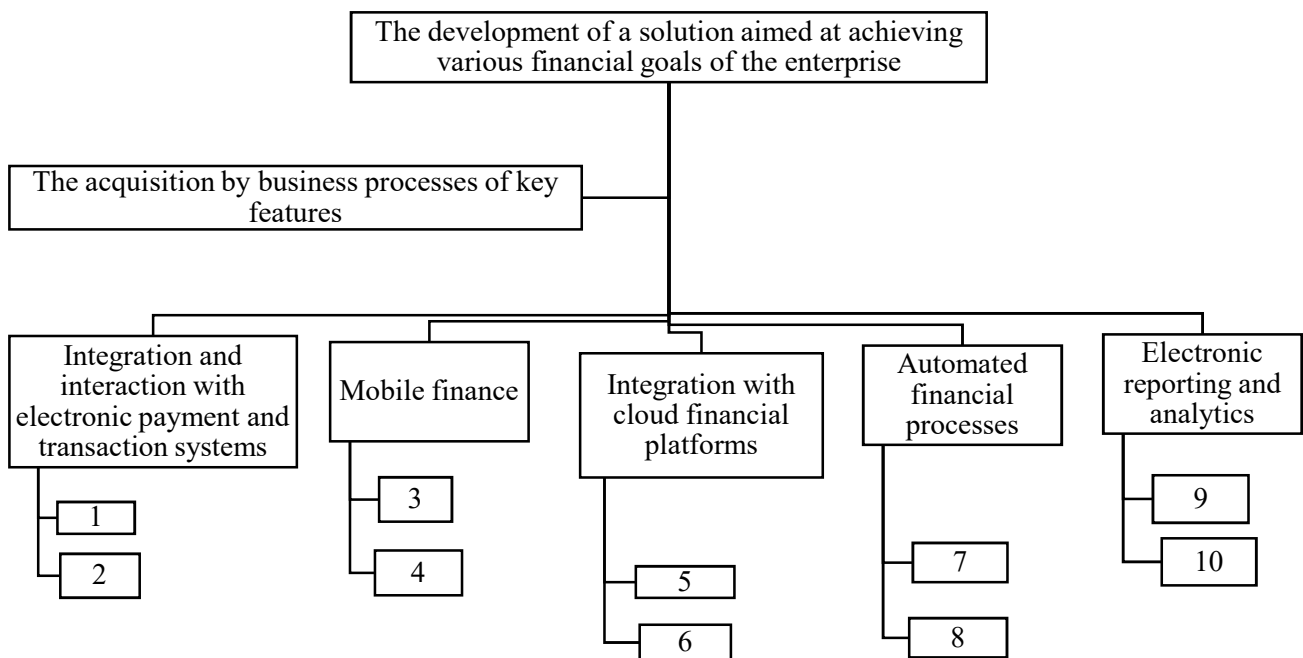


Figure 2. Features of digital financial management of the enterprise

Note

*Detailed features: (1) Automated processing of electronic transactions and payments; (2) Integration with various payment systems to ensure fast and secure money exchange; (3) Capability to conduct financial operations through mobile devices; (4) Expansion of functionality in mobile apps for real-time financial management and transactions; (5) Use of cloud technologies for storing and processing financial information; (6) Accessibility to financial data from any device and location; (7) Implementation of automated tools to optimize financial operations and reduce human intervention; (8) Utilization of robotic processes for performing routine tasks; (9) Generation of electronic reports and real-time analysis of financial information; (10) Use of analytical tools to gain insights and make informed decisions.

Source: formed based on [1; 6-7]

In the context of digital management of manufacturing activities, the enterprise can acquire the following key features through its associated business processes (Figure 3):

1. Integration and interaction with real-time remote manufacturing monitoring systems.
2. Integration of various information systems and manufacturing technologies, facilitating data exchange and ensuring unity of the information environment.
3. Manufacturing processes with varying degrees of automation, contributing to the formation of mobile manufacturing.
4. Optimization of the use of manufacturing resources, which may involve task automation, identification and elimination of unnecessary steps, as well as improvement of operation sequences.

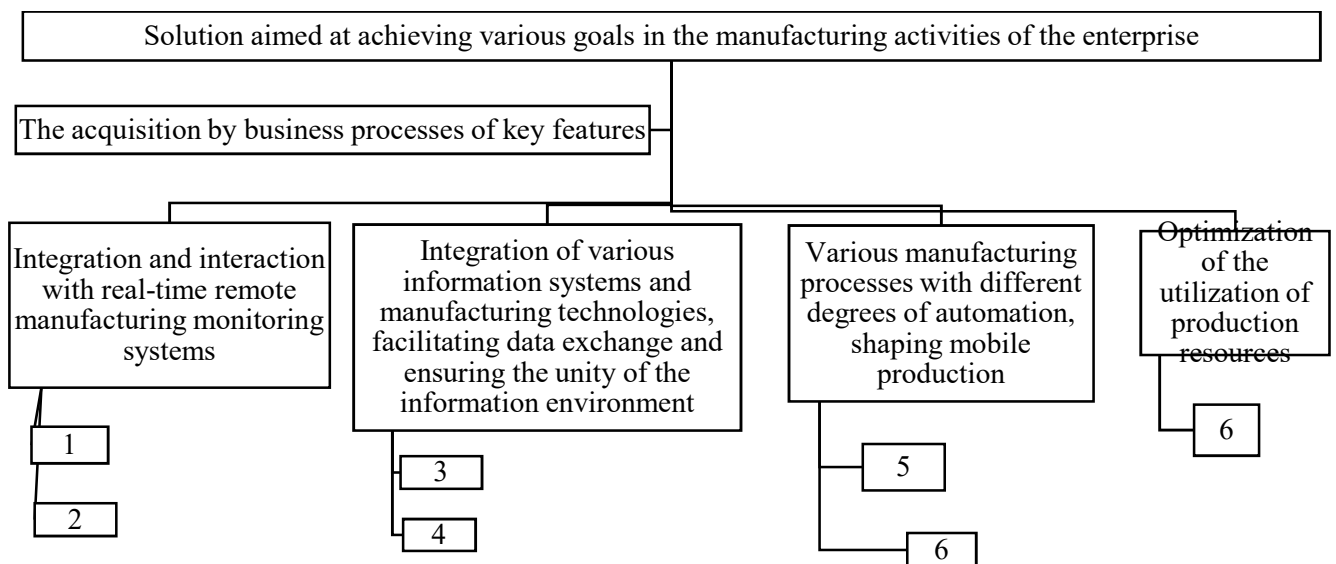


Figure 3. Features of digital management in the production activities of the enterprise

Note

* Detailed features: (1) ability to track production processes in real-time; (2) ability to receive real-time information about the state of equipment, inventory, and other parameters; (3) ensures the unity of informational and production environments; (4) facilitates data exchange between different production areas of the enterprise and improves the coordination of business processes; (5) enables the execution of tasks with minimal human involvement, which can streamline and expedite the management of production processes; (6) allows for the efficient utilization of production resources to maximize performance and reduce costs.

Source: formed based on [1; 6-7]

In the context of digital marketing management, the adoption of digital solutions and associated business processes can involve key features such as (Figure 4):

1. Integration and interaction with analytics systems and performance measurement, as well as content personalization;
2. Mobile marketing;
3. Various levels of automation for routine marketing tasks;
4. E-commerce and online sales.

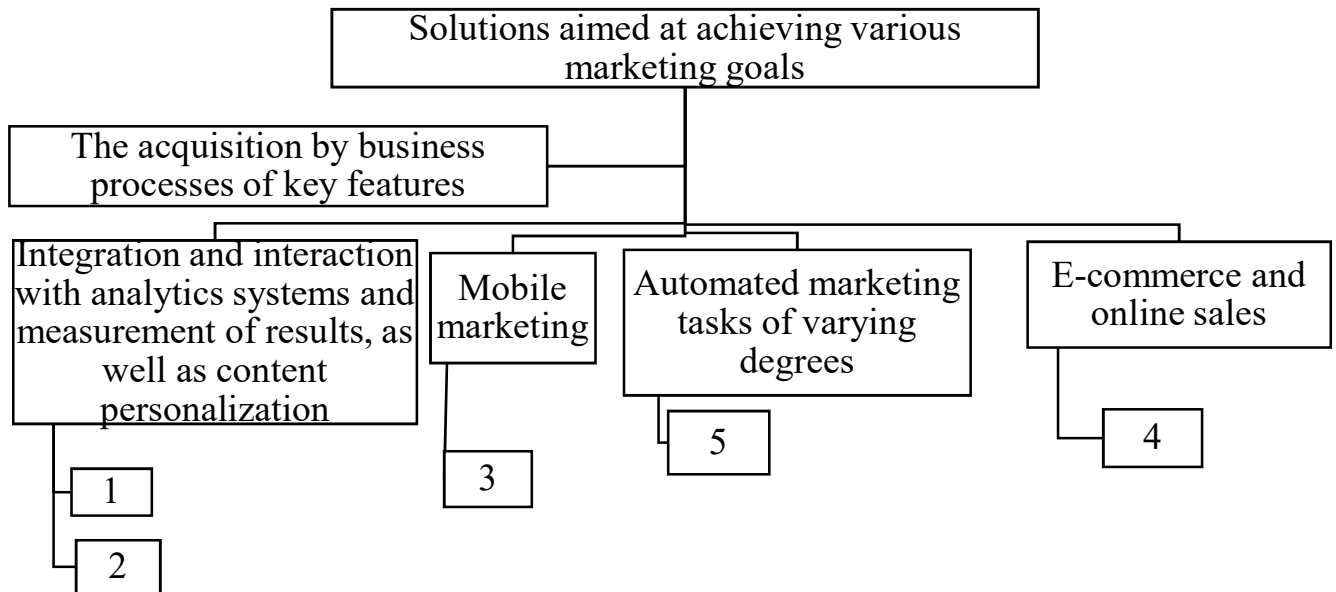


Figure 4. The features of digital management of the marketing activities of the enterprise

Note

* Detailed features: (1) The application of digital tools for collecting and analyzing data, allowing the measurement of the effectiveness of various marketing campaigns; (2) The use of tools to interact with the audience, taking into account their individual needs and online behavior; (3) Developing strategies targeting mobile users, considering the increasing use of mobile devices for internet access; (4) Managing digital channels for selling goods and services, as well as streamlining the purchasing process and providing convenience for customers; (5) Implementing systems for automating routine marketing tasks, such as email campaigns, content management, etc.

Source: formed based on [1; 6-7]

So, digital management of financial, production, and marketing activities of the enterprise brings significant changes both in the management process itself and in the managerial business processes through the integration of the latter and such categories as "electronic document," "electronic document flow," "electronic service," "mobile finance," "mobile marketing," "mobile production.

Conclusions from this study and prospects for further exploration in this area.

Within the study, it has been proven that digital transformation leads to specific changes not only in the content of managing financial, production, and marketing activities of enterprises but also in the content of their respective managerial business processes. The following conclusions have been drawn regarding the content of transformations and complications that define the course and effectiveness of the digital transformation process:

1. Transformations and complications result in substantial changes to the structured, step-by-step algorithms of employees' actions, particularly in addressing key financial, production, and marketing tasks related to planning, defining, assigning responsibilities, and monitoring their execution. The outlined changes are effective if they have led to improvements in the quality of technological and analytical support for management in each of the areas and streamlined the process of achieving set goals.

2. Transformations and complexities are generated by expanding analytical, predictive, and other capabilities that transform approaches to planning, defining, distributing responsibilities, and controlling financial, production, and marketing tasks. The outlined changes are effective if they have created advanced analytical and predictive capabilities for business process owners, enabling them to more accurately analyze information, make informed decisions, and adapt quickly to changes in both internal and external environments.

3. Transformations and complexities arise from changes in the flexibility of decision-making in business process management. Considering that managerial decision-making is the result of the subject's choice of actions aimed at solving a set task, the outlined flexibility should manifest itself in the planning, determination, allocation of responsibilities, and task control directions. The outlined changes are effective if they have resulted in enhancing the adaptability and flexibility of business processes, increasing the speed of response to external and internal challenges in all aspects of business process management.

4. Transformations and complexities arise from the saturation of the process of managing electronic and digital devices, tools, systems, and the establishment of

electronic communication exchange between them, as well as the application of self-regulated actions. The outlined changes are effective if they have led to the transformation of business processes into a digitized and fully or partially automated structure.

The prospects for further research lie in expanding the understanding and conducting detailed analysis of the impact of digital transformation on specific aspects of financial, manufacturing, and marketing management.

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