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Digital Technologies Planning of Commercial Activity and Optimization of Processes for Open Socio-Economic Systems: Financial and Legal Aspect

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Abstract

The main purpose of the article is to present directions for improving the use of digital technologies for planning commercial activities and optimizing processes for open socio-economic systems. The object of the research is the planning of commercial activities and optimization of processes for open socio-economic systems. The scientific task consists in modeling the process of improving the use of digital technologies for planning commercial activities and optimizing processes for open socio-economic systems. The research methodology involves the use of the IDEF0 method to build a model for improving the use of digital technologies for planning commercial activities and optimizing processes for open socio-economic systems. As a result of the research, an author's approach to improving the use of digital technologies for planning commercial activities and optimizing processes for open socio-economic systems is presented.

Keywords: *Banks, Economical and Legal Aspects, Modeling, Enterpises, IDEF, RFID, Commerical Activity.*

INTRODUCTION

In today's globalized economy, the integration of digital technologies into commercial activities is crucial for businesses to stay competitive and efficient. Digital technologies enable automation, enhance data management, and streamline operations, reducing costs and improving productivity. The planning and implementation of these technologies allow companies to optimize supply chains, improve customer service, and develop new business models. This is particularly important in open socio-economic systems where businesses interact with various stakeholders, and digital tools facilitate smoother and more effective communication and transaction processes.

Process optimization through digital technologies is vital for the sustainable development of open socio-economic systems. These systems are characterized by dynamic interactions between economic, social, and environmental factors. Digital tools help in managing these complexities by providing real-time data and analytics, which are essential for making informed decisions. This optimization helps in enhancing the efficiency of resource use, reducing environmental impacts, and fostering economic growth. By improving process efficiency, digital technologies contribute to the resilience and adaptability of socio-economic systems in the face of external shocks and changing market conditions.

From a financial perspective, digital technologies enable significant cost reductions and efficiency gains. They offer tools for better financial planning, monitoring, and control, which are essential for the economic health of businesses and socio-economic systems alike. Through advanced data analytics and automation, companies can optimize their financial operations, reduce errors, and enhance compliance with financial regulations. The integration of financial technologies (fintech) also opens new avenues for funding, investment, and financial services, promoting greater financial inclusion and stability in open socio-economic systems.

The legal aspect of integrating digital technologies in commercial activities is crucial for ensuring compliance and protecting businesses and consumers. Digital technologies must be implemented in a manner that complies with existing regulations related to data protection, privacy, cybersecurity, and intellectual property. Effective digital planning helps businesses navigate complex legal landscapes, ensuring that they adhere to laws while leveraging technology for growth. This legal compliance is especially important in open socio-

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economic systems, where interactions are often cross-border and involve multiple legal jurisdictions, making it essential for businesses to understand and comply with diverse regulatory requirements.

The application of digital technologies in commercial planning and process optimization plays a pivotal role in enhancing socio-economic integration and promoting growth. These technologies bridge gaps between different sectors and communities, facilitating greater economic participation and reducing disparities. In open socio-economic systems, digital tools enable better coordination and cooperation among various economic agents, fostering innovation and driving economic development. By leveraging digital technologies, businesses can contribute to more inclusive and sustainable economic growth, benefiting not just individual companies but the broader socio-economic system as a whole.

The main purpose of the article is to present directions for improving the use of digital technologies for planning commercial activities and optimizing processes for open socio-economic systems. The object of the research is the planning of commercial activities and optimization of processes for open socio-economic systems.

LITERATURE REVIEW

The application of digital technologies in commercial activities has been a subject of significant scholarly interest. Bazyliuk et al. (2019) provide a comparative analysis of the institutional dynamics influencing regional development in publishing and printing activities in Ukraine. Their methodological approach underscores the importance of digitalization in enhancing regional economic activities and supporting sustainable development . This study highlights how digital technologies can streamline operations and contribute to regional economic growth, which is essential for understanding the broader implications of digital transformation in commercial settings.

Alazzam et al. (2023) explore the development of e-commerce and its role in ensuring business economic security. They emphasize the necessity of forming an innovative model for e-commerce development that incorporates digital technologies to enhance business operations and economic resilience . This research is particularly relevant to the current study as it underscores the critical role of digital technologies in optimizing commercial processes and safeguarding economic interests in a digitally-driven marketplace.

Optimizing processes within open socio-economic systems requires a detailed understanding of both the technological and economic dimensions. Abramova et al. (2021) discuss the ecosystem of VAT administration in e-commerce within Eastern European countries, highlighting how digital technologies can optimize tax administration processes and improve compliance . This study provides valuable insights into the regulatory and economic challenges associated with digital transformation in commercial activities, which is crucial for optimizing processes within socio-economic systems.

Iljins and Skvarciany (2015) investigate the role of change management in fostering trust within commercial banks, emphasizing the significance of digital tools in facilitating trust-building and process optimization . Their findings are pertinent to the current research as they illustrate how digital technologies can enhance operational efficiency and stakeholder trust, which are vital components of process optimization in socio-economic systems.

Alazzam et al. (2023) examine the management of foreign economic activities in the context of sustainability, discussing the peculiarities of integrating digital technologies to manage international commercial operations . This study highlights the complexities of managing cross-border commercial activities and the role of digital technologies in optimizing these processes, making it relevant to the analysis of open socio-economic systems.

The financial implications of integrating digital technologies are multifaceted, involving cost efficiencies, improved financial management, and enhanced regulatory compliance. Alazzam et al. (2024) propose a methodical approach to selecting business management strategies that incorporate digital technologies for improved commercial activities . Their approach emphasizes the financial benefits of digital integration,

including cost reductions and improved financial planning, which are essential for optimizing commercial processes.

Legal compliance is another critical aspect of digital integration. Alazzam et al. (2023) explore the legal implications of digital contracts using blockchain technology, highlighting how digital tools can facilitate legal compliance and improve transaction security in commercial activities . This research provides a legal framework for understanding the implications of digital technologies in commercial settings, which is crucial for ensuring that businesses adhere to legal standards while leveraging digital tools for process optimization.

The socio-economic impacts of digital technologies extend beyond commercial benefits to include broader societal implications such as increased inclusivity and sustainability. Alazzam et al. (2023) discuss the development of information models for e-commerce platforms, focusing on the socio-economic benefits of digitalization and legal compliance . Their findings highlight the potential of digital technologies to drive socio-economic development by improving access to economic opportunities and enhancing legal compliance in digital transactions.

Lagodiienko et al. (2022) examine the management of foreign economic activities under current sustainability conditions, discussing the role of digital technologies in promoting sustainable development and economic growth . Their research underscores the importance of integrating digital technologies into commercial activities to support sustainable economic practices and enhance the resilience of socio-economic systems.

METHODOLOGY

This chapter outlines the methodology employed to achieve the research objectives of improving the use of digital technologies in planning commercial activities and optimizing processes for open socio-economic systems. The methodology section is crucial as it delineates the approach and techniques utilized to model the enhancements and identify the most effective strategies for integrating digital technologies into commercial activities. The primary methodological framework used in this research is the IDEF0 method, a well-established modeling technique that facilitates the understanding and communication of complex systems and processes.

The research adopts a quantitative approach, leveraging the IDEF0 (Integrated DEFinition for Function Modeling) method to create a detailed model of the processes involved in planning commercial activities and optimizing them using digital technologies. The choice of IDEF0 is driven by its capability to provide a structured and comprehensive representation of processes, which is essential for identifying areas where digital technologies can be most effectively implemented. The IDEF0 method is a graphical modeling technique used to represent the functions, activities, and processes within a system. It is particularly useful for depicting the flow of information and control within an organization. In this research, IDEF0 is used to model the processes related to commercial activity planning and process optimization.

Data for this research were collected from a combination of primary and secondary sources. Primary data involved interviews and surveys with industry experts and practitioners in the field of commercial activity planning and process optimization. Secondary data included a review of academic literature, industry reports, and case studies related to digital technologies and their application in commercial activities.

The analysis involved comparing the current state of processes with the proposed model to identify gaps and opportunities for improvement. Quantitative data from surveys were analyzed using statistical methods to identify trends and patterns. Qualitative data from interviews were coded and analyzed to extract themes and insights relevant to the research objectives.

RESEARCH RESULTS AND DISCUSSIONS

Implementing Advanced Data Analytics and Automation

Needs Assessment and Goal Setting. Conduct a thorough assessment to identify the specific needs and goals related to commercial activities and process optimization. This includes evaluating current workflows, identifying bottlenecks, and defining clear objectives for digital technology integration.

Data Integration and Management. Implement a robust data integration platform to centralize and manage data from various sources. This involves setting up databases, data warehouses, and ensuring data quality and consistency.

Development of Predictive Models. Develop predictive models using advanced data analytics techniques such as machine learning and artificial intelligence. These models should be designed to forecast trends, identify patterns, and provide actionable insights for process optimization and financial planning.

Automation of Routine Processes Identify repetitive and time-consuming tasks that can be automated using robotic process automation (RPA) and other digital tools. Implement automation solutions to streamline these processes. (Fig.1).

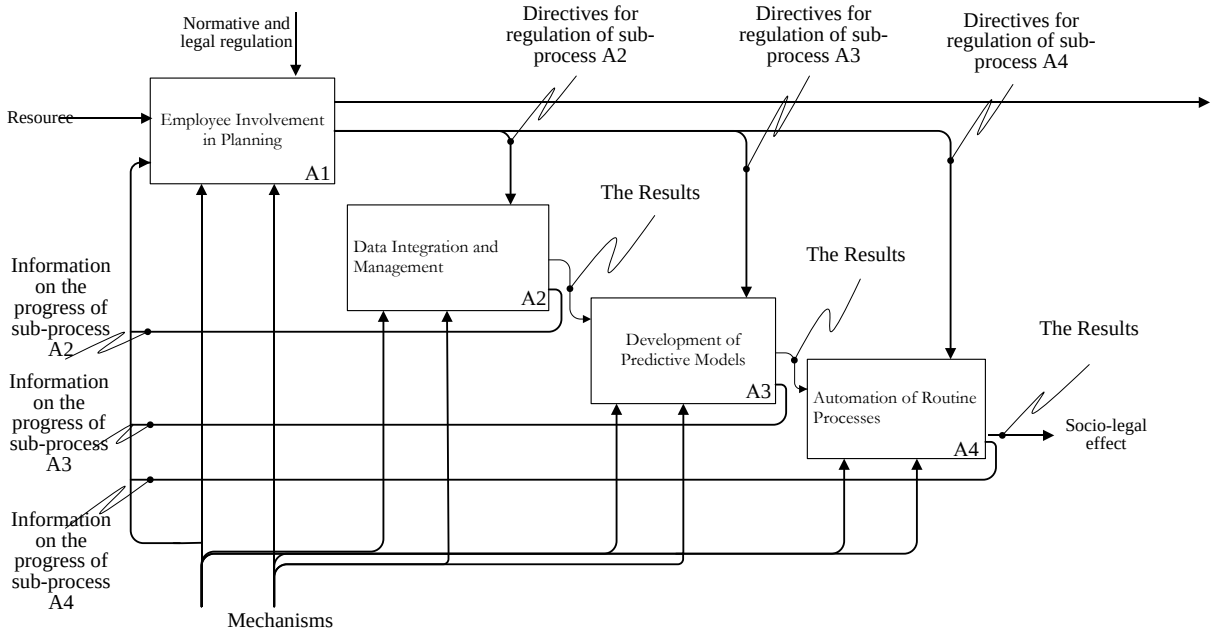

Figure 1. Model IDEF0

Enhancing Legal Compliance and Security through Digital Solutions

Regulatory Compliance Mapping. Conduct a comprehensive review of all relevant financial and legal regulations that impact commercial activities. Map these regulations to identify compliance requirements and areas where digital technologies can facilitate adherence.

Implementation of Compliance Management Systems. Deploy compliance management systems (CMS) that integrate digital tools for monitoring, reporting, and managing compliance activities. These systems should include features such as automated reporting, audit trails, and compliance alerts.

Development of Digital Security Frameworks. Develop and implement digital security frameworks to protect sensitive data and ensure secure transactions. This includes setting up cybersecurity protocols, encryption methods, and access controls.

Integration of Blockchain for Transactional Transparency. Integrate blockchain technology to enhance the transparency and security of financial transactions and contractual agreements. This involves setting up blockchain-based systems for recording and verifying transactions. (Fig.2).

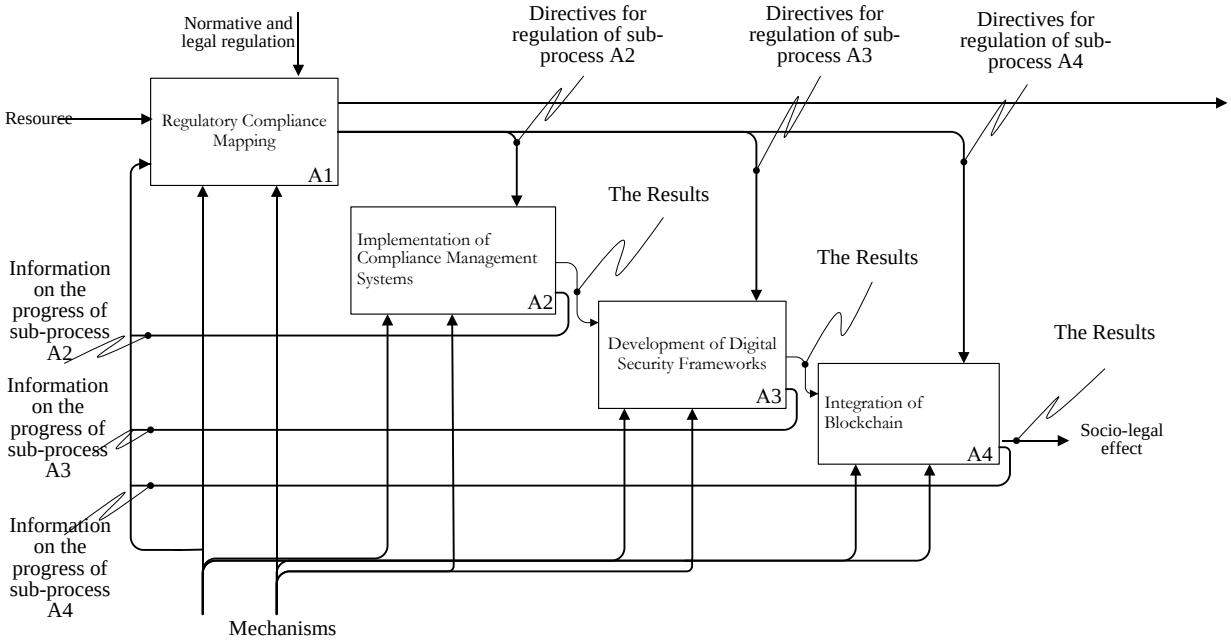

Figure 2. Second Model IDEF0

Blikhar et al. (2023) emphasize the importance of addressing economic and legal aspects to ensure the effectiveness of anti-corruption measures in state authorities. This perspective is particularly relevant when considering the digital transformation of commercial activities. Digital technologies can enhance transparency and accountability, thus reducing opportunities for corruption within commercial and state interactions. The study suggests that the integration of digital tools in commercial activities can support the establishment of robust anti-corruption frameworks, which are critical for maintaining economic integrity and trust in socio-economic systems.

Saleh et al. (2020) discuss the legal challenges associated with managing cryptocurrency assets within national security frameworks. This highlights the broader implications of digital technologies for legal compliance and economic security. As businesses increasingly adopt digital solutions, including blockchain and cryptocurrencies, the need for comprehensive legal frameworks becomes paramount. These frameworks must address issues such as data privacy, digital contracts, and financial transactions to ensure that the benefits of digital transformation are realized without compromising economic stability or security.

Kopytko and Sylkin (2023) explore the role of information systems in combating corruption, emphasizing the importance of digital tools in supporting economic security. Their findings underscore the potential of digital technologies to provide critical information support for anti-corruption efforts, thereby enhancing the overall security of economic systems. This aligns with the current research, which highlights the role of digital technologies in optimizing processes and ensuring compliance with legal standards, thereby contributing to a more secure and transparent commercial environment.Panchenko et al. (2022) highlight the importance of methodological approaches in managing innovative activities within enterprises. Their research underscores the need for systematic planning and integration of digital technologies to drive innovation and optimize processes. This perspective is particularly relevant to the current study, which utilizes the IDEF0 method to model and enhance the use of digital technologies in commercial activities. The findings indicate that a structured approach to digital integration can lead to significant improvements in process efficiency and innovation, which are essential for the sustainability and competitiveness of businesses in open socio-economic systems.

CONCLUSIONS

This research aimed to explore and improve the use of digital technologies for planning commercial activities and optimizing processes within open socio-economic systems. The primary tool employed was the IDEF0 method, which facilitated a detailed analysis and modeling of current processes and identification of potential enhancements. Key findings from the study include:

Efficiency Gains through Digital Integration: The integration of digital technologies significantly enhances the efficiency of commercial planning processes. The model developed using IDEF0 highlighted several areas where automation and digital tools can streamline operations, reduce manual effort, and minimize errors, leading to cost savings and improved accuracy.

Enhanced Data Management and Decision-Making: Digital technologies enable better data management and analytics, which are critical for informed decision-making in commercial activities. The study found that digital tools can enhance the ability to gather, process, and analyze large volumes of data, providing valuable insights that support strategic planning and operational improvements.

Optimization of Processes: The use of digital technologies for process optimization within open socio-economic systems can lead to substantial improvements in operational efficiency and resource utilization. The IDEF0 model identified several processes that can be optimized through the adoption of digital solutions, resulting in reduced cycle times and increased responsiveness to market changes.

Compliance and Legal Frameworks: The research highlighted the importance of legal compliance when integrating digital technologies. The model demonstrated how digital tools can support compliance with financial and legal regulations, ensuring that businesses not only improve their operations but also adhere to relevant laws and standards, thereby reducing legal risks and enhancing trust among stakeholders.

The findings suggest that the adoption of digital technologies can have broader socio-economic benefits, including increased transparency, improved stakeholder collaboration, and greater inclusivity. These benefits contribute to the overall resilience and sustainability of open socio-economic systems, making them better equipped to handle external shocks and adapt to changing conditions.

The research provides several practical implications for businesses and policymakers. For businesses, the findings underscore the importance of investing in digital technologies to enhance commercial planning and process optimization. Implementing the recommendations derived from the IDEF0 model can lead to significant improvements in efficiency and competitiveness. For policymakers, the study highlights the need to support the digital transformation of commercial activities through appropriate regulatory frameworks and incentives, ensuring that the benefits of digitalization are widely accessible and contribute to socio-economic development.

While the research provides valuable insights into the integration of digital technologies in commercial activities, it also has some limitations. The study focused primarily on the use of the IDEF0 method, which, while effective for process modeling, may not capture all nuances of real-world operations. Additionally, the research relied on data from specific industries, which may limit the generalizability of the findings to other sectors. Future research could explore the application of digital technologies in a broader range of industries and use alternative modeling techniques to provide a more comprehensive understanding of the impact of digitalization.

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