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ERP SYSTEMS AS SUPPORT FOR THE DIGITAL TRANSFORMATION OF BUSINESS ENTITIES AND PUBLIC (TAX) ADMINISTRATION

Abstract: Digital transformation represents one of the most significant development processes affecting contemporary business entities and public, including tax, administration, as it contributes to improved efficiency, transparency, service quality, and data-driven decision-making. In this process, enterprise resource planning (ERP) systems play an important role as integrated information solutions that enable the connection of business and administrative processes, centralized data management, and the automation of activities. The subject of this paper is the analysis of the role of ERP systems in supporting the digital transformation of business entities and public administration, with particular emphasis on their importance for integrating organizational functions, improving resource management, reducing administrative burdens, and enhancing electronic communication with public institutions. The aim of the paper is to highlight the importance of ERP systems in the contemporary business and public sectors, as well as the benefits and challenges associated with their implementation. Particular attention is devoted to the relationship between ERP systems and e-government, including the use of digital services such as electronic invoicing, tax portals, and the Unified Electronic Mailbox (eMailbox), which enable more efficient data exchange between businesses and public

administration. The paper is based on the assumption that ERP systems contribute to greater efficiency, improved process control, a higher level of regulatory compliance, and more effective use of electronic public services. The challenges associated with ERP system implementation are also examined, including high costs, the need for organizational change, employee training, information security, and data protection.

Keywords: *ERP systems, digital transformation, business entities, public administration, tax administration, e-business, information systems*

1. INTRODUCTION

Digital transformation represents one of the key directions in the development of contemporary organizations in both the private and public sectors. It is important to emphasize that digital transformation involves changes in the way organizations manage processes, data, resources, and relationships with users. In an environment characterized by rapid technological development, increasing volumes of data, and growing demands for efficiency, transparency, and reliable decision-making, information systems are becoming an important instrument of organizational modernization. Enterprise resource planning (ERP) systems play a particularly important role. As integrated software solutions, they enable the connection of various business functions, including finance, procurement, sales, production, inventory management, human resources, and reporting. Their fundamental value lies in centralized data management, the reduction of duplicated activities, increased process visibility, and improved control over resources. Therefore, ERP systems do not merely provide technical support for business operations but also serve as a means of improving organizational efficiency, management quality, and decision-making based on reliable information.

In business entities, the implementation of ERP systems contributes to better coordination of business activities, faster data processing, more efficient planning, and greater compliance with the requirements of the contemporary business environment. Under conditions in which responsiveness, information accuracy, cost control, and regulatory compliance are particularly important, ERP systems can provide a significant foundation for the development of digital business operations and the strengthening of business competitiveness.

In addition to their importance for business entities, integrated information systems also play an important role in the modernization of

public administration. The digitalization of public administration includes the automation of administrative procedures, electronic data exchange, the provision of electronic services, and more efficient communication with citizens and businesses. In this regard, ERP systems and related integrated software solutions can contribute to better management of public resources, greater institutional transparency, the rationalization of administrative procedures, and the improvement of public service quality.

The particular importance of this topic is reflected in the connection between the digital transformation of business entities and that of public administration. Contemporary business operations increasingly depend on electronic communication with government authorities, tax administration, electronic invoicing systems, electronic public procurement platforms, and other digital services. ERP systems therefore represent not only an internal tool for organizing business operations but also an information foundation that enables business entities to fulfil their legal, tax, accounting, and administrative obligations more efficiently in a digital environment.

However, the implementation of ERP systems is not a simple process. It requires financial investment, adequate information infrastructure, employee training, the adaptation of existing processes, and changes in organizational culture. In addition, particular attention must be paid to information security, data protection, and responsibility for the accuracy of information processed through digital systems. ERP systems should therefore be regarded as part of a broader technological, organizational, and managerial transformation rather than merely as software solutions.

The subject of this paper is the analysis of the role of ERP systems in supporting the digital transformation of business entities and public administration. The aim of the paper is to highlight the importance of ERP systems in integrating business and administrative processes, improving efficiency, increasing data reliability, and strengthening the connection between the private and public sectors in the digital environment. Accordingly, the paper examines the fundamental characteristics of ERP systems, their application in business entities and public administration, and the key benefits and challenges associated with their implementation.

2. METHODOLOGY

This paper applies a theoretical and analytical approach based on the review of relevant scientific and professional literature in the fields of ERP systems, digital transformation, e-business, and public administration. The research is qualitative in nature, as it is based on the systematization of

existing theoretical and professional knowledge concerning the role of ERP systems in the digital transformation of the private and public sectors.

The analysis employs content analysis, descriptive, and comparative methods. Content analysis was used to examine the fundamental characteristics, functions, benefits, and challenges associated with the implementation of ERP systems. The descriptive method was applied to explain their role in integrating business and administrative processes, improving data management, and increasing the efficiency of organizational operations. The comparative method was used to compare the significance and application of ERP systems in business entities and public administration.

Particular attention is devoted to ERP systems as instruments that contribute not only to the internal organization of business operations but also to stronger connections between business entities and public administration through e-business, electronic invoicing, tax portals, electronic public procurement, and other digital services. In this way, the methodological framework enables ERP systems to be examined as part of a broader process of digital transformation rather than merely as technical software solutions.

3. ERP SYSTEMS IN THE DIGITAL TRANSFORMATION OF BUSINESS ENTITIES AND PUBLIC ADMINISTRATION

The analysis of relevant literature shows that ERP systems provide important support for digital transformation by enabling data integration, process standardization, and more efficient management of organizational resources. Their importance is reflected not only in the technical processing of data but also in their ability to connect different functional areas of an organization within a unified information system. This reduces the fragmentation of business operations, increases information reliability, and creates the conditions for faster and higher-quality decision-making (AlMuhayfith & Shaiti, 2020; Jo, 2023).

In business entities, ERP systems contribute to improved efficiency by integrating business functions such as finance, procurement, sales, production, inventory management, human resources, and reporting. When business data are stored in different and disconnected systems, the likelihood of errors, duplicated activities, and inconsistent information increases. ERP systems enable centralized data management, real-time data availability, and better coordination between organizational units. In this way, they improve control over resources, reduce administrative burdens,

and strengthen the organization's ability to respond more rapidly to changes in the business environment (Barna & Ionescu, 2023; Gessa et al., 2023).

The significance of ERP systems is evident in data-driven decision-making. Management requires accurate, up-to-date, and reliable information on financial performance, sales, inventory, costs, productivity, and other business indicators. ERP systems enable this information to be consolidated and used in planning, control, and decision-making processes. Their implementation can therefore be regarded as an important element of the digital maturity of business entities (Jo, 2023; Llivisaca-Villazhañay et al., 2025).

In public administration, ERP systems and related integrated software solutions perform a different but equally important function. Their role is not primarily associated with competitiveness but with the efficiency of administrative procedures, accountability, transparency, and the more rational management of public resources. Public administration manages large volumes of data, records, and procedures, and integrated information systems can therefore contribute to better institutional coordination, fewer administrative errors, and higher-quality services for citizens and businesses (Hurbean, 2008; Fernandez et al., 2017).

The introduction of ERP systems in the public sector can contribute to more efficient management of budgets, public procurement, human resources, records, and reporting. Data centralization provides better insight into financial flows and the activities of public institutions, which can increase transparency and accountability in public administration. However, the implementation of ERP systems in the public sector is often more complex than in business entities because it requires compliance with regulations, institutional procedures, budgetary constraints, and the public interest (Ziemba & Oblak, 2013; Fernandez et al., 2017).

An important result of the analysis is the identification of the relationship between ERP systems, e-business, and e-government. Contemporary business entities increasingly communicate electronically with public administration through electronic invoicing systems, tax portals, electronic public procurement, electronic registration, and other digital services. This form of communication demonstrates that the digital transformation of the economy is not separate from the digital transformation of public administration; rather, the two processes are mutually interdependent. In this regard, the digital transformation of institutions such as the Serbian Business Registers Agency can be viewed as an important part of the development of a contemporary digital society, as it enables business entities to complete administrative procedures more

quickly, easily, and accessibly (Vasić & Bulatović, 2023).

Furthermore, e-government in the Republic of Serbia is regulated by the Law on Electronic Government and related regulations governing electronic administrative procedures, electronic communication, data exchange, and the use of information and communication technologies in public administration (Golić, 2023). This legal framework is important because it establishes a basis for standardized, reliable, and more secure electronic procedures conducted by public authorities, as well as more efficient communication with citizens and businesses. It is particularly important to emphasize that e-government involves not only the provision of individual digital services but also the establishment of a system in which data can be exchanged between different public authorities and used to accelerate administrative procedures. In this context, ERP systems serve as the internal information foundation of business entities. They enable data relating to procurement, sales, invoicing, inventory, employees, financial flows, and other business activities to be recorded in an organized, standardized, and reliable manner. Such data can subsequently be used to fulfil legal, tax, accounting, and administrative obligations toward public administration. ERP systems therefore contribute not only to the internal organization of business operations but also to higher-quality electronic communication between business entities and public institutions (Kitsios et al., 2023; Hurbean, 2008).

The relationship between ERP systems and e-government demonstrates that the digital transformation of the private and public sectors does not constitute two separate processes. Business entities depend on the quality and availability of electronic public services, while public administration depends on the accuracy and timeliness of the data submitted by businesses. Interoperability, data standardization, and information security are therefore particularly important. When information systems are not mutually compatible, technical problems, repeated data entry, inconsistent records, and delays in administrative procedures may occur (Ziemba & Oblak, 2013; Kitsios et al., 2023).

Nevertheless, the analysis shows that ERP systems alone do not guarantee successful digital transformation. Their effects depend on organizational readiness, management support, employee training, the adaptation of existing processes, and adequate information infrastructure. Key challenges include high implementation costs, employee resistance to change, shortages of qualified personnel, data protection, and information security. ERP systems must therefore be regarded as part of a broader organizational and managerial transformation rather than merely as

technical solutions (Ziemba & Oblak, 2013; Llivisaca-Villazhañay et al., 2025).

3.1. The role of ERP systems in connecting business entities and public administration

An important aspect of the analysis concerns the relationship between ERP systems, e-business, and e-government. Contemporary business entities increasingly communicate with public administration electronically through electronic invoicing systems, tax portals, electronic public procurement platforms, and other digital services. In this context, ERP systems serve as an internal information foundation that enables business data to be recorded in an organized, standardized, and reliable manner so that they can be used to fulfil legal, tax, accounting, and administrative obligations (Kitsios et al., 2023; Hurbean, 2008).

This relationship demonstrates that the digital transformation of the private and public sectors does not constitute two separate processes. Business entities depend on the quality and availability of electronic public services, while public administration depends on the accuracy and timeliness of the data submitted by businesses. Interoperability, data standardization, and information security are therefore particularly important. If information systems are not mutually compatible, technical difficulties, repeated data entry, inconsistent records, and delays in administrative procedures may occur (Ziemba & Oblak, 2013; Kitsios et al., 2023).

Within this relationship, ERP systems are not merely internal tools for organizing business operations but also provide a basis for more reliable electronic data exchange between businesses and public administration. Data generated through business processes, such as invoicing, procurement, sales, inventory management, finance, and human resources, may be important for fulfilling obligations toward public institutions. In this way, ERP systems contribute to greater regulatory compliance, reduced administrative burdens, and more efficient use of digital public services.

In the contemporary digital environment, communication between business entities and public administration authorities increasingly takes place electronically. ERP systems can play an important role in managing the data and documentation generated through such communication by enabling centralized record-keeping, deadline monitoring, and the storage of relevant business information. One of the most important instruments of electronic communication with public administration in the Republic of

Serbia is the Unified Electronic Mailbox system, known as eMailbox.

In the Republic of Serbia, the Unified Electronic Mailbox has been developed as a mandatory digital communication channel between public administration authorities and natural and legal persons. The system enables the electronic delivery of administrative acts and other official documents, thereby replacing traditional postal communication with centralized and automated electronic data exchange. The legal significance of the Unified Electronic Mailbox lies in the fact that it represents one of the key elements of the e-government system in the Republic of Serbia, enabling more efficient, cost-effective, and legally secure communication among public authorities, citizens, and business entities (Golić, 2023). Of particular importance for business entities is the fact that an eMailbox is automatically opened for companies that have a registered email address in the Business Entities Register. This improves the efficiency of administrative procedures, ensures reliable electronic delivery, and strengthens legal certainty through the automatic generation of delivery confirmations. From the perspective of business information systems, the eMailbox forms part of the broader digital institutional environment in which business entities operate. ERP systems can support the organization and management of internal business processes related to the fulfilment of administrative and regulatory obligations arising from electronic communication with public administration.

However, the ability of ERP systems to support business digitalization and improve organizational efficiency depends on numerous organizational and technological factors. The results of the analysis indicate that ERP systems alone do not guarantee successful digital transformation. Their effects depend on organizational readiness, management support, employee training, the adaptation of existing processes, and adequate information infrastructure. Key challenges include high implementation costs, employee resistance to change, shortages of qualified personnel, data protection, and information security. ERP systems should therefore be viewed as part of a broader organizational and managerial transformation rather than merely as technical solutions (Ziemba & Oblak, 2013; Llivisaca-Villazhañay et al., 2025).

3.2. E-government and tax administration

Taxes represent one of the principal sources of public revenue and an important instrument for financing public needs. Therefore, the efficiency of tax administration has a direct impact on the stability of public finances, the legal certainty of taxpayers, and the quality of relations between business entities and public administration. The traditional method of fulfilling tax

obligations was based on paper documentation, the in-person submission of tax returns, and manual data processing, which often resulted in slower procedures, higher costs, and a greater likelihood of errors.

The development of information and communication technologies has enabled the digitalization of tax administration as part of the broader development of e-government. E-government does not merely involve replacing paper documents with electronic ones but also improving the ways in which data are collected, processed, exchanged, and used in administrative procedures. Its application contributes to simpler, faster, and more accessible public services, lower administrative costs, and greater transparency in the work of public authorities (Golić, 2023).

In the Republic of Serbia, the eTaxes electronic service plays an important role in the digitalization of tax administration. This service enables the electronic submission of tax returns, the review of tax liabilities, the monitoring of tax account balances, and the receipt of certain tax-related decisions and documents. In this way, the need for taxpayers to visit Tax Administration offices in person is reduced, document exchange is accelerated, and the fulfilment of tax obligations is facilitated. At the same time, digital tax procedures must comply with the principles of legality, efficiency, cost-effectiveness, legal certainty, and the protection of taxpayers' rights (Pitić et al., 2019).

The digitalization of tax administration is particularly important for business entities because tax obligations are based on data generated through their business activities. Data on revenues, expenses, turnover, invoices, employees, and financial transactions are used to prepare tax returns, accounting reports, and other documentation submitted to the competent authorities.

ERP systems provide an important internal information foundation for fulfilling tax, accounting, and administrative obligations. By integrating finance, sales, procurement, inventory management, and human resources, ERP systems enable business data to be consolidated, updated, and made available in a standardized form. This reduces the need for repeated data entry, limits the possibility of errors, and facilitates electronic communication with the Tax Administration.

The relationship between ERP systems and digital tax services shows that the digital transformation of business entities and public administration is a mutually interdependent process. Electronic services enable more efficient fulfilment of tax obligations, while ERP systems provide the reliable business data required for their use. However, the successful implementation of these solutions requires information system

interoperability, data protection, adequate digital infrastructure, and appropriately trained employees.

3.3 Challenges of ERP system implementation in the private and public sectors

Although ERP systems provide important support for digital transformation, their implementation does not automatically guarantee the successful modernization of business operations or public administration. The effects of ERP systems depend on organizational readiness, management support, the quality of information infrastructure, employee training, and the organization's ability to adapt existing processes to digital operations. If ERP systems are introduced without a clear strategy and a prior analysis of business or administrative processes, there is a risk that existing organizational problems will simply be transferred into the digital environment.

In business entities, the most common challenges concern high implementation costs, the need to adapt business processes, employee resistance to change, and shortages of qualified personnel capable of managing complex information systems. ERP systems require changes in working practices because they involve data standardization, greater discipline in data entry and processing, and improved coordination among organizational units. Successful implementation therefore depends not only on the quality of the software solution but also on the willingness of employees and management to accept new organizational procedures.

In the public sector, these challenges are further intensified by the complexity of administrative procedures, budgetary constraints, regulatory requirements, and the need to align digital solutions with the public interest. The implementation of ERP systems in public administration requires a high degree of reliability, transparency, and accountability because such systems may process data relevant to financial management, public procurement, official records, reporting, and the provision of public services. Particular attention must be paid to data protection, information security, and responsibility for the accuracy of information used in administrative procedures.

ERP systems should therefore be viewed as part of a broader organizational, technological, and administrative transformation rather than merely as technical software solutions. Their full value is achieved only when they are linked to a clear digital transformation strategy, employee training, process improvement, and the development of interoperable

information systems. In this regard, ERP systems can contribute to more efficient, transparent, and integrated functioning of the private and public sectors, but only if their implementation is carefully planned and aligned with the actual needs of the organization.

4. DISCUSSION

The analysis conducted in this paper shows that ERP systems play a significant role in the digital transformation of business entities and public administration, but their importance cannot be reduced solely to the technological dimension. Although ERP systems are most commonly viewed as software solutions for resource planning and management, their actual value lies in their ability to integrate data, processes, and organizational functions into a unified system. In this way, they contribute to more efficient operations, improved information management, and decision-making based on reliable data.

ERP systems represent a link between the internal digitalization of organizations and the external requirements of the digital environment. In business entities, data relating to sales, procurement, invoicing, inventory, employees, and financial flows, which are processed within ERP systems, often provide the basis for electronic communication with tax administration, electronic invoicing systems, public procurement platforms, and other digital services of public administration. Therefore, ERP systems are not merely internal tools for business management but also constitute an information foundation for connecting business entities with the public sector.

This approach demonstrates that the digital transformation of business entities and public administration cannot be regarded as two separate processes. Business entities increasingly depend on the availability, quality, and reliability of electronic public services, which is particularly evident in the development of electronic entrepreneur registration in the Republic of Serbia (Vasić Garić, 2026). Within this relationship, ERP systems play an intermediary role by enabling business data to be recorded in a standardized and reliable manner and in a form that facilitates electronic communication with public institutions.

However, the full value of ERP systems can be achieved only when they form part of a broader digital transformation strategy. If they are introduced without clear objectives, adequate organizational preparation, and appropriate employee training, there is a risk that existing problems will simply be transferred into the digital environment. Particular attention

should be paid to information security, data protection, interoperability, and responsibility for the accuracy of information, especially considering that digital systems increasingly process sensitive business, financial, and administrative data (Vasić, 2025). These issues are particularly important in the context of public administration, but also in business entities that process confidential business, financial, and employee-related data through ERP systems.

ERP systems represent an important instrument of digital transformation, but they are not an independent solution to all the challenges faced by contemporary businesses and public administration. Their success depends on the alignment of technological solutions with organizational needs, employees' readiness to accept new working methods, and the ability of institutions and business entities to adapt their processes to the digital environment. ERP systems should therefore be viewed as technological, organizational, and managerial instruments for the modernization of the private and public sectors.

5. CONCLUSION

ERP systems provide important support for the digital transformation of business entities and public administration because they enable data integration, process connectivity, activity automation, and more efficient resource management. Their implementation contributes to greater visibility of business and administrative procedures, reduced information fragmentation, and the creation of conditions for decision-making based on accurate and up-to-date data.

ERP systems are particularly important for improving business efficiency, strengthening coordination among organizational units, controlling costs, managing inventory, planning, and reporting. In the context of digital business operations, their value is also reflected in the organization's ability to respond more quickly to changes in the environment and to fulfil regulatory, tax, accounting, and administrative obligations more reliably. In public administration, ERP systems and related integrated information solutions can contribute to the modernization of administrative procedures, greater institutional transparency, more accountable management of public resources, and higher-quality services for citizens and businesses. Their implementation is particularly important in the context of e-government development because it enables more effective processing, exchange, and use of data in the public sector.

Based on the analysis, it can be concluded that the digital transformation

of business entities and public administration does not represent two separate processes. Business entities increasingly depend on electronic public services, while public administration depends on accurate and up-to-date data submitted by businesses. Within this relationship, ERP systems play an important intermediary role because they enable standardized and reliable data management, thereby facilitating e-business and electronic communication with public institutions. Nevertheless, ERP systems do not constitute an independent solution to all the challenges of digital transformation. Their successful implementation depends on strategic planning, management support, employee training, the adaptation of organizational processes, information security, and data protection. ERP systems must therefore be viewed not only as technological solutions but also as part of a broader organizational and managerial transformation.

In a broader sense, the introduction of ERP systems in public administration may represent one of the prerequisites for the development of smart cities, as it enables centralized data management, improved coordination of public services, and decision-making based on reliable information. However, ERP systems alone do not create smart cities; rather, they form part of a wider digital ecosystem that includes e-government, interoperability, open data, digital infrastructure, and contemporary services for citizens.

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