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HIGHER COURSE OF TECHNOLOGY IN PUBLIC MANAGEMENT - EAD

SPEED OF ELECTRONIC PROCESSES IN PUBLIC MANAGEMENT

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SUMMARY

The public sector faces a wide range of accumulated documents and processes, which makes it essential to implement changes and innovations to improve services and increase the efficiency of both the organization and the professionals involved. This article presents a study on the speed of the electronic information process in public management, a technology that facilitates communication and information in a dynamic and flexible way. The research aims to evaluate the performance of the electronic information process based on the experience of different agencies, as well as to analyze the critical points. The methodology applied in the research was of a qualitative nature through the interpretation of existing texts, theories and concepts on the subject, through a bibliographic review. It is concluded that despite there being some cases of resistance on the part of employees during the process of implementing the systems, the results are positive in the use of electronic information processes, demonstrating that the technology brings benefits and efficiency to the public sector..

Keywords: Information and communication technology (ICT). Document management. Electronic documentation.

ABSTRACT

The public sector faces a wide range of accumulated documents and processes, which makes it essential to implement changes and innovations to improve services and increase the efficiency of both the organization and the professionals involved. This article presents a study on the speed of the electronic information process in public management, a technology that facilitates communication and information in a dynamic and flexible way. The research

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aims to evaluate the system's performance based on the experience of different bodies, as well as analyzing critical points. The methodology applied was qualitative in nature through the interpretation of existing texts, theories and concepts on the topic, through a bibliographic review. It is concluded that despite there being some cases of resistance on the part of employees during the system implementation process, the results are positive in the use of electronic information processes, demonstrating that the technology brings benefits and efficiency to the public sector.

Keywords: Information and communication technology (ICT). Document management. Electronic documentation.

1. INTRODUCTION TO ELECTRONIC PROCESSES IN PUBLIC MANAGEMENT

Electronic information processes involve the application of digital technology for the management, storage and transmission of data and documents in an organization. In public administration, this practice is essential to improve the efficiency, transparency and accessibility of services. Digitalization reduces bureaucracy, speeds up decision-making and facilitates access to information by citizens, promoting responsibility and social participation (BRASIL, 2011).

According to Santos et al. (2017), the Electronic Document Management system is a crucial instrument for increasing productivity, organizing documents, recovering physical space, optimizing management, maintaining files and ensuring information security, with a focus on agility in obtaining data for decision-making.

The implementation of electronic systems in public management began in the 1980s, with the first software aimed at public administration. In the 1990s, Brazil began a process of computerizing public services, highlighting the creation of the Integrated Financial Administration System of the Federal Government (SIAFI). The publication of the Access to Information Law and the creation of e-SIC contributed to increasing transparency and the use of digital technologies. Currently, tools such as the Electronic Information System (SEI) are being adopted in several public agencies to improve processes and increase administrative efficiency (BRASIL, 2011).

Expenses with the acquisition of materials to process paper cases increase costs and are reflected in the slowness of conclusions, the difficulty in locating files and frequent cases of loss. A notable impact is also seen in the printing area, with the

reduction in the use of printers, toners and cartridges, as well as office supplies such as pens, stamps, glues and staplers. An Information System is not restricted to the technological factor alone, and must also consider the system operators and organizational processes, comprising three dimensions (LAUDON, LAUDON; 2010):

Table 01: Dimensions of Information Systems

DIMENSION	MAIN ASPECTS
Organizational	Structure, organizational processes, history, culture, conflict, functional specializations, internal interest groups.
Human	Competent people, training, professional attitudes and behavior of administration.
Technological	Computing hardware, software, data management technology, network and telecommunications technology.

Source:LAUDON, LAUDON (2010):

According to Silva (2019), one of the biggest challenges in public management is organizing information from physical documents, as it consumes time and space and generates costs with shelves and cabinets, in addition to making access and retrieval difficult. The adoption of electronic management not only promotes paper savings, but also allows the gradual recovery of space previously occupied by large volumes of diverse documents. This change improves organization, optimizes the management and maintenance of files, and protects them against fires and insects.

According to Silva (2019), there are numerous benefits that can be expected from implementing an electronic information process:

- Reduction of financial and environmental costs related to printing (printers, toners, paper and contracts).
- Reduction in operational costs with document delivery and storage.
- Reduction in time to open, handle, locate and process documents.
- Elimination of loss and misplacement of documents.
- Simultaneous document sharing for collaboration and reference.

- Support for servers with models and guidelines for specific situations.
- Increased transparency in processes, facilitating monitoring by employees and citizens, in addition to internal control.
- Process improvement and knowledge management with a single platform that allows analysis and comparison between agencies.
- Greater capacity to define, collect and use data and indicators, through homogeneous databases.
- Efficiency and speed of public service.

2. LEGAL AND REGULATORY ASPECTS

Law 8,159, of January 8, 1991, establishes in its first article that it is the responsibility of the Public Power to manage documents and provide special protection for them, serving as support for administration, culture, scientific development and as evidence and information. Document management is defined by Law as “the set of technical procedures and operations relating to the production, processing, use, evaluation and archiving of documents, in the current and intermediate phases, regardless of the support, aiming at its elimination or collection for permanent storage.”

The main rules and legislation governing the implementation and use of electronic information processes in public management in Brazil are listed below:

- Law No. 12,527/2011 (Access to Information Law): known as the Access to Information Law, it establishes standards for access to public information, promoting transparency and social participation, as provided for in the Constitution of the Federative Republic of Brazil of 1988. The law describes information as data, whether processed or not, that can be used to generate and transmit knowledge, regardless of the medium, support or format. With the enactment of the law, the Brazilian Government began to direct resources to create mechanisms that would guarantee access to information, products and services of the public administration available to society. In addition to facilitating access to information, e-government enables the monitoring and control of public management, increases the transparency of government actions and

contributes to the formulation of public policies of common interest. Based on these principles, government portals have been developed through the public administration to promote the visibility of government activities and streamline interaction between the government and citizens.

- Law No. 13,709/2018 (General Data Protection Law - LGPD): Regulates the processing of personal data, establishing that public access must take into account the purpose, good faith and interest that justify its provision, ensuring the privacy and protection of citizens' information. The law guarantees rights to data subjects, such as access, correction and deletion of data, promoting greater transparency in the processing of information. It introduces the requirement of explicit consent for the processing of data, strengthening the data subject's control over their information. In addition, it creates the National Data Protection Authority, responsible for overseeing the application of the law and providing guidance on best practices.
- Decree No. 8,539/2015: Regulates the Access to Information Law, detailing the procedures for requesting and making information available. It establishes that the storage of digital documents and electronic administrative processes, considered to be of permanent value, must follow the standards of the responsible public archival institution. This includes ensuring the compatibility of support and format, the technical documentation necessary for the interpretation of the documents, as well as the instruments that ensure their identification and control during the collection process.
- Law No. 14,129/2021 (Digital Government Law): Establishes guidelines for the digital transformation of public administration, aiming at the creation of more efficient and accessible public services. It determines that services must be offered preferably in digital format, encouraging integration between different government systems and platforms, facilitating data sharing and communication between public agencies. In addition, it defines standards for the identification and authentication of users, ensuring the security and protection of personal data.
- Law No. 8,666/1993 (Bidding Law): Although it does not deal exclusively with electronic processes, the law establishes rules applicable to purchases and contracting of digital systems and services. Publicizing bidding processes promotes transparency, allowing society to monitor the use of public resources. Thus, it creates a competitive environment for contracting services.

The initiative to regulate access to information in the Government of the State of Rondônia occurred with the publication of Decree No. 17,145, of October 1, 2012. The rule subordinated the entities of the Direct and Indirect Administration of the State Executive Branch, including also the private non-profit entities that receive public resources, to compliance with the Decree, ensuring the right of access to information to individuals and legal entities. It established that the agencies/entities linked to the public administration must consider active transparency and passive transparency in the provision of information under their custody or production.

It is worth noting that the provisions contained in Decree No. 17,145 (RONDÔNIA, 2012) aim to provide access to information and interaction between the government and society. However, it must be considered that access will only be possible with the development of transparency practices in the construction of the information cycle.

As citizens gain access to information and knowledge and reach a certain level of civic maturity, they tend to become more interested in public issues and become actively involved. This involvement transforms them into protagonists and opinion makers, enabling them to collaborate and participate fully in the democratic processes guaranteed to them. This participation is essential to strengthen democracy and promote more responsive and transparent public management (SANTOS, 2016).

3. SUCCESSFUL EXAMPLES OF IMPLEMENTING ELECTRONIC INFORMATION MANAGEMENT TOOLS

Below, we present successful cases of the adoption of electronic processes in public bodies, which highlight the advantages in decision-making, resource management and transparency. These improvements have a significant impact on the efficiency, agility and governance of public administration.

A global example of digitalization is Estonia, which with the implementation of the E-Government system, allowed 99% of public services to be accessed online, where citizens can vote, register companies and access health services electronically, resulting in greater efficiency and satisfaction.

Another example is the Government of São Paulo (SP), where the SP156 System was implemented, a platform that allows citizens to request services and information online. Digitalization has improved response to demands and transparency, reducing waiting times for service.

Sarubbi (2020) found in his case study research on the implementation of the Electronic Information System (SEI) at the National Supplementary Health Agency (ANS) that there was a significant improvement in the work routine after the implementation of the system, especially with regard to the rationalization and organization of processes in the Public Administration.

Nogueira and Costa (2017), when analyzing the implementation of the Electronic Information System (SEI) at the University of Brasília (UnB), concluded that the results of the implementation were the promotion of cultural change in relation to the use of electronic processes, resulting in greater transparency and efficiency in the processing of documents at the institution.

Assis (2021), analyzing the Critical Success Factors (CSF) in the implementation of the Electronic Information System (SEI) at the Federal University of Minas Gerais (UFMG) and the Federal University of Viçosa (UFV), highlighted the positive perception of managers and members of the implementation teams, who consider the projects successful, despite the difficulties faced. He emphasizes that, in public organizations, especially in federal higher education institutions, the chances of success in future implementations of the SEI or other electronic process systems can be significantly increased.

Farias et al. (2020) discussed the issue of security by stating that the system enables digital processing of processes and real-time monitoring, which provides greater control. The author emphasizes that this approach not only increases safety in the execution of work, but also improves the traceability of the process.

Teixeira (2023) investigated in her research the main challenges in implementing the Electronic Information System (SEI) at the Alagoas State Research Support Foundation. The adoption of the system was determined by a legal requirement of the Alagoas government, aiming to create an administrative policy that would promote agility and economy in processes. The author found from the results found that the implementation has proven to be an innovative solution for Fapeal, allowing accessible connectivity 24 hours a day, 7 days a week.

Electronic process initiatives in public management in the State of Rondônia corroborate the successful implementation results:

Table 02: Electronic Processes in Public Management in the State of Rondônia

Initiative	Description	Responsible Body
Electronic System of Information (SEI)	It allows administrative processes to be processed electronically, increasing efficiency and transparency.	Governorship of the State of Rondônia
Rondônia Transparency Portal	Provides information on public spending, revenue and contracts, allowing the population to monitor them.	Various state government bodies and entities
e-Judicial Process	Adopted by TJRO, it improves agility and access to justice through electronic processes.	Court of Justice of Rondônia (TJRO)
Health Surveillance Digital	System for managing health licenses and permits, facilitating requests and monitoring by citizens.	Health Department
Information System to the Citizen (SIC)	It facilitates access to public information, allowing citizens to request data electronically.	State Comptroller General
Licensing Management System	Used for managing environmental licenses, streamlining processes and increasing transparency.	State Secretariat for Environmental Development (SEDAM)

Source: Survey carried out by the author.

Pereira (2017) conducted a study with the objective of verifying the impact of the adoption of the Electronic Information System (SEI), focusing specifically on the influence of this system on the consumption and expenditure on office supplies at the Federal Institute of Education, Science and Technology of Rondônia – IFRO, Vilhena Campus. The results revealed that most sectors recorded significant savings in office supplies, which had a positive impact on the efficiency of the use of public resources. In addition, the level of satisfaction with the resources made available by the system indicated a positive acceptance among the sectors of the organization.

Andrade and Aguiar (2022), analyzed the efficiency of the Electronic System of the Citizen Information Service of the Government of the State of Rondônia (e-SIC RO), with emphasis on

State Department of Justice, in relation to access to information. The results indicated that e-government proved to be an effective tool for facilitating access to information, promoting the generation of knowledge and participation in public management in this department. The analysis showed that the State Government demonstrated efficiency in providing information using e-SIC, which reinforces the importance of information and communication technologies in administrative processes and in facilitating access to information.

The implementation of electronic information management tools has demonstrated success in several organizations, providing greater efficiency, agility and transparency in processes. However, this progress does not come without challenges and obstacles, such as resistance to cultural change among employees, the need for adequate training and adaptation to new technologies.

4. CHALLENGES AND OBSTACLES IN THE ELECTRONIC INFORMATION PROCESS

The effective implementation of electronic processes in public management requires a solid technological infrastructure, with appropriate equipment and a stable connection, in addition to training human resources through training and education of employees to operate these systems. It is essential to ensure information security, protecting sensitive data against leaks and cyberattacks. Data analysis should be used to support more informed decisions, while document management should be improved to facilitate the organization and retrieval of information. In addition, technological advances, such as artificial intelligence, have the potential to considerably accelerate the speed of electronic processes, promoting a more efficient and transparent public administration (DUNLEAVY, CARR, 2013; MIKROYANNIDIS, 2017).

Public administration has incorporated new technologies into its routine, but this transition faces several challenges, including the need for investment in infrastructure, acquisition of adequate equipment, paradigm shifts, adaptation of environments and training of employees to use these technologies. Among the solutions provided by Information Systems, the elimination of the use of paper stands out as one of the most significant. A major challenge is to ensure investment in training

continuous training of public servants, as well as the time needed to adapt to new technologies and work methodologies.

Factors related to human resources, such as the need for training, lack of technical support and motivational policies, and cultural resistance to change are issues to be worked on to make better use of available Information Technologies (SANTOS; FREITAS; LUCIANO, 2005).

Human beings play a crucial role, as they are the only ones capable of making decisions and converting information technology into practical solutions to achieve organizational objectives. Bureaucracy in public sector processes represents one of the main obstacles to efficiency, largely due to the manual and rigid methods still used. The lack of integration between systems, the use of paper documentation, and the ambiguity and inconsistency of data complicate the lives of citizens, in addition to generating additional costs for governments (MACEDO, 2021).

Corporate governance must ensure that all aspects are integrated holistically within the organization, being well understood and applied by employees in the entities. When implemented correctly, corporate governance can facilitate the integration of the strategic management framework, which is essential to achieve the performance standards necessary to achieve the established goals and objectives (FREITAS et al., 2015).

Teixeira (2023) reports in his work that the main difficulties faced in implementing the software were mostly related to cultural issues and users' adaptation to the new tool. Some employees of the foundation reported that the platform has a non-intuitive interface and pre-established formats with little usability. Difficulties in understanding the language of the tool and finding commands corresponding to the intended action were also mentioned. Frequent system updates, as well as situations of software instability and lack of integration with other systems were other points mentioned by the interviewees as areas for improvement.

Freitas et al. (2015) found in their study of the principles of electronic governance in information technology practices implemented at the Federal University of Rondônia (UNIR) that despite significant advances that have benefited the academic community, especially in the provision of services and access to information previously restricted to employees, the institution still lacks more mature management to meet

fully comply with the principles of electronic governance. It is necessary to expand the possibilities of control through transparency and the provision of information to users, promoting the empowerment of the academic community. This will allow for better application of public resources and will result in improvements in the academic and bureaucratic activities of the institution.

Andrade and Aguiar (2022) analyzed the efficiency of the Electronic System of the Citizen Information Service of the Government of the State of Rondônia (e-SIC RO), focusing on the State Secretariat of Justice, regarding access to information. The results showed that e-government proved to be an efficient tool in accessing information for the generation of knowledge and participation in public management within the scope of the State Secretariat of Justice of the State of Rondônia. The Government of the State of Rondônia, through the State Secretariat of Justice, demonstrated, based on the literature, efficiency in providing information with the use of e-SIC, which strengthens the use of information and communication technologies in administrative processes and enables access to information.

Another obstacle to implementing the electronic information process is the need to maintain a physical space in the public administration structure for in-person service, since Internet access is still not universal for certain marginalized communities.

5. FUTURE PROJECTIONS FOR THE ELECTRONIC INFORMATION PROCESS IN PUBLIC MANAGEMENT

With the rapid advancement of technology, greater integration between different platforms and agencies is expected, allowing for a more agile flow of information and reducing data redundancy. Data visualization tools such as dashboards can allow for clearer, more transparent and real-time monitoring of government actions, promoting government accountability.

Expanding digital accessibility will ensure that all citizens, regardless of their skills, can access and interact with public services online, allowing digital tools to encourage more active participation by the population in government decisions, through public consultations and communication platforms.

suggestions. With the increase in digitalization, security and data protection protocols must be a priority to ensure the integrity of information and the privacy of citizens.

Another positive point to be mentioned is the environmental benefits due to the saving of natural resources and the reduction in the generation of solid waste, contributing to more sustainable practices in public administration. Advances in technology will in the future make it possible to automate document analysis, improve process screening, predict needs, offer support in decision-making, making public management more efficient and allowing the evaluation of the effectiveness of public policies.

FINAL CONSIDERATIONS

The adoption of electronic processes in public management brings to light critical issues that need to be addressed, especially in relation to information security and system reliability. It has been found that protecting sensitive data and ensuring robust operation are essential to maintaining public trust in government initiatives. However, advances in information technology have the potential to create a more efficient, transparent and responsive environment, benefiting both public administration and citizens. Accessibility, with remote access facilities and improvements in communication between the parties involved, is a crucial aspect of this transformation. Therefore, by addressing the challenges of security and reliability, it is possible to build a more effective public management system that promotes citizen participation and optimizes the services provided to society.

The implementation of electronic processes in the public sector must be accompanied by adequate training for civil servants, ensuring that everyone is prepared to use the new tools efficiently. System integration and real-time data analysis not only facilitate more informed decision-making, but also speed up administrative processes. Fostering a digital culture in the public sector, with active citizen engagement, is essential to strengthen transparency. In addition, it is essential to constantly review information security policies and practices, identifying flaws or vulnerabilities and proposing solutions that guarantee the

data protection, creating a solid foundation of trust in government initiatives. By prioritizing both security and training, public management can optimize its processes and respond more quickly and effectively to society's demands. Therefore, it is essential that organizations adopt strategic planning that minimizes challenges, ensuring that everyone involved feels supported in the transition. In this way, it is possible to transform obstacles into opportunities for continuous improvement, enhancing the results of electronic information management.

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