Revista Macambira

Mapping of supplier payment process in a public higher education institution

Tânia Figueiredo Cardoso[1]*, Isabela Maganha[2], Ana Carolina Oliveira Santos[3]

ABSTRACT

Demands for quality of services is a major challenge for organizations, as it directly affects customer satisfaction. In the context of public administration, the delivery of high quality and fast services is essential to promote efficiency and equity in meeting the needs of the population. This paper is a case study that aims to map a supplier payment process, carried out in a public Higher Education Institution (HEI), with the aim of representing the flow of processes, disseminating knowledge in the institution, checking possible flaws and proposing improvements. The study methodology has an exploratory character and a qualitative approach. Participant observation and document analysis were used to collect data. As a result, the payment processes of 201 bank orders (BOs) were mapped, identifying non-significant delays in almost all activities and specific delays due to external and internal factors. This made it possible to map payment processes and analyze the execution of activities, and recommend the training of servers, create process monitoring using indicators and create manuals for the standardization of activities.

Keywords: Mapping of Process, Supplier Payments, Public Administration, Higher Education Institution, Case study.

Mapeamento do processo de pagamento de fornecedores de uma instituição de ensino superior pública

RESUMO

A busca pela qualidade dos serviços é um grande desafio das organizações, pois afeta diretamente a satisfação dos clientes. No contexto da administração pública, a entrega de serviços com alta qualidade e agilidade é essencial para promover a eficiência e a equidade no atendimento às necessidades da população. Este trabalho é um estudo de caso que visa mapear um processo de pagamento de fornecedores, realizado em uma Instituição de Ensino Superior (IES) Pública, com o objetivo de representar o fluxo dos processos, disseminar o conhecimento na instituição, verificar possíveis falhas e propor melhorias. A metodologia do estudo tem caráter exploratório e abordagem qualitativa. Para a coleta de dados foi utilizada a observação participante e análise de documentos. Como resultado, foram mapeados os processos de pagamento de 201 ordens bancárias (OBs), identificando atrasos não significativos em quase todas as atividades e atrasos específicos devido a fatores externos e internos. Recomendou-se a capacitação dos servidores, a criação de indicadores para o acompanhamento do processo e a elaboração de manuais para a padronização das atividades.

Palavras-chave: Mapeamento de Processo, Pagamento de fornecedores, Administração Pública, Instituição de Ensino Superior, Estudo de caso.

Mapeo del proceso de pago a proveedores de una Institución de Educación Superior Pública

RESUMEN

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La demanda por la calidad de los servicios es un gran desafío para las organizaciones, ya que afecta directamente la satisfacción del cliente. En el contexto de la administración pública, la entrega de servicios de alta calidad y rapidez es esencial para promover la eficiencia y la equidad en la atención a las necesidades de la población. Este trabajo es un estudio de caso que tiene como objetivo mapear un proceso de pago a proveedores, realizado en una Institución de Educación Superior (IES) Pública, con el fin de representar el flujo de procesos, difundir el conocimiento dentro de la institución, verificar posibles fallas y proponer mejoras. La metodología del estudio tiene un carácter exploratorio y un enfoque cualitativo. Se utilizaron la observación participante y el análisis documental para la recolección de datos. Como resultado, se mapearon los procesos de pago de 201 órdenes bancarias (OB), identificando retrasos no significativos en casi todas las actividades y retrasos específicos debidos a factores externos e internos. Esto permitió mapear los procesos de pago y analizar la ejecución de actividades, recomendando la capacitación de los servidores, la creación de un monitoreo del proceso mediante indicadores y la creación de manuales para la estandarización de actividades.
Palabras clave: Mapeo de proceso. Pago a Proveedores. Administración pública. Institución de educación superior. Estudio de caso.

INTRODUCTION

Public administration in Brazil is governed by the principles listed in article 37 of the 1988 Federal Constitution, and one of these principles is efficiency. This principle refers to the need for public administration to make the best use of available resources in order to achieve the best results. Ensuring the efficient use of public resources is a challenge for managers, as there is a shortage of resources in the face of growing demands for quality and transparent services.

To address this challenge, the public sector has adopted management tools and practices from the private sector. In Brazil, this adoption became more common after the administrative reform, which replaced the bureaucratic model with the managerial model. Since then, management ideas and tools from the private sector have been adapted and applied to the public sector, such as quality programs, organizational management and participatory management (Capobiango *et al.*, 2013).

An organization's strategic planning consists of a series of processes that need to be understood in their entirety to avoid wasting time on non-essential details. In-depth knowledge of the processes becomes a competitive advantage, allowing a critical analysis and assisting in decision-making (Costa; Moreira, 2018).

By recognizing that the way processes are controlled and executed has a direct impact on the quality of the service received by customers and the efficiency of service provision, process mapping becomes a useful management tool for organizations. Through this mapping, it is possible to improve work processes and, consequently, obtain better organizational efficiency rates (Costa; Moreira, 2018).

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Considering the lack of mapping of the activities and tasks that make up the supplier of a higher education institution (HEI) payment process, this study aims to analyze and map this process and disseminate knowledge in the institution.

To this end, information was collected through participant observation of the processes and analysis of official documents related to the procedures carried out in 2023. The study aims to answer the research question: how can process mapping help in the performance of the activities of the supplier of an HEI payment process? Accordingly, the specific objectives are: a) to map the payment process; b) to identify possible weaknesses; c) to verify if there were delays or problems in the execution of the activities; and d) to propose interventions to improve the process.

THEORETICAL FRAMEWORK

Processes

A process consists of a set of activities with the objective of transforming inputs into goods or services (outputs), adding value through procedures. These outputs are delivered to customers and must meet their expectations and needs (Cruz, 2009).

All significant work done in organizations is embedded in a process. There is no delivery of a product or service by an organization without an underlying business process. Likewise, there is no point in having a process that does not result in the delivery of a product or service to a customer, whether that customer is internal or external (Graham; LeBaron, 1994).

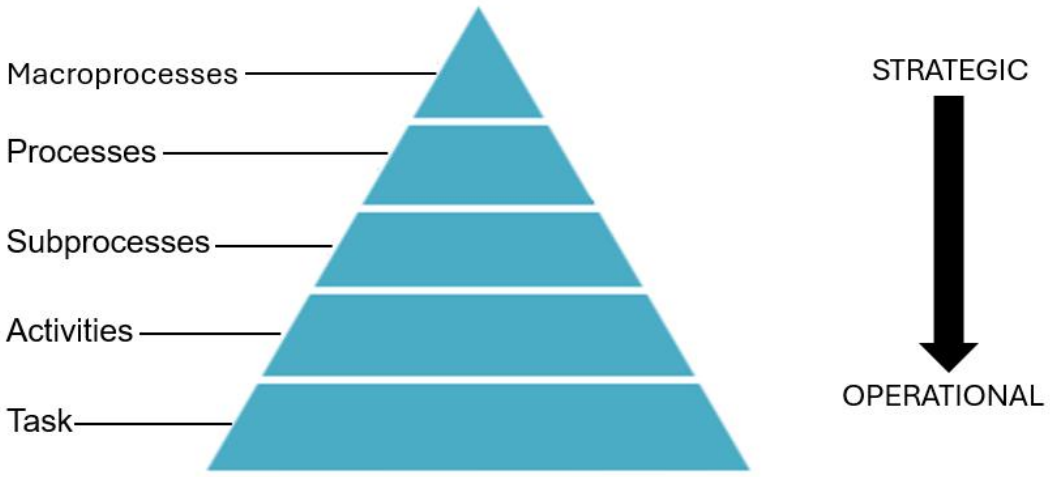
The processes can be understood as a set of interconnected activities to deliver a quality product and/or service to the internal or external customer. However, it is crucial that the activities are aligned with the common goal of increasing the value provided to the customer (Rodrigues *et al*., 2017).

Process hierarchy

The hierarchical structure of processes classifies them according to their level of detail and relevance to the organization. Based on the classification presented by the National Council of the Public Prosecutor's Office – CNMP in the acronym in Portuguese (2016), the processes are ordered as follows, as illustrated in Figure 1.

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Figure 1. Process hierarchy.



Source: Adapted from the National Council of the Public Prosecutor's Office (CNMP, 2016).

- Macroprocesses: they are defined as the set of business processes that an organization considers essential to fulfill its strategic objectives from a comprehensive perspective. The macroprocesses are related to the institution's mission, which is its main objective and reason for existing.
- Processes: they consist of a sequence of steps used to execute the organization's routines. This sequence involves the coordination of several actions, which can be broken down into subprocesses, activities and tasks.
- Subprocesses: they have a more detailed form of a specific part of a process. They can be seen as a subdivision of a process or as a separate process with a specific objective that is contained within another process.
- Activities: these are the actions performed in a process or subprocess, carried out by a specific organizational unit. They describe what needs to be done to achieve the objective of the process, answering the question: “what to do?”.
- Tasks: they represent the most detailed level of activities, corresponding to how activities are generally carried out. Consequently, tasks are the lowest level documented in process mapping, answering the question: “how to do it?”.

Process mapping

To achieve a comprehensive and improved view of organizational processes, process mapping is a crucial tool that provides organizations with a visual representation of the entire operational process, facilitating the understanding of the role played by each individual involved from the beginning to the end of the procedure development (Harrington, 1996).

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Process mapping is a tool that makes it possible to visually represent activities, highlighting all the elements that make up a process, with the aim of facilitating understanding and allowing a complete view of the activities performed, being the basis for the analysis of business processes (Bowles; Gardiner, 2018; Zelt *et al.*, 2019).

Process mapping identifies the main steps and decisions in a routine activity flow in a visual way, in addition to establishing the flow of information, materials, documents and determining the roles of a variety of individuals interested and active in the process, which according to the authors, is useful for facilitating interdepartmental communication (Barbrow; Hartline, 2015).

As a fundamental element for management, process mapping can also contribute to reducing costs in the delivery of materials or services, reducing integration failures between systems and improving the organization's performance. In addition, it is a tool that promotes a clearer understanding of existing processes and the simplification or elimination of unnecessary or non-essential activities (Gomes *et al*., 2015).

Among the various techniques for process mapping, the flowchart is the most widely used because it simplifies the decision-making process by providing a comprehensive view of all information flows and activities, facilitating the analysis and implementation of improvements (Oliveira, 2013).

A flowchart is a visual representation that illustrates the step-by-step process of a specific activity. Its purpose is to present the workflow in a dynamic way, using symbols (Cury, 2017).

Process mapping in Public Administration

As established in the 1988 Federal Constitution, public administration must ensure efficiency and effectiveness in the management of resources and in the provision of services to society. This sector faces specific and unique challenges related to process management, since the demand for transparency is a requirement of the population and control bodies (Albuquerque, 2019).

The complexity of operations and the need to meet a large volume of demands mean that public administration must adopt management practices that ensure not only compliance with standards, but also the optimization of resources and the continuous improvement of services provided. Process mapping emerges as a crucial tool for achieving these objectives (Araújo, 2019).

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By mapping processes, public administration can identify and understand workflows, critical points and areas that require improvement. This method allows for a detailed analysis of the steps involved in each process, enabling the detection of inefficiencies and the implementation of more effective practices. In addition, process mapping facilitates the standardization and documentation of activities, contributing to the formation of a solid basis for the training of civil servants, the creation of operational manuals and favoring public management (Costa; Moreira, 2018).

RESEARCH METHOD

This work is exploratory in nature, with a qualitative approach and uses the case study method. Exploratory research seeks to understand, recognize and examine the problem in its entirety. It adopts a flexible planning approach, allowing for the consideration of various aspects related to the process in a broad way (Gil, 2009).

Regarding the approach, the research is identified as qualitative because it uses qualified methods for data collection and analysis, especially during the initial exploratory phases of the study, aiming to provide a detailed analysis of the content raised (Vergara, 2009).

Regarding the method, the research is a case study, which is an approach that investigates contemporary phenomena in their real context, being used in situations where the boundary between the phenomenon under study and the context is not clearly defined (Yin, 2010).

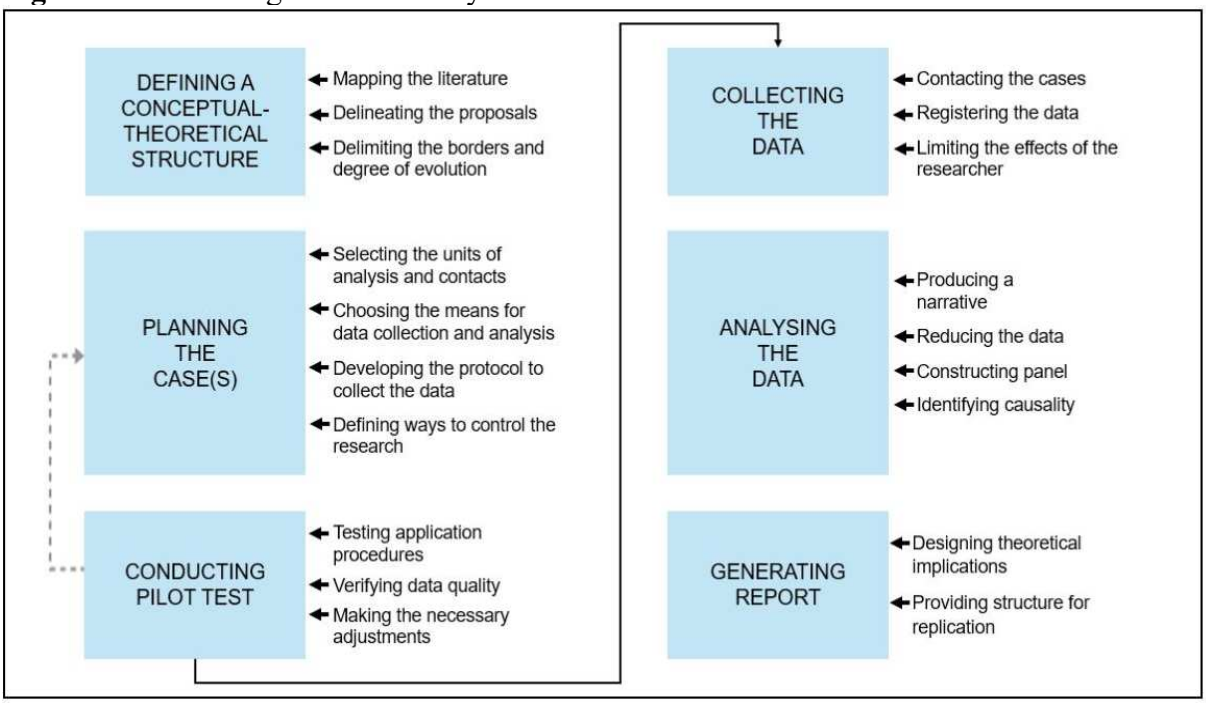
This work followed the content proposal and sequence of conducting a case study made by Miguel (2007), as per details presented in Figure 2.

According to Figure 2, the first stage of the case study involves mapping the literature, outlining propositions and delimiting the boundaries and degree of evolution of the studied topic (Miguel, 2007). For this study, a conceptual framework focused on mapping payment processes in public administration was defined, delimiting the researched topic and specifying the search strings used to ensure a theoretical basis.

The second stage is planning. It includes the selection of analysis units and relevant contacts, the choice of means for data collection and analysis, and the development of the data collection protocol. After defining the theme, the sectors and actors directly involved in the supplier payment process were selected, with data collection carried out through the analysis of official documents and participant observation.

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Figure 2. Conducting the Case Study.



Source: Miguel (2007).

Next, the third stage is conducting the pilot test. Miguel (2007) highlights the importance of conducting a test to validate procedures and ensure the quality of the data collected. In this study, the preliminary data obtained from participant observation were compared with current legislation and with internal documents and standards of the HEI studied, allowing for necessary adjustments and refinements before the final collection.

Data collection is the fourth step. It is a critical phase in which information is recorded and organized, minimizing the researcher's influence on the results. For this study, the sectors and actors involved in the supplier payment process were described in detail, highlighting their respective activities. The information collected was summarized and presented in Table 2.

Miguel (2007) suggests that, in the fifth stage, data analysis includes the production of a narrative, data reduction, construction of panels and identification of causalities. Figures 1 and 2 illustrate, in a clear and objective manner, the complete flow of the supplier payment process, facilitating the identification of critical points and areas for improvement.

Finally, the last step involves generating the final report, which should outline the theoretical implications of the study and provide a framework for replication. In this work, the reports are presented in the topics “Analysis of payment processes” and “Final Considerations”, detailing the payments made during the period analyzed and discussing how the recommendations and structure of the work can be applied by other similar institutions.

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Selected works

In addition to the benefits in the provision of services and in the dissemination of knowledge of the HEI, another contribution of this study is theoretical. The bibliometric analysis carried out in May 2023 highlighted the theoretical contribution, by revealing the small number of researches that address the mapping of payments in the public sector.

The research was conducted using the Scopus database, which is considered one of the largest databases of abstracts and citations of peer-reviewed literature, with bibliometric tools to track, analyze and visualize, and is considered one of the most widely used databases for bibliographic reviews (Chadegani *et al*., 2015). Initially, the research used the terms “” (in quotation marks) as “TITLE-ABS-KEY”, using the search logic of the expression “and”, as shown in Table 1.

Table 1. Research *Strings*.

Term	Variations	Search logic
Mapping	*Process Mapping; Mapping*	*and*
Public Administration	*Public Administration; Public Service; Public Management; Government; Government agencies;*	*and*
Payment	*Payment*	*and*

Source: authors (2023).

A total of 23 studies were found. After excluding those that were unavailable for reading and whose content was at odds with the research objective, no articles were found. Next, a new search was conducted, keeping the terms “Public Administration” and “Payment”, but removing the term “mapping” and its variations, and 242 studies were found. After discarding studies with titles that did not match the intended content and reading the selected abstracts, 5 scientific articles were found. Since one of them was not available, the sample related to payment in public administration was reduced to 4 studies.

Determining that the term “Public Administration” would not be excluded due to its particular characteristics related to compliance with specific legislation and bureaucracies that differ from the private sector, a new search was conducted, this time removing the term “payment”, and 364 results were found. After excluding unavailable articles, screening by the titles of the work and subsequent reading of the abstracts, 7 more works were selected. Therefore, only 12 works were selected for full reading, which confirmed that none of the articles described a payment flow of a public HEI.

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PRESENTATION AND DISCUSSION OF RESULTS

The case study

The expansion of public HEIs brings new administrative challenges, especially with regard to the efficient management of public resources. As these institutions expand, it is essential that public bodies provide means to guarantee the effectiveness and transparency in the use of these resources, ensuring the fulfillment of educational and social goals (Teixeira; Gianezini, 2023). In this context, the use of process mapping emerges as a strategic tool to help public administration manage and optimize its activities.

The HEI that is the subject of this study has been in existence for over 100 years, but the campus under analysis began its activities in 2008, as part of the university expansion project. The decentralization of supplier payment processes from the main campus to the campus under study only occurred in 2014.

The deadline for payment of services and materials is determined by the rules of the bidding process and Brazilian legislation and, therefore, must be analyzed individually. The process of paying suppliers is not an activity exclusive to the financial sector, although its practical part is the responsibility of the sector. The activities of checking and receiving, provisional certification and final certification of the invoice (NF in the Portuguese acronym) involve employees from various sectors of the HEI, and a delay in any of these steps ends up influencing the total deadline for completion of the process, which can result in a delay in payment to the supplier.

Delimitation of the study

This study aims to analyze the processes of payment for materials and provision of services after the supplier's activities have been completed, which consists of the full delivery of the product and/or service. Activities involving acquisition planning, budgeting procedures, purchasing processes and monitoring of contract execution are not considered. Data collection was carried out by analyzing official documents related to procedures carried out in 2023 and participant observation.

Description of the actors involved in the process

For a better understanding of the supplier payment process, the first step is to present all the actors involved, as well as describe their main activities and responsibilities, as shown in Table 2.

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Table 2. Description of the actors involved in the payment process and their sectors.

Server	Description, activities and responsibilities
Administrative tax officer purchasing agent (various sectors)	The administrative tax officer is the official appointed by order after the publication of the contract. His/her responsibility is to verify the material or service provided, in addition to the documents (if applicable). He/she performs the provisional certification (in the case of service invoice) or definitive certification (in the case of material invoice), includes the relevant documentation in the electronic process and forwards it later. In simpler contracts, in which the inspection activity is not delegated by order, these activities are carried out by the purchasing agent.
Contract Management Coordination (CGC)	The contract manager is appointed by order immediately after the contract is published. His/her responsibility is to verify that the contracted supplier maintains its qualification conditions and to analyze the documents sent by the inspection department. In addition, he/she is responsible for the final receipt of the contracted item, through a detailed statement that proves compliance with the contractual requirements and indicates to the financial sector that the service was in fact provided as stated in the invoice.
Asset and warehouse coordination	Does not participate in payments related to service providers. It is responsible for recording the receipt and subsequent release of permanent and consumable materials in the IES system. Is responsible for provisionally checking the merchandise and notifying the tax officer/purchasing agent so that he/she can check it.
CFCO Server 1 (responsible for settlement)	Responsible for settling the invoice (NF) in the system, checking the inspection and management documentation, calculating the deductions and attaching the system note documents to the electronic process.
CFCO Server 2 (responsible for payment)	The person is responsible for making the request for financial resources, checking the settlement documentation including the validity and issuing (if necessary) of new qualification documents, filling in the information in the system and communicating the existence of payment orders (PO) to the financial manager and the expense manager. After signing, the documentation and proof of payment must be included in the process.
Financial Manager (CFCO) / Expense Manager (PDI)	They are different servers, delegated by order, who are responsible for checking, authorizing and signing the PO. After both have signed, the bank order is generated for the supplier.

Source: authors (2023).

The information presented refers to the payment process and was collected through participant observation, reading of relevant legislation, standards and regulations of the HEI.

Table 2 presents the actors involved and, in summary, the relevant activities of each one in the payment process. It is important to highlight that the term purchasing agent is defined by the internal rules of the HEI. The differentiation between server 1 and server 2, both from the Finance, Accounting and Budget Coordination (CFCO in the Portuguese acronym), is to meet the need for segregation of functions, and to demonstrate that the settlement and payment activities cannot be performed by the same person.

Another point observed is that the tax officer and purchasing agent positions are located in practically all sectors of the HEI, both administrative and academic sectors, with more than forty different employees being observed, in just one of the Campuses.

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The POs always require the signature of two civil servants: the expense manager and the financial manager, who, although they have different functions, with regard to the payment process, perform the same tasks simultaneously.

Payment process mapping

During participant observation, it was found that the flows of invoices for materials and services, from receipt to payment, are distinct in phases 1 and 2. From phase 3 onwards, when the electronic process is forwarded to CFCO, the flows follow a similar sequence.

When receiving a material invoice, phase 1 begins in the warehouse sector. A server in the sector receives the material and checks the information on the invoice: the recipient's details, supplier, and address. They also check whether the quantity of packaging described in the invoice is correct, and whether any damaged or missing items are observed while the delivery person is still waiting. If there is a problem, the material is not received. Otherwise, the server performs a provisional certification and inserts the documents into the electronic process. They then inform the purchasing agent or tax officer about the availability of the material for verification.

When called, the purchasing agent or tax officer begins phase 2 of material receipt. The employee must go to the physical warehouse and check the technical and quantitative specifications. If there is a discrepancy, the employee must formally notify the supplier so that they can make the change. If the material is in accordance, the employee must certify the invoice by issuing the final receipt. After the final receipt, the warehouse and assets sector enters the materials into its systems, registering the entry of the goods (consumable or permanent). At this point, the electronic process is sent to CFCO.

In the case of service invoices, phase 1 begins with the agent/tax officer. In addition to the invoice data, other relevant documents and the nature of the contract are analyzed. Depending on the type of service, it is necessary to evaluate the labor documents and prepare a document with the list of employees involved (including possible vacations, absences and incidents). It is also verified whether the result measurement index (RMI) is applied, which records whether the supplier will be given a discount if it has not delivered the expected result. Then, the provisional certificate is issued, and the documents are registered in the electronic process. The process is then forwarded to contract management.

In phase 2, the contract manager analyzes the tax officer's documents and checks whether any corrections are necessary. If there are none, the manager issues the company's qualification in the supplier registration system (SICAF) and issues the certificate, issuing the

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final receipt. The documents are registered in the electronic process and sent to CFCO. The following phases are similar for both types of invoice.

In phase 3, the CFCO server responsible for settlement checks the documents and requests corrections from the person in charge, if necessary. It then checks whether the company has opted for the *SIMPLES Nacional* regime and meets the eligibility requirements. After verification, the settlement is made in the SIAFI system, generating a system note (NS), which is attached to the electronic process, together with other *SIMPLES* and SICAF documents.

Phase 4 begins with another CFCO server recording the settlements in the sector's spreadsheet, which contains, among other data, supplier information, values, source and type of resource, and electronic process number. The federal government is awaiting the sending of the financial resource for continuation.

Upon receiving the government funds, the HEI conducts a survey of the liquidated amounts to determine the payments, following a priority order defined by regulatory instruction. At this stage, the eligibility conditions are verified again. If the company does not have the current documents, it is notified to regularize the situation. If it does not do so, the expense manager is called to analyze the continuity. An administrative process may even be opened to investigate possible penalties for the supplier.

If the SICAF (or an equivalent) is in force, the server records the payments in the SIAFI system. In the case of continuous labor invoices, the linked account guide is issued and, if there is tax withholding, the withholding receipts are saved.

In phase 5, the POs are issued, and the CFCO server notifies the financial manager and expense manager, who check the entries in the SIAFI system and perform the electronic signature. After both parties have signed, the bank orders (BOs) are made, and the financial resources are transferred to the supplier. Finally, the BOs and other documents issued in phases 4 and 5 are registered in the electronic process and the payment process is completed.

The flows of the two payment processes are summarized in Figures 3 and 4. Figure 3 presents an illustration of the five phases involved in the material invoice payment process and Figure 4 presents the flow of the service invoice payment process.

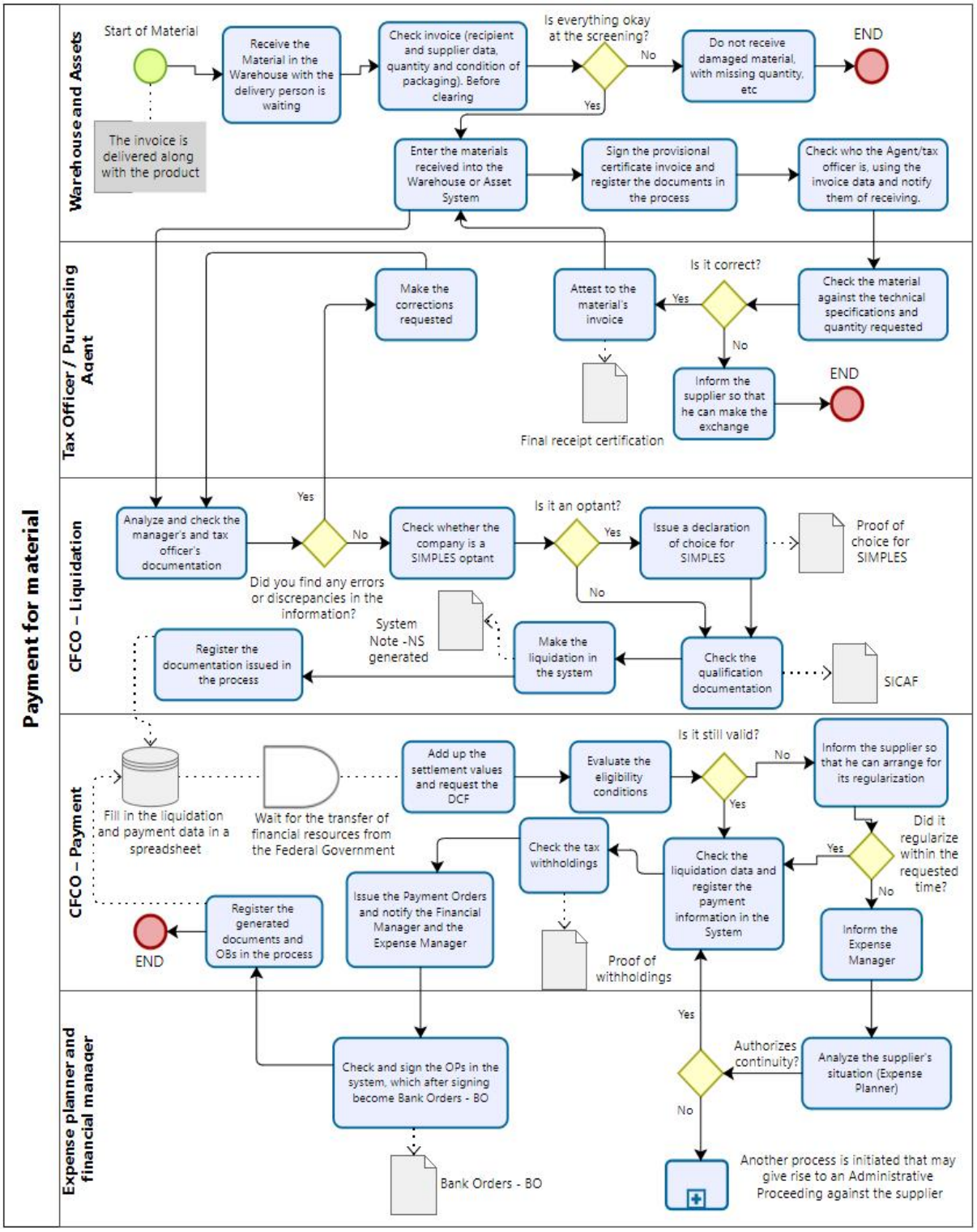
ANALYSIS OF PAYMENT PROCESSES

In this study, the payment processes carried out in 2023 were analyzed, covering a total of 201 BOs. During the participant observation, non-significant delays and requests for

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corrections were identified in practically all mapped activities. It is important to emphasize that the term "non-significant delay" is used to describe activities that were executed with a longer time than usual, but without resulting in a delay in the final payment deadline established in the notice.

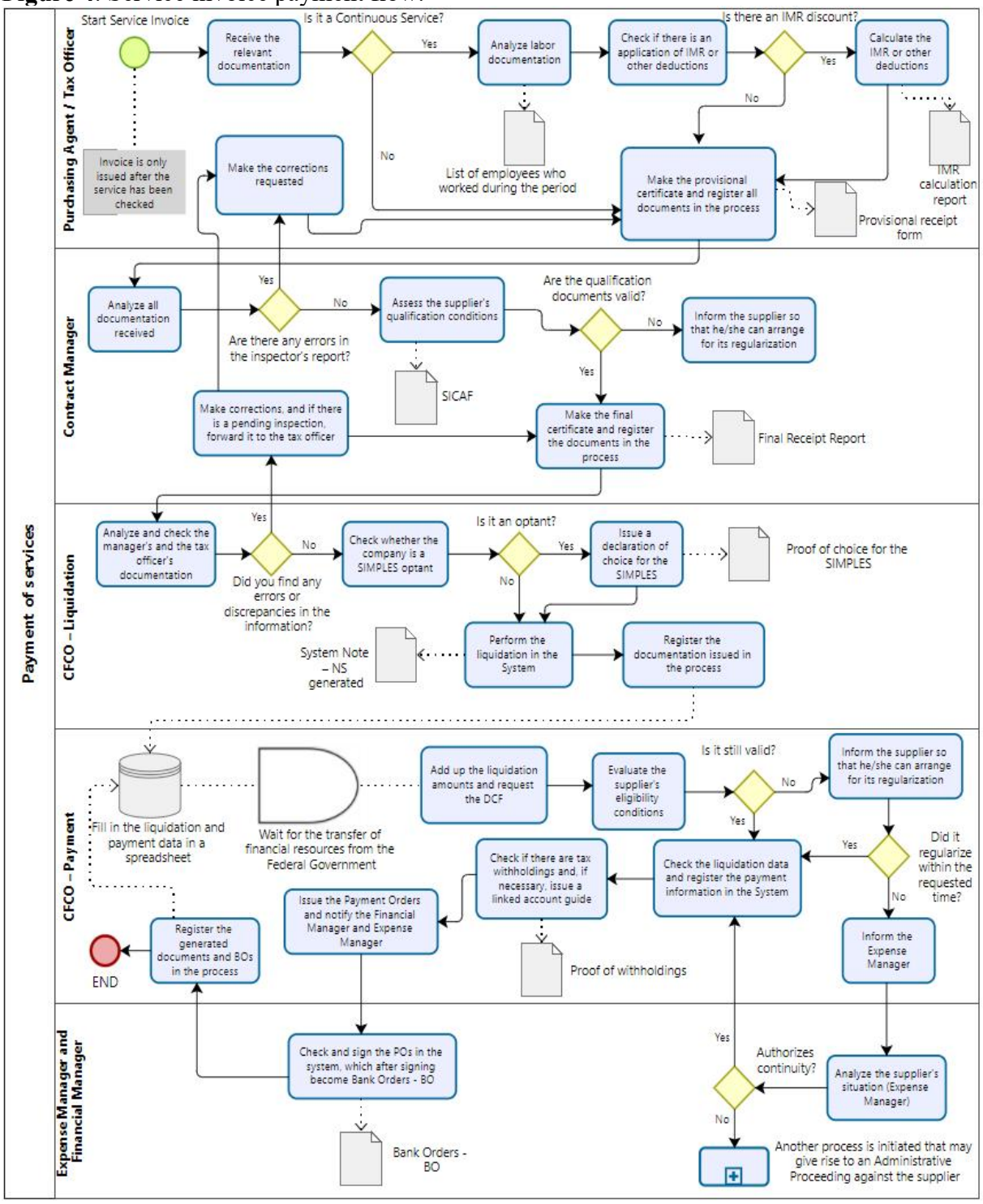
Figure 3. Material invoice payment flow.



Source: authors (2023).

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Figure 4. Service invoice payment flow.



Source: authors (2023).

Of the 29 late payments that occurred, 16 were caused by external reasons, 11 due to delays in the transfer of funds by the federal government and 5 cases in which the products or services were delivered incompletely and/or with defects, awaiting delivery or replacement for certification.

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Regarding the 13 delays caused by internal problems, all occurred in the certification phase (final or provisional). Three of them were due to the need to perform more complex tests on equipment, one problem occurred due to a failure in communication by the CPA, which did not inform the purchasing agent about the arrival of the material, in five cases the server responsible for receiving the material was on vacation and his replacement was not informed, and after four delays in the certification phase, the reasons were not detailed in the process.

Proposals for improvements to the process

Even though this was a work with limited data, using only the 2023 processes, it was clear that the activities involved could be carried out more quickly, since delays were observed in practically all phases, even if not significant. Given the results and analysis, the following suggestions are made:

- process monitoring, with creation of indicators;
- training of the employees involved, especially purchasing agents and inspectors;
- standardization of activities with the creation of manuals and tutorials.

The creation of performance indicators is important to establish parameters on the average time for each task. These indicators will allow continuous monitoring of the process, facilitating the identification of bottlenecks and data-based decision-making. The lack of formalization of metrics observed during the study currently makes it difficult to measure the efficiency of the process. This proposal is also justified as a way of providing the employees involved with feedback on the ideal time for each task performed.

The main delays were observed in the performance of purchasing agents, who are employees responsible for carrying out the invoice certification but who also perform other functions in their coordination. Participant observation revealed that these employees had more questions than employees in contract management and the financial sector, which is why it is suggested that they receive training. Specific training seeks to reduce these uncertainties, increasing efficiency and accuracy in the execution of tasks.

Standardizing activities is essential to reduce variations in task execution and minimize errors. Creating manuals and tutorials will complement training, serving as a constant reference for employees in case of doubts. This proposal aims to minimize errors observed in task execution. By providing clear guidelines, it is expected that activities will be carried out with greater uniformity, facilitating monitoring and control throughout the process.

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The main objective of the suggestions presented is to improve efficiency and reduce delays in the supplier payment process, increasing agility and consistency in the execution of activities. The implementation of these actions is expected to bring positive impacts to the management of the process, making it more transparent and less susceptible to variations and errors, contributing to better management of the HEI supplier payment process.

FINAL REMARKS

This study sought to analyze how process mapping can assist in the performance of activities in public administration, focusing on the process of paying suppliers of a HEI.

Through a bibliographical research, few articles related to the topic of mapping payment processes in public administration were identified, which highlights the need for the study in question and its theoretical contribution.

Flowcharts of the material and service payment processes were created so that all employees from all sectors involved could have a holistic view of the process. Process mapping, in addition to allowing this more comprehensive perspective, allows for the identification of flaws and the analysis of possibilities for changes.

The results demonstrate that process mapping played an important role in revealing inefficiencies and weaknesses in the payment process. Through participant observation and detailed analysis of activities, it was possible to clearly visualize how tasks are distributed, executed and where delays occur that hinder compliance with deadlines.

The main weaknesses identified include the lack of standardization of activities, insufficient training of the employees responsible for performing critical tasks, and the absence of a formal monitoring of the stages of the payment process. In particular, purchasing agents faced more difficulties, often due to the accumulation of other responsibilities in their respective coordination.

Given the results found, there was a recommendation that the payment process be monitored with the creation of indicators, that the employees involved be trained, and that the HEIs create manuals and tutorials for the standardization of activities.

Regarding the possibility of replicating the study, it is important to highlight that its structure and methods can be used by several institutions. In addition, the mapping of the process through the flowchart and the survey of the responsibilities of the agents involved can be used and analyzed by other institutions, in whole or in part with adaptations, according to their needs and resources. This perspective highlights the practical contribution of this research.

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For future work, we suggest a study on the development and analysis of indicators for the supplier payment process, and a survey of the main processes of the HEI with their subsequent mapping.

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