

Proposal to improve the process of administration of projects financed by CONACYT by the Treasuries of the Universities of Campeche

Propuesta para mejorar el proceso de administración de proyectos financiados por CONACYT por parte de las Tesorerías de las Universidades de Campeche

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Abstract

The treasuries of the universities and educational institutions of the state of Campeche, have processes for the administration of projects that are generally made up of many steps to follow to carry out the different procedures such as payments to suppliers, per diems, scholarships, among others, which usually takes from days to weeks, making it impossible to meet the commitments made by the institution. The objective of this work is to evaluate the flow of the current financial administration process of the projects of the National Council of Science and Technology (CONACYT) to propose a reengineering of the processes. The technique of direct observation and the survey was applied to learn from the users the perspective of the administrative process and to identify critical points in conflict. The study of time and movement proposed by Tejada *et al* (2017) was applied, a tool that determines the standard times of the operations that make up a process; and the movements of the people involved to carry out said operation. With this application of this method, the following were achieved: minimizing the time required in each step and the costs, providing a reliable and high-quality process, eliminating inefficient steps, and accelerating the efficient ones.

Projects, Universities, Treasuries

Resumen

Las tesorerías de las universidades e instituciones educativas del estado de Campeche cuentan con procesos para la administración de proyectos que generalmente se componen de un gran número de pasos a seguir para realizar diferentes trámites como pagos a proveedores, viáticos, becas, entre otros; los cuales suelen tardar de días a semanas, imposibilitando el cumplimiento de los compromisos adquiridos por la institución. El objetivo de este trabajo es evaluar el flujo del actual proceso de administración financiera de los proyectos del Consejo Nacional de Ciencia y Tecnología (CONACYT) para proponer una reingeniería de los procesos. Se aplicó la técnica de observación directa y encuesta para obtener de los usuarios la perspectiva del proceso administrativo e identificar puntos críticos de conflicto. Se aplicó el estudio de tiempos y movimientos propuesto por Tejada *et al.* (2017), herramienta que determina los tiempos estándar de las operaciones que conforman un proceso; y los movimientos de las personas involucradas en la realización de dicha operación. Con la aplicación de este método se logró: minimizar el tiempo requerido en cada paso y los costos, proporcionar un proceso confiable y de alta calidad, eliminar los pasos ineficientes y acelerar los eficientes.

Proyectos, Universidades, Tesorerías

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1. Introduction

Today, most educational institutions seek continuous improvement with the purpose of achieving the quality required by their various processes; The educational system is immersed in a society of constant transformation that continually pressures new demands to which it must have a response. Educational organizations cannot distance themselves from what is happening around them, they must anticipate by analyzing the needs that are required inside and outside them to achieve excellence. It is necessary for educational institutions to develop capabilities, structures and systems that allow them to be more adaptable and competent to respond to the numerous demands that society asks of them. One of the important areas of opportunity for the improvement of processes is that generated by long or clumsy cumbersome procedures that sometimes stop the fulfillment of obligations that have to be carried out with third parties, thereby creating an undesirable image of said organizations.

The excess of procedures often causes the commitments acquired by the institution towards the financing sources to not be fulfilled, thereby causing the lack of opportunity in subsequent years to compete for new projects before the institutions that grant financing sources, since that the institution creates an image of non-compliance.

Taking what was described above as a starting point, it is important to point out the need to have quality processes in all the operations carried out by our Educational Universities, and mainly in the financial administration of the projects financed by CONACYT, who are in charge of the Directorates of the Treasuries in the Financial Projects departments, with areas of opportunity.

1.1 Reengineering

The modifications in the functions of the different areas of the institution, as well as the requirements defined in the various regulations of external funds that are managed in the treasury departments and specifically those applicable to special projects such as those of CONACYT, require a process reengineering in the same that in our case we will delimit the administrative department of the financial projects.

Process reengineering, also known as Business Process Reengineering (BPR), consists of the radical redesign of processes with the aim of achieving better results in terms of costs, quality, service and speed (Hammer and Champy, 1994). It has been recognized that information technologies facilitate the redesign of processes in organizations (Davenport, 1993), since they greatly streamline the activities that are covered in the different functions of an organic structure, such is the case of the function financial and, within this, the functions of the treasury (Kroll, 2006) (Hernández, 2013).

According to Hammer and Stanton (1997), process reengineering is characterized by the need to take into account the rules on which the management carried out in a company or organization is based; it also means that existing processes must be discarded and new ones started., with the clear objective of tangibly increasing performance, concentrating on the processes that are carried out and not on the functions defined in the organic structure (Hernández, 2013).

The process methodology helps organizations achieve benefits that become excellent results in their value chain derived from better processes, improving their governance and productivity, as well as the quality of services and products they provide to society (Guerrero, 2011).

The benefits that society obtains by using a systematic procedure for the continuous improvement of its processes are (Guerrero, 2011, p.2):

- **More effective leadership**
- Better management visibility through critical process controls.
- Strengthening in process stages.
- **Progress of results through application of improved processes**
- Improvement priorities defined based on business objectives.
- Optimization of efficiency of critical processes.
- Measurement of results and improvement of process performance.

- **Project management of the improvement initiative**
- Development of improvement strategy for short, medium and long term.
- Improvement management as a true project, critical for the institution.
- Emphasis on cultural change and strengthening critical success factors.

1.2 Treasury

According to Atencio (2015), the Treasury is constituted as a strategic unit that must manage the financial resources of an organization effectively and efficiently. Likewise, Robles (2012) states that the treasury is the area where the monetary resource is managed and must include collection, management of bank deposits, execution of payments to suppliers, to creditors; must maximize wealth and reduce the risk of a crisis; In such a way that, the primary function is to have sufficient monetary resources to arrange and carry out operations in accordance with the activity of the organization.

Currently, society is constantly changing so changes and challenges must be faced responsibly. The factors and situations that the treasurer must face are: a) Volatility of interest and inflation rates, b) volatility of exchange rates, c) tax reforms, d) problems in obtaining external funds, e) high speculation, f) advancement of information technology, among others; Given this, Atencio (2015) suggests the implementation of strategies that serve as a basis to predict or mitigate the impact of changes in institutions.

The treasurer must be proactive, he must predict the changes and variations that the environments experience (Atencio, 2015); You must also make the decisions to use the best management tools; such as the timing of monetary flows of payments and collections; manage control over bank inflows and outflows, manage the organization's liquidity, establish contact with banking institutions and other agencies and must calculate the financial risk produced by variations in exchange and interest rates (Santos, 2005). All of the above with the objective of meeting the goals established by the institution. To effectively achieve planning and control of resources, the treasury must have the support of the entire organization, in this way the treasurer is the one who must ensure compliance with the goals.

And for this there must be timely and adequate planning of the company's financial policies and a connection between the treasury and the rest of the departments of the organization (Atencio, 2015: pp.557, 558).

1.3 Continuous improvement of management processes

Nowadays, universities are subject to processes of change and transformation in the face of the challenges posed by the so-called knowledge society, which grants them a central social role in the production, preservation and transfer of knowledge. These are increasingly revealed as a strategic component in the construction of a society where learning, the creativity of education and culture, given the value of knowledge, are key elements to achieve sustainable economic and social development (Esquivel, León and Castellanos, 2017: p.57).

The excellence of university institutions must be achieved through a process of continuous improvement in all fields: staff capabilities, efficiency of equipment and facilities, relationships with the sector and between members of the organization and with society. This is possible from the management of knowledge of university processes, to fulfill the mission and achieve the institutional vision and the academic process in question, as well as directing efforts to the needs and expectations of the students. This entails a continuous dynamic of study, analysis, experiences and solutions, which implies a process of continuous quality improvement (Esquivel et al., 2017: p.58). Therefore, the continuous improvement of the knowledge management process of university processes promotes social recognition of the results that the university generates; and constitutes a way to enhance not only institutional but also local development, by responding from its own development to the university social mandate, based on the demands that society generates (Esquivel et al., 2017: p.58).

1.4 Reengineering in processes

Processes are currently considered of utmost operational and structural importance in most organizations. This perception results after organizations go through internal limitations when carrying out their operations and even when implementing solutions to the needs of each moment.

When the organization is functional, the grouping of activities can give a feeling of control and generate high levels of effectiveness in the specialized operations handled by each function, however, it always results in a reduction in the overall effectiveness of the company and of limited and fluid communication between the different functions. When the processes in the organization are clear and defined, it can operate in a matrix manner, optimizing existing human capabilities, in an integrated and appropriate manner for each new project or activity (Zaratiegui, 1999).

Zaratiegui (1999) defines processes as a series of ordered and logical steps whose purpose is transformation; in the end, programmed results are obtained that must be delivered to clients.

Process reengineering involves a radical change in the way the company operates. It can be defined as the radical reconsideration or reinvention, from its foundations, of the organization's processes to achieve goals with spectacular results in terms of performance. cost, quality, service and speed. (Rafoso and Artiles, 2011).

According to Rafoso and Artiles (2011) cited in Hammer and Champy (1994), the method can be introduced in theory process by process, but it involves profound changes in mentality, so in practice entire blocks of related processes, or all of them, are changed. basic processes of a business unit, or directly all the key processes of the company (Rafoso and Artiles, 2011).

Reengineering, when successful, produces a qualitative leap equivalent to several years of continuous progress and sometimes goes beyond what would be achieved with progressive improvement methods.

This implies risks, which must be compensated by the benefits to be obtained, so it is mandatory that reengineering projects (like all change projects for company management, on the other hand) are driven by market requirements, so customers, who are no longer satisfied with the similar characteristics offered by the range of competitors, without attractive initiatives (Rafoso and Artiles, 2011).

Methodology

Here data or components were collected on the different processes carried out in the financial administration of the projects financed by the CONACYT projects in some Universities, which allowed an analysis and measurement of these. This study was divided into two phases, in the first a structured closed-type questionnaire was applied on the current administrative process of CONACYT projects, while in the second to the proposed administrative process.

2.1 Intervention proposal

Once we have observed the process that is currently being carried out, it is easy to notice the large number of control moments or filters implemented between the different areas, departments or people involved in it, coupled with the fact that, in strategic areas of the process, the personnel who attend to projects financed by external funds in some Universities of Campeche. Table 1 presents the problems identified in each step or function.

Step or function	Problem
Administrative procedures and documents.	There are too many filters between the units responsible for meeting commitments with funding sources.
Delay in Bank reconciliations.	The aforementioned information is not available; When required, there are always delays, resulting in failure to comply in a timely manner according to the dates established in the delivery of financial reports.
Lack of personnel to issue checks.	By having a single person responsible for preparing all checks and bank transfers from Educational Institutions, there are delays and therefore non-compliance with the commitments made with institutions, researchers, suppliers, etc.
Obsolete equipment.	The equipment that the project area has in some Universities is obsolete. This means that there is no capacity to install programs on the computers necessary to carry out and expedite the delivery of financial reports.
Lack of motivation to staff.	The staff must be comfortable with the work they carry out, so it is necessary that the staff of every institution be motivated in terms of promotions, salary increases and impartiality by the General Management.
Absence of requirements for the implementation of projects.	Many projects are underway without formalization, procedures and/or procedures are incomplete (there is no agreement, breakdowns, etc.).

Table 1 Problem chart

Source: *Self-Made*

It is also evident that in the different areas in which project control is carried out, the benefit of carrying out adequate financial administration on research projects financed through the CONACYT fund is not known.

2.3 Solution proposal

The solution proposal is to redesign processes that allow obtaining the quality that Universities require; The new processes would be as follows (See Annex 1). When this proposal is implemented, the department will work very closely with the areas responsible for obtaining financing for the projects so that the documents are processed, archived, safeguarded and to be able to manage resources in a more efficient way. Table 2 presents the solution to the identified problems.

Problem	Solution
There are too many filters between the units responsible for meeting commitments with funding sources.	A reduction in filters is proposed in the issuance of administrative procedures and paperwork. Filters in any Institution are important, but in excess they cause delays in the release of resources. To release resources, two filters will be used, starting with a letter from the technical manager to the administrative coordinator of the responsible unit, who will send said request to the project department.
Delay in bank reconciliations. Banking information is not available; When required, there are always delays, resulting in failure to comply in a timely manner according to the dates established in the delivery of financial reports.	Independence of deposits made for projects. It is important to have a certain number of personnel in the Projects department that is sufficient to control the account statements, auxiliaries and reconciliations only of extraordinary income (project resources).
In many Educational Institutions there is only one person responsible for making all checks, electronic transfers, etc. of universities, is faced with the problem of their delay and non-compliance with the commitments made with institutions, researchers, suppliers, etc.	Hiring personnel to carry out checks, electronic transfers, etc. of projects. It is necessary to have sufficient personnel to carry out checks, electronic transfers, etc. of extraordinary resources (projects).
The equipment that the project areas have, which are used to deliver financial reports, are obsolete.	Updated equipment. It is important to have the capacity of the teams according to the workload, which will allow them to comply in a timely manner with the financial reports and the tasks to be carried out by each of them.
Many projects are underway without formalization, procedures and/or procedures are incomplete (there is no agreement, breakdowns, etc.).	It is urgent to hold meetings with the technical managers before carrying out the preliminary draft of their investigations, since in many cases they are not aware of the administrative process they have to carry out.

Table 2 Solutions Chart

Source: Self-Made

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Results

The issue related to the financial administration of CONACYT projects managed by educational universities has been highly debated in recent times. We know that CONACYT is an institution dedicated to the financing of science, technology and innovation in Mexico, so educational institutions play a primary role in the progress and execution of research projects.

Therefore, it must be emphasized that the administration of CONACYT projects by educational universities involves a series of responsibilities and challenges that must be carried out in an effective way to guarantee the success of the project. One of the main challenges that universities face is financial management, since they must ensure that the funds granted by CONACYT are managed appropriately and efficiently to meet the project objectives.

Based on this research, it was possible to evaluate the situation in which the Universities were in the area of treasury projects and identify their areas of opportunity, since the results obtained support the need to implement an improvement process in most of its administrative areas.

There are many authors who describe the importance of implementing and innovating processes, such as Juan Luis Blat (2014) in which he points out in his work how to improve efficiency in the treasury department; since they are subject to adjustments in their structures in different periods of time, the administrative-financial departments and in particular the treasury departments that are not immune to this circumstance. However, it is important to mention that this requires that treasuries consider financial resources in their annual planning or budget to counteract those risks that are constantly found in the environment of any organization.

On many occasions, the educational institution assumes that it has the liquidity and solvency capacity to meet more immediate obligations, when this is truly not the case, which is why it is necessary for universities to carry out financial strategies that allow them to truly know what their financial situation is. from the same.

López *et al* 2015, points out how quality, evaluation, accreditation and management are integrated to achieve continuous improvement in higher education. It is important to emphasize that to achieve the aforementioned, there must be a constant in the application of the processes by each university, as well as the participation of all those involved proactively.

According to Pérez *et al* 2017, process reengineering offers an enormous advantage for companies. It is worth mentioning that every educational institution requires quality processes that help optimize the times and movements of the activities of every educational institution, considering that public schools are the space where they face challenges such as assuming a constant role of change. and transformation, it is necessary that the administrative processes and filters of educational institutions are carried out in order to achieve said quality, seeking to satisfy the requirements of society. Changing the administration processes of an educational institution to improve them has several implications, since it is a long-term transformation process in which many people who collaborate in the corresponding departments are involved, and this leads to establishing strategies to achieve or improve efficiency in these processes.

Some of the treasuries in the municipality of Campeche need modernization: they do not have up-to-date and online information, they have old processes and they have poorly qualified personnel without technical knowledge in the matter, which means that Senior Management does not have sufficient and real elements for daily intake. According to Cabrera and García, 2007, this is due to globalization and the evolution of new technologies; institutions decide to centralize their treasuries with the purpose of establishing visibility and control.

Changes in the economic environment have caused the financial function, specifically treasury, to be oriented toward performing its function in a very competitive manner, with lower costs, less time and greater quality. This function, which, although it seems only of internal interest to the organization, is currently recognized as a primary element, due to the need to analyze the information it generates, its strategic vision, its integration in all areas of the organization, its support role in decision-making, and its identification as a link or channel uniting the different areas in the organization.

Therefore, the function of the treasury can be understood from two main aspects, internal treasury management, which is related to the department's own activities, and external treasury management, referring to the activities carried out by other departments and that can influence in the financial flows of the organization.

Conclusions

All procedures carried out in the financial projects area or department require reengineering.

It is recommended:

- When the proposal is implemented, the department will work very closely with the areas responsible for obtaining financing for the projects so that the documents are processed, archived and safeguarded, and to be able to manage resources in a more efficient way.
- A meeting must be called in which the project area, the researcher, the area responsible for managing them, as well as the control and surveillance areas such as the Comptroller and Internal Audit, participate, in order to establish the administrative rules of operation for that the project is developed with strict adherence to the current fiscal provisions, as well as the internal regulations of the Educational Institutions.
- Establish a calendar of activities detailing the dates for the presentation of the financial reports of each of the CONACYT projects, in accordance with what is required by the agreements assigned with the financing entities in general, with the purpose of complying with the procedures in a timely manner.
- It is proposed that the deadline for payment procedures will be 3 business days from the date of receipt of the corresponding resource release request.

- The steps for any procedure will be from the Technical Manager to the Administrative Coordinator of his Responsible Unit, who in turn sends it to the project area, here it is received by the Project Director, and this in turn forwards it to the operational manager.
- Payment of checks or electronic transfers will be made only to the beneficiary of these or in the case of companies, to the person authorized to do so. No checks or bank transfer documents, nor policies will be delivered to those responsible for the areas; suppliers and/or beneficiaries will have to go to the financial projects management to collect them.
- Those responsible for the projects will schedule the release of their resources to avoid urgent checks or transfers. The project department will not be responsible for unsolicited checks or bank transfers.
- The verification of the resources must be carried out within a period of no more than 15 business days from their release; this in order to have supporting documentation to support the respective reports.
- The researcher, as well as the administrative areas, will keep track of the balance held by each authorized item in order to prevent overdrawing of their financial ceiling.
- Carry out a reconciliation per project between the balances released by the release of resources by the financial project management and the existing balances in the coordination of their area.

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Annexes



