

THE IMPLEMENTATION OF AN ERP IN A PUBLIC UNIVERSITY: THE CASE OF THE UNIVERSITY OF GUANAJUATO

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Abstract

The Enterprise Resource Planning Systems have become a very useful tool in companies in recent years, even universities are beginning to implement this type of systems, however educational institutions have presented some challenges in their implementation, for this it is necessary to know what are the critical success factors that facilitate the implementation of an ERP in a Higher Education Institution. A questionnaire was developed for the present study which was sent to different characters involved with the ERP of the University of Guanajuato, in order to find out what the conditions of its implementation were and also to determine what actions can be taken to improve its functioning. The research is still ongoing but some data found in the responses of the participants has been that not all users of the platform were aware of the use of the tool when it was implemented, however the interaction among those who use the ERP in The University of Guanajuato is giving rise to the knowledge management that in turn can lead to improve its application.

Resumen

Los sistemas de planificación de recursos empresariales se han convertido en una herramienta muy útil en las empresas en los últimos años, incluso las universidades comienzan a implementar este tipo de sistemas, sin embargo las instituciones educativas han presentado algunos retos en su implementación, por ello es necesario saber cuáles son los factores críticos de éxito que facilitan la puesta en marcha de un ERP en una Institución de Educación Superior. En este estudio se desarrolló un cuestionario que fue enviado a diferentes personajes involucrados con el ERP de la Universidad de Guanajuato, con la finalidad de encontrar cuáles fueron las condiciones de su implementación y además determinar qué acciones pueden realizarse para mejorar su funcionamiento. La investigación aún se encuentra en curso pero algunos datos encontrados en las respuestas de los participantes han sido que los no todos los usuarios de la plataforma tenían conocimiento en el uso de la herramienta cuando fue implementada, sin embargo la interacción entre quienes utilizan el ERP en la Universidad de Guanajuato está dando lugar a la gestión de conocimiento que a su vez pueden conducir a mejorar en su aplicación.

Keywords

Enterprise Resource Planning System; Critical success factors; University of Guanajuato; Case study.

INTRODUCTION

The implementation of an Enterprise Resource Planning System (ERP, for its acronym in English) has been recognized as a management strategy of organizations to enhance their performance and internal management. It is the decision to implement something that entails risks and opportunities to redefine the organization. There are critical success factors associated, as well as the potential benefits and roles that must be observed in each of the stages of development and implementation of the ERP. To know which are the critical success factors make possible a better implementation and with it a greater use of the tool.

Concept

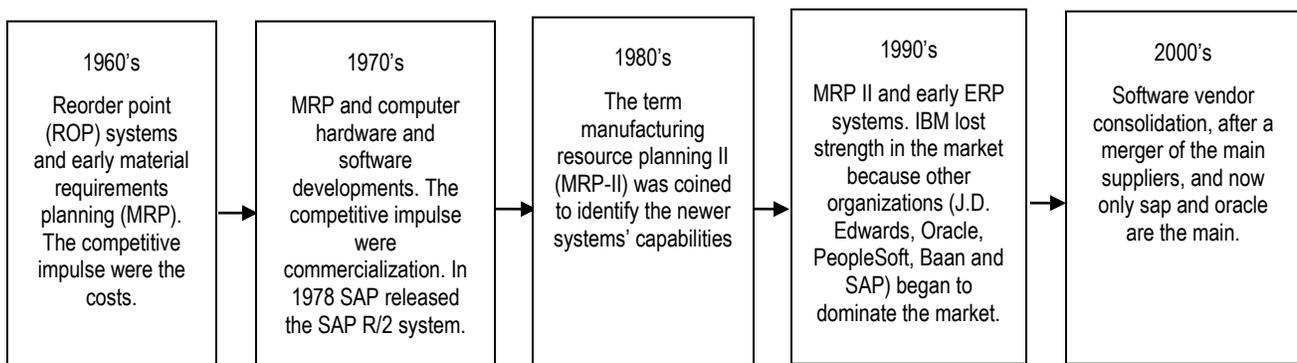
There are several definitions about ERP, however we chose 3 concepts, the first is of Oracle because this is an organization specialized in these type of systems. Oracle (2018) says that ERP, "It refers to the systems and software packages used by organizations to manage day-to-day business activities, such as accounting, procurement, project management and manufacturing. ERP systems tie together and define a plethora of business processes and enable the flow of data between them." [1] Increasingly organizations are using an ERP, which is changing them, because it is streamlining and making the administration of their resources simpler and more comprehensive. The second concept is defined by Rico (2004) as: "For universities, ERP is an information technology solution that integrates and automates recruitment, admissions, financial aid, student records, and most academic and administrative services". [2] Now, the universities begins to use ERP for better its service and productivity. The educational institutions began to realize the benefits of an ERP, but, the great challenge is to achieve an optimal implementation to achieve the expected benefits. Finally the third concept is from SAP (2018):

"Think about all the core processes needed to run a company: finance, HR, manufacturing, supply chain, services, procurement, and others. At its most basic level, ERP integrates these processes into a single system. But new ERP systems are anything but basic. They provide visibility, analytics, and efficiency across every aspect of a business. Using the latest technologies, ERP systems facilitate the flow of real-time information across departments, so businesses can make data-driven decisions and manage performance – live". [3]

This last concept is very important because the system used in the University of Guanajuato is SAP, so is better if we know how define SAP an ERP to understand about it.

ERP history

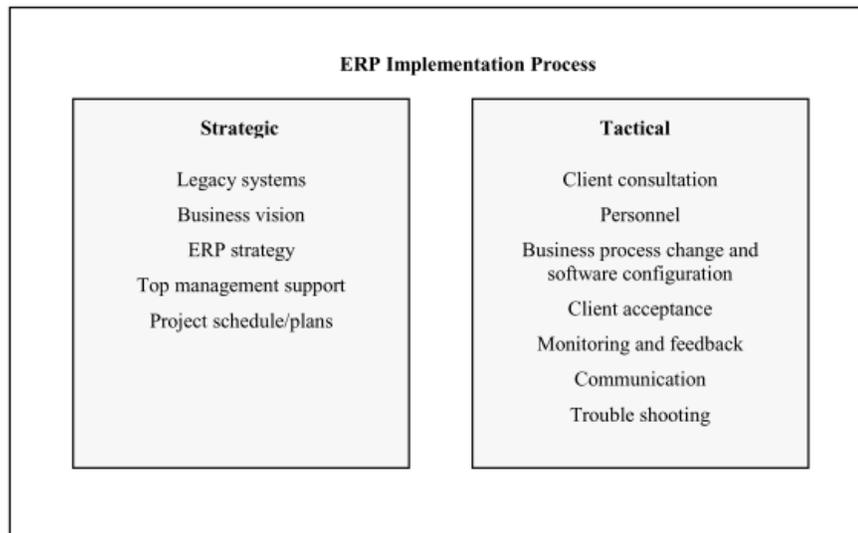
In order to reach the systems we have today, what is nowadays the ERP has been developing for decades. Below is a brief description of the history of ERPs:



Source: Own preparation with information from Robert Jacobs, F., & 'Ted' Weston, F. C., 2007. [4]

Critical success factors (CSF's)

Several studies on the CSF's of an ERP present some variations in the number of these, however after a review among different authors and as a result of their experience, Holland & Light (1999), divide into two groups the CSF's, in strategic and tactical, the first in reference to planning and the last in terms of the operation phase (Allen, Kern, & Havenhand, 2002) [5]



Source: Holland & Light, 1999 [6]

In order to better understand each of the CFS's, the aforementioned will be explained, this will delineate the elements of both columns and will lay the foundations for the subsequent analysis on the implementation of an ERP at the University of Guanajuato according Holland & Light (1999) [7]:

Strategic CSF's

Legacy Systems: This CSF contains the different systems that are maintained, they are the backgrounds.

Business vision: it refers to the existence of a model for the functioning of the organization and the presence of objectives that can be measured.

ERP strategy: It refers to what will be the mechanism of implementation.

Top management support: Level of involvement of senior management and their willingness to assign resources.

Project schedule/plans: It is the framework on the critical tasks, the limits and highlights.

Tactical CSF's

Client consultation: is to involve clients in different stages of the process, such as design and implementation.

Personnel: they are the collaborators

Business process change and software configuration: understand the situation of the organization in terms of processes and relate it to the ERP.

Client acceptance: is the recognition of customers to the System

Monitoring and feedback: exchange of information among the people involved.

Communication: is to inform about the progress of the project among the members of the organization.

Trouble shooting: ability to manage crises and changes.

The CSFs mentioned above are a framework for any organization that wants or is using an ERP has elements to identify which are the critical factors for implementation and improvement.

MATERIALS AND METHODS

To identify the critical success factors in the implementation of the ERP at the University of Guanajuato, a questionnaire was designed in Google Forms with key questions to apply to the main actors that contribute to the ERP of the University, derived from the study of different authors. The league for the instrument was sent to the participants' mail to obtain as much information as possible to make this study more robust.

RESULTS AND DISCUSSION

Some of the information obtained by the participants has shown that the ERP used at the University of Guanajuato since 2017 is the SAP, which is an improvement tool in the management of resources particularly financial. Some of the difficulties encountered were that there was no project team, few actors knew how to use the tool in architecture, development and parameterization, however many professionals have extensive knowledge to operate the system, but this it is not enough as adequate architecture and development is required in principle for the system to operate correctly.

Undoubtedly one of the great advantages of this process is the high management and transfer of knowledge that is being generated, between the technical team, consultants and those who operate the system at the University (administrative support apparatus) generating instructions, manuals and tutorials in the three areas (architecture, development and operation), this provides the opportunity to store this knowledge that will give continuity to the development and improvement of the implementation of the ERP.

CONCLUSIONS

Nowadays, the functionality of the organization can not be understood without the intensive use of information technologies, whereby organizations decide to develop and implement technologies that are up to the needs of their internal and external clients, however the changes in the management or structure of the organization, make the process of implementation of these technologies become complex. As we have seen in this case study, the absence of a project team with high knowledge in the architecture, development and operation of the ERP, as well as a weak process of knowledge storage that is generated in the implementation make its operation complex, however this has given the opportunity to generate mechanisms to manage and transfer knowledge. Institutions of higher education have a great challenge in terms of the implementation of an ERP, nevertheless investigations like this allow a frame of reference for the University of Guanajuato itself and for other educational institutions. It is important to clarify that the study is ongoing, so it is not possible to conclude yet.

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ANNEXES

Questionnaire for ERP

Objective: to know which were the critical success factors in the implementation of an ERP at the University of Guanajuato.

1. Why the University of Guanajuato decided to use an ERP?
2. What ERP does the University of Guanajuato currently use and since when?
3. Why was that ERP chosen?
4. How were you working prior to the implementation of the current ERP?
5. What situations or conditions facilitated the implementation of the ERP?
6. What were the challenges that were presented for the implementation of the ERP in the university?
7. Which were the critical success factors in the implementation of the ERP?
8. What things can be improved?
9. What way do you think the University will take to the ERP in the coming years?