

The Impact of ERP Implementation on Firm Performance

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Abstract

Employees in conventional organizations, with traditional information systems that date back to the 1960s and earlier, were concentrated on their distinct functional responsibilities and had only limited access to the information available from their department's information system. The information system for their department only provided limited information. The outdated systems reinforced the conventional vertical paradigm, which was focused toward certain operations such as accounting, commerce, and production. These systems were constructed one at a time, individually, with their own data models and with little to no integration with one another. In addition to having very little integration with the others. The technical solution called for the establishment of an interface whenever interaction between various systems was necessary.

Key words: ERP, financial performance, profitability, productivity

J.E.L. classification: M40, M41, M48

1. Introduction

The market offers a set of products to optimize business processes through mega information systems that capture, store, process and distribute data and information generated by the different administrative, operational and productive units of the company. Before the appearance of these mega systems, companies had independent systems administered by each function or department to which the system was attached (Laudon, 2018, p.35). The duplicity of data, the difficult access to them, the lack of integrity and the almost null possibility of sharing them online and in real time prevented an adequate and timely knowledge and control of the operations and management of the company. The information was neither precise, timely nor accurate.

The implementation of these systems and the impact on the company has not been studied for national cases. Given the nature of the information needed for a subject with these characteristics, it has been difficult to have information and therefore studies regarding the experience that national companies have had of the benefits of these applications and if the companies have benefited from the general facilities that ERP has to integrate the information of the different foundations of the company and to integrate it with information and communications technology (Xero, 2022)

There is a very strong tradition of data ownership, be it accounting, financial, production, sales, or human resources data. Each entity that generates a particular piece of data has a certain domain and ownership over it and imposes certain restrictions, sometimes informal, so that this data can be known, shared or partially used by another user or another department of the company. Thus, it is not difficult to find companies that have duplicated most of their data, so that maintenance and storage efforts increase.

The objective of this study is first of all to know basically the ERP systems and what has been globally the genesis of these systems and their evolution until their current situation. Secondly to confirm or reject some of the basic hypotheses regarding the results of the implementation, e.g.:

The intrinsic facilities of an ERP type system are exploited by the company by integrating existing technological facilities:

- The functional structure of the company is affected by the implementation of ERP type systems?
- Which are the modules that are used in the ERP system?
- Which are the modules that the company sees as the main ones for the achievement of its mission?
- The benefits observed are those expected by the companies that incorporated an ERP type system?
- Management control improves as a result of the integration of the company's functional areas?

The work presents the following structure of development. In the first part, the most relevant characteristics of ERP systems and the main benefits as well as the main disadvantages of these solutions are presented. Next, the methodology used to achieve the objectives is presented. It continues with the development of the topic, the core of the study, and ends with the conclusions that emerge from the discussion that takes place in the development itself and that are synthesized at the end.

2. Literature review

These systems began to be developed in the USA during the Second World War, with the objective of supporting the management of the material resources demanded by the army. They were called MRPS (Material Requirements Planning Systems). In the 1960s, manufacturing companies took up the idea of MRPS in order to manage and rationalize their inventories and plan the use of resources according to the real demand of their products, so MRPS evolved into MRP (Manufacturing Resource Planning). In the 80's, the use of these systems included concepts such as "Just in Time", customer and supplier relationship management, among others, this is how MRP evolved completely to what is known as MRP II.

In the 90's, as a result of globalization, companies began to require systems to support business management, integrate the parts of the business, promote operational efficiency and support critical aspects of management. Thus the software industry initially developed applications to integrate the various MRP I and MRP II systems, which years later became integrated enterprise systems, known today as ERP (Enterprise Resource Planning) or Enterprise Resource Planning Systems (Radu, 2006, p.4).

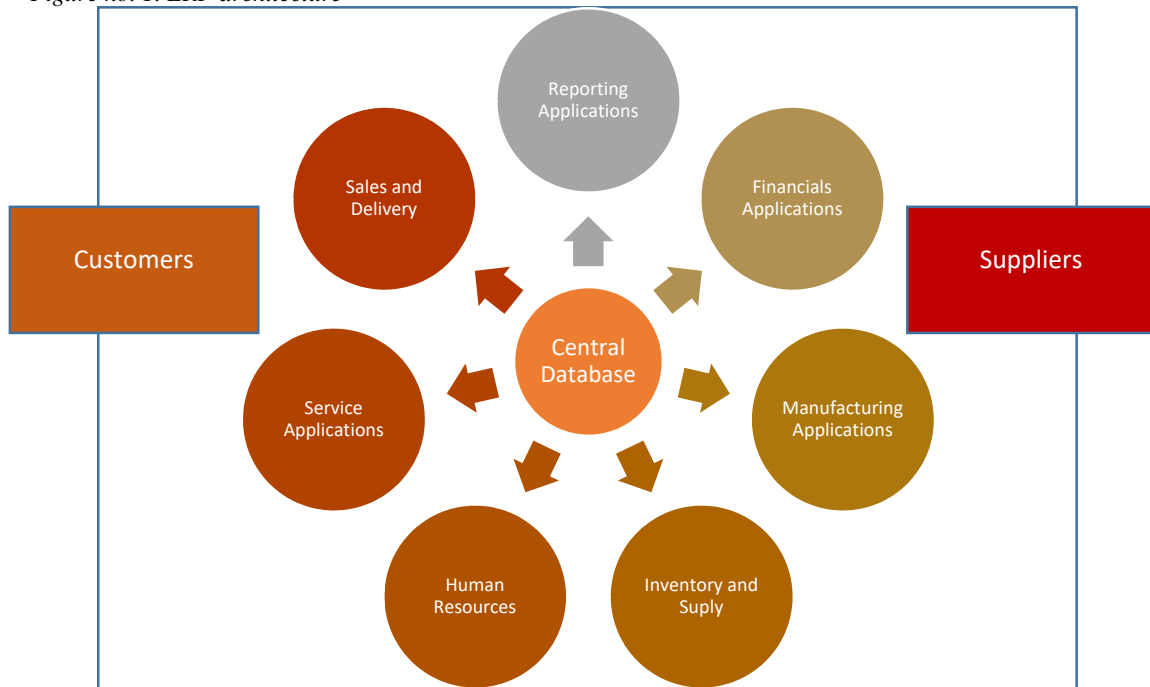
An ERP system is an integrated IT solution made up of interdependent units called Modules: The first and fundamental are the so-called Basic Modules, of compulsory acquisition, and around which are added the other optional modules, which are not compulsorily acquired and are added to incorporate new functions to the ERP system. There are also the so-called vertical modules, which are optional modules specifically designed to solve the functions and business processes of a specific economic sector.

There are several companies in the software industry that design, develop and market these solutions, and although there are differences in the final product, they have certain common characteristics (QBO,2022), these are the following:

- Adaptability. They are systems capable of adapting to any company, regardless of the sector to which they belong and the particularities of the business processes.
- Modularity. ERP systems are made up of a specific number of modules, independent of each other, but at the same time they are connected, which allows a great adaptability to companies according to their size and availability of resources. The main modules of ERP systems are: Financial Accounting, Management Accounting, Project Management, Workflow Management, Logistics, Production, Human Resources, Sales and Marketing.
- Business process orientation. From the point of view of the design of ERP systems, all its reference or high-level description of its functionalities according to the business logic by means of a business process modeling tool.

- Universality: Being a World Class software, an ERP can be used by any organization. However, its suppliers select that there are ERP for some specific industries.

Figure no. 1. ERP architecture



Source: (Ramady, Mohamed, 2016)

3. Research methodology

This study is a literature review where the authors gather information and data about ERP systems. The results of this evaluation will be utilized to determine how Enterprise Resource Planning systems implementation may impact a company's performance.

The type of methodology used to write this article is a qualitative description method based on literature reviews from numerous sources.

4. Findings

ERP is currently used in almost all industries. Although ERP is expensive and time-consuming, it has many advantages and makes it easy to manage the needs of the company. If a company uses ERP, it doesn't automatically mean that it can run without human supervision; in order to be competitive, a business still needs the support of a strong executive team.

The execution of the planning, organizing, implementing, and supervising tasks is good performance management (Wier et al. 2007). If these duties are performed well, managers can help their firms achieve their goals.

4.1. Advantages and disadvantages of ERP implementation

The implementation of an ERP system, properly performed, provides the following benefits:

- It automates and simplifies processes that are performed manually by imposing a new logical structure, often resulting from reengineering, with the consequent savings in operating time, improved productivity and increased competitiveness of the company.
- It integrates all areas of an organization so that it has more control over its operation, establishing cooperation and coordination links between the different departments, facilitating the control and auditing process. With ERP software, you can instantly

synchronize your data, improve the quality of your data, and instantly see an updated view of your organization. An ERP system makes it simple to create information, combine it, and manage corporate-wide business operations. Accounting data is tracked using integrated financial management modules and shared management tools in accordance with international standards. You can choose a framework in several languages, currencies, businesses, and charts of accounts as a result. With the aid of ERP systems, you may compile financial information from several departments to produce reports like the general ledger and other financial statements. The system effectively integrates all data, making ERP a crucial component of any modern firm.

- It provides an integrated solution for some of the functions of the organization, which ensures the continuous and immediate updating of data in the various geographical areas where the organization is located, thus improving the decision making process.
- A centralized database is created in which all the functions performed in the company are registered, processed, monitored and controlled regardless of the geographical location. Access to information in a single, centralized and integrated database improves the decision making process.
- Often organizations have different types of software integrated within it. An ERP system consolidates all software into a single system.
- GAAP compliant ERP: For the most part, bookkeeping software isn't GAAP compliant, though a full-fledged ERP arrangement regularly is compliant with GAAP. A strong ERP software provides financial reporting in multiple accounting standards.

And some disadvantages of these systems are:

- Costs: This is one of the most important disadvantages that a company faces. In addition to the costs of the product itself, there are costs such as training, implementation, support, configuration, etc.
- Implementation time and complexity: The implementation of an ERP system is a time-intensive process, which can affect the time efficiency of the company's operations.
- Personnel: An ERP system automates many tasks executed by people, if they are not well trained and have no skills to manage the ERP system, the organization will be affected as a whole.
- Complexity to integrate external information: contained in systems external to the ERP: The difficulty in integrating information in the ERP occurs because companies have independent systems from different suppliers whose data structure obeys a data model that is not compatible with that of the ERP.

4.2. Popular software on the market

Oracle NetSuite ERP is made for contemporary businesses that need mobile tools and cloud access. Companies with various locations will benefit greatly from this because each site may instantly access the same information. Because NetSuite allows you to add or modify features as your business expands, it is made to accommodate growing enterprises.

NetSuite is an example of cloud ERP software that can be licensed as a hosted SaaS solution or hosted internally. Sales representatives, field technicians, and employees on the manufacturing and warehouse floors will all be able to access crucial customer data thanks to cloud access, as well as view information about orders that need to be filled. More open lines of communication between all departments are made possible by it. Accounting, inventory control, supply chain and warehouse management, production management, order management, procurement, human capital management, and e-commerce are just a few of the features that NetSuite provides (NetSuite, 2022).

The number of users, the licensed modules, the support level chosen, the contract duration, the frequency of billing cycles, the configuration and training needs, and promotion eligibility all affect how much NetSuite costs.

Based on review data, 66.5% of the companies that had recently given NetSuite some thought as a prospective purchase option stated that their maximum anticipated investment costs for the next three years would be in the tens of thousands of dollars.

Pricing choices for NetSuite typically start at \$1,000/mo, with extra licensing fees based on module choice, support level, and user needs.

Microsoft's Dynamics 365 Business Central was developed by merging the features of its Dynamics ERP and Dynamics CRM applications. Small and mid-market businesses can utilize Dynamics 365 Business Central, which offers a scalable method to gain the capabilities your company needs to be more lucrative (SoftwareConnect, 2022).

A start-up or small business (SMB) that has outgrown its initial accounting program may consider switching to a small business ERP like Dynamics 365, which will expand with the company as needed. The software can be purchased in modules, allowing you to only buy what you require and having the pricing of the product reflect that. "Business Central Essentials," their entry-level Dynamics 365 bundle, covers financial management, CRM, project management, supply chain management, HR, and warehousing.

Small and mid-size businesses can utilize Sage Intacct, a web-based SaaS accounting and financial management solution. Sage Intacct was created by finance professionals for other finance professionals. It offers multi-dimensional data analysis and strong automation of complicated operations. Sage Intacct, one of the first SaaS accounting solutions, was first introduced in 2000. The application is being actively used by over 10,000 organizations. For companies that need greater functional sophistication than what is offered by entry-level web accounting software, it offers an alternate option. The core market is made up of growth-oriented small and mid-market businesses looking for strong financial management capabilities.

The product was "designed for finance," according to Sage. Sage Intacct is recognized as a "recommended provider of financial management solutions" by the American Institute of CPAs (AICPA). By offering considerable point-and-click configuration possibilities for fields, reports, and workflows without the requirement for code-based adjustments, the solution has increased the program's appeal to financial experts. A variety of third-party add-on programs created to integrate via its Web Services API can enhance its capabilities for organizations looking for functional assistance for business activities outside of the finance and sales divisions (Law C.C., 2007, p. 390).

Pricing for Sage Intacct varies and is offered on a quote basis. The number of users, their level of access, and the number of modules needed all have an impact on subscription prices. The necessity for data migration, the expected configuration services, the specifications for interaction with other business applications, and training expectations can all affect the initial set-up expenses.

Organizational capabilities are a company's capacity to carry out a sequence of activities using its resources. Businesses create organizational-specific competencies to develop and manage organizational capabilities in order to obtain a competitive edge. Continuous use makes capabilities stronger and more challenging to copy for rivals. By increasing information access, quickly and effectively developing new products, streamlining operations, and taking effective steps to change the amounts and timing of cash flows, an investment in information technology enables a company to make its processes more efficient and to achieve operational and financial outcomes (Shang and Seddon, 2002). With the help of the ERP system, company processes may be automated and changed, which has advantages for information access, product diversity, process improvement, and financial flexibility.

5. Conclusions

Since its inception, cloud accounting software has advanced significantly. Software that was once thought to be inferior to desktop applications has advanced significantly to become a desktop application replacement. Even though there are still some issues with cloud computing, most of them have been resolved recently. Cloud accounting can be viewed as a cost-effective, convenient, and user-friendly option that is safe on both a digital and physical level. The three companies described in this thesis target SMEs with their whole product, though the user ultimately decides whether to deploy. Today's businesses, in my opinion, stand to gain the most from cloud accounting software. I think the majority of cloud solutions available now don't go as deep as inventory systems.

There are many benefits to utilizing an ERP system for financial management and accounting. A financial director has a better understanding of the organization's capital needs and can manage its accountable activities. The majority of business owners utilize accounting software, but an ERP

system provides a complete solution that includes modules for every department, including finance, production, quality, sales, acquisitions, etc. A factory-specific ERP financial management system offers all the same features as well as functionality tailored to the manufacturing sector.

6. Acknowledgement

This work is supported by project POCU 153770, entitled “Accessibility of advanced research for sustainable economic development – ACADEMIKA”, co-financed by the European Social Fund under the Human Capital Operational Program 2014 - 2020

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