ERP Systems – Technological and Social Innovation for Sustainable Business

Laura – Eugenia – Lavinia Barna[1]
[1)] *The Bucharest University of Economic Studies, Bucharest, Romania*.
E-mail: barnalaura15@stud.ase.ro

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Abstract
The growing interest of managers in ensuring the sustainability of business has led to an increase in research on ERP systems that have quickly entered the market, mainly targeting the field of sustainability. This was determined by the massive increase in the current of digitalization of the activity carried out by organizations in order to reduce the waste of resources (electricity, paper, etc.), but also to cope with the changes in the sector in which these organizations operate.
The aim of the paper is to observe what is the possibility of an organization to become a sustainable business by implementing ERP systems. An analysis was performed based on the exhaustive research of the papers dealing with the topic of the article, gathering relevant information from selected articles in specialized journals. The work adds value to the literature, combining novelty concepts with concepts found in the works of other authors.
Following the research, the author concluded that ERP systems can ensure the sustainability of a business, due to the many advantages that these systems offer, especially from the point of view of digitalizing the activity. However, the role of this article is to provide an overview of how ERP systems work, mainly used in various fields, focusing in general on the main advantages and disadvantages of using them.

Keywords

ERP systems, innovation, sustainability, business, implementation

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Introduction

Information technologies are constantly evolving, they have a major impact on the development of industry and professions, by automating the main activities carried out bringing added value to organizations. Thus, the concept of digitalization was seen as an opportunity to support the professional and technological progress of organizations, which became able to reduce the inefficient consumption of resources and became sustainable business in a relatively short time.

In order to materialize the concept of digitization, there has been a significant increase in the number of organizations implementing ERP systems, because these systems can be adapted to the needs of an organization depending on the specifics of its activity, allowing management of all components of a business in the only database. Fotache et al. (2013) says that integrated ERP systems can ensure "connectivity and communication between the flows of economic functional processes". The purpose of this system is to eliminate as much as possible the manual management of information flows, allowing the storage and provision of data from a single database. Given that all information is stored in a single database and can be generated directly from the ERP system, this reduces the consumption of paper used to print and transfer information from one department to another.

Almost all organizations in the European Union have the obligation to develop their business sustainably in order to obtain the necessary funding to carry out certain categories of activities (Dona, 2020).

According to Bradford (2014, p.2), ERP systems are process-centered systems, providing a "clear, real, logical and complex view" of the organization's business processes.

This article has the following structure: a section on literature review presenting the most important concepts of the paper, presenting how to collect the information needed to "build" this article and concluding with a brief presentation of the results identified in the selected articles and conclusions.

1. Review of the scientific literature

The process of developing ERP systems began with the need to automate the main activities of data processing and input (Rîndașu, 2018), but also to develop sustainably in a short time. According to Srivardhana and Pawlowski (2007), the implementation of ERP systems "provides new opportunities by developing different common cognitive structures for employees in different functional areas", giving the organization the opportunity to develop efficient innovative processes. Chofreh et al. (2020) considers that ERP systems contain essential components that help the sustainable development of a business.

However, to understand this, sustainability is defined in the literature as a concept and process "of enforcing environmental, economic and social transformation towards a better quality of life" (Scheidel et al, 2018).

As a result of this growing trend towards the concept of sustainability, many organizations have begun to incorporate the concept into internal policies and operations, strategy, business relationships with business partners and other business areas (Chofreh, Goni and Klemes, 2016).

However, the process of sustainable development is quite difficult because the requirements are very high. The main goal of sustainability is to create new opportunities using innovation. Thus, organizations that develop sustainable businesses can benefit from various advantages (reduction of costs for the acquisition of new programs). A sustainable business model can be developed when organizations recognize the importance of moral and ethical values and integrate corporate social responsibility aspects into the business model (Fiorentino et al., 2020).

Evans, Rana and Short (2014) observed that the sustainable development of the business environment can be characterized by 5 components:

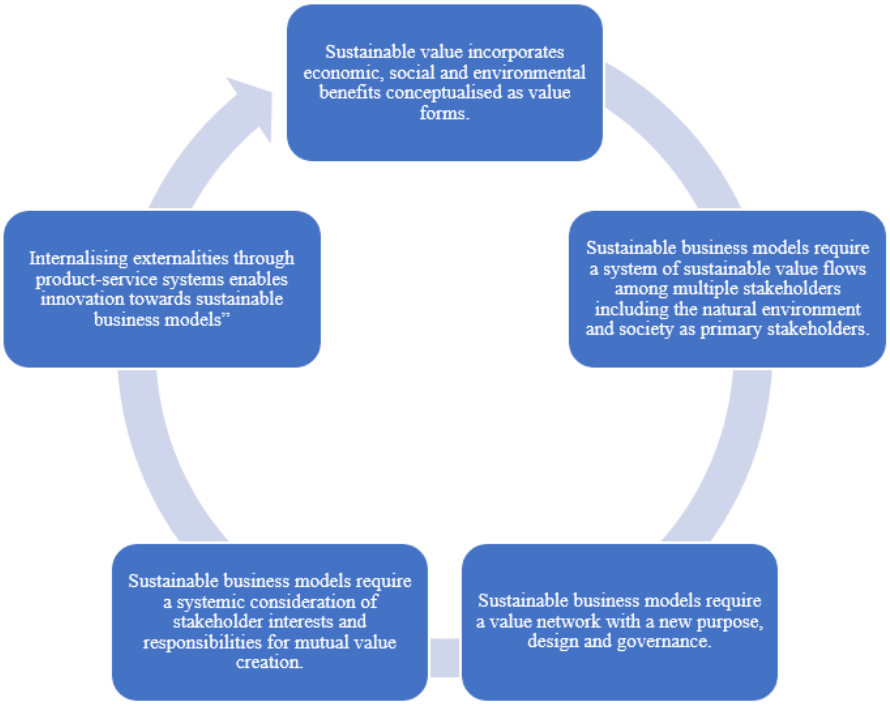

Figure no. 1. Sustainable development of the business environmental
Source: Adaptation after Evans, Rana and Short, 2014

Other reasons to become a sustainable business, identified by the authors Geissdoerfer, Vladimirova and Evans (2018) and Evans, Rana and Short (2014) were:

- increase productivity
- reducing inefficient resource consumption

- more prompt decisions due to the use of ERP systems
- much more organized activities, due to the modules contained in ERP systems
- reducing the working time on a certain activity
- numerous financial benefits

In the next section, the author presents the research methodology based on the review of the articles dealing with this topic.

2. Research methodology

The paper was based on exhaustive research of the papers dealing with the topic of the article, gathering relevant information from selected articles in specialized journals. Articles were selected from Web of Science, Google Scholar, Elsevier, and other databases, based on keywords such as: "ERP systems", "innovation", "sustainability", "business process" and "sustainable business".

In order to structure the results obtained from the selected articles, the author structured some research questions:

Q_1: Which is the role of ERP systems in adopting a sustainable business process?

Q_2: Which are the technological and social innovations to develop a sustainable business?

Q_3: Which are the advantages of developing a sustainable business using ERP systems?

Q_4: Which is the importance of business sustainability?

3. Results and discussion

In this section, the author structured the main information found in the selected articles from the databases. At the first question, *"Which is the role of ERP systems in adopting a sustainable business process?"*, the author found that ERP systems contain a series of modules that are essential in the activity of an organization. Implementing an ERP system "takes a lot of time and money" (Chofreh et al., 2020), but also a fairly rigorous planning of activities to avoid failure.

The role of ERP systems is to help employees and managers to manage and monitor the organization's resources, integrating all internal and external information. Many ERP systems (such as Microsoft Dynamics AX, Sustainability Performance Management 4.0 from SAP), contain an environmental sustainability dashboard that provides the organization with monitoring, evaluation and reporting of sustainable performance ensuring a sustainable business process, considerably reducing the harmful / negative effects of the business on the environment (Chofreh et al., 2020).

At the second question, *"Which are the technological and social innovations to develop a sustainable business?",* the author identified the definition of business process innovation as a "performing work activities in a radically new way to attain visible and dramatic results to meet the business objectives" (Davenport, 1993).

According to Anand et al. (2013), an organization can survive in the market only if it uses innovative technologies in order to reduce the side effects of the activity, but also to increase the performance of the organization. Using innovative technologies, organizations expect to increase performance, reduce costs in the shortest possible time, reduce costs and time on activities and have better control over the business. Thus, the process of innovating the business so that it becomes sustainable can be presented as the alignment of IT resources to the strategic objectives of the organization. IT resources must have components that consume as few resources as possible (electricity, paper) and that allow the organization to carry out its activities with maximum efficiency.

A sustainable business involves the application of innovative solutions that create immunity relative to the risks of the industry in which it operates, or of the business environment as a whole.

At the third question, *"Which are the advantages of developing a sustainable business using ERP systems?"*, Microsoft (2018) said there are 5 benefits to ERP systems for an organization to become a sustainable business and this are presented at figure no. 2:

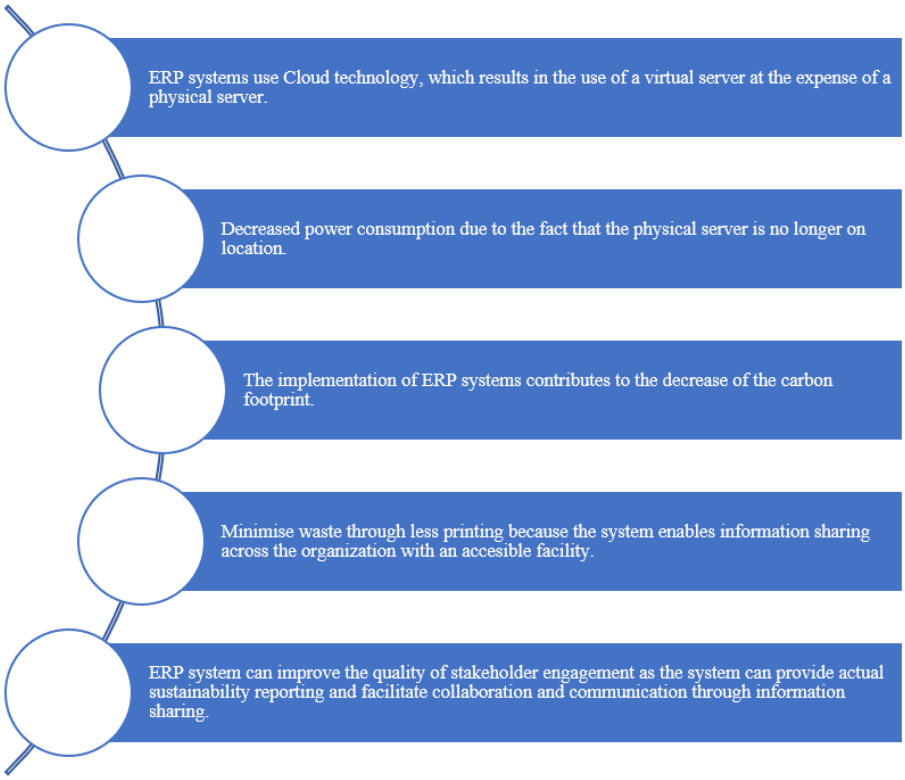

Figure no. 2. Five benefits to ERP systems for an organization to become a sustainable business
Source: Microsoft, 2018

At the fourth questions, *"Which is the importance of business sustainability?"*, the author found that integrating sustainability into business processes can be a challenge for many organizations because it has an effect on decision-making at all levels of management (see figure no 3).

Figure no. 3. Decisional paradigm
Source: Chofreh, Goni and Klemes, 2018

The decision-making process has an important effect in achieving the sustainability objectives, because the problems that the activities carried out on the environment could cause must be identified as correctly as possible.

According to Chladek (2019), the concept of sustainable business development presupposes that the business has a positive impact on one or more areas, mainly contributing to building a beneficial effect on the environment.

The main benefits of business sustainability are:

- Brand protection - organizations that invest money in high-performance equipment that reduce harmful effects on the environment have a better reputation.
- Competitive advantages - a sustainable organization more easily attracts new talent, new customers, new investors, because their activities have a positive effect on society.
- Market growth by producing sustainable products / services
- Reduce costs - the implementation of innovative systems that optimize an organization's business leads to lower costs (Tiuttu, 2021)
- Transparency improves sustainability practices

Geissdoerfer, Vladimirova and Evans (2018), define sustainable business model "as business models that incorporate pro-active multi-stakeholder modifications have accounted for the multi-stakeholder nature of sustainable business model in two of the elements the focus on customer and monetary value of the value capture element endured ".

An organization should have a sustainable vision, so that resources are used as efficiently as possible by implementing the best possible IT solutions (e.g. ERP systems) in order to incorporate the entire activity with the help of these systems. The role of this sustainable vision is to minimize the effects of your organization's impact on the community or the environment.

According to Austral.ro (2021), 62% of managers consider that a sustainability strategy is necessary to differentiate from the competition. Concern for the environment and society will add value to the marketing strategies of organizations that are sustainable business.

According to EcoSynergy.ro (2021), the sustainability of a business can be represented by the economic sustainability (it can be represented by projects and plans without endangering the resources it has) and the financial sustainability (attracting funds by using innovative collection methods of waste).

At the level of an organization, the strategic objectives should take into account 3 major areas presented in figure no. 4:

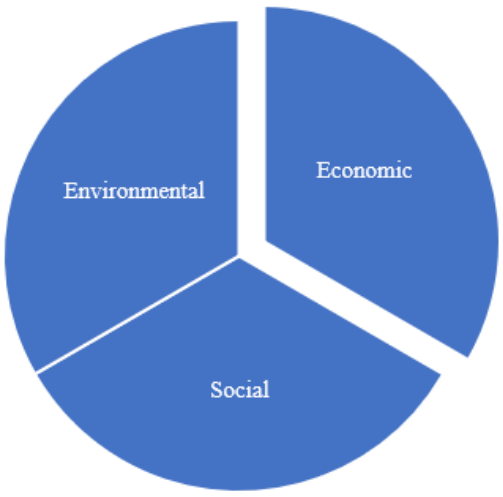

Figure no. 4. Areas of interest
Source: Author's creation

The economic component considers the impact of the organization on the economic well-being of stakeholders and on the local, national and global system.

The environmental component considers the impact of the organization's activity on the natural systems (water, air, land).

The social component reflects the organization's attitude towards its employees, suppliers, contractors and customers.

Conclusions

The paper aimed to review the literature in order to highlight how ERP systems can provide the organization the opportunity to develop sustainably. Following the analysis, the integration of ERP systems aims to increase efficiency and flexibility, contributing in particular to increasing the performance of the organization. Business process innovation has a fairly high impact on the decision-making process, but also on business continuity.

The correct use of ERP systems will ensure maximum efficiency in the activity carried out by the organization.

However, the organization must take care of environmental economic changes and social performance when they want to become a sustainable business.

For an organization to be successful in implementing its activities, the sustainability strategy must be analyzed in the business strategy and everything should be carried out according to the established plan before starting the process of implementing ERP systems. This will reduce the possibility of failure to implement the ERP system (Chofreh et al., 2020).

It can be said that ERP systems help the organization to share activities and processes between departments and to effectively improve the production process and sustainability.

Thus, ERP systems can provide support in the process of evaluating sustainability performance, reducing inefficient resource consumption, increasing efficiency and reducing carbon emissions by 40% (Tsai, 2019).

Analyzing the selected articles, the author concluded that the implementation and use of ERP systems has a positive impact on the development of a sustainable business, as they significantly reduce the overuse of the organization's resources (reduce electricity consumption due to the fact that the server is no longer in location of the organization).

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