

THE IMPACT OF DIGITALIZATION OF ACCOUNTING ON THE QUALITY AND TRANSPARENCY OF INFORMATION PRESENTED BY ORGANIZATIONS USING ERP SYSTEMS. OPPORTUNITIES FOR ADOPTION CLOUD ERP VS. ON-PREMISE ERP

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Abstract

The rapid progress of IT technologies in recent years was favored by the emergence of the phenomenon of digitalization, especially in the field of accounting. The purpose of the legislation and standards is to accord support for continuous development of both IT technologies and the organization. The main objective of this paper is to observe the manner in which the digitalization of accounting influences the quality and transparency of information if employees use ERP systems. In order to study the role and opportunities offered by ERP systems on accounting, the author used a study based on the review of the literature, but also on the analysis of the results obtained using the constructed questionnaire. The results show that ERP systems have a positive effect on the digitalization process and most respondents believe that an ERP system on a Cloud server is considered much more efficient and secure than an ERP system based on a local server (on-premise).

Keywords

Cloud ERP, on-premise ERP, digitalization of accounting, quality, transparency.

JEL Classification

M15, M40, M41, O14, O33, O43.

Introduction

The accounting industry has a significant evolution with the use of IT technologies as high as possible (automation of various processes using ERP systems, robots or machine learning) which have led to the phenomenon of digitalization of accounting. This rapid evolution of the digitalization of various activities was also determined by the emergence of Industry 4.0, most activities migrating from the traditional sphere to

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the digital age based mainly on IoT (Internet of Things) (Haddara and Elragal, 2015) which is mainly based on the use of intelligent computer systems connected to the Internet that allow the automation of a very large number of business processes.

According to a study conducted by Deloitte (2020), organizations are mostly unprepared to move in a short time to the implementation of new IT technologies.

Industry 4.0 has a significant impact on the stability, strategy, workforce and technology used by the organization.

However, the term digitalization is defined in the literature as “the use of new technologies, robotics, cloud services, intelligent systems and Big Data that have rapidly penetrated the accounting area” (Boghian and Socoliu, 2020), having a role in increasing the quality and transparency of data processed with computer systems. The main benefits of digitalizing accounting with the help of ERP systems are: reduced working time for a specific work task (thus professional accountants will no longer pay much attention to manual data processing, but will be based more on data analysis activities ERP systems), cost reduction (related to the management of old systems, electricity costs), flexibility and the possibility to integrate new functions (because ERP systems are arranged modularly).

In this article the author will analyze the main opportunities offered by ERP systems as a result of the digitalization of accounting activities.

The paper is structured as follows: review of the literature where the author defined the main concepts, description of the research methodology used in this paper, analysis of the results obtained based on the questionnaire and the main conclusions of this article.

1. Review of the scientific literature

The phenomenon of digitalization has grown as a result of the evolution of IT technologies, because most organizations want to meet their goals (Geambașu, 2012 cited by Stanciu, 2021). Most organizations use ERP systems that provide a modular structure that is easy to adapt to the organization's requirements and is based on a cloud server. According to Stanciu (2021), the advantages of Cloud technologies over accounting business processes consist in “continuous optimization, costs and security that these systems offer”. Cloud technology provides the opportunity to access and update data at any time and from any location as long as an internet connection is provided.

ERP systems are mostly implemented in large organizations, with the role of automating a lot of recurring tasks such as: invoicing, payroll and processing of accounting documents (Gulin, Hladika and Valenta, 2019). The reason why organizations decide to implement ERP systems is that these systems integrate a multitude of functions beneficial to any organization because they are arranged modularly (Elmonem, Nasr and Geith, 2017) and ensuring the automation of workloads. The primary role of automation is to reduce human errors as much as possible and to ensure an analytical review of the results generated by ERP systems. Thus, the role of professional accountants will not be limited only to the processing of accounting data, but also to the analysis and forecasting of data processed using ERP systems. ERP

systems ensure that the data processed is correct and complete, providing transparency to the data reported to managers and stakeholders.

The server on which the ERP system is implemented depends on the size, culture and requirements of the organization so that the objectives of the organization are met as accurately, completely and in real time. Initially, ERP systems were based on an on-premises (local) server, but the need to have access from anywhere led to the emergence of ERP systems based on a Cloud server (Johansson and Ruivo, 2013). There are 3 server models on which ERP systems can be implemented (figure no. 1):

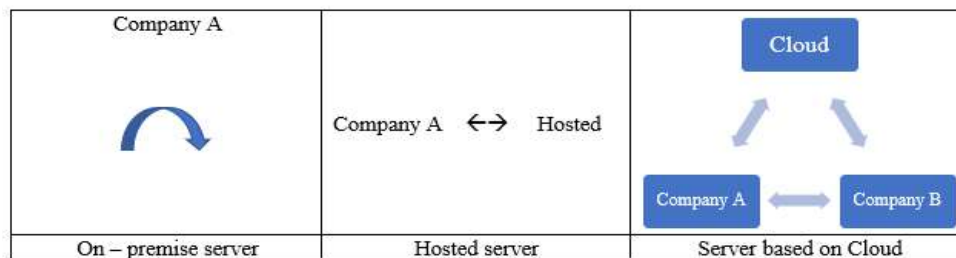


Figure no. 1. Servers on which ERP systems can be implemented

Source: Adaptation after Rabaya și Graffi, 2019, p. 2

According to Ahn and Ahn (2020), a Cloud-based ERP system contains an Internet storage resource, which can be accessed from any location, and the server of an on-premise ERP-based system requires direct installation on physical servers, only requires very large hardware, software and personnel resources compared to the Cloud-based ERP system. In other words, by Hale and Cox (2020), Cloud-based ERP systems are also referred to as Software as a Service (SaaS), which is hosted by the provider and is accessed directly from a website, based on a monthly or annually subscription to operate, and on-premise (local) ERP systems are installed locally only on the basis of the acquisition of an operating license.

The main benefit of Cloud-based ERP systems compared to on-premise-based ERP systems is that they offer the ability to reduce access, support and maintenance costs, reduce data duplication, and improve scalability, efficiency, and flexibility. Other opportunities related to ERP systems (Johansson și Ruivo., 2013; Gupta, 2016; Elmonem, Nasr și Geith, 2017; Elbahri et al., 2019) are:

- lower initial costs
- low operating costs
- improved financial image
- increased availability and accessibility offered to the user
- scalability and flexibility
- rapid implementation of modules
- rapid integration with other systems and services
- access to new technologies
- useful in business processes

If an organization has a locally installed ERP system (on-premise) and wants to switch to a Cloud server, organizations must ensure that (Hustad et al., 2020; Rabaya și Graffi, 2019; Knudsen, 2020):

- the new ERP system will be compatible with the rest of the systems
- correct "migration" of data
- compliance with existing data security rules and regulations.

The implementation of ERP systems in the Cloud allows a better visualization of the data processed with these systems. The data is much clearer and more complete and can be generated and used to prepare monthly reports (Orosz, Selmeçi și Orosz, 2019). Data processed with ERP systems are stored in a single database for all departments of the organization (example: ERP system database) facilitating quick access to data and transparency of this processed data.

According to Gupta et al. (2021), the adoption of Cloud-based ERP systems is a bit more expensive, but in the long terms these systems strengthen the basic structure of the organization, ensuring that the flow of information between the departments of the organization is carried out efficiently and correctly. Szekely and Knirsch (2005, cited by Gupta et al., 2021) consider that ERP systems have the role of “maintaining the balance between operational and economic performance” so that they can take advantage of all the opportunities offered by ERP systems to fulfil their real-time goals.

2. Research methodology

To identify how the impact of digitalization of accounting using a Cloud or On-premises server-based an ERP system was defined in the literature, the author analyzed papers that address this topic by selecting only relevant articles from different databases: Google Scholar, Science Direct, Sustainability, Web of Science based on keywords: “digitalization of accounting”, “Cloud ERP” and “On-premises ERP”.

In this article, the author also used a questionnaire as a method of quantitative research in order to observe the perception of respondents about the phenomenon of accounting digitalization, given mainly the ERP system used within the organization and the server on which system is implemented. The questionnaire was published on the isondaje.ro platform between January 26, 2021 - September 5, 2021, to which 102 respondents answered. The sample is representative because most respondents work in the economic field and use ERP systems. In the next section the author will analyze the data collected using the questionnaire in order to observe the impact of digitalization of accounting and what is the perception of respondents about the server on which an ERP system should be installed. The data collected with the questionnaire were confirmed through studies presented in the works of other authors.

3. Results and discussion

The questionnaire used was structured as follows: the first part of the questionnaire contains questions about age, the last form of education and field in which the

respondents work, and the second part contains questions specific to the topic addressed in the paper.

In this section the author analyzed the results obtained from the processing of data collected using the constructed questionnaire. In the first part the author will analyze the profile of the respondents who participated in completing the questionnaire, analyzing first of all their age (table no. 1).

Table no. 1. Distribution of respondents according to age and gender

Age (years) \ Gender	Men	Women
20 - 30	20	43
31 - 40	5	12
41 - 50	5	10
51 - 60	2	4
61 - 70	-	1
Σ	32	70

Source: Own creation based on the data from questionnaire.

Most respondents are female, as most graduates of undergraduate, master's or doctoral programs in economics are female. The last form of education completed by the respondents was the master's program (55.88%), then bachelor's programs (31.37%), doctoral programs (1.96%), the rest being postgraduate or high school programs (10.78 %).

About 65% of respondents work in accounting field, the rest being employed in areas such as marketing, IT, finance, audit, sales, consulting.

In the second part, the author analyzed the results on the ERP systems used, and the most used system is SAP, followed by WinMentor and Microsoft Dynamics AX 2012.

The main reasons for choosing an ERP system that were identified by the respondents were:

- can be used easily
- intuitive interface
- adaptability to other systems
- operability
- flexibility and reliability
- low costs
- minimizing human errors
- many functions that integrate all the processes in the organization
- is modeled according to the requirements of the organization
- efficient organization of working time and activities
- proper management of the organization's resources
- efficiency in document processing (allows the processing of a large volume of data)

- centralization and efficient storage of data
- easier monitoring of data (offers the possibility to follow the entire production / service process from the moment of initiation to capitalization)
- improving the information flow between the organization's departments
- real-time data availability
- rapid data analysis
- much more detailed reports based on the processed data

Given the many benefits of ERP systems, approximately 85.3% of respondents consider that they are indispensable in the daily work of employees. This situation is often encountered in the literature.

According to the results obtained based on the questionnaire, the preferred server of respondents on which the ERP system should be implemented is Private Cloud (figure no. 2):

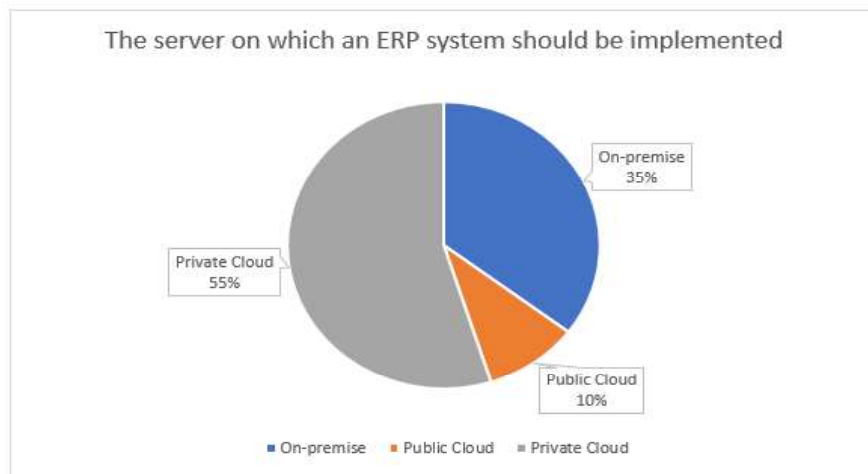


Figure no. 2. The server on which an ERP system should be implemented

Source: Own creation based on the data from questionnaire

Usually, organizations implement ERP systems based on a Private Cloud, because they want more data security and costs are much lower. Hale and Cox (2020) analyzed the 2 types of servers based on 4 points (table no. 2): cost, security, system customization, implementation.

Table no. 2. Cloud ERP vs. On-premise ERP

Criteria	Server	Cloud ERP	On-premise ERP
Cost		Initial cost and reduced costs over time	High initial cost, which can be called an investment that can pay off over time.
Security		Data security is the responsibility of the provider	Data security is the responsibility of the user
System customization		The provider provides stability and system upgrades.	Optional customization
Implementation		Short implementation time	Long time for implementation, especially if many system customizations take place.

Source: Adaptation after Hale și Cox (2020)

Given the upward trend of digitalization, most respondents believe that in the future in the accounting profession will predominate the use of Cloud ERP in performing daily tasks, allowing the professional accountant to perform analysis and forecasting activities, not only processing documents and accounting data.

Conclusions

The evolution of technology has significantly influenced the process of digitalizing the compatibility and daily activities carried out by employees within organizations. The main reason for the organizations behind the decision to implement ERP systems is to automate as much as possible their time-consuming for repetitive activities, in order to increase the efficiency of the organization's activities. The aim of automation is to minimize errors as much as possible, so that after digitalizing the accounting, the data processed with ERP systems are quality and complete while ensuring transparency of the data underlying the preparation of monthly and annual reports.

Organizations typically implement cloud-based ERP systems because deployment time and subsequent costs are reduced compared to on-premise ERP systems, giving the user much greater flexibility to access data stored in the system's database in real time.

In conclusion, the digitalisation of accounting has a positive impact on the quality and transparency of the information presented by organizations in their monthly and annual reports.

Given the upward trend of digitalization of activities, the author recommends using ERP systems in the process of digitalizing the activity of an organization, because the modular aspect of this system allows the inclusion of all activities in the digital age.

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