FROM THE TRADITIONAL ERP TO CLOUD-BASED ERP

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ABSTRACT: *Not many years ago, **E**nterprise **R**esource **P**lanning (ERP) software applications meant, in fact, a small and insignificant step in a company. An ERP system is basically a set of applications that help a company overcome a critical threshold that processes all kinds of sensitive information, including **H**uman **R**esources (HR) and financial data, consumer databases, or sales plans. The idea of putting all the internal data of a company on an external server, controlled by an external team, sounds like a guaranteed recipe for failure for most executives. Many of these issues have changed over the last few years, and medium and large companies have taken into account the idea of cloud-sharing. Romanian companies are in the process of education in terms of how an ERP solution can help a company grow and be successful. Small and medium-sized businesses have begun to invest in solutions that can provide them with efficiency and dynamism as well as reduced costs. In this context, an ERP solution installed on a Cloud platform becomes essential. Installing a business solution on a Cloud platform has the following benefits: a lower total investment, flexibility (you can choose the desired features), low cost (pay for what and how you use it), fast deployment, security, mobility wherever a Wi-Fi network is accessible on any device that has a web browser installed). The paper aims to present the transition from traditional ERP to cloud-based ERP with advantages and disadvantages in the context of digital technologies and transformation.*

KEY WORDS: *traditional ERP, cloud, digital transformation, technology, business.*

1. INTRODUCTION

Domestic small and medium-sized businesses are currently investing up to 5% of their business IT solutions, such as ERP and CRM (***C**ustomer **R**elationship **M**anagement*) solutions, which will increase over the next five years.

This growth trend shows an increasing interest of SMEs (***S**mall and **M**edium **E**nterprises*) for IT (***I**nformation **T**echnology*) as they become aware that software solutions can provide the necessary competitive advantage under difficult market conditions. Romanian SMEs now learn the alphabet of traditional IT solutions for business, Cloud solutions being the next stage.

Why is it, however, a difference between large companies, which are widely using business software solutions, and domestic SMEs? The reason has been dictated for a long time by the power of small and medium-sized enterprises, who did not afford to invest money, time and resources in such solutions [1, 2].

Meanwhile, IT developers and vendors have gone a step further and, along with solutions updates, have begun to abandon the licensing business model, focusing on a monthly subscription-based model, more at hand smaller businesses, and more accessible platforms such as Cloud.

Compared to Romania, where small Cloud Business for Small Business is still low, the trend in the region is that business solutions, such as ERP, are presented exclusively as requiring a Cloud installation.

At the regional level, there has been a 300% increase in the number of Cloud installations in the first months of 2018, compared to the same period in 2017, reaching several thousand installations of this type. Of a total of 12,000 installations, 40% are subscription-based, of which 25% are in the Cloud, and 60% are licensed.

With regard to the size of companies, 15% are companies with 1-10 employees, 40% those with 11-100 employees, 25% with 101-500 employees and 20% companies with over 500 employees in areas such as distribution, services, engineering, retail, hospitality, etc.

2. THE ROLE OF DIGITAL TECHNOLOGIES IN COMPETITIVENESS

In the European perspective of return to growth, we can estimate the role that digital technologies have in increasing the competitiveness of small and medium-sized enterprises. Employees of SMEs in Romania consider that modern mobility and IT technologies are the main factors for increasing business productivity [2].

Romanian employees embrace modern IT technologies for their increased productivity and the ability to increase flexibility at work. Against the backdrop of the dynamics of their employers, Romanian employees recommend investing in increased data security and the ability to work on the move as a priority. A priority for companies must be to equip their employees:

- If they would have the opportunity to work from anywhere, one in three Romanian employees would do this in the office, while a quarter would prefer to work from home and one in five would prefer to be moving outside the office;
- With regard to work outside work hours, almost one in three employees report that this is happening regularly, a third that happens from time to time and 31% occasionally. Only 6% of employees say they have never worked outside the program hours;
- Of those who work more or less regularly outside of program hours, half of them associate this aspect with a high workload. One third of Romanian employees work outside standard work hours because of flexibility at work;
- Almost half of Romanian SMEs employees anticipate an increase in workload. One in five expects increased

competition in the market and a strong customer demand for better service and quicker response.

While the use of modern business technologies still places Romania on a non-honorable place in the competitiveness rankings, the current situation shows a very high potential for change from the employees of the Romanian companies, recognition of the value of the technologies for business and involvement in the design of IT policies [1].

An obvious perspective is that Romanian employees are polarized when assessing the IT systems, they have at their office. A third thinks that IT systems are outdated, while another third this they benefit from the latest office innovations. Among those who believe that technology at work is obsolete:

- Two-thirds account for 5 to 10-year-old PCs and use operating systems older than 5 years;
- At the same time, outdated IT is linked to the lack of tablet and Smartphone, the lack of mobile applications and technical skills that allow remote access.

We know that IT upgrading is a real challenge for many Romanian companies. Budgets are often small and many companies lack the specialized IT staff to contribute to the adoption of strategic IT decisions.

The novelty of modern IT technologies - such as mobility and cloud solutions - is that it eliminates the historical barriers associated with access to the most innovative technologies such as cost-related. Small businesses must perceive modernization as an opportunity for growth and less as an optional expense in current economic realities [2, 3].

Regarding the benefits of modern technologies for business we can mention:

- In a very large proportion, employees in Romanian companies believe that mobile technologies help them to get a higher return on the job and half of employees think cloud-based solutions are crucial for small companies with growth ambitions;
- A large proportion of employees believe that modern digital technologies are critical to business success, and two thirds believe that the firms they are part of

would be more competitive in the market if they use modern technology;

- Regarding the benefits of modern IT solutions, Romanian employees refer to better customer service, increased work productivity, real-time access to critical business information, and better internal communication and collaboration. Investments in modern IT systems should improve information security, employee satisfaction with the workplace and customer satisfaction;

- Only three out of ten employees consider the level of IT spending in their company. Most are of the opinion that spending on IT upgrading is insufficient;

- With regard to the scenarios for companies to invest in modern technologies, it is recommended to prioritize projects to improve data security, refer to the ability to collaborate and communicate with colleagues from other locations, highlight the need for mobility and work from a distance, and the need to access important outside office documents [3].

A perspective on the framework in which IT can contribute to Romania's innovation agenda is provided by the Western Region, with a performance above the national average and a significant contribution of the IT sector to the economy.

The Western Regional Development Agency has facilitated the creation of regional clusters. Although the IT sector is well represented in the region, the potential for using technologies to develop entrepreneurship on the one hand and innovation in companies on the other hand is well capitalized.

Maintaining the upward trend of the regional economy depends crucially on the ability of existing companies and start-ups to adopt new technologies, to generate intensive knowledge-intensive products and services and to benefit from incentives such as European funds, accelerators business, and support services for innovation or internationalization.

2.1. ERP solutions grow in complexity to adapt to the digital economy

We can think that ERP systems are becoming more and richer in functionality to cope with the digital economy. Today's notebooks require ERP to manage a company's entire business, from financial and customer relations to inventory and e-commerce. Customers also want to be able to choose the best way to use and pay for these solutions: licenses or subscriptions.

ERP solutions add Business Intelligence (BI), Cloud, Big Data and Mobility elements, which, in combination with the over 550 add-ons available, cover the most diverse usage scenarios [1, 3].

The new technologies and versions have pushed the scalability limits further: implementations with over 400 users, real-time business analytics, unique ERP platform, BI, Mobile etc, and added functionality including Windows and Office integration, which allows copying data directly from Excel to ERP, exporting analysis to Excel, using Outlook ERP facilities, etc.

We will present the main development directions of the solution and the pace at which the solution develops. It exceeds the limits of an ERP for SMEs and becomes a management platform. The new versions of the application bring special technological and technical novelties funcțional, which allows for both complex business processes and scalability of implementations [3].

Partner ecosystem complements this successful recipe, providing customers with personalized solutions for any industry. Whether we are talking about production, distribution or professional services, RTP (**R**eal-time **T**ransport **P**rotocol) can support integrated business activities by providing stability and the virtually unlimited growth of business in Romania.

Another element that favors the development of ERP is the partner community, which allows an extensive exchange of technical and business knowledge and generates a high level of project quality. At the same time, it provides companies with presence in several countries or regions assistance implementation from local partners.

2.2. Integrated ERP – CRM projects

The integrated ERP - CRM approach brings the beneficiaries a 25 to 35% faster return on investment. The main advantage lies in the native connections that are created between a company's financial processes and the sales and customer relationship management activities and which allow for a general overview of the business.

Integrated ERP - CRM projects have lower costs of up to 33% at the level of consulting, configuration and customization services, as well as a shorter implementation time. Currently, over 75% of small and medium-sized companies in Romania prefer a step-by-step implementation of a business solution, first addressing resource management and subsequent customer management, which generates high costs and high stress in the organization.

For companies that have sales teams, an ERP solution that incorporates besides ERP-specific modules and a customer management and sales opportunity module is reliable. The module, native integrated in the solution provides complete functionality and is included in the core licensing package.

Practically, a company's sales processes are perfectly integrated with all the other tasks managed within the ERP application. This provides customers with the advantage and delivers both ERP and CRM functionalities in a single deployment project, resulting in an automated sales process. This allows customers to increase efficiency and depreciate investment in the significantly faster IT solution [2].

The integrated ERP - CRM approach offers a number of obvious benefits, such as: automated sales, unique insight into operational and financial information on the same screen, low implementation time and costs, single point of contact at provider level, integrated reports, between CRM activities and financial results.

3. CLOUD-BASED ERP

For mid-sized and large companies, ERP cloud solutions are not a complete system that effectively replaces ERPs with extra functionality [4]. For example, a company can use such a tool to help human resources departments' better control CVs or can also use a cloud reporting system that fits well with the financial system. Both variants are recommended for this type of company, without making changes to the organizational web page level.

Cloud ERP solutions can deliver the full set of functionality and scalability needed by medium-sized companies that develop software applications without incurring other costs, maintenance, or other services for an on-site software that runs correctly [4, 5].

Practically, choosing involves accepting cost savings without giving up some technical functionality. Another advantage of the cloud-based ERP solution is that employees can work remotely.

A fleet management company, valued at $ 33 million, needed this benefit for the sales, customer service, financial, administrative, and mobile app developers. To provide remote access, they have integrated multiple cloud systems. Cloud migration has helped automate a set of tasks, such as generating invoices.

Although cloud-based ERP have multiple benefits, this solution is not recommended for any business. An example given by Forrester Research is that of people who consider this tool to be too complicated to use in the context of its work and which, therefore, would take them very long.

ERP cloud providers have begun to offer cloud versions of ERP functionality so that each user can choose and add the required cloud application alongside the already purchased service package [4 - 6].

When an organization chooses cloud migration, it needs to self-analyze its position, objectives, self-control capacity, and the complexity of the requirements it has to meet.

4. THE ADVANTAGES OF CLOUD-BASED ERP

On Cloud ERP systems, the implementation time of the solution is significantly reduced, with monthly usage costs available to any

organization Cloud Services are designed to provide easy access to applications, resources and services that are fully managed by a cloud provider and delivered directly on the internet.

The major advantage is that there is no need to invest in hardware infrastructure or purchase new software licenses. In addition, the implementation period of the solution is significantly reduced, and the monthly cost of use is easy to calculate and accessible to any organization [5, 6].

With cloud-based ERP, enterprise data is managed centrally ("cloud") and accessed by users using a web browser. Key Benefits of Cloud ERP Solutions:

- *Reduce costs* - by eliminating upfront spending with IT equipment and software licenses. Using an ERP system introduces fundamental innovations in resource management, eliminates delays and thus reduces transaction costs.

- *Provides quick access to critical data* - through reporting situations available at any time and at any geographic location with cloud technology. Much of the inefficiency in operational activity comes from inappropriate reporting. With such a system, this probability is diminished by means of templates, containing accurate and pertinent information for each department.

- *They are scalable* - because they allow the addition of new functionalities needed for business, which ensures easy management of new processes, departments and beyond. Most ERP systems cover all areas of activity, regardless of the type of organization, being adaptable to the specific business needs of any customer [6].

- *Improve employee productivity* - by reducing the volume of manual document processing and data processing operations, as well as by shaping business processes and document flow.

- *Increase efficiency in substantiating managers' decisions* - by improving the consistency, consistency, relevance, and accuracy of primary data input from the system. Thus, managers make better and faster business decisions using the custom dashboard with real-time data updates. In fact, an ERP system improves the quality of data by improving the processes that underlie the activity.

- *Eliminate unauthorized access to information* - by assigning differentiated access rights for each user, depending on their role within the organization [7].

- *Standardizes workflow* - by creating a unitary data frame. At the same time, the organization has a better control over the activities, the system being developed and updated according to the legislation in force.

- *Improve customer relationship* - as a result of improving business processes.

- *Reducing business complexity* - by introducing a perfectly designed workflow system that makes the entire human resource chain more efficient [5].

- *Increase system response speed* - by archiving historical data that can be accessed at any time.

Implementing of an efficient ERP system for business management is indispensable to any organization in the context of business environment transformation. It can be said that the ERP system is perfectly adaptable to the cloud, to be accessible to users of organizations of any size, securely, from anywhere, anytime, via mobile devices.

ERP components are integrated and can work with other existing applications already in the current work environment to accelerate user activity and decision-making by simplifying workflows [6, 7].

5. CONCLUSIONS

Researchers believe the cloud-based ERP, also known as the SaaS (*Software as a Service*) ERP solution, has generated a few percent of total IT sales this year in the years to come, with years following doubles [7]. This is not a pessimistic figure, as the process of selling an ERP involves a longer cycle.

Cloud-based ERPs can be considered as a package of integrated options, allowing companies to choose the functionality that best suits their own business.

Armed with a powerful IT solution, managers make better and faster business decisions using a real dashboard, customized with real-time data updates [8]. ERP solutions create a unique database that allows optimizing the flow of information within the organization and managing links with external recipients. This increases the efficiency of the company, reducing operational costs and implicitly improving the company's profitability [7, 8].

ERP solutions can be used locally ("on premises") or cloud SaaS.

The main difference between the two categories is that on-premises solutions are locally installed on the company's hard drive and servers and are internally managed while cloud solutions are provided as a service and are managed by the solution provider.

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