AUTOMATING FINANCIAL AND OPERATIONAL PROCESSES USING ERP SYSTEMS IN DEVELOPING COUNTRIES: TRENDS AND CHALLENGES

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Abstract

This literature review explores how the implementation of ERP (Enterprise Resource Planning) systems helps automate financial and operational processes. ERPs integrate different business functions such as financials, logistics, human resources and other modules improving efficiency and transparency. Although ERP implementation holds great potential in company transformation, this process has significant challenges like high initial implementation cost, expensive infrastructure and maintenance, lack of skilled resources and organizational resistance to change. The review highlights of ERP advantages such as unified processes, having all data in one place, improved collaboration between different departments, which are very important for companies. New trends, especially artificial intelligence for automatization of different processes and real time data analysis for better decision-making need to be taken into consideration for their potential to reduce cost and increase performance. Companies in developing countries might face atypical barriers during digital transformations like local fiscal regulations and cultural resistance, which can be very important to be consider ensuring project success. Future research should focus on making AI technology usable on this products even for the small enterprises, collaboration with academic institutions to make the implementation modular and pre-setup. This will ensure easier access to this kind of projects for every company and driving substantial economic growth.

Key words**:** *ERP systems, automation, developing countries, digital transformation, financial processes, operational processes.*

Përmbledhje

Ky rishikim literature eksploron se si zbatimi i sistemeve ERP (Enterprise Resource Planning) ndihmon në automatizimin e proceseve financiare dhe operacionale. ERP-të integrojnë funksione të ndryshme biznesi si financat, logjistikën, burimet njerëzore dhe module të tjera duke përmirësuar efikasitetin dhe transparencën. Megjithëse implementimi i ERP-së ka një potencial të madh në transformimin e kompanisë, ky proçes ka sfida të rëndësishme si kostoja e lartë e implementimit fillestar, infrastruktura dhe mirëmbajtja e shtrenjtë, mungesa e burimeve të kualifikuara dhe rezistenca organizative ndaj ndryshimit. Ky punim nxjerr në pah avantazhet e ERP si proçeset e unifikuara, të gjitha të dhënat në një bazë të dhënash të vetme, përmirësimi i bashkëpunimit ndërmjet departamenteve të ndryshme, të cilat janë shumë të rëndësishme për kompanitë. Tendencat e reja, veçanërisht inteligjenca artificiale për automatizimin e proceseve të ndryshme dhe analizat e të dhënave në kohë reale për një vendim-marrje më të mirë duhet të merren parasysh për potencialin e tyre për të ulur koston dhe për të rritur performancën. Kompanitë në vendet në zhvillim mund të përballen me barriera atipike gjatë transformimeve dixhitale si rregulloret fiskale lokale dhe rezistenca kulturore, të cilat mund të jenë shumë të rëndësishme për t'u marrë parasysh për të siguruar suksesin e projektit. Hulumtimet e ardhshme duhet të fokusohen në bërjen e teknologjisë AI të përdorshme në këto produkt edhe për ndërmarrjet e vogla, në bashkëpunim me institucionet akademike për ta bërë zbatimin modular dhe të para-konfiguruar. Kjo do të sigurojë akses më të lehtë në këtë lloj projektesh për çdo kompani dhe do të nxisë rritje të konsiderueshme ekonomike.

Fjalë kyçe: *Sisteme ERP, automatizimi, vendet në zhvillim, transformim dixhital, proçese financiare, proçese operative.*

Introduction

In recent years, most companies have invested more and more to automate financial and operational processes, deeply influencing their transformation in global economies. ERP systems (Enterprise Resource Planning) (Moon, 2007) and similar technologies have been evaluated as key factors in this transformation, helping significantly in the integration and optimization of business processes. In developing countries, this transformation represents an important opportunity to address various challenges within companies and to accelerate economic growth more and more.

In such countries, automation faces several limitations. Usually, the initial cost for the implementation is very high, it is difficult to find specialized

employees, infrastructure and maintenance have also a high cost and these are just some of the factors that make this process even more complex (Ahmad, 2013). But on the other hand, at the same time, the usage of these technologies represents a very important step towards digitization and competitivity in a digitized global market which is increasing rapidly. This article attempts to provide more information on the benefits, challenges and applications of financial and operation automations in companies residing in developing countries, analyzing current needs and opportunities for further improvements (Mahmood, 2000).

Subject inclusion and purpose

The automation of financial and operational processes is particularly important for developing countries, because they seek new ways to improve the efficiency of companies and the transparency of business activities. ERP systems (Monk, 2008) are a comprehensive integration of various processes such as accounting, human resources and operational logistics into a single platform, providing unified organization of data and significantly reducing errors in each of these processes (Davenport, 1998).

In developing countries, there are three main reasons for implementing ERP in companies: (1) improving access to information, (2) reducing and improving operational costs and (3) increasing transparency and sustainability. For example, in a study of manufacturing companies in Sub-Saharan Africa, it was reported that enterprises adopting ERPs significantly reduced the time for processing financial transactions and improved coordination between departments (Iskanius, 2013).

From a strategic perspective, the implementation of ERPs can represent a significant competitive advantage for SMEs, which often struggle to meet the demands of the global market (Seddon, 2010). However, these benefits are dependent on adapting ERP systems to local requirements and unique user needs.

Trends and needs identification

The demand for automation of financial and operational processes, has been having significant evolution in the last years, which has brought new technologies that transform the way that companies have been working so far. In this context, it is very important to understand the trends that are having the most impact in the use of ERP (Enterprise Resource Planning) systems and the

needs that companies in developing countries should address so they can fully benefit from these technologies.

One of the most obvious trends is the use of modern technologies within every system, such as artificial intelligence (AI). This technology offers automation for process optimization, analyzing business trends and can make decisions automatically based on real-time data. For example, using AI algorithms to analyze financial data can help companies detect anomalies in their balance sheets or predict future inventory availability based on transaction history (Shaul, 2012).

Another advancement is the hosting of ERPs in cloud technologies, which make it easier to access and use systems remotely. Cloud systems are very convenient because they offer benefits such as lower infrastructure costs, simplified maintenance, automatic upgrades and easily scale on resources as they are all online. This is particularly important for SMEs (Small and Medium Enterprises) in developing countries, because most of the companies struggle to invest in expensive IT infrastructure.

Enterprises in developing countries have specific needs that distinguish them from those in developed markets. One of the main priorities for these companies is to reduce the costs of implementing and maintaining ERP systems. Many of the companies in these countries encounter financial difficulties in adopting these technologies, making them look for simpler and cheaper solutions (Ahmad, 2013).

Another critical need for enterprises in developing countries is adapting ERPs to local fiscal and legal requirements, as well as often meeting international accounting standards. In some cases, these requirements create complex challenges for systems integration, such as in the case of Albania, real-time fiscalization of sales transactions, specifics in certain sectors such as pharmaceuticals for real-time declaration of inventory and electronic prescriptions, etc. For example, countries with different taxation and accounting systems often require ERP solutions specifically tailored to meet these requirements, significantly increasing costs and implementation time (Babei, 2015).

In many cases, enterprises in developing countries are not aware of the strategic benefits that the use of ERP brings. This is especially true for SMEs (Aboelmaged, 2010), which often perceive the implementation of ERPs as an excessive investment rather than as a means of increasing their long-term

sustainability. Educating enterprise leaders about the benefits of ERPs in optimizing processes and increasing competitiveness is an important step towards wider adoption of these technologies (Peppard, 2016) (Helo, 2010).

Challenges identification

Automation of financial and operational processes can significantly improve the efficiency and competitivity of companies in developing countries. However, this process is not without challenges. Technological, economic, cultural and regulatory factors create a complex environment for implementing ERP and automation solutions in general. Below we will analyse some of the main challenges and their causes, highlighting the importance of addressing them to guarantee the success of such projects (Helo, 2010).

Technological and infrastructural barriers

One of the biggest challenges in developing countries (Huang, 2001), is the lack of proper technological infrastructure. This includes high financial costs for creating a complete hardware infrastructure, in some cases limited access to high-speed Internet, etc. For example, in some rural regions, enterprises often face frequent network outages, which hinder the continuous operation of cloud-based ERP systems (Ahmad, 2013).

Additionally the lack of technological standardization is also a common challenge as well. Enterprises in developing countries often use different and independent technological solutions, which are not compatible with each other. This results in a lack of integration between existing and new systems, increasing costs and complexity of implementation (Babei, 2015).

High costs and lack of financial resources

Implementing ERP systems requires significant financial investment in software, equipment and staff training. For many enterprises in developing countries, especially SMEs, these costs are often prohibitive. Studies show that enterprises in developing economies often either make choices based primarily on cost rather than solutions or rely on international grants or subsidies to finance their digital transformation projects (Yusuf, 2004).

Additionally, hidden costs, such as long-term maintenance and required software upgrades (Gattiker, 2005), often exceed initial budgets. In some cases, enterprises are faced with stopping or suspending projects due to lack of sufficient funds (Finney, 2007).

Lack of qualified workforce

Another major obstacle is the lack of technical expertise to support the implementation and operation of ERP systems. In many developing countries, the number of skilled IT specialists, data analysts or simply qualified users of ERP systems is limited. Even when these skills are available, they are often concentrated in urban centres, leaving rural areas and small enterprises without sufficient support (Dorobat, 2017).

Furthermore, the low level of technological training and academic preparation for the use of advanced technologies is a constant challenge. Without proper training, users may experience resistance to change, which negatively affects the success of automation projects (Markus, 2000).

Resistance to change and cultural factors

Organizational and individual resistance to change is another factor hindering the spread of automation. In many organizations, managers and employees often see technology as a threat to their workplaces or to familiar and consolidated processes. This is particularly pronounced in traditional enterprises, where the culture of innovation and the tendency to experiment with new technologies are lacking (Saka-Helmhout, 2003).

Additionally, some enterprises in developing countries face a business environment where collaboration and information sharing between departments is limited. In this environment, implementing an ERP system that requires cross-functional integration may encounter strong resistance (Nah & Delgado, 2006).

Legal and regulatory challenges

In developing countries, where legislation and regulations can be unclear or constantly changing, implementing ERPs faces special challenges. Companies often have to adapt their systems to local tax, accounting and financial reporting requirements, which significantly increases complexity, implementation costs and maintenance (Bannister, 2000).

A concrete example of this challenge is the need to implement systems that tend to meet international regulations, such as IFRS standards for financial reporting, while also respecting local reporting requirements, which are mandatory. This dualism creates confusion and challenges for many enterprises, especially those with limited resources (Almajali, 2016).

Impact of global environments and economic trends

Global economic crises and market uncertainties directly affect the ability of enterprises to invest in new technologies. For example, the COVID-19 pandemic made many enterprises in developing countries, to change their focus from innovation to survival due to insecurity and lack of financial stability.

Furthermore, changes in global market trends, such as the growth of e-commerce, require rapid adaptation of ERP technologies to support businesses that want to expand into international markets. For most enterprises in developing countries, this transition is challenging due to the lack of capacity to manage major changes in their operations.

Analysis of current applications

In some developing countries, the automation of financial and operational processes through the implementation of ERPs has produced positive results, but on a limited scale. For example, a study on the implementation of ERPs in various industries in Nigeria showed that the use of cloud-based ERPs has significantly improved inventory management and financial transparency (Elragal, 2011).

Another case is the implementation of ERPs in the public sector in South Africa, where the use of ERP platforms has improved financial reporting and reduced corruption through centralized monitoring of transactions (Gessa, 2023).

However, many enterprises have reported failures due to lack of technical support and failure to consider specific local needs (Babei, 2015). This highlights the need for customized applications and careful implementation plans.

Conclusions

Identifying needs for further research

In the context of ERP implementation in developing countries, in-depth research is needed to address the cultural, organizational and technological challenges that may hinder their success. An important area is the analysis of the impact of organizational culture on the adoption of ERPs, especially when traditional management practices are highly emphasized. Research should examine ways to change the mindset and provide support for the integrated management processes that ERPs can provide.

Furthermore, it is necessary for studies to focus on adapting ERPs to local markets. Modern technologies such as Artificial Intelligence (AI) and Machine Learning can be integrated to optimize processes and provide new opportunities for data analysis, which would help in making strategic decisions. Future studies could examine the impact these technologies have on improving the performance of organizations using ERP.

To maximize success, ERPs must be customized to the specific needs of local markets. Modifiable and low-cost ERP systems can help companies, but above all SMEs, benefit from modern technologies, keeping implementation costs low and enabling the use of relevant systems for local conditions. Customized ERP models are necessary to adapt to the regulations and infrastructure of developing countries (Babei, 2015).

To create more effective ERPs, it is important for the private sector to collaborate with academic institutions to develop appropriate systems. This will help create ERP models best suited to specific conditions and local market needs, ensuring that these systems are efficient and sustainable in the long term.

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