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Reviewed Study on Impact, Challenges, Achievements and Success Factors of ERP Implementations

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Abstract – ERP implementation is a challenging and expensive task that not only requires rigorous efforts but also demands to have a detailed analysis of such factors that are critical to the adoption or implementation. ERP implementation should be considered as an organization-wide project that advantages from the contribution of all stakeholders. The entire ERP lifecycle involve knowledge creation, storage, and sharing. Therefore, lack of an effective knowledge management can devastate the implementation of ERP. Change management needs to understand organization culture as the basis of behaviors and values among employees. The implementing team needs to create a learning organization that is open to ideas and innovation. In addition, the entire ERP project should be an organization-wide project that benefits from the positive contributions of all stakeholders.

Keywords: Enterprise Resource Planning, ERP, Implementation, Organizational, System Issues, Critical Success Factors.

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1. INTRODUCTION

A recent IT innovation that is enhancing organizational performance through providing end-to-end connectivity is Enterprise Resource Planning (ERP) Systems. ERP software, which attempts to integrate all departments and functions across a company into a single computer system, is one of the fastest growing segments in the software market, and one of the most important developments in information technology in the last decade.

Enterprise Resource Planning (ERP) is a software solution that assimilates business functions and data into a single system that is shared within the business. ERP originated from the manufacturing and planning systems, and it has expanded its scope to other “back office” functions including the management of human resources, production planning and finance [1]. In recent years, ERP has integrated other business functions and extensions such as supply chain management and customer relationship to achieve strategic goals.

The key objective of integrating ERP is to improve the operating efficiency of business by improving business processes and decreasing operation costs [2]. ERPs allow the communication of different business departments that have diverse needs by sharing information in a single, comprehensive system. Therefore, ERP facilitates cooperation and interactions between all units and processes of a business [3]. ERP plays a critical role in standardizing processes and data within business best practices. The business can streamline the flow of data between different parts of the organization by creating a one-transaction system. According to [4], the standardization of processes allows a greater level of interoperability that was complex and costly to achieve with most standalone, custom-built systems. The standardization and integration of processes coupled with effective data flow, allows in organization to centralize its administrative activities, improve its ability to deploy new information systems and reduce the cost of maintaining information systems [5]. These advantages and benefits of ERP have made ERP the backbone of business intelligence for businesses by giving managers an integrated view of all the processes with the organization. ERP is designed to acclimatize to new business demand with ease. A significant number of organizations and businesses have adopted ERP over the past decade, and revenue of ERP market continues to expand more rapidly [6].

2. OBJECTIVES OF THE STUDY

The main objective of this study is to Study on Impact, Challenges, Achievements and Success Factors of ERP Implementations

3. ISSUES AND CHALLENGES OF ERP IMPLEMENTATION

Though the market for ERP seems to be growing, there are several issues and challenges one has to contend with when implementing an ERP system. Some of these are:

Awareness: There is a low level of awareness for ERP vendors, applications etc. most of the time they do not even know what ERP systems are and what they can do. They consider ERP systems to be a magic wand, which will help solve all their business problems, be it in terms of quality, or process defects. ERP brings in a more disciplined execution of business process giving more transparency and visibility to the working of the organization.

Perception: The perception that ERP is meant only for large firms mainly owing to the high costs of acquisition, implementation and maintenance as also the complexity.

Earlier Implementations: The much-publicized failures in ERP implementation, which have led firms to bankruptcy. Some SMEs who have implemented ERP earlier have failed.

Approach to implementation: Considering that ERP systems will bring it best business practices. This is the plain vanilla approach that was mentioned earlier, which would bring down the cost of implementation. ***Cost:*** Less of capital than their larger counterparts.

Change management**:** One of the major reasons why ERP implementations nationwide have been known to fail is due to the implementation being considered as an automation project instead of one that involves change management. This results in the system being put in place but not being used effectively due to people not ready to accept the change.

Limited resources: Most sectors do not have an in-house IT team. Due to this they have to rely on external agencies to help them and this adds to the implementation costs.

4. FACTORS AFFECTING ERP IMPLEMENTATION

The major factors can be classified into four subheadings namely, the top management, training, the data collection & Software design and Testing. The 8 factors affecting the ERP implementation are determined. The consensus among the ERP team and top management is very important to indicate the need for application framework. The factors are can be illustrated as fallows-

► **Data provided**

Adequate and correct data should be provided it had to be collected from the distributed Tally 7.0 Servers, had to be reconciled, mapped into the ERP System in its standard format and finally the data had to be uploaded into the system. A strong management direction is needed for the managers at each of the branches so that adequate and appropriate data is duly provided.

► **Parallel systems**

When issues began to crop up after implementation of ERP in Finance module, sales and distribution module was completely ignored, they shifted work with these modules back to the old system. This hampered the proper integration of organization data and led to data mismatch in other modules as well. As a result, support system provided by the vendor became obsolete and difficult to implement. Hence, use of parallel systems should be avoided outright.

► **Training and testing**

Training and testing of the system should be done properly by the ERP Consultants, that is, the vendor is provided as part of the implementation procedure to only a 30% group of people from the clients' side known as the Core Team. This core team in turn trains a rest of people who are actually responsible for day-to-day transactions called the End Users. It was observed that the 50% second leg of training which is provided to the end users was not carried out mainly due to lack of computer literacy, not will to accept the responsibility this triggered a strong resistance to change for the new system being installed and caused reduction in employee motivation.

► **Expectations from the ERP System**

Clarity in management objectives and expectations from the ERP System are clearly stated to the vendors. This led to a belief of the systems' power to integrate the company actual functions. According to the vendor, management expected a quick return on investment which was not practical since it takes around three to four months to notice any significant returns. Hence, top management should be patient with the new system and any fear of failure should be done with for a successful running system.

► **Employee Retention**

It was observed that after the completion of ERP training provided to the staff and within some days of the system going live, many of the trainees from the organization quit the company causing great losses to organization in the form of shortage of key resources i.e. trained staff. This was a big percentage of employee attrition rate and it is not possible for a company to hold back any of its employees even with the most stringent contract.

► **Design & Testing**

It is a very important part of software testing and should not be neglected the computer work stations are set up in a room to represent each of the major tasks of customer service /order entry, planning, goods-in, stores and finance. A simplified data set is loaded and the company operations run through. The data is gradually increased as first the project team, then managers and finally users get more familiar with the software. This is conducted just before the ERP becomes fully functional in the organization.

► **Customization should be less than 30%**

Customization Services involves any modifications or extensions that change how the out-of-the-box ERP system works. Customizing an ERP package can be very expensive and complicated. Some ERP packages have very generic features, such that customization occurs in most implementations. Customization work is usually undertaken as "changes requested beforehand" software development on a time and materials basis. But ideally, experts in the ERP implementation field have suggested that customization should be less than 30%. The level of customization in the case of Multiplex exceeded beyond this and posed a great deal of problems when key applications were run and found to be not working as they were intended to.

► **Stakeholders shall be identified in the initial phase including customers and vendors**

Stakeholders are all those who are directly or indirectly affected by a company implementing any new ERP system be it organizations like those of the supplier as well as the vendors. A failure to identify the stakeholders gives the implementing company a major setback when the concerned people or organizations work against the new system. So identification of all stakeholders has to done in advance.

5. BARRIERS TO ERP IMPLEMENTATION

The slow ERP adoption is due to the barriers that prevail due to the business context and operating nature:

► **Lack of Organizational Leadership/Commitment from Top Management**

Any ERP system implementation process is phased over a time period. In most cases, during the implementation phase, management interest and commitment decline [7].

The management has less understanding of ERP implementation aspects, like size, scope and technical problems at the top management level. Sometimes, there is a lack of commitment for providing resources required for successful implementation [8].

► **Availability of Skilled Resources**

Generally sectors do not have technical and business specialists within the organizations. The scarcity of specialized resources required for initiation, adoption and implementation of new technology, like ERP, creates a negative impact [9] [10].

► **Business Process Reengineering Reduces Flexibility and Competitive Advantage**

In general, unstructured processes that have evolved over years. Thus, in most, an ERP implementation requires partial or complete business process reengineering, affecting not only the procedures, but also its organizational structure. It is observed that mainly focus on day-to-day survival instead of long-term strategic planning. It is important to retain flexibility, and thus, there is no need to rush for ERP to achieve any benefit against flexibility [11].

ERP implementation may change business logic or create conflict with existing business practices, which can further lead to the loss of competitive advantage. In general, the competitive advantage comes from the knowledge and experience of employees, and business operations carried out using ERP systems may be contrary to traditional industry practice [12].

► **Internal Change Management**

Effective change management is required for ERP implementation due to business process reengineering. Without a proper change management process, an organization will not be able to implement ERP successfully [13] [14].

► **Ineffective Communication**

Effective communication plays a vital role in ERP implementation. Expectations from management at every level of organization need to be communicated to ERP vendors. One of the

reasons for unsuccessful ERP implementation is poor communication. Sometimes, communication problems start showing up at the very beginning, i.e., at the time of announcing the purpose for ERP implementation and it continuous till the end, i.e., informing the organization's staff about the progress and importance of the ERP implementation. Poor communication prevents different parts of the organization from assessing how they will be impacted by the changes in processes, policies and procedures. Communication failures occur in implementing ERP because no prior experience with large IT projects. Secondly, it is also difficult to identify key contact persons in different departments to be earmarked as ERP implementation ambassadors [15].

► **Inadequate End-User Training**

Another cause for unsuccessful ERP implementation is insufficient training of the ERP system, as it is always underestimated in terms of budget, time and resources. A good training plan for making use of the features and functionality of the ERP system is essential. Every staff should sufficiently learn how to interact with ERP and business processes, as ERP will affect the entire organization's operations. Inadequate user training and lack of understanding of how ERP changes the existing business processes are impediments to a successful ERP implementation [13].

6. ERP TECHNOLOGY SELECTION CHALLENGES

ERP technology selection is a crucial and paramount consideration for enterprise level decision makers in organisations aspiring to sustain staying competitive since, it is a serious investment decision.

As investment in ERP systems implementations projects in organisations are strategic and highly risky because of the complexity involved, high implementation cost and change management issues it is crucial to select ERP software that fits with organisational goals and objectives for successful implementation.

Radut and Codreanu (2012) argued that the most important part of adopting an ERP system is the selection part and the selection process should be specific to organisation as it takes into account the requirements of the organisation and should be an analytical method based on criteria. The most important of which are functionality, technology and expertise, flexibility and application scalability, costs, implementation and ease of use [16].

Their offering is a simple sequential qualitative model with selection criteria/characteristics composed of six attributes, namely functionality, reliability, efficiency, usability, maintainability, and portability.

Johansson et al (2011) studied relationship between factors influencing selection of implementation approach and companies' ability to stay within budget when implementing ERPs. The main findings are that:

1. The number of implemented modules influences selection of an implementation approach

2. Companies with information strategies are more likely to stay within budget regarding ERP systems implementation. More research is required to understand relationship between factors influencing selection of implementation approach and ability to stay within budget for ERP implementation [17].

Garg and Khurana (2013) presented the ERP product selection criteria for Indian SMEs. The finding of this research will help the marketing and sales team of ERP product companies to improve upon the key points and also enable end users to make informed decisions in selecting the ERP package for the organisation [18].

Ratkevicius et al (2012) presented analysis of different classifications of the fundamental criteria for the ERP system selection process, and defines two main groups – software-related, and implementation-related. The significance of ERP system functionality as the principal software-related ERP selection criterion is emphasized [19]. Eleven other criteria were defined as important to consider, such as the total costs of the ERP implementation project, vendor reputation, ERP reliability, ease of integration with other systems, technology advance, scalability, upgrading ability, customization/parameterization possibilities; ease of use; flexibility and modularity. The importance of all-round knowledge for a successful ERP implementation is emphasised

Kazancoglu and Burmaoglu (2013) presented the TODIM method, which allows the usage of both qualitative and quantitative data through a case study which involves ERP software selection process of a steel forming firm [20].

Kazemi et al (2014) presented ERP system criteria based on opinions of the project expert team and tried to select the best vendor option of ERP system and determine a suitable ERP package for enterprise using multi-criteria decision making technique and combining them with goal programming and fuzzy theory [21].

Venkatraman and Fahd (2016) states today, great potential is envisaged for ERP systems in small and medium -sized enterprises (SMEs), and software vendors have been repackaging their ERP systems for SMEs with a recent focus on cloud-based systems [22]. While cloud ERP

offers the best solution for SMEs without the overheads of the huge investment and management costs that are associated with traditional ERP systems, the SME sector faces many challenges in their adoption. Traditional ERP studies have predominantly focused on large organizations, and gaps in the literature indicate that both vendor and consumer perspectives require more understanding with new technology offerings for SMEs. This paper describes some of the common challenges, such as cost effectiveness, alignment between software and business processes, customized governance and training, which form the major SME constraints for ERP system adoption. Due to the dynamic nature of SME businesses, best practice guidelines for an SME's ERP implementation could be arrived at through closer investigation of its business requirements in order to avoid misfits. This forms the main objective of the study. We identify key success factors of ERP implementation in an Australian SME as a case study. These target success factors are then compared to the actual outcomes achieved. Factors such as business process alignment with the ERP system, meeting customer and stakeholder needs and reducing recurring and maintenance costs were key to the success of ERP implementation for the Australian SME. In particular, the IT and business strategy alignment with a customer focus and flexible reporting features of ERP systems has resulted in business agility.

In the study of Haddara (2017) the Enterprise Resource Planning (ERP) system selection is an early phase in the ERP adoption process. When organizations evaluate an ERP, they commonly develop their own selection criteria that usually involve various system and vendor related factors [23]. While the selection process is critical, however, there is an apparent research gap in literature. The ERP selection effort also focuses on the system's fit with the organizational requirements and needs. Thus, the selection phase is critical, because if an organization chooses an unfit ERP, the whole project could be predestined to fail. This research provides an overview of an ERP selection process at an overseas branch office of a multinational company. The process employed a simple multi-attribute rating technique (SMART) for evaluation. In addition, this research presents how cross-border data protection laws between the parent company and its branch have influenced the selection process. As the ERP system has been implemented successfully, the method and the selection factors have been proven adequate for the selection process.

7. EMERGING TECHNOLOGIES AND FUTURE PROOF CHALLENGES IN ERP IMPLEMENTATION

Organisations are under constant pressure from customers, shareholders, and suppliers to continuously improve and make better products quickly and efficiently. Competing in a dynamic environment and meeting global challenges requires agility. Successful companies must be able to respond quickly and cost-effectively to change. Organisations need to convert their industries into responsive, demand-driven, profit-making enterprises by optimizing their operations. Their competitive advantage and ultimate survival depend on the use of extended information system applications and/or technology. This has led to an increasing interest among vendors to improve future ERP-systems to support the end-customer organisation even better using emerging technologies.

The emerging technologies will introduce new levels of process flexibility, improve the transparency of ownership costs, and accelerate the speed of process execution. Below is a brief introduction of each of the above listed extended information system applications and/or technology.

Through exhaustive literature survey the following emerging technologies are identified in report by [24] :

- Software as service (SaaS) – and, more broadly, cloud computing – represents an alternative deployment model that is much more predictable. SaaS or cloud deployment models will change application economics.

- Mobile technology including devices, software, networks and product distribution channels is evolving at breakneck pace. The potential of mobile applications to transform business processes hinges not only on the speed and convenience of mobility itself, but also on the unique capabilities of the devices to sense, respond to, deliver and capture information in real time.

- Package configuration tooling that is flexible, graphical and model-based – no coding required – is evolving and will become a way to differentiate between packaged application suppliers. Building out these capabilities may prove challenging, given the high degree of flexibility, variability and adaptability built into business process modeling (BPM) services.

- Platform-as-a-service (PaaS), a set of rapid application development tools for extending apps to the cloud, disrupts the notion of 'build versus buy' in applications. Instead of build versus buy, the application platform will enable 'buy plus build'. Standard functionality plus

PaaS extensibility means that ERP and other complex applications can be more effectively aligned with business requirements.

► Elastic application platform (EAP) are emerging as an application platform that automates the elasticity of transactions, services and data, delivering high availability and performance using elastic resources. EAPs will deliver faster performance and be more cost-effective to use. Organisations will efficiently manage high volumes of transaction and internal data and will also draw insight from the vast data resources that exist in public and industry domains.

• Social communication networks in the consumer world are forcing application suppliers to harness this technology within, or alongside, business applications. In the near term – the next one or two years – social collaboration will sit alongside enterprise applications, as only a few enterprise application suppliers will harness it successfully in the context of enabling business processes. Effective use of social collaboration in enterprise applications and business processes will take several years to mature, eventually becoming a relatively ubiquitous and standardized feature.

► Mobile technology is being leveraged to enhance timely transaction handling and data collection, as well as access robust tools for management decision making in supporting SCM, ERP and complimentary systems. Not only must internal application requirements address the mobility needs of its users, but interaction with external entities (e.g. suppliers) must be considered, as well.

Hammerman (2011) reports trends for next five years to shape the future of enterprise applications and ERP that will introduce new levels of process flexibility, improve the transparency of ownership costs, and accelerate the speed of process execution. As outlined in recent research from Forrester, seven technologies will drive this transformation: SaaS, mobile, BPM, usability by making these apps user-friendly and adding advanced analytics capabilities, PaaS, social networks, and elastic computing. This research work is very useful in our work as we have incorporated future technology trends also in our ERP selection frame work [24].

Martens (2013) analyzed that many ERP vendors debuted product or fleshed out their strategies for SaaS ERP in 2012 and further developments are set for future with focus. SaaS ERP, SaaS offering in hybrid harmony with on-premises ERP, PaaS and infrastructure-as-a-service (IaaS) strategies. Given the success of SaaS CRM and HCM, SaaS financials seems the next area likely to resonant with a larger set of enterprise customers [25].

Addo and Helo (2014) proposed ERP-SaaS model and attempts to propose industrial systems solution value-adding benefits including: low preliminary-and-anticipated ongoing costs, faster implementations and value-adding, affordable ownership cost, greater reliability, improved support, reduced IT complexity and improved business motivation [26].

Ranjan et al (2017) Manufacturing “smart connected products” and building “factories of future” are need of the hour in global manufacturing arena, which is forcing enterprise decision makers to develop deeper insight in relevance of emerging technologies in enterprise resource planning (ERP) such as mobility, cloud computing, analytics, social network computing and Internet of Things (IoT) to leverage them for strategic benefit and competitive advantage [27]. In this paper, we explore strategic engagement of these technologies in manufacturing enterprises. We conducted exploratory factor analysis (EFA) of the benefits and studied their impact on four objective indicator areas such as employee, process, customer, and finance. We used IBM SPSS to perform EFA on the response data from questionnaire survey to identify critical benefit factors and beneficiary objective indicators. We compared our work with other research findings. This work will help practitioners develop better insight and decisiveness for investing in advanced technologies in pursuit of manufacturing excellence. For academia, the work will open new research directions.

Huang (2018) a huge research gap in ERP life cycle, the Decline stage, remains. Not only limited empirical evidence is found to support the Decline stage, but also, the existence of this stage is not acknowledged by the majority. On the other hand, because that the Decline stage is short of theory and data support, organizations which are or will be at this stage have little help to deal with what might happen. This research aims at proposing a practical decision model for organizations facing ERP (Enterprise Resource Planning) switching/reversion. The process model of Rasmussen’s Cognitive Control of Decision Processes was adopted as the theory lens to construct the decision model. Based on the survey results from eighteen organizations, a descriptive model-A2O model-is proposed. This research fulfills the blank in the ERP life cycle, provides the empirical supports on exploring the critical issues, and enlightens vendors and consultants on product development and customer service [28].

8. CRITICAL SUCCESS FACTOR APPROACH TO ERP IMPLEMENTATION

In spite of the expected ERP benefits, its implementation is considered as costly, complex, and has high failure rate (Ahmad & Cuenca, 2013). The main reasons for ERP implementation failure include poor planning, lack of management support, inadequate training for end users, improper package selection, high installation and training costs, incompatibility with business processes, and lack of effective project management methodology.

Consequently, the successful ERP implementation to achieve the desired benefits has been a challenging problem in the ERP area [30]. To cope with this challenge, numerous CSFs for ERP implementation were identified in previous studies. The purpose of these CSFs is to ensure the successful implementation through overcoming the high failure rate. The identified CSFs include management support, training and education, ERP package selection, business process reengineering, project management, vendor support, consultant support, technological infrastructure, change management, business plan and vision, and good communication with all stakeholders. The adequate management of the aspects pertaining to these CSFs is extremely important to increase the success possibilities of ERP implementation. Although there are a large number of studies that have identified the CSFs for ERP implementation, only few studies have examined the effects of these CSFs after the successful implementation of the ERP system, especially their impacts on realizing the CBIS's roles. The selected CSFs are among those that are widely cited as having a notable i m-pact on the implementation success of the ERP systems [31].

9. CONCLUSION

ERP provides an effective strategy to gain competitive advantage. As organizations worldwide continue to implement ERP, there is a great need to identify the key issues that affect the success of ERP projects. Evidence from empirical research indicates the significance of organizational factors as facilitators or hindrances to ERP implementation. Some of the identified issues include the composition of a representative and knowledgeable implementation team. Organizations needs to perceive ERP implementation as more than just the integration of software's and hardware and view it's a change process that affects employees and other stakeholders. The success of ERP largely relies on effective change management. Effective change management is vital in reducing resistance and improving the adoption of technology. Failure to manage change is a major contributor of ERP failure. The top management and the implementing team need to initiative change management initiatives using various change manager theories. They can improve motivation and innovation within the organization through various motivation theories. Change management needs to understand organization culture as the basis of behaviors and values among employees. The implementing team need to create a learning organization that is open to ideas and innovation. Implementing ERP alter complete an organization culture and without a smooth and effective transition, the organization risk failing to reap the maximum benefits of ERP. ERP implementation goes hand-in- hand with business process reengineering. Business process reengineering ensures the new ERP fits into the new model of business processes. ERP implementation should be considered as an organization-wide project that benefits from the contribution of all stakeholders.

REFERENCES

1. Van Nieuwenhuyse, I. De Boeck, L. Lambrecht, M. & Vandaele, N. J. (2011). Advanced resource planning as a decision support module for ERP. Computers in Industry, 62(1), pp. 1-8.

2. Beheshti, H. M. (2006). what managers should know about ERP/ERP II. Management Research News, 29(4), pp. 184-193.

3. Harrison, J. L. (2004). Motivations for enterprise resource planning (ERP) system implementation in public versus private sector organizations (Doctoral dissertation, University of Central Florida Orlando, Florida).

4. Hitt, M. L. Wu, D. Zhou, X. (2002). ERP Investment: Business Impact and Productivity Measures, Journal of Management Information Systems.

5. Siau, K. (2004). Enterprise resource planning (ERP) implementation methodologies.

6. Dover, C. (2012). Worldwide enterprise resource management applications 2012–2016 forecast and 2011 vendor shares. (Market Analysis No. 238476, Vol.(1). IDC.

7. Price water house Coopers. (2005). ERP Implementation in the Mid-Market Segment; PricewaterhouseCoopers (P) Ltd. Kolkata, India, 2005.

8. Ahmad, S. Ibrahim, S. and Garba, S. (2015) Enterprise Resource Planning (ERP) Systems in Banking Industry, Implementations Approaches, Reasons

for Failures and How to Avoid Them. J. Comput. Sci. App.2015, 3, pp. 29–32.

9. Raymond, L. (2007). Uwizeyemungu, S. A profile of ERP adoption in manufacturing SMEs. J. Enter. Inf. Manag.2007, 20, pp. 487–502.

10. Maguire, S. Koh, S. and Magrys, A. (2007). The adoption of e-business and knowledge management in SMEs. Benchmarking Int. J. 2007, 14, pp. 37–58.

11. Koh, S. and Simpson, M. (2005). Change and uncertainty in SME manufacturing environments using ERP. J. Manuf. Technol. Manag. 2005, 16, pp. 629–653.

12. Nathanael, D. Papantoniou, B. and Papageorgiou, D. (2003). ERP implementation and actual work practice in SMEs: Adialectic Perspective. In Proceedings of the 6th SMESME Conference, Athens, Greece, 1–4 June 2003.

13. Kim, Y, Lee, Z. and Gosain, S. (2005). Impediments to successful ERP implementation process. Bus. Process. Manag. J.2005, 11, pp. 158–170.

14. Nah, F. Lau, J. and Kuang, J. (2001). Critical factors for successful implementation of enterprise systems. Bus. Process. Manag. J. 2001, 7, pp. 285–296.

15. Ekanayaka, Y. And Currie, W. (2002). Seltsikas, P. Delivering Enterprise Resource Planning Systems through Application Service Providers. Logist. Inf. Manag. 2002, 15, pp. 192–203.

16. Radut, C. and Codreanu, D-E. (2012) 'Selection of an organization specific ERP system', Ideas REPEC Journal, Vol. 18, No. 2, Supplement, pp. 384–389.

17. Johansson, B. Sudzina, F. and Newman, M. (2011). ERP system implementation costs and selection factors of an implementation approach', International Journal of Business Information Systems, Vol. 8(1). pp. 87–105.

18. Garg, P. and Khurana, R. (2013). ERP product selection criteria for Indian small and medium enterprises: an empirical study', International Journal Business Information Systems, Vol. 14(4). Pp. 443–460.

19. Ratkevicius, D. Ratkevicius, C. and Skyrius, R. (2012). ERP selection criteria: theoretical and practical views', Ekonomika, Vol. 91(2). pp. 97–116.

20. Kazancoglu, Y. and Burmaoglu, S. (2013). ERP software selection with MCDM: application of TODIM method', Int. J. of Business Information Systems, Vol. 13(4). pp. 435–452.

21. Kazemi, A. Saeidi, S.R. and Azizmohammadi, M. (2014).Selecting an ERP system using multi-criteria decision making method: a goal programming and fuzzy approach', International Journal Business Information Systems, Vol. 16(1). pp. 55–71.

22. Venkatraman, S. & Fahd, K. (2016). Challenges and Success Factors of ERP Systems in Australian SMEs. Systems. 4. p. 20.

23. Haddara, M. (2017). ERP systems selection in multinational enterprises: a practical guide, International Journal of Information Systems and Project Management. Vol. 6(1).pp. 43-57.

24. Hammerman, P.D. (2011). Forrester: Seven Trends to Shape the Future of Enterprise Applications and ERP, Forrester [online] http://www.computerweekly.com/news/2240105104/Forrester-Seven-trends-to-shape-the-future-of-enterprise-applications-and-ERP (accessed 15 July 2012).

25. Martens, C. (2013). http://scn.sap.com/community/businesstrends/forresters-thoughts-for-2013-erp-trends-revealed (accessed 4 March 2014).

26. Addo-Tenkorang, R. and Helo, P.T. (2014). ERP SaaS value chain: a proposed SaaS model for manufacturing SCM networked activities', International Journal of Business Information Systems, Vol. 17(3), pp. 355–372.

27. Ranjan, S. Jha, V. & Pal, P. (2017). Application of emerging technologies in ERP implementation in Indian manufacturing enterprises: an exploratory analysis of strategic benefits. The International Journal of Advanced Manufacturing Technology.

28. Huang, T. (2018). Decision-making to switch your ERP system: empirical Japanese evidence, International Journal of Information Systems and Project Management. Vol. 6(3), pp. 21-41.

29. Ahmad, M. M. & Cuenca, R. P. (2013). Critical success factors for ERP implementation in SMEs. Robotics and Computer-Integrated Manufacturing, 29(3), pp. 104-111.

30. Suna, H. Nib, W. & Lamc, R. (2015). A step-by-step performance assessment and improvement method for ERP implementation: Action case studies in Chinese companies. Computers in Industry, 68 (2015), pp. 40–52

31. Leyh, C. (2016). Critical success factors for ERP projects in small and medium-sized enterprises – The perspective of selected ERP system vendors. In F. Piazolo & M. Felderer (Eds.), Multidimensional Views on Enterprise Information Systems, Lecture Notes in Information Systems and Organisation. pp. 7-22.

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