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Abstract

This study focuses on factors that affect an ERP implementation in King Saud University from users? perspective. After reviewing related literature, a theoretical model was developed and four hypotheses were articulated to look at the status of system implementation at the university. The tools that were used in the study were a questionnaire and interviews. Both were designed by the researcher and used to achieve the aim of the study. The study shows that overall success is dependent on the satisfaction levels of the users. It also finds a significant relationship between satisfaction level and challenges on implementation. Further, the study emphasizes that the top management commitment is a very important factor for implementing the system. However, the study found no significant relationships among some of the training factors and a successful implementation of the system. The study suggests some recommendations that enhance the implementation of the system in the university.

Index terms— recommendations, implementation, theoretical model.

1 INTRODUCTION

he hi-tech era of today has brought effectiveness and efficiency for organizations around the globe, and no organization can survive effectively without the adoption of the latest available technology. Enterprise resource planning (ERP) is one of such technologies used for the better running of organizations to achieve effectiveness and efficiency. ERP has been defined by many researchers as "a packaged business software system that enables a company to manage the efficient and effective use of resources (materials, human resources, finance, etc.) by providing a total, integrated solution for the organization's informationprocessing needs" Nah and Lau (2001). Häkkinen & Hilmola (2008) have defined ERP as a typical software package that provides integrated operational processing and access to information that extend to various firms' units and multiple organization transactions.

Organized and acclimatized implementation of ERP give rise to the integration of all the functional information flow across the organization into a solo package with a common database.

Nowadays, almost all public and large private organizations around the world are implementing ERP systems, replacing the old legacy systems, which are no more compatible with the contemporary business environment. But the process of moving from old systems to an ERP system is hard and tough, as found by Kroenke (2008). Moreover, the change to the ERP system is costly and requires new actions, training and renovation of data (Zhang et al., 2005). An ERP system costs firms $10-to-$100 millions, depending on the size of the firm (MA et al., 2000). An ERP is not a mere installation of software, but a complete organizational shift which requires changes in technology, process and people.

The objective of this paper is to check the status of Madar implementation in King Saud University (KSU). Madar is an ERP of KSU, This study is an attempt to evaluate the performance of Madar with the user's perspective in mind. KSU is located in Riyadh, the capital of Saudi Arabia. It was founded by King Saud in 1957. Today, the university has more than 31 colleges at 10 different locations across the country with over 70,000 students and around 20,000 faculty and staff.

Roughly three years ago, the university introduced its Madar system, which is now almost 85% complete, to speed up its process and procedures. Madar has been introduced in eight departments, namely human resources, finance, budgets, purchasing, warehouse control, administration and communication. Fifteen hundred people are working on its implementation.

2 II.

3 LITERATURE REVIEW

Much research has been carried out on the issues and factors which contribute to the success and failures of the ERP implementation. The main issues recognized by various researchers are as follows. a) Factors Effecting ERP i. Top management Commitment Top management commitment and support is always found to be significantly important in any ERP implementation processes (Al-Mashari et al., 2003), as top management is responsible for creating vision and plan and also for ensuring users' motivation for achieving goals. According to Nah et al. (2001) top management is responsible for the allocation of appropriate resources, such as human and financial, as part of the implementation effort and also to communicate the business vision and the role of ERP system to the users. Top management support significantly reduces the users' resistance to ERP implementation (Wu Wang, 2006). (Al-Mashari et al., 2003) argued that it is a top management duty to decide on an ERP system and to select its proper vendor, and also to assess feedback from the end users and IT professionals in advance of implementation. Further, constant monitoring of the implementation process and to provide necessary direction to the ERP team is also critical for successful ERP implementation. In general, top management responsibilities and duties may vary with project-to-project implementation, but their commitment and support will remain constant, as many researchers have highlighted.

ii. Users' Satisfaction Satisfaction, according to (Wu-Wang, 2006), means the sum of one's feelings and attitude toward a variety of factors that are related to the delivery of information, products and services. Literature has evaluated user's satisfaction in the context of success of ERP implementation. Without users' interest and positive attitude the ERP, or any other technology, implementation is very difficult to execute. As Satcioglu (2009) noted, in the ERP implementation the main success factors are users centered. Researchers including (Wu-Wang, 2006 **??** Baily and Pearsons, 1983 **??** Nah, et al, 2003) have considered the users satisfaction as a major variable for the evaluation of ERP implementation. Researchers have found many factors that can affect users' level of satisfaction with the implementation processes, including (system understanding and training, involvement in preimplementation process, ERP product and adaptability, interaction with IT department, knowledge and involvement). All those factors increase the satisfaction and acceptance level of the users and will improve the perceived control through participating in the project implementation. **??**ah et al. (2003) has emphasized that users training and education about the ERP is very important as this helps increase the success of ERP implementation.

4 iii. Training

Training to change the behavior and increase the trainee knowledge and expertise about the system and its successful implementation is very important, for lack of training has lead many projects to partial success or complete failure (Khaled et al., 2008). ERP is not so simple to use and adapt even having IT knowledge and skills, thus training of all users is important for successful implementation in any organization (Nah et al., 2001, andWu Wang 2006). Training plans should consist of training needs, view of users' knowledge capacity and their attitude toward technology acceptance. ERP users' involvement in development and implementation processes of the system will help in identifying their needs and lack of expertise, and thus effective training can be given.

5 b) Factors Effecting ERP

There is a long list of the factors which contribute in the successful implementation of ERP. Some of them are discussed briefly as follow: i. Organizations Vision Organization vision and plan is very important factor in ERP the users must know the vision of the organization and understand whether ERP is a strategic tool or a mere software solution. Without organization plan and vision, ERP should not be implemented (Nah et al., 2001) ii. Software Selection ERP software is costly and vigorously changing, so it is elaborated in too many studies, such as Butler (1999), Bernroider and Koch (2001). The ERP software is nonspecific and, thus, has to be specified for the needs of different organizations, industry sectors, and countries (Klaus et al., 2000).

iii. Project Management For any project to be successful, there should be experienced and qualified implementers and, as ERP is a hi-tech project involving millions of dollars, that need becomes immense. Full time and fully empowered team a with all financial and material support should be available (Finney & Corbett, 2007), (Nah et al., 2001). The project manager should lead by example and motivate the project team team that is project champion, as recognized by (Nah et. al., 2001 and **??**rancoise, et al., 2009). Successful implementation of ERP requires a fair team that consists of members with a diversity of skills from different areas (Willcocks and Sykes, 2000).

6 iv. Communications

Project implementation and users' satisfaction depends on appropriate communication. Users' expectations at all levels need to be communicated effectively. According to Rosario (2000), users' enquiries, comments, reactions, approval and overall needs should be properly manage in project implementation. Communication in all phases of the project is significant to communicate the importance of the project along with project vision, scope, objectives, activities and all updates including changes should be communicated to all stakeholders in time (Sumner, 1999).

7 v. Change Management

Organizations are dynamic and require a strong organizational identity that is open to change. Change management is important in entire project implementation. Thus, enterprise-wide culture and structure change, including people, organization and culture changes, are important factors in the implementation phase. Users' involvement in design and implementation of a project at different levels is one of the change management efforts. Rosario (2000) has emphasized that users must be trained and all their needs and problems must be addressed through effective ways of communication and working with change agents.

8 III.

9 ERP SUCCESS AND FAILURE CASES

The factors mentioned above, together with some others, lead to a successful implementation if fulfilled but, if not, then are the causes of failure. Some of them are discussed here for some organizations. Serving more than 45000 students and successful implemented Course listings, libraries, human resources, e-mail, campus information, public relations, registration, admissions and other. The University of Nebraska-Lincoln (Gaska, 2003).

Successful ERP implementation for recruiting and admissions.

The University of Houston) (Gaska, 2003).

Serving 51,000 students and recruiting, admissions, registration, student records, and administration.

10 Department of Administrative

Services (DOAS) of Georgia's Corporation (Songini, 2000).

Effective communications via Web page, e-mail, instant messaging, as well as face-to-face meetings and extensive planning led to a successful ERP implementation. Queries that would take a month are fulfilled immediately. Annual contract reviews which would have taken weeks in previous system are now done in hours. And it decreased the time taken for audit preparation by at least 50%. Bradley Corporation **??**Dickey, 2000).

Change of business process led to a successful implementation and has gained considerable benefits, which includes lower inventory levels and warehouse space requirements, increased sales without adding more staff, decreased lead times and increased on-time deliveries. Greece university Charalambos Spathis, John Ananiadis, (2005).

The study was based on the perceived benefits according to the user's expectation. One year after implementation, the study found that the perception of the users towards ERP was more positive than before the implementation. ERP has increased flexibility in information provision through effective monitoring of the university assets and revenue expenditure flow and, hence, improved decision making. Empirical results of the research also confirmed that a number of benefits have been derived, especially in accounting and management information. The university went live before the system was ready, incurring a loss of AUS$ 47 million Furthermore, student enrolment was difficult. Higher education sector Australia (Nielsen, 2002) Change. Was expensive to take people out of normal positions.

Whirlpool Corp (Okolica, 2001) No coordination between business and technical experts together with lack of consultancy lead to failure resulting in Delayed shipments of appliances to distributors and retailers FoxMeyer Drugs (Scott, 1999) Change management, lack of knowledgeable personnel, training employees and lack of clear goal led to failure resulting in Excess Shipment due to incorrect order, costing the company millions of dollars Siemens Power Transmission **??**Pender, 2000) Lack of top management commitment, insufficient funding to continue project. Reebok **??**Holland et al., 2001) ERP failed because system was not compatible with organization process.

IV.

11 THEORETICAL MODEL AND HYPOTHESES DEVELOPMENT

After reviewing literature, the following theoretical model and hypotheses have been developed to look at the status of Madar implementation at KSU. Fig. **??** : Theoretical Model H H1. User's satisfaction has a significant impact on the success of ERP implementation. H2. Top management commitment has significant impact on the success of ERP implementation. H3. Appropriate training has a significant impact on the success of ERP implementation. H4. Implementation Challenges have a significant impact on the success of ERP implementation.

V.

12 METHODOLOGY a) The Research Approach

The study adopted both the quantitative and qualitative approaches because of its nature. The quantitative approach was represented by a questionnaire tool that used data collected from KSU employees, and the qualitative approach, which was represented by interviews that supported the result obtained from the questionnaire and provided the different views of the people surveyed.

The sample of the study contained 140 employees to be surveyed via copies of the questionnaire. There was also another sample onto which six interviews were administered. The questionnaires were distributed manually to KSU employees who were using Madar, while the six interviews were conducted with responsible persons in their respective divisions for implementing Madar. The length of the interviews was no longer than 30 minutes. The feedback was obtained from 105 users of Madar but three were not taken into consideration because they were not completed and the answers to the questions were not clear, so only 102 of the questionnaire feedback copies were statically analysed, which is considered as 75 % of the questionnaire total sample.

13 Implementation Success

Training Communication Ease of use Consultancy Support

14 Implementation Challenges

User's resistance Software customization Software complexity Time availability

15 Top management commitment

16 Clear vision scope Benchmarking Performance assessment Financial and moral support

17 User satisfaction

Communication Training Consultancy support Involvement b) Questionnaire Design

The questionnaire was formed using three different sections, each one is described as follows: Background information about the respondent and administrative unit was the first section. The purpose of this section is to assess user involvement with respect to the overall system implementation. The second section was assigned to identifying the Legacy system used in the university as well as the status of implementation stage. The third section discusses in detail the important dimensions that affect Madar implantation. These include university infrastructure, implementation teams, benefits, challenges, success and failure from the user's prospective.

18 c) Limitations

Although the adoption of technology might be common among the universities, however, the results obtained from the questionnaire and interviews might not reflect the vast majority of the universities in the region. Two reasons could be attributed to this. First, the qualitative research would always be subject to the interviewer and interviewee's own interpretation of the technology's trends and the education environments. Bryman (2004) confirmed this by arguing that the data collected using a qualitative technique will be subjected to the people's own ideas and it will be difficult to replicate. Second, the number of contributors was low, compared to the KSU staff. Such a low ratio might negatively impact the accuracy of the provided information.

VI.

19 ANALYSIS AND DISCUSSION

This section provides the analysis of hypotheses and discusses the relationships among different variables that are important for the successful implementation of Madar system in KSU. Correlation is significant at the 0.01 level **??**2-tailed) The first hypothesis was about the relationship between the satisfaction levels on Madar and success levels on overall implementation. A significant relationship (P=0) is found between the satisfaction levels of the users and implementation of Madar. Further, the regression value (r=0.900) shows a correlation between these two variables. From the results success= { =6.179+ = 0.866 multiplied by satisfaction} shows that overall success is dependent on the satisfaction levels of the users.

ii. Implementation Challenges of Madar The third hypothesis concerned the relationships between top management commitment and successful implementation of Madar. This study shows a significant relationship between the two variables and found that the top management commitment is very important for the implementation of Madar in KSU. The scope and vision of the project (P= 0.045< =0.05) is related to top management commitment. Compared to previous studies, the results found no significant relationships among some of the following factors and successful implementation of Madar at KSU. Respondents were found in disagreement on some variables, including preimplementation evaluation P=0.420, lack of executive level commitment (P= 0.643), assessment of the implementation (P=0.886) lack of consultancy provided (P=0.842), change management (P= 0.702), problems related to project management (P=0.283).

20 iv.

Training and successful implementation of ERP The fourth hypothesis was regarding the relationships between the levels of training and success of implementation. For Madar implementation, it was found that it depends on adequate benchmarking (P=0.046< =0.05), identification of problems related to implementation (P=0.003< =0.05), and adequate training (P=0.009< =0.05). The study thus found no significant relationships among some

of the following factors and successful implementation of Madar at KSU as respondents did not agree with a few variables, including pre-implementation evaluation P=0.137, changes on project vision/scope(P= 0.558), lack of executive level commitment (P= 0.302), for no assessment of the implementation (P=0.946), lack of consultancy provided (P=0.617), change of management (P= 0.486), problems related to project management (P=0.879), and for poor communication (P=0.386). There were no major problems reported with the progress/implementation of ERP in KSU. The users did complain about a lack of adequate training. Users also reported that they received very little consultancy and are facing poor communication from the top management. During the interview it is noted that users were affected by network problems. Only a few users/respondents separated the network problem from the Madar system implementation. Now the users are hopeful that things are getting better with the passage of time. One of the respondents acknowledged during the interview that there were problems in the old system, but they were familiar with them and they hope that this new system (Madar) will bring relief and will eliminate the limitations of the old system that have not yet been met.

21 b) Interview results

Interviews were conducted with six individuals, all of whom are responsible for implementing Madar in their respective divisions. The main focus was to learn more about three focus areas: Implementation of Madar, top Management commitment, and users' satisfaction. Interview respondents showed that Madar is almost 85% implemented and the Madar project Vision is Paperless organization. Objectives include Control, Time saving, Computerized systematic activities, Unification, and connecting eight departments in KSU. Respondents consider Madar as a strategic tool and are clear with the vision, rather than considering it as mere software tool. It is noted that users were trained for successful implementation but still need further consultation with the project management team.

It is noted that top management is fully committed in the implementation process. The steering/supreme committee is monitoring and supporting all the stakeholders in the project. Top management people are found to be personally involved and are fully committed and supportive, both financially and emotionally. Communication gap was found, for project progress is not communicated to the users.

Users are satisfied with the communication sources but are not informed timely as to the overall implementation processes. It is noted that all the recommendations given by the users are accepted if they are valued. Being a public organization with government rules and regulations, it is found that changes in processes and people are minor or modifications only. Resistance to change to a certain extent was also observed. Respondents were of the opinion that Madar is performing its functions well but not up to expectation. Madar integration with other software such as archive, academic, e-register, and inventory control is encountering some obstacles. That is, first, priorities are different for academic and Madar and, secondly, old data is not clean and in order and, thirdly, each department has technically standalone systems and now there is a problem integrating them. The respondents from the project team and top management are almost happy, but they think that there are some problems from the part of the company. The major ones are delayed response for problem solving, poor communication, and accessibility to the system, especially in purchases. Contract is also an issue, as Software Company claims additional funds whenever called upon to solve problems in any department. Other problems include System breakdown, system hang-up for unknown reasons, and deficiency of specialized people, integration and availability of fit applications solutions.

VII.

22 RECOMMENDATIONS

1. Training should be problem-solving oriented. There is a need for more technical people who know the technicality of the implementation. 2. System should be simplified for it is stepwise so, if an error occurs on one step, then all the steps have to be repeated. 3. There should be easy accessibility to the system as now it takes longer for purchases to be fulfilled, that is, quotation first, go to the project management, then to company, then, once company approves, purchases can be made. 4. Barcodes system should be implemented in warehouse and, for effective control, there should be scanners to trace items so that no one can misuse or steal an item from warehouse. 5. There should be a good mechanism to coordinate with the company, and there should be better communication at all levels in the Madar. 6. Training should be effective and, if possible, refresher training programs should be conducted for the users throughout the year.

7. The resistance of employees can be minimized by providing a user-friendly environment, motivation techniques and enhanced training.

VIII.

23 CONCLUSION

The main objective of Madar implementation in KSU is a paperless organization with effective control, Time saving, Computerized systematic activities, Unification and connection of eight departments. This study focuses on the status of Madar implementation from users' perspective. Because the users are the best judges of any system, they are the best source of information as to whether a system is successful or a failure.

As the study uses questionnaires and interviews to get the results, all the critical success factors were asked, and the results are shown in the tables. The result shows that all the factors are met, apart from effective training, change management and proper communication. Change management, that is, changes in process and people, are rare in KSU because KSU is a government organization with government rules and regulations. Users were trained, but not effectively nor in problem solving. Communication is not a big issue in KSU but, for motivation, users must be kept informed about the progress of Madar. Furthermore, Madar is implemented only in the administrative side by 85%. To judge the results of Madar in KSU effectively, it must be extended to the academic side as well. [1] [2]

1

Company	Major ES Results
Georgetown University	Serving over 30000 students Financial aid and admission automated successfully.
Blitzbau & Hanson, 2001). Louisiana State University (Ethridge, Hadden, & Smith, 2000).	

Figure 1: Table 1 :

2

Company	Major Results
Royal Melbourne Institute of technology Gray .p(2003)	

Figure 2: Table 2 :

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[2]MarchERP Implementation at King Saud University

[Mabert et al.] , V A Mabert , A Soni , Venkataramanan .

[Holland et al. ()] 'A critical success factors model for enterprise resource planning implementation'. P Holland , B Light , N Gibson . *Proceedings of the 7th*, (the 7th) 1999.

[Zhang et al. ()] 'A framework of ERP systems implementation success in China: An empirical study'. Z Zhang , M Lee , P Huang , L Zhang , X Huang . *International Journal of Production Economics* 2005. (1) p. .

[Butler ()] 'Assessing the benefits of using an enterprise system in accounting information and management'. J Butler . *Charalambos Spathis, John Ananiadis*, 1999. 2005. 18 p. . (Risk management skills needed in packaged software environment)

[Bryman ()] A Bryman . *Social research methods*, (Oxford) 2004. Oxford University Press. (2nd Ed)

[Ethridge et al. ()] 'Building a personalized education portal: Get a behind-the-scenes look at LSU's awardwinning system'. R R Ethridge , C M Hadden , M P Smith . *Educause Quarterly*, 2000. 23 p. .

[Rosario ()] 'Business world, Philphines. 23. satisfaction in ERP projects: benefits, barriers or risks?'. J G Rosario . *Journal of Enterprise Information Management* 2000. 22 (6) p. . (on the leading edge, critical success factors in ERP implementation projects)

[Nah et al. ()] 'Critical factors for successful implementation of enterprise systems'. F H Nah , L S Lau , J Kuang . *Business Process Management Journal* 2001. 3 (7) p. .

[Nielsen ()] *Critical Success Factor for Implementing an ERP system in a University Environment: A Case study from the Australia, Honours issertation*, J L Nielsen . 2002. Brisbane, Australia, Griffith University.

[Sumner ()] 'Critical success factors in enterprise wide information management systems projects'. M Sumner . *Proceedings of the Americas conference on information system (AMCIS)*, (the Americas conference on information system (AMCIS)) 1999. p. .

[Al-Fawaz et al. ()] *Critical Success Factors in ERP implementation: A Review'. European and Mediterranean Conference on Information Systems*, Khaled Al-Fawaz , Zahran Al-Salti , T Eldabi . 2008. 2008. Dubai.

[Gaska ()] 'CRM hits the campus'. C L Gaska . *University Business* 2003. 6 (11) p. .

[Songini (2000)] 'Despite Odds, Georgia Hits It Big with ERP System'. Marc Songini . *Computerworld* October 9. 2000. p. 10.

[Bailey and Pearson ()] 'Development of a tool for measuring and analyzing computer user satisfaction'. J Bailey , S Pearson . *Management Science* 1983. 25 (5) p. .

[MA ()] 'Enterprise resource planning survey of US manufacturing firms'. MA . *Production and Inventory Management Journal* 2000. 41 (2) p. .

[Al-Mashari et al. ()] 'Enterprise resource planning: a taxonomy of critical factors'. M Al-Mashari , A Al-Mudimigh , M Zairi . *European Journal of Operational Research* 2003. 146 (2) p. .

[Häkkinen and Hilmola ()] 'ERP evaluation during the shakedown phase: lessons from an after-sales division'. L Häkkinen , O P Hilmola . *Info Systems Journal* 2008. 18 p. .

[Françoise et al. ()] 'ERP implementation through critical success factors management'. O Françoise , M Bourgault , R Pellerin . *Business process management journal* 2009. 15 (3) p. .

[Finney and Corbett ()] 'ERP implementation: a compilation and analysis of critical success factors'. S Finney , M Corbett . *Business Process Management Journal* 2007. 13 (3) p. .

[Bernroider and Koch ()] 'ERP selection process in midsize and large organizations'. E Bernroider , S Koch . *Business Process Management Journal* 2001. 7 (3) p. .

[Dickey ()] *ERP system flushes bottleneck at Bradley Corp, Midrange Systems*, Sam Dickey . 10/18/00, v12 i15.

[European Conference on Information Systems] *European Conference on Information Systems*, 1 p. . (Information Systems Management)

[Okolica ()] 'Factors Affecting System Implementation: The Case of Enterprise Resources Planning System'. Carol Okolica . *Proceedings of the 16th Annual Conference of the International Academy for Information Management. p36*, (the 16th Annual Conference of the International Academy for Information Management. p36) 2001. October 18, 2000.

[Klaus et al. ()] H Klaus , M Rosemann , G G Gable . *what is ERP? Information Systems Frontiers*, 2000. 2 p. .

[Wu and Wang ()] 'Measuring ERP success: the ultimate users view'. J Wu , Y Wang . *International Journal of Operations & Production Management* 2006. 26 (8) p. .

[Scott and Judy ()] 'The FoxMeyer Drugs' Bankruptcy: was it a failure of ERP?'. E Scott , Judy . 13-15.08.99. *Proceedings of the 5th Americas Conference on Information System*, (the 5th Americas Conference on Information SystemMilwaukee, WI, USA) 1999. p. .

[Kroenke et al. ()] 'The role of the CIO and IT function in ERP'. D ; L Kroenke , R Willcocks , Sykes . *Communications of the ACM* 2008. 2000. 43 (4) p. . (Experiencing MIS, Prentice Hall 17)

[Blitzblau and Hanson ()] 'Transforming Georgetown through technology'. R Blitzblau , M Hanson . *Educause Quarterly*, 2001. 24 p. .