Utilizing ERP System in Higher Education
A Case of a HEI in the UAE

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Abstract

In the field of information technology, an Enterprise Resource Planning (ERP) is most simply defined as the system that integrates functional and cross-functional business process of an organization. The potential adoption of ERP is increasing rapidly in different sectors; it has evolved in economic sectors as well as in higher education institutions (HEIs), but few studies about ERP were conducted in the United Arab Emirates' (UAE) universities. This case study focuses on one university in UAE. The data is collected from interviews with directors and senior managers. The data collected is used to 1) provide baseline data on the use of ERP system for educational organizations; and 2) highlight administrators' perceptions of the advantages and challenges an ERP system may present. The analysis of the empirical data allowed the researcher to investigate the following research questions: 1) How do administrators at the case institution narrate their perceptions of the potential limitations and strengths of ERP utilization? 2) Do these perceptions align with the operational advantages and difficulties that an ERP may present to universities? The study highlights the functionalities and use of ERP system in universities. Findings suggest that participants have a clear understanding of ERP system. However, the majority of them do not suggest implementing an ERP system in the university due to several reasons. Insights gained from this research may benefit other universities when deciding whether to implement ERP system or not. Future research should explore the differences between governmental and private universities' utilization of ERP systems.

Keywords: Enterprise Resource Planning (ERP), Higher Education Institution (HEI), United Arab Emirates (UAE).

1. Introduction

Enterprise systems are considered as one of the most complicated and powerful information systems in use today (Magal & Word, 2012), and one of the largest and complex enterprise systems is Enterprise Resource Planning (ERP). ERP is the broad set of activities that a manager does to run important parts of an organization. This definition changed by time to be the "system that integrates functional and cross-functional business processes" (Magal & Word, 2012, p.25). Moreover, it is an integrated suite of information technology applications that support the operations of an enterprise from a process perspective. The cores of ERP systems are operations, human resources, sales and marketing, finance and accounting, and these functions are supported by a standard ERP system.

Most important advantage of ERP is the seamless integration that in return brings numerous advantages such as time reduction in performing tasks. On the other hand, ERP requires intensive resources and time to be implemented. Although the use of ERP systems is significant in terms of benefits, higher education institutions do not realize it (Abugabah, & Sanzogni, 2010).

This paper is a preliminary investigation of ERP system at the selected university. This preliminary study looks at reasons why the studied university does not utilize an ERP system, and the possibility of ERP utilization in future agenda.

The paper is structured as follows, first a literature review; an overview of ERP benefits and challenges in both corporate and higher education sectors. Second the methodology that includes context of the case study, data collection, sample selection and inclusion factors, and data analysis as subheadings. Third is the findings section that includes arguments against and for using an ERP system at the sample university. Next is a discussion of findings with researcher's point of view. And the final section of the paper is the limitation of the study and the conclusion.

2. Literature Review

2.1. ERP In Corporate Sector

2.1.1. reasons & benefits

In successful scenarios, ERP improves business processes and decreases cost, thus it improves the business operations leading to business excellence. ERP also decreases data redundancy by making one piece of entered information available to the rest of the enterprise departments. In addition, ERP standardizes business processes and eases the flow of data within all units of the enterprise. As a result of ERP's varied capabilities, wide range of companies and business have adopted ERP system, making it the core of their business intelligence.

2.1.2. challenges

The process of implementing an ERP system requires a continuous planning and determination. The utilization of ERP needs extensive resources -both human and material- and time that some companies are not ready to spend. The biggest challenge may be seen in the fact that ERP can cost millions of dollars depending on the business needs. Furthermore, the factor of employment resistance to the changes that the utilization of ERP brings to the company's way of doing business discourages these companies from implementing such system.

2.2. ERP In Higher Education Institutions

2.2.1. organizational structure

According to Pollock and Cornford (As cited in Rabaa'I, Bandara & Gable, 2009), universities may seem similar to manufacturing organizations; yet, they have unique needs that depend on the administration of the university. In addition, the traditional ERP system may not meet all the needs of university's administration, because university functions are not limited to finance, human resources, operation and logistics and sales and marketing, but also include managing facilities, students, and courses.

HEIs have special characteristics that differentiate them from corporate sector, and according to Lockwood (As cited in Rabaa'I, Bandara & Gable, 2009) these differences include:

- Limitation of output measurements
- Internal fragmentation
- Complex purposes and
- Diffuse structure and authority

2.2.2. reasons & benefits

The use of ERP in a higher education institution can reduce the need of backing up data through a backup or shadow system. It also provides user-friendly and accessible services for administration and students, in which they can access integrated, reliable, and validated information in real time. The integrated and confidential data and services

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that parties can access is a result of integrating technology and education coherently by a single secure and protected platform (Sabau, Munten, Bologa, Bologa & Surcel, 2009).

The business benefits that ERP may present are improving communication internally, and enhancing self-service for both administration and students. Furthermore, it provides an analysis of sophisticated data for decision makers to help improve planning and decision making capabilities. Additionally, by using ERP, manual processes such as recording information on a paper are reduced or even eliminated due to integrated workflow, and the use of industry best practices (Sabau et al., 2009).

In addition to above technical and business benefits, ERP enables full management of the university's functional areas such as human resources; in terms of skill and training management, planning; budgeting and forecasting, research; managing projects, as well as accounting (Sabau et al., 2009).

2.2.3. challenges

Although the implementation of ERP in HEIs has numerous benefits, it is perceived as challenging. A conducted study indicates that 60% - 80% of higher education institutions' implementation of ERP has failed to meet their goals and objectives and stakeholders were not satisfied with the outcomes (Abugabah & Sanzogni, 2010). Even with offering the ability to customize the ERP system in order meet university's objectives, customization itself poses a risk of failure due to high cost and scope changes (Seo, 2013). ERP system in HEIs does not fail only because of limited technical resources, and the other factors that are addressed by Pollock and Cornford (2004).

ERP may not be recommended for implementation in HEIs due to its uniqueness attributes in terms of processes, structure, and decision-making process that differ from business and corporate sector. The aftermath of ERP implementation in HEIs may result in usual changes in culture. The adoption of ERP pushes universities to follow business-like approach. Thus, employees may show resistance toward the changes ERP present not because of having a new information system, but also because of the organizational changes ERP does and the effects of it. Therefore, employees perform what is called "workaround"; the processes that employees used to do before implementing the new information system. Other researchers point at the technical limitation of ERP system as one of failure reason of implementing ERP system in HEIs. ERP system may be a generic form of solution for universities, and that its strategy is a high-risk one (Seo, 2013).

3. Methodology

3.1. Context

The sample university was established in 1998 by United Arab Emirates' (UAE) federal government, and is highly responsible for preparing students to be future leaders. The university selected for this sample is one of the first universities in the UAE due to the exponential growth of students enrolling in its academic programs. According to "Registered Students and Graduates at Universities and Colleges by Nationality and Gender - Emirate Dubai" statistic, the university enrolls the largest number of students among the rest of Dubai universities, by 2,960 students - both males and females - registered for the academic year 2010-2011 (Dubai Statistics Center, 2011), making the university the largest university among others in term of number of students.

The studied university provides wide range of software applications for students, yet utilizes few information systems that keep the university's operations effective and competitive. Some of these information systems include Human Resources Management System (HRMS) from ORACLE, and Banner web that is used mainly for finance and academic purposes. Furthermore, Tejari information system was implemented as a directive from the government to eases the process of purchasing and procuring. However, the studied university is currently undertaking many changes in the processes of it operations. It is also changing it strategic plans, and is benchmarking with other universities.

3.2. Data Collection

The study of ERP adoption at the sample university case is an investigation employing a qualitative approach. Conducting three interviews with senior managers at the sample university led to saturation by which the data

collected answers the research questions. The interviews conducted were semi-structured interviews, which allowed the investigator to collect further information that may not directly answer the proposed research questions.

3.3. Sample Selection / Inclusion Factors

The sample includes three participants who were given pseudonyms; two males (Ahmed and Omar) and one female (Maryam). The participants are managers/directors in the sample university and have the big picture of their department's processes. Both Ahmed and Maryam have technical background while Omar does not. Moreover, all participants have worked with ERP system and have experience in industries other than higher education.

3.4. Data Analysis

The analysis of the empirical data will allow the researcher to investigate the following research questions: *1) How do administrators at the case institution narrate their perceptions of the potential limitations and strengths of ERP utilization? 2) Do these perceptions align with the operational advantages and difficulties that an ERP may present to universities?*. After the interviews conduction, it were transcribed into word document, and used open and axial coding scheme. The coding scheme was used to analyze the data collected in order to answer both of the first and second research questions. By open coding, the researcher grouped the pieces of data gathered based on the theme seen among it. On the other hand, axial coding helped create connection between the themes found within the data collected.

4. Findings

4.1. Partial Absence Of Integration

Data collected indicates the business processes within the university administration are partially integrated through different information systems. The participants suggest that by stating, "mainly we are using documents to record our information". Ahmed ensures the partiality of this integration; "the departments are not 100% integrated". To further this statement the participant elaborates by saying, "but are they integrated in a sense that it's the same system… they completely in synch? No they are not." Other participants revealed the existence of manual processes; "..we find out that there is an issue. we are spending a lot of time in a manual process".

4.2. Banner Web As ERP

A participant (Ahmed) perceives Banner as ERP system "We have an ERP system here its called banner". Although Ahmed has a background in technology and information systems, he considers Banner an ERP system that integrates and link departments.

4.3. If It Is Not Broken, Why Replace It?

"Existing systems are being fixed and customized when needed. There is no need for purchasing a new information system such as ERP and replacing the old ones", as Maryam commented. Addressing future needs was perceived as a matter of fixing what exists.

4.4. Resource Constraints, Both Human & Financial

Data includes finances as a constraint for implementing ERP system in the sample university. For instance, Omar shared that it is perceived as: "a huge cost for us to change from banner to ERP, since the whole university using banner". Additionally, change management was mentioned as constraint as well "It is a challenge to convince people and take them through this transition period to make them [use the implemented system]."

4.5. Alignment With Mission/Vision

Participants' answers regarding university's mission, objectives, goals, direction, and needs were mentioned repeatedly throughout the interview, which may indicate the influence the management have on the process of selecting an information system; "In order of you to make a decision you got to understand.. what exactly are the goals and objectives of the university." Participants continuously highlight a need to "align with the direction of the university".

5. Discussion

5.1. Thinking Inside The Box

Based on the findings, participants showed a clear understanding of what ERP is, its benefits and challenges. Administrators' perceptions of ERP strengths are the capability of eliminating manual processes that consume time, streamlines integration among departments, and it covers the organization's processes. Participants also perceive ERP's challenges at the sample university as a financial constraint, change management/employees resistance, and aligning ERP with the university's goals and mission. Also, there is a case in which a participant perceives Banner as an ERP system, the case of Banner being considered as an ERP system is debatable and needs further study.

There is a controversy among participants whether to implement an ERP system in the sample university or not. From inclusion factors, Ahmed and Maryam showed no need for an ERP and that the current information systems are functioning well, whereas Omar did show the need to utilize a system other than what it is being used, such as ERP. It may be concluded that the IT department does not fully understand the need of users for an enhanced information system, or they lack of users' insight.

It is true that the IT department believes the university administrations do not need a new information system, yet the reality indicates the opposite. Both Ahmed and Maryam proved that the university's administration departments are lacking of some sort of integration and that they are trying to improve this area. The lack of proper integration has resulted in the remains of manual processes, which employees still perform even in the age of technology and information.

5.2. And Outside Of The Box

According to the findings, financial constraint is one of the reasons why the sample university is not implementing ERP system. However, the budget spent on fixing current university's systems may overweigh the cost of ERP implementation. To overcome the financial constraint, management should plan for long-term goals and start increasing their savings for implementing an ERP.

Yet, there is an indication of a management issue that can be seen in the changes that are currently occurring in the strategic plan as well as in replacing managers too often. Another point to highlight is the culture of the organization that widely affects how employees and individuals within react to changes, especially in the way they work. Findings directly point at the resistance of employees toward utilizing new information system as a barrier. For instance, according to Omar, employees showed resistance toward using Tejari information system during it implementation.

6. Limitation

Researcher access to needed information was limited or denied at several points throughout this investigation. Individuals were particularly sensitive to discussing the organization structure. In some cases, employees' opinions, regarding the addressed matter, were limited or never shared (i.e. after large pauses and careful crafting of words). Furthermore, the researcher was not able to contact key stakeholders that might have the authority to influence major decisions. The reason of these limitations may be due to the cultural environment of the university that is shown by.

7. Conclusion

This case study was conducted in an administration of governmental university in the UAE that does not utilize an ERP system. The case study suggests that most of participants have a clear understanding of what an ERP is and its benefits and challenges. According to the participants, one of the main benefits of ERP in HEIs is eliminating manual processes, whereas the main challenge is financial constraint.

Although there is a lack of integration between departments and that manual processes still exist, some participants do not support the implementation of ERP at the university. Based on the findings, future researches should take into account the other campus of the same university, and the integration between those two campuses. In addition, a comparison can be conducted between governmental and private universities in term of motivations and challenges of implementing an ERP system. Moreover, perceiving Banner as an ERP system can be another direction for additional investigation.

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