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Organization Readiness and ERP Implementation in Albaha University

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Abstract. This work studies the correlation between the organizational readiness in Albaha University and the respective Critical Success Factors with regards to the Enterprise Resource Planning (ERP) implementation. The study also considers some suggestions to improve the ABU's ERP systems and roadmap towards the self-development strategy and to reduce vendor-dependency. A survey regarding ERP to the end-users, experts and developers in Albaha University was conducted. The analysis of the results in this work confirmed with the results of an existing work. The four significance success factors: Project Management, Business Process Re-engineering, System Integration, and Training and Education are recommended to be adopted to assure the smooth adoption of ERP at Albaha University.

Keywords: *ERP, ORGD, Project Management, BPR System Integration*

1. Introduction

Weiner [1] defines Organizational readiness (ORGD) for change as “a multi-level, multi-faceted construct. As an organization-level construct, readiness for change refers to organizational members' shared resolve to implement a change (change commitment) and shared belief in their collective capability to do so (change efficacy). The higher the organizational readiness for change, the more organizational members likely to initiate change, exert greater effort, exhibit greater persistence, and display more cooperative behaviour”. Figure 1 illustrates the factors and consequences of ORGD for change.

On the other hand, Enterprise Resource Planning (ERP) is the use of software suites to pull together and systemize data of various organization's levels to provide judgement into key performance indicators (KPIs). The ERP has wide-ranging set of achievements which assists an organization in dealing its business. In general deployment, ERP has to be integrated with other software systems with the aim of optimizing the overall system. Thus, deployment of a new in-house ERP system can involve sizeable business process reengineering and employee retraining.



Nevertheless, ERP concept in education management is not a new thing. Higher education institutions have implemented ERP systems to advancing their procedures and branding them more transparent and well-organized.

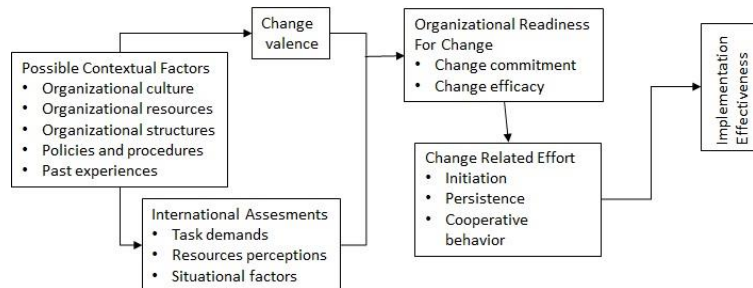


Figure 1. Factors and consequences of organizational readiness for change (adapted from [1])

The Information System and Application development in Albaha University is in general not so encouraging, especially the development of ERP systems. Among the problems faced in Albaha University (ABU) include:

- Low user satisfaction level
- High vendor dependency
- Lack of IT awareness program
- Automation of many key process is partial
- Absence of documentation of the roles, responsibilities, and accountabilities
- Absence of well-defined organizational and process framework.

However, at the same time, ABU has positive factors that are believed may support towards the improvement of the ERP systems. The positive factors include:

- Headway made by few departments by implementing ERP and student information system
- Enthusiasm to adopt e-working practices at departments/units/ centres
- Good support from ABU top management to have best technology that help university to achieve their vision.

This research work focuses on ABU organization readiness with regards to the success of ERP implementation and considers four critical success factors (CSFs): project management (PM), business process re-engineering (BPR), system integration (SI), and training and education (TED) as investigated by [2].

2. Related Works

Research works have been conducted in ERP implementation such as Ramayah and Annamalai [3] that examined the benefits of two enterprises resource planning (ERP) packages namely SAP and Oracle. King [4] concluded that the current status of ERP adoption by companies, regardless the size of the company shows a tremendous growth. Some companies have implemented successfully ERP in customer relationship management and supply-chain management systems as integrated systems.

Voordijk et al. [5] studied on the changing role of information technology (IT) in engineering consultancy firms after implementing ERP. The authors used empirical case study approach to analyze ERP implementations in the Dutch-based engineering consultancy companies.

Grossman & Walsh [6] mentioned numerous recommendations to ERP implementation as a huge mission packed with risks. The authors gave lots of practical advices for reducing the risks. The authors also considered operational, technical and legal factors of guaranteeing an acceptable ERP implementation. The necessary softwares should be employed in a shortened timeframe with less risk, together with the potential of having the state-of-the-art of technology that embodied the common practices of companies' prior to carrying out ERP systems.

3. Research Method

3.1. Research hypotheses and the conceptual model

According to researches by Somers and Nelson [7] and Tesch, et al. [8], the organizational readiness for ERP deployment within an organization is essential to know a readiness of an organization prior to the commence of the project and to identify as early as possible probable problems. The problems may affect the implementation outcome. Therefore, the organizational readiness is expected to meaningfully contribute to the success the ERP implementation and thus, the following hypothesis is constructed.

H1: OGRD and the success of PM are positively and significantly correlated.

Works by De Soysa and Nanayakkara [9], and Capaldo and Rippa [10] note that BPR is an important dimension of the overall organizational ERP readiness framework of the organization.

The work further demonstrate that OGRD could perform a greater role in prompting the results of a BPR exercise. Thus, this paper premises the following.

H2: OGRD and the success of BPR are positively and significantly correlated.

ERP systems have modular structure and require inter-module interfacing and integration to work seamlessly. SI is one of the key strategies for successful ERP implementation [10, 11]. Thus, it is meaningful to hypothesize:

H3: OGRD and the success of SI are positively and significantly correlated.

Understanding the OGRD enables organizations to capture their users' training needs [12]. The OGRD helps organizations to gain a better understanding of the skill levels of their staff, the availability and adequacy of human resource skills and capabilities in recognizing the available training facilities, trainer capabilities and training requirements for implementing a complex system like ERP [13, 14]. Therefore, we contend that OGRD is helpful for providing an appraisal of the human and infrastructure capabilities that may be required to conduct TED successfully, and hence develop the following hypothesis.

H4: OGRD and the success of TED are positively and significantly correlated.

The proposed model was built based on the assumptions of the associated hypotheses: H1, H2, H3, and H4 as shown in Figure 2 [2].

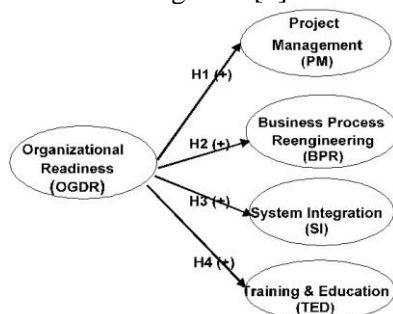


Figure 2. The conceptual ORGD - ERP model (adopted from [2])

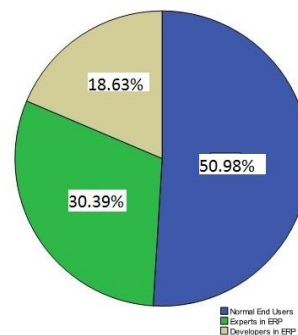


Figure 3. Distribution of respondents (End user, experts, and developers)

3.2. Instrument development and data collection

A questionnaire with five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5) was used to collect data. The questionnaire was adapted from Ram et al., [2], five constructs: OGRD, PM, BPR, SI, and TED with their respected items were surveyed. The questionnaire was validated by experts, then translated to Arabic version forth and back and checked to be in the same levels.

The survey instrument was pre-tested in two phases, initially with academics. The feedback and comments received from both sets of respondents were incorporated to improve format, presentation, content clarity and questionnaire length. SPSS software was used with data and reliability were firstly checked, they were with good values. Demographic data are: End-users, Experts, and Developers.

4. Results and Analysis

4.1. Statistical results

The distribution of respondents is shown in Figure 3. 150 questionnaires are distributed and 107 are collected and validated.

Table 1. Spearman's ρ for PM- OGRD Correlation

		PM construct	OGRD Construct
PM construct	Correlation Coef.	1.000	.585**
	Signif. (2-tailed)	.	.000
	N	102	102
OGRD construct	Correlation Coef.	.585**	1.000
	Signif. (2-tailed)	.000	.
	N	102	102

** Correlation is significant at the 0.01 level (2-tailed).

Table 2. Spearman's ρ for BPR- OGRD Correlation

		OGRD Construct	BPR construct
OGRD construct	Correlation Coef.	1.000	.573**
	Sig. (2-tailed)	.	.000
	N	102	102
BPR construct	Correlation Coef.	.573**	1.000
	Sig. (2-tailed)	.000	.
	N	102	102

** Correlation is significant at the 0.01 level (2-tailed).

Table 3. Spearman's ρ for SI- OGRD Correlation

		OGRD Construct	SI construct
OGRD Construct	Correlation Coef.	1.000	.651**
	Sig. (2-tailed)	.	.000
	N	102	102
SI construct	Correlation Coef.	.651**	1.000
	Sig. (2-tailed)	.000	.
	N	102	102

** Correlation is significant at the 0.01 level (2-tailed).

Table 4. Spearman's ρ for TED- OGRD Correlation

		OGRD Construct	TED Construct
OGRD Construct	Correlation Coef.	1.000	.493**
	Sig. (2-tailed)	.	.000
	N	102	102
TED Construct	Correlation Coef.	.493**	1.000
	Sig. (2-tailed)	.000	.
	N	102	102

** Correlation is significant at the 0.01 level (2-tailed).

According to Table 1 we conclude that H1: There was a positively moderate association between PM and OGDR and it is significance ($\text{sig} < 0.05$), so accept H1.

Referring to Table 2 we conclude that H2: There was a positively moderate association between BPR and OGDR ($\text{sig} < 0.05$), so accept H2.

Referring to Table 3 we conclude that H3: There was a positive moderate association between SI and OGDR, ($\text{sig} < 0.05$), so accept H3.

Referring to Table 4 we may conclude that H4: There was a Positive moderate association between TED and OGDR, ($\text{sig} < 0.05$), so accept H4.

4.2. Analysis

Overall, the results show that organizational readiness is significantly and positively associated with the four investigated CSFs as the conceptual model discussed in Section 3.1. The findings extend knowledge of the relationship among factors antecedent to different stages of ERP systems development [2]. Thus, an understanding of organizational at the adoption stage of an ERP system project is important. The following are the detail discussions on the findings.

ORGD effect on PM. The results indicate that organizational readiness is crucial in accomplishing the project success as it provides better planning and control through regular meetings and reasonable deadline. Albaha university IT Center management should evaluate a number of factors including: organizational process assets for risk management, information collection on change management procedures, and human resources to understand the organizational readiness for project management. Moreover, Albaha university IT Center management is recommended to strengthen the Project Management Unit with proper staff and PM softwares and tools.

ORGD effect on BPR. The findings show that BPR exercise significantly influences the organizational readiness. The exercise needs experts and man power that may cost more the university. It is suggested that the Albaha university management must take advantage of the expertise and skills available within the university to conduct BPR exercises.

ORGD effect on SI. The results say indirectly that considering internal skills and resources is important to ensure SI activities run easily. Consequently, the university should focus on the availability of a skilled workforce to support integrated interfaces. Albaha University is likely still relies on external support to maintain their integrated systems. Albaha University IT center management should evaluate a number of factors, including: the experience and skill set of IT staff, particularly in SI; the availability of legacy in-house systems; third-party information systems that need to be interfaced/ integrated with ERP; procedure and regulations for checking data integrity. The evaluation will help to understand well ORGD for SI.

ORGD effect on TED. The study concludes that the university have to consider to materialize staff continuous professional development program. The university management should have an effective management of training programs to foster a learning and sharing culture among the staff. In-house skills development to achieve successes in ERP projects is also recommended, to fulfill the need of special training. In addition, Albaha University management should consider a number of factors related to the TED and allocate proper budget for training programmes.

5. Conclusion and Future Works

The analysis of the results in this work confirmed with the results of work by Ram [2] that is the ORGD influences the success of ERP implementation. Albaha University management need to study the university's organizational readiness to measure the technological, human, and infrastructure capabilities in designing and implementing ERP systems. The four significance critical success factors: PM, BPR, SI, and TED are recommended to be adopted to assure the smooth adoption of ERP at Albaha University.

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