ERP System for Effective Management in Middle East

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Abstract

In these days the need of implementing integrated solution that supports major issues in business, economic, cultural, and basic infrastructure is increased; thus the enterprise resource planning (ERP) software is designed to meet these needs. ERP system provides distinct advantages in the new business, financial, academic and public sector/government environment such as reducing operating costs, increase customer satisfaction and reduce cycle times.

This paper shows the impact of ERP on management process in multiple organizations in the Middle East and how much it affect the workflow in these organizations and also this research presents the major reasons that drive these organizations to choose our ERP system to manage their business.

Major characteristics of the designed ERP that includes flexibility, ease of use, ability to hold and manipulate large amount of data made it more preferable to be adopted than other traditional systems found to be used in the organizations under study such as excel sheets, oracle ERP and separate, independent resources systems.

Keywords: *ERP, Middle East, Organizations, ERP Benefits.*

1. Introduction

Now, with the rapid growth of the IT field, and with the existence of this huge amount of documented and non-documented activities that are being executed by enterprises, ministries, organizations in a daily basis, there are urgent needs for enterprises resources planning systems that aim in its core to enhance the productivity, efficiency, save time, cost and efforts in managing daily operations, provide the needed information and reports required to monitor and evaluate the performance and enhance it [1],[2],[3] and [4].

The purpose of ERP is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders [5]. It provides a lot of benefits, among these:

- Helping the upper level management of organizations to decide by providing the needed critical decision making information.
- Greatly improve the quality and efficiency of a business.
- Streamlining and automating the business functions daily operations.
- Creating a more agile company that can better adapt to situations and changes.
- Integrating functional departments together.
- Provide a logical history of every transaction through relevant data compilation in every area of operation.
- More towards standardization and unifications of organizations operations and information.

In Middle East the traditional file system distributed in many organizations where each system uses its own programs and files which make it difficult to share and maintain data, which contribute in a data redundancy and variations in information formats.

Some of organization uses distributed database systems which are easy to maintain, allow data sharing and there is no (or less) redundancy. But Integration of existing system is technically very complex and expensive and the system may be very unstable after addition of new functionalities, so an ERP system is required here.

In this work we had recognized the urgent needs for an integrated ERP system, thus, we commenced developing our own and internally developed custom and comprehensive systems for enterprises resources planning

and management. This provided us with the advantage to customize and integrate these systems in a way that best fulfill the organizations' requirements in different sectors.

We ended up with a robust, flagship product that forms a complete business solution that enables governmental entities and big enterprises to automate their daily operations, reaching to a "paper-less" environment, and allowing integration with other governmental entities to support the decision making process internally and externally.

2. Related Work

ERP was introduced in late 1980 to integrate other business functionalities [6]. It is not confined to manufacturing only but covers all facets of organization such as:

- Finance

- Human Resources

- Supply Chain

- Warehouse management

- Project Management

ERP development from software solution provider mainly emerged as a sequel of their material requirements planning (MRP) products. Some of the early solution providers are:

- SAP from Germany

- Baan from Netherland

- JD Edwards from USA

- Lawson from USA

Historically, companies created "islands of automation" a combination of various systems that operated or managed different business processes. Sometimes these systems were integrated with each other and sometimes they weren't. Sometimes they were loosely interfaced and sometimes they were more tightly interfaced such as a many companies in the Middle East world.

Multiple studies and researches were established to study the different benefits and advantage of ERP systems, ERP modules and also its disadvantages [7], [8]. The most existing research papers present a highlighted view on ERP

implementation in the developed countries such as USA, Germany and China.

Some researches provide understanding of Enterprise Resource Planning (ERP) systems adoption, as well as non-adoption practices in a less developed country. It highlighted the benefits, motives and barriers of implementing such systems in the Middle East [9]. But still there is a little focus on ERP system implementation in the Middle East and how does it affect its organizations and their business. So this paper try to get focus on a sample of ERP system in the Middle East and take over how its affect the organizations business.

3. Implementation

The implemented ERP system integrates the major functions and departments within an organization through a common information system. At the heart of ERP systems there is a common database so when a user enters or updates information in one module; it is immediately and automatically updated throughout the entire system.

ERP software is made up of many software modules that are individually purchased, based on what best meets the specific needs and technical capabilities of the organization. Each ERP module is focused on one area of business processes, such as product development or marketing.

Fig. 1 below shows the different modules implemented for this research.
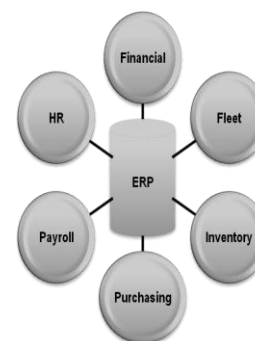

Fig. 1 Required Task Time

Now let us take an overview about each of the implemented module.

- **Human Resource(HR) and Payroll Module:**

Human Resources (HR) and Payroll System handle the organization needs of managing human resources from

recruitment till retirement. It provides advanced personnel management functionalities as well as a robust payroll module that is able to cope with complex organizational structure.

▪ Financial Management Module

Financial Management system handles the organization accounting transactions, operations, and reporting. It supports multiple business standards, equipped with comprehensive reporting and auditing tools. The system contains a full cycle of accounting processes along with comprehensive full back-office automation facilities.

The financial management system contains the following sub-modules:

- General Ledger
- Budgeting
- Accounts Payables
- Accounts Receivables
- Reporting
- Administration

▪ Fleet Module

The Fleet Management system aims at providing the organization with the ability to efficiently manage vehicles, drivers, car parks, technicians, maintenance, and dispatching. The application provides the ability to schedule drivers and vehicles daily activities and manage their assignments to events. It also has a full maintenance and work order module that manages vehicle repairs and spare parts.

▪ Purchasing Module

The purchasing system aims at automating all purchasing transactions starting from creating material requisitions by any department and sending it to purchasing department, managing quotations, pricing items, integration with inventory, managing bonds, to generating purchase orders. In addition to managing vendors and contacts and reporting features.

▪ Inventory Module

Supply Chain Management system aims at providing the organization with the capabilities to efficiently manage procurement cycle and inventory and catalogue management.

Our system deployed into different governmental organization in the Middle East those are: the Crown Prince Court - Abu Dhabi that replaces its HR and Inventory system that depended on traditional custom software by our HR and Inventory Modules, Saudi

Commission for Tourism and Antiquities which installed our ERP system instead of Oracle ERP system which have an expensive support license, complex user interface and the users don't have the ability to customize the business field to fulfill the organization needs, National Bank of Kuwait (NBK) that replaces its Purchasing and Inventory system that also depended on traditional custom software by our ERP Purchasing and Inventory Modules and a Jordanian Food Industries Company which was using different programs such as: Excel and non-integrated custom database systems .

A research study made on those organizations it compares between their work efficiency and reliability before and after using the implemented ERP system. The results are mentioned in the next section.

4. Results

After installing the ERP system on different organization as mentioned in the implementation section, we make comparisons between the last used system and the new one from different points(Time and Speed , Data Access) and we found great differences in the efficiency, reliability and the work flow of those organizations.

A comparison results in terms of time and speed that needed to accomplish different tasks such as: Manage loans and advance, Employee promotion, Getting Tax Detection, Track Employee's Vacations, Getting employee's ID cards, Stocktaking of Inventory and Budget Approval are presented in Table1.

Table 1: Required Task Time

The Task	Time Needed with Previous System	Time Needed with ERP System
Manage loans and advance (A)	Approx. 20 days	One day
Budget Approval (B)	Approx. 90 days	14 days
Getting Tax Detection	Approx. 1 Hour	2 Minutes
Track Employee's Vacations	Approx. 30 days	10 Minutes
Getting employees ID cards (C)	Approx. 30 days	One day
Stocktaking of Inventory (D)	Approx. 60 days	6 Hour

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Tendering Procurement (**E**)	Approx. 60 days	7 days
Employee Promotion (**F**)	Approx. 150 days	One day

Fig. 2 shows clearly the huge difference in the required task time that's needed with and without ERP system.
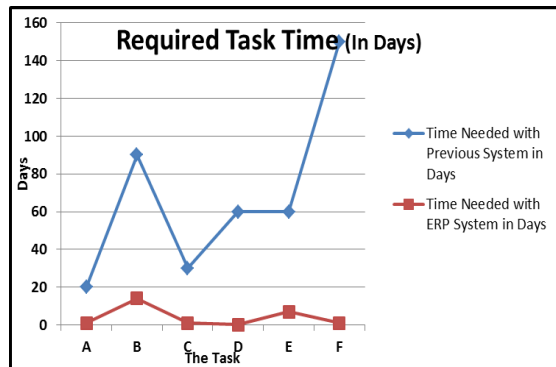

Figure (2): Required Task Time

The results shows there is a huge difference in the time required to finish a job if we use the last system and ERP system, thus a high speed response for many requests and processes was generated and no need to waist a lot of time in wait.

Another comparison point was the easy of access to the data by different employees in those organizations and how much ERP is comfortable system. As founded that all collected opinions see that ERP system is more comfortable and easy to be used to accomplish their jobs.

5. Conclusions

After this study we conclude that ERP system is a suite of integrated applications that a company can use to store and manage data from every stage of business. Time enhancing accomplished by using ERP and error-free transactions and production are facilitated. Using ERP provide a comfortable and reliable user interface for the employees and make the flow of the business smooth and easier, reaching to a "paper-less" environment.

In today's environment, there is a much greater interaction between the citizens and governments but unfortunately in Middle East countries there is a little usage of ERP system which offers this interaction .if we applied this system and the other implemented ERP systems in different Middle East companies and organizations this will be great and useful to them. To successfully implement a proper mix of people, processes and technology; the ERP should be applied in our organizations such as universities and government ministries.

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