Transition of Legacy Enterprise Information System into Integrated and Interoperable environment

MODERN ENTERPRISE RESOURCE PLANNING (ERP) SYSTEM BASED ON SERVICE ORIENTED ARCHITECTURE (SOA)

~~**ABSTRACT - Currently, enterprises are striving to stay sturdy in business competition in IT market, also to make their business processes scalable and flexible, as a result, it becomes essential to manage enterprise assets consciously, by improving and innovating their business processes, so basically, they need to invest in Enterprise Resource Planning (ERP), it's considered to be a modular in nature, which increasing its modules exponentially day after day. So practically, to get a balance between scalability of these modules and their optimal quality of work, it's important to build a robust ERP infrastructure. This paper promotes a powerful architectural design for ERP software based on Oracle Service Oriented Architecture (SOA). This SOA architecture is a customized solution which uses best practices to help enterprises to achieve their ultimate goal, manage and monitor their business processes by using interactive dashboards, and finally, stay competitive in this business market.**~~

ABSTRACT - Currently, enterprises are striving to stay robust in business competitions, and build scalable business processes. As a result, it becomes essential to manage enterprise assets consciously, by using a Modern Enterprise Resource Planning (ERP), which considered to be modular in nature. However, these modules are increasing exponentially day after day, depending on business demands. Practically, to have a balance between modules scalability and their optimal quality of work, it's important to build a robust ERP infrastructure. Thus, this paper promotes a powerful architectural design for ERP software based on Oracle Service Oriented Architecture (SOA). This SOA architecture is a customized solution, using best practices to help enterprises to achieve their ultimate goal, manage and monitor their business processes perfectly by using interactive dashboards, and finally, stay competitive in this business market.

Keywords- ERP Implementation, ERP Modules, Oracle SOA Middleware, Business Processes, Business Activities Monitoring, ERP Interactive Dashboards,

INTRODUCTION

ERP can be considered as a breakthrough technology that ~~facilities~~ facilitates managing enterprises' internal business processes.

~~As a matter of fact~~ Basically, there are ~~a~~ fundamental business processes and functionalities to ~~run,~~ manage and organize any enterprise efficiently~~, starting~~. This cycle starts from having a customer database, then ~~manage~~ managing business orders or warehouse ~~, also an accounting system which responsible for financial transactions and enterprises assets~~, thereafter, organizing and managing all financial transactions and enterprises` assets based on an accounting system. Most properly that enterprises~~, filling~~ fill gaps in the information pipeline with spreadsheets and manual process, but none of these automated and manual systems ~~have talked to~~ are communicated with each other~~, they don't share data, which~~. This scenario is called islands of information. This island of information definitely impacts enterprises efficiency. Let's face it, efficiency ~~is connected to~~ is determined by time and money, so here is where ERP took its place in the market. The ERP centralizes all the information in an enterprise, ~~so it becomes~~, making it very easy to streamline the flow of information, in which all business processes become connected end-to-end ~~, in other words,~~ . This means that the ~~enterprise has~~ enterprises have a single ~~view customer~~ customer line , so they can provide a better service~~, also the~~ .The enterprises team will also work more efficiently ~~because they have~~ in order to get the information they need when they need it~~, and finally,~~ . Therefore, analyzing this centralized data becomes very easy and powerful to create ~~an~~ interactive dashboards and have a full, accurate insights about all business process within the enterprise.

Actually, the term ERP stands for Enterprise Resource Planning: it's a class of software that provides an end- to- end information and data management solution within an enterprise. The software can be used by all departments to manage and organize its related business processes. Hence, Information management is an organized collection, storage, and the use of information for the benefit of enterprises.

According to an accurate static calculated in 2017, during the last four years, ERP services' worldwide market increased by around 10 billion USD.

Now a days, they stick an additional word in front of ERP to become Modern ERP software~~,~~ ~~they~~ .They mean by modern managing and centralizing information seamlessly is just a beginning~~,~~ .That modern ERP allows to do much more, like connect to customers better through a portal link, modern communication tool like exchange ~~365 through~~ email or powerful BI for business intelligence. Modern ERP can speak the same language as supplier systems ~~something like EDI,~~ . Moreover, ~~modern~~ Modern ERP is flexible and adaptable with new ~~technologies~~ technology trends such as cloud, mobile, IOT, and, Service Oriented Architecture.

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ERP software is rarely developed and implemented in a standalone approach, it must have the ability to securely, interoperate and integrate different data sources in a centralized database, also with a unified interface for all its modules such as human resources, marketing and sales, financial and accounting and other modules.

~~Moreover~~ Furthermore, there are many different scenarios for every enterprises~~, some~~. Some of them have their own ERP software which integrated with their legacy systems ~~and they~~ which need to be restructured ~~and restructure it~~ by using SOA middleware~~, also some of them~~. On the other hand, some of which have to purchase a complete ERP from IT vendors in the market~~, but in~~. In either ~~ways~~ case, they have to understand ~~both~~ their business needs, objectives as well as SOA middleware architecture ~~and~~: how they are going to ~~integrated~~ integrate different systems with different programming languages also different APIs (Application Programming Interfaces)~~,~~ and ~~finally,~~ what is the best practice to achieve this quantum leap.

~~Implementing and~~ In reality, applying SOA middleware is not the end of the story~~,~~: enterprises should ~~know about~~ be aware of managing and controlling their internal business processes ~~that already defined~~ within SOA middleware ~~service bus, this~~. This is a serious challenge for any enterprise, especially when they are going to achieve service quality, customer's satisfaction, high performance, high availability, and a high level of security.

Thus, building a solid integration layer is a must in any Modern ERP software~~,~~ because this domain is growing up and increasing its modules exponentially.

This research paper promotes a solid ERP architecture by using SOA middleware technology ~~then high light~~ . It highligts what potential business processes should be defined within Oracle SOA middleware service bus, and what else components should be in this architecture to achieve enterprises ~~long term goals~~ strategic objectives.