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Customized ERP System for Testing and Calibration Laboratory

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ABSTRACT

ERP systems have become the system which is in demand in the majority of publicly traded organizations and companies, being specific ERP systems are computer systems that integrate application programs in Accounting, Sales, Manufacturing and the other functions in the firm. Initially focused on automating Back office functions. Foundation of ERP system for domestic as well as international business operations, locally or globally, mostly supports all the functional areas in organization's daily process and operations. ERP system is considered as a source of competitive advantage for some organizations. This system consist of a Common database, User friendly interface, Custom-designed report systems. This paper presents a Web enabled system for automating functionalities involved in four verticals as Testing, Calibration, Validation and Training which will help in project management and administration. Here, after several multi-method testing and analysis of an ERP system implementation is presented pointing on majority of research treats this system as having various essential technical features and properties that enables and provides ease to business corporates in order to bring about positive organizational effects.

***Keywords*:-** Automated system, user-friendly interface, report generation, core centralized database, report status, vendor solutions.

I. INTRODUCTION

THIS document presents the use and need of a customized ERP system by small-mid sized organizations in their laboratories. **Enterprise Resource Planning** (ERP) system is considered as a software used for management of business flow that allows these organizations to use an automated system consisting of several functional modules and integrated applications to maintain the flow of business in organizations. The proposed system connect to real–time data and transaction of data in a variety of ways, typically this system configuration is done by integrators of system, who actually are responsible in bringing the unique knowledge on equipment's, processes and vendor solutions. This system provides increased opportunities for collaboration of Data that takes many forms in the modern enterprise such as forms, files, Documents, audio and video, emails. Most Oftenly, each medium of data consist of its own collaboration mechanism. This system basically provides a platform of collaborative nature that helps by allowing employees to spend more time in content collaboration in spite of learning the curve for communicating in different formats over a multi-distributed systems and providing faster sophisticated approach of handling queries over a system by reducing errors and allowing an easy and transparent access to the system. This paper illustrates how the capabilities of these customized systems, and their organizational effects, are constructed through language providing customers as well with easy access to reports and their status.

II. METHODOLOGY

As per our research survey we found out which ERP implementation strategies are most commonly used and implemented successfully.

As per the demanded needs of the organisation for an automated system, We looked for following factors specifically:[1]

1. Which implementation strategy would match requirements of particular selected organization?
2. Would this strategy be implemented successfully?
3. Will this strategy be implemented in a sophisticated manner that would be easy and interactive for Customers as well as employees in an organization?
4. Will this implementation strategy overcome the limitation of existing system?
5. Will this implementation be customizable expandable in future if needed?

III. ERP AND RELATED TECHNOLOGIES

ERP provides the techniques and concepts with functional modules for the management of business in an integrated manner as a whole, with some clear view of effective and efficient use of management resources that may help to improve the efficiency of an organisation. ERP systems serves by integrating separate business functions such as material management, product planning, sales, distribution, finance and accounting and others-into a single application.

Some of these technologies are:-

- Business Process Re-engineering (BPR)

- Management of Information System (MIS)
- Decision Support Systems (DSS)
- Executive Information Systems (EIS)
- Data warehousing
- Data Mining
- On-line Analytical Processing (OLAP)
- Supply Chain Management(SCM)

IV. IMPLEMENTATION

Erp Implementation is a very crucial factor as it is the stage where several man-power, resources, planning etc are considered in all having a goal of making an customized system that would fulfill and match the functional modules of an organization [3].The term "ERP Implementation Life Cycle "is referred to as the process that is been carried out for ERP implementation. This life cycle refers to the several specific stages in which ERP implementation is been carried out by an organization.

It basically keep focusing on actual ERP project which is been carried out to make ERP up, operational and running. Process of an ERP project is undergoes through several different phases like any other project of an organization. Most often such phases are mostly independent of one another sequentially, i.e. one phase may start its process before previous phase's process has been finished off. Also all phases that will be discussed at the time of implementation planning may not be applicable in each cases.

Several phases involved in ERP implementation are:-

- Pre-evaluation Screening
- Package Evaluation
- Project Planning Phase
- Gap-Analysis
- Reengineering
- Configuration
- Implementation Team Training
- Testing
- Going Live
- End-user training
- Post – implementation

V. EXISTING SYSTEM

The traditional System used in organisation had some limitations which needed some new approach in order to carry on the systematic flow in business needs and processes.

As per our survey, existing systems has following limitations:

Finite –It is useful only for particular departments or small-to-medium business corporate sectors.

Structure Query Language (SQL) — SQL for MS Access cannot be considered as robust as MS SQL Server or Oracle.

One file –It limits options, functions and how you choose utilize data; slowing down report generation process, query handling, and forms.

Static-Friendly — it mostly doesn't provides any way or functions to publish files apart from static files.

Multi-user limited — technically, the limit of concurrent users is 255, but in real world limit is 10 to 80.

SAP:

Global Integration --Barriers of currency exchange rates, language, and culture can be bridged automatically.

Cost Reduction-- reduces cost only if the company may consider the accounting and reporting in serious manner though before actual implementation of project and also requires a lot of manual or human effort in it.

Real Time User--reducing the possibility of redundancy errors

Less Personnel— Less reporting, but more sales assistants etc.

Accuracy- To be highly accurate.

VI. PROPOSED SYSTEM

As per the dynamic and fast phase nature of financial market necessitate the use of this system to provide the organization with a customized solution to their organizational needs of reliable and function with accuracy. Implementation of this system has tried to fulfil the needs required by providing specific modules required in an organization for performing their verticals such as testing, calibration, validation, and training and inspection. This system would be more customer-centric and efficient by providing those online reports and alternatively providing status of their provided task.

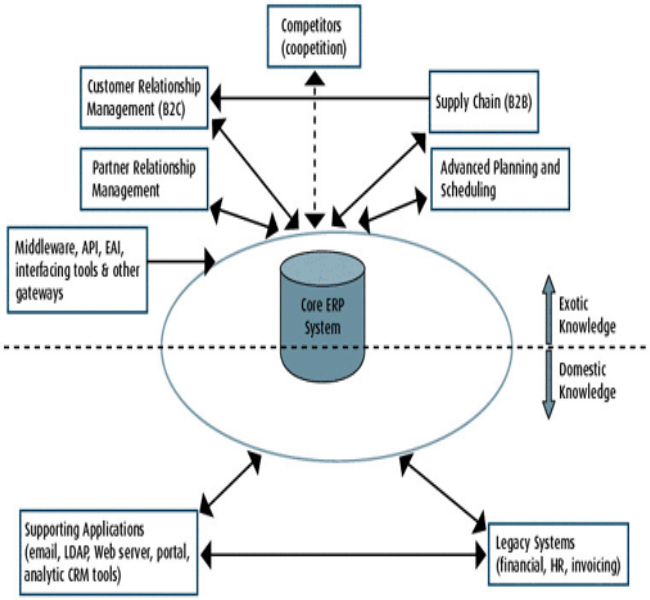
The main purpose of implementing system is to provide customized way of automating several functionalities by giving easy and sophisticated access to the customer and employees in an organization also providing flexible and secure access to key service areas.

Keeping this in mind we hereby present out proposal of customized system as for development implementation, installation and maintenance of ERP management for an organization.

VII. ARCHITECTURE

The drawbacks and limitations of traditional ERP (enterprise resource planning) system are been analyzed. The basic architecture model of multi-distributed intelligent ERP system has some advantages such as its intelligence, reliability, re-engineering and its flexibility. Moreover, how the integration is carried out in flow of material requirements, capital-flow and in flow of required information as well in

ERP system are been analyzed too. The basic implementing model of an ERP system is presented.[4]



VIII. CONCLUSION

The concept of ERP seems to be growing widely and expanding as per further needs in organizations. It helps in investigating several topics such as how the organizations using the ERP system perceive this trends, how will they stay up to date or cope up properly with the changes, what tools, methodologies and models would be required in their expansion efforts, etc.

Several areas for future research seems to have scope and being promising. One of those is the educational-area of an ERP system. It might be a time now for teacher-scholar to reflect and present on their past experiences and start publishing for common good. Another interesting area among those is to have a complete assess to the current status of ERP with help of international collaboration.This may surely help to acquire competitive advantage in global or local economy, So organizations are expanding their ERP system beyond the boundaries of firm. Future growth of the industry lies in adding extensions, Integration, scalability and flexibility issues.

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