

Measuring the Performance of an ERP System

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Abstract

Measurement can be applied to find out the success of an ERP implementation. It should be done to verify continuously that the organization is moving forward in the right direction while using the ERP system. It is a tool for ensuring that the system's performance and employees' efficiency are improving. Therefore it is necessary for the management to make sure that the system is delivering all the benefits that it was supposed to deliver like productivity improvement, error reduction, reduced response time and so on. There are number of reasons that organizations should measure the performance of the ERP system at regular intervals after implementation like evaluate and determine status with respect to plans etc. Today's success is no guarantee of tomorrow's. Therefore a continuous improvement through constant monitoring is must for survival. In order to do this, and to know that an organization is performing well and is moving in the right direction. This paper is an attempt to highlights the evaluation of performance of an ERP system.

Keywords

Enterprise Resource Planning, Metrics, Performance.

I. Introduction

Enterprise Resource Planning (ERP) systems integrate primary business applications; all the applications in an ERP suite share a common set of data that is stored in a central database. A typical ERP system provides applications for accounting and controlling, production and materials management, quality management, plant maintenance, sales and distribution, human resources, and project management [2, 8]. Thus the proactive adaptability of an enterprise around predefined business objectives is called Enterprise Resource Planning [1].

Some of the major features of ERP and what ERP can do for the business system are as below:

1. ERP facilitates company-wide Integrated Information System covering all functional areas like Manufacturing, Selling and distribution, Payables, Receivables, Inventory, Accounts, Human resources, Purchases etc.
2. ERP performs core corporate activities and increases customer service and thereby augmenting the Corporate Image.
3. ERP bridges the information gap across the organization.
4. ERP provides for complete integration of Systems not only across the departments in a company but also across the companies under the same management.
5. ERP is the only solution for better Project Management.
6. ERP allows automatic introduction of latest technologies like Electronic Fund Transfer (EFT), Electronic Data Interchange (EDI), Internet, Intranet, Video conferencing, E-Commerce, etc.
7. ERP eliminates the most of the business problems like Material shortages, Productivity enhancements, Customer service, Cash Management, Inventory problems, Quality problems, Prompt delivery etc.
8. ERP not only addresses the current requirements of the company but also provides the opportunity of continually improving and refining business processes.
9. ERP provides business intelligence tools like Decision Support Systems (DSS), Executive Information System

(EIS), Reporting, Data Mining and Early Warning Systems (Robots) for enabling people to make better decisions and thus improve their business processes.

II. Reasons for the Growth of the ERP Market

There are number of reasons why companies take an ERP [1, 4]:

1. Enable improved business performance
2. Support business growth requirements
3. Provide flexible, integrated, real-time decision support.
4. Increased functionality at a reasonable cost.
5. Integrate customer order information.
6. Incorporate financial information.
7. Standardize and speed up manufacturing processes.
8. Reduce inventory.
9. Standardize HR information.

III. ERP System Development Process

The ERP systems design process is different from the traditional systems development process. The ERP systems development process includes planning, requirements analysis, design, implementation, and maintenance. Planning starts with a need assessment, which provides a business justification for the purchase of the software. This need assessment phase is important because of the major investment in an ERP system and its business impact. The requirement analysis phase of an ERP project involves specifying the business processes to be supported by the ERP package. ERP is a way to integrate the data and processes of an organization into one single system with modules that support core business areas such as manufacturing, distribution, financials and human resources. ERP allows managers from most or all departments to look vertically and horizontally across the organization to see what they must see (information) to be productive in their managerial roles. ERP captures data from historical activity and current operations. [7, 9] That data can be transformed into information along with external information which is useful in planning and controlling operations, and in developing business strategies. ERP is evolving into a Multi-Module Application Software Package that automates inter-organizational business processes across the supply chain which involves business partners, suppliers, customers, and more [5, 6].

IV. System Designed for Attendance Capturing & Recording System

The main objective of developing these systems is to measure the performance of Attendance Recording System (ARS) which ensures the attendance (i.e. presence or absence) of employees is accurately recorded and reported for computation of payable days, overtime hours, festival allowances and payable ESI contributions etc.

The screenshot shows a Windows application window titled "Attendance Recording System". It features the Birla Corporation Limited logo at the top right. Below the logo, the company name and address are displayed: "BIRLA CORPORATION LIMITED CEMENT DIVISION, SATNA (M.P.)". The main area contains a large blue circular logo with the word "BIRLA" and "CEMENT DIVISION" inside.

Fig.1: System designed for Attendance Capturing & Recording System

This screenshot shows the "Monthly Attendance Processing" form. It includes fields for "Unit Name" (dropdown menu), "Process Start Date" (calendar icon), "Process End Date" (calendar icon), and a checkbox labeled "Are You Confirmed(Y/N)".

Fig.2 : Monthly Attendance Processing Form

This screenshot shows the "Monthly Attendance Correction Form" for Birla Corporation Limited. It displays three separate tables for attendance correction. Each table has columns for Shift Number, Shift Name, Status, and Punch In/Out Time. The first table is for the date 31-03-2006, the second for 31-03-2006, and the third for 31-03-2006.

Fig.3 : Monthly Attendance Correction Form

This screenshot shows the "Voucher Correction Form (Multiple)" for Birla Corporation Limited. It displays multiple tables for voucher correction. Each table has columns for Period, Voucher No., Date, Status, and Punch In/Out Time. The tables are for various dates such as 31-03-2006, 30-03-2006, 29-03-2006, etc.

Fig.4 : Voucher Correction Form"

This screenshot shows the "Worker's Missing Punch Correction Form" for Birla Corporation Limited. It displays four tables for worker correction. Each table has columns for Employee ID, Employee Name, Status, and Punch In/Out Time. The workers listed are P. BHALADEVIA, P. RAJENDRA SINGH, P. RAJESH KUMAR GAUTAM, and P. VISHNU KUMAR SWAMI.

Fig.5 : Worker's Missing Punch Correction Form

V. Result and Discussion

An efficient employee Attendance Recording system makes for a smoother-running organization. The ARS can contribute to an organization's overall harmony and efficiency. [1] This automated system saves time for managers and employees, improving their productivity. By eliminating manual record keeping, it reduces errors, avoiding disputes. ARS integrates a company's accrual policies and consistent awarding of employee attendance. The primary goals of ARS are to:

1. Establish an efficient workflow process for attendance authorization.
2. Integrate time and leave data with HR, payroll and ERP systems or to APIs for electronic processing.
3. Ensure accurate and consistent implementation of pay and leave policies.
4. Quickly and simply request leave or other scheduled absences.
5. Receive automatic notification of leave balances, as well as available vacation and personal time, sick days and other leave benefits.

The proposed system of measuring the performance of an ERP system has several advantages like worker's individual information is stored separately, searching of particular information became faster, Generation of various reports made review process easy, facilities of full database backup and central control of user, well-defined authorization and security levels etc.

VI. Conclusion

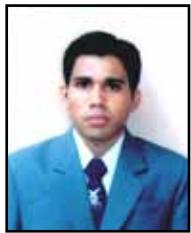
Measurement can be applied to find out the success of an ERP implementation. It should be done to verify continuously that the organization is moving forward in the right direction while using the ERP system. It is a tool for ensuring that the system's performance and employees' efficiency are improving. It is necessary for the management to make sure that the system is delivering all the benefits that it was likely to deliver such as productivity improvement, error reduction, and reduced response time etc.

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