The Impact of CRM in ERP specially for Selected Engineering Companies in Vadodara

[1] Mehul Patel, [2] Dr. R.M.Joshi

[1] *RESEARCH SCHOLAR,PAHER UNIVERSITY, UDAIPUR. RAJASTHAN*

[2]*Associate Professor,Department of Business Studies, S.P.University, Vallabh Vidyanagar*

ABSTRACT

This study provides outcomes on CRM-ERP integration with special reference to engineering companies of Vadodara City. This study provides insights on employee perception towards CRM activities by focusing on firm business and core components of ERP software in terms of information quality, system quality, system use and appropriateness. The motivational factor of this investigation is to understand digital world in engineering companies which either SMEs or non-corporate organizations in city of Vadodara. The relation between employee perception and effects on firm performance on implementing integration of CRM-ERP will provide directions to employers for better outcomes on productivity. Data quality of technological resources has been an interest of enterprise executives from the start of computer in industries but modern trend of using data to make business decisions performance-oriented. This study provides analytical output on role of CRM software on current and future customer trends for the companies.

Keywords: *Customer relationship Management, Enterprise Resource Planning, Business Applications, Organizational Profitability.*

Subject: *Management.*

Introduction

Enterprise Resource Planning is business management software—typically a suite of integrated applications—that a company can use to collect, store, manage and interpret data from many business activities, including: product planning, cost, manufacturing or service delivery, marketing and sales. This phenomenon in software industry is inevitable in business world in 21st century. The integration of ERP with Customer Relationship Management gives better firm performance and smooth management practices. Most of the organizations either SMEs or large scale companies have integration interfaces between ERP and CRM systems for the exchange of customer and sales data. In recent years there has been a blurring of the distinctions between ERP and CRM systems. Most ERP systems have expanded to basic functionality for CRM and Management Information Systems (MIS). Similarly, CRM systems now include much general ERP functionality. The aim of this investigation to identify the essential components of CRM-ERP integration and how it deals with HR concerns. The previous literature is reviewed and main objectives are framed for this study is to examine the relationship between CRM: The Business Focus factor and information quality of ERP solution, system quality of ERP solution, system use of ERP solution and appropriateness of ERP solutions in context to engineering companies of Vadodara City.

This study may be a lamp post for employers on CRM-ERP handshake. Due to the explorative nature of this study, a number of future research possibilities were uncovered. First of all, the negative effect of CRM: The Business Focus factor was an unexpected result of this study, but not unique in regard to former studies. Future research can be helpful to further explore the

relationship between CRM-ERP integration and other technical aspects of solutions which are being used in engineering SMEs.

Research Objectives

The following research objectives are formed for this investigation on the basis of research gaps identified.

1. To study the CRM activities on implementing ERP solutions in engineering companies in context to Gujarat.
2. To examine the relationship between CRM: The Business Focus factor and information quality of ERP solution in context to engineering companies of Vadodara City.
3. To examine the relationship between CRM: The Business Focus factor and system quality of ERP solution in context to engineering companies of Vadodara City.
4. To study the relationship between CRM: The Business Focus factor and system use of ERP solution in context to engineering companies of Vadodara City.
5. To study the relationship between CRM: The Business Focus factor and appropriateness of ERP solution in context to engineering companies of Vadodara City.
6. To determine the most influential factor to CRM: The Business Focus factor amongst information quality, system quality, system use and appropriateness.

Literature Review

Enterprise Resource Planning (ERP) systems have emerged as the centre of successful information management system and are considered as the backbone of organizations. In this global business scenario, organizations of any magnitude have either implemented or are in the process of implementing ERP systems in order to remain competitive. ERP can be regarded as highly integrated management information system having the capability to manage all aspects of business operations of organizations, which include production, manufacturing, sales, accounting, customer service, etc.

According to Gable & Stewart, (1999)[1]: ERP is increasingly becoming accepted platform for the small and medium scale industrial sectors and is viewed as one of the ways to achieve competitive advantage and to reengineer business process. Wang et al., (2010)[2]: to achieve synergy across product lines, these businesses must implement a set of standard business applications and consistent data definitions across all business units. ERP packages are extremely useful for integrating a company at the global level and for providing a "common language" throughout the organization). Indian small and medium business is also affected with such scenario. However, the large establishments have attempted to tackle in their own way and it is the small and the medium scale enterprises (SME) that are showing their huge potential growth using ERP. Indian SMEs contribute well above 60% of country's gross domestic product (GDP) and, because of its potential growth ERP vendors are moving their attention towards small and medium business (SMB) by offering customized and cheaper solutions from both the organizational and technological point of view Chen, (2001)[3].

According to (Mabert et al, 2001)[4]; Koh & Simpson, (2007)[5]: SME creates the largest employment opportunities for the Indian population. India's SME sector is a vibrant, dynamic, flexible and productive entity, containing as many as 12 million units and employing around 30 million people. At the time of removal of quantitative restrictions under WTO in 2001, it was widely feared that this sector would collapse under the onslaught of global products. On the contrary, the sector quickly adapted and restructured itself to face the competition head-on. It embraced high technology, accepted norms of quality and competitiveness and continued to expand faster than the rest of the industrial economy. A vast majority of small and medium scale organizations have some significant constraints in their resources. While Indian SMEs overlook the benefits of integrating ERP systems stating that such ERP software are beyond their budgets as the reason, but there is no doubt that the implementation of ERP software can improve the company's performance as well. The awareness of implementing enterprise business application (i.e. ERP) among SMEs is less than 35%, as compared to over 80% for large organizations as per survey conducted by International Data Corporation (IDC). The critical influencing business drivers for SME segment increase the overall business efficiency, increase the capital and labour productivity and to reduce the fixed and variable cost. Research and survey by leading IT vendors clearly points out that the need for technology solutions is not only confined to metro cities in India but also business organizations operating from urban and Sub urban area also need ERP solutions as well. As all ERP vendors are focusing on this market, the Indian SME segment will have many

alternatives to choose any one out of those having different competitive price. It has been found from the outcome of several researches that the implementation of ERP systems is more complex and expensive task for small organizations.

According to Leonard Simon (1997)[6] , the ERP paradigm shift is a result of demand from industries for flexible and integrated information systems and exploitation of information technology advancements such as Relational Data Bases, Client\Server computing, Object Oriented Network and Graphical User Interfaces to this end.

Taylor's (1986)[42] concept of quality in his value-added model provides the most general framework which can be applied to the evaluation of information systems, information, and data. His value-added model is based on the assumption that the judgment that users are making to choose particular information objects over others is giving *value* to the former, but not to the latter. That is, we are making judgments of value continuously while monitoring a variety of information systems and extracting what seems to be of value. To Taylor, the processes of storage and display on the system side and choice and use on the user side are throughout based on conscious and unconscious assumptions about the value of information.

Measures of system quality typically focus on performance characteristics of the system under study. Some research has looked at resource utilization and investment utilization (Kriebel and Raviv, 1980 pp 279-311)[55]. Some focused on accuracy, proceeding speed, time of response, easy access, easy use, friendly working environment and latest technology in the hardware and software of the system (Panigyrakis and Chatzipanagi, 2006, pp 91-100)[56] Hemilton and Chervany`s list of system quality measures is probably the most well known which states data accuracy, response time, turnaround time, data accuracy, reliability, and ease of use (Hamilton and Chervany, 1981, pp, 55-69)[57]. Seddon considers system quality to be considered with "bugs" in the system (system reliability), user interface constituency, ease of use, documentation quality and quality & maintainability of the program code.

Organizations looking seriously into internet enabling of their HR businesses should evaluate the authentication, security, access rules, and audit trails related to service providers' networks, servers, and applications (Karakanian, 2000)[58]. Undesired consequences refer, for instance, to an increase of quantity but a decrease of quality of applicants in e-recruiting (Strohmeier, 2009)[33]. Another important aspect of using information systems is user satisfaction. It is often suggested as an indicator of IS success.

Human resource planning, recruiting, and training are less frequent users within personnel perhaps reflecting greater use of the system for routine reporting than for decision support (Ngai and Wat (2006)[62] stated that usage was decided by the HR strategy of an organisation and further described a matching process between different strategies and different system usage. If the strategy were to reduce cost, the system would have been based on administration purposes. Martinsons (1994) [63] as cited by Ngai and Wat (2006) classified into two types according to their usage: unsophisticated and sophisticated. Payroll and benefits administration, and employee absence records keeping electronically is listed as unsophisticated since it is an electronic replication of the contents of the HR department's manual files. He called this simple minded automation. Use of IS in recruitment and selection, training and development, HR planning and performance appraisal, is classified as sophisticated since those support decisions which involve expert judgments'. A quality-based strategy is similar to an expert systems approach. Innovation strategy matched with decision support systems. Kovach and Cathcart and Kovach,1999)[64] also noted that information could be used for administrative purposes, which reduced cost and time, and supported more analytical decisions as well. They further added two general purposes of ERP applications as administrative purposes that reduced processing costs and time, and decision-support applications that assisted HR managers, non-HR managers, and employees to make better decisions. The key was to focus on making better decisions, not just producing data faster.

Although ERP systems were computerized and grew extensively in size and scope during this period, they remained (for the most part) simple record-keeping systems (Kavanaugh et al., 1990)[65].

Hypothesis

The following hypotheses are framed on the basis of research questions for the purpose of satisfying the aims and objectives of this study.

$H_0$1: There is no relationship between CRM: The Business Focus and information quality of ERP solution in context to engineering companies of Vadodara City.

$H_0$2: There is no relationship between CRM: The Business Focus and system quality of ERP solution in context to engineering companies of Vadodara City.

$H_0$3: There is no relationship between CRM: The Business Focus and system use of ERP solution in context to engineering companies of Vadodara City.

$H_0$4: There is no relationship between CRM: The Business Focus and appropriateness of ERP solution in context to engineering companies of Vadodara City.

The hypotheses correlate the CRM: The Business Focus factor and information quality, system quality, information use and appropriateness of ERP solution.

Research Methodology

The total CRM-ERP integration oriented engineering companies are 79 in Vadodara. The selection of 15 companies is made possible on the basis of five zones of Vadodara city. The zones are North, South, Central, and West. The source of data is primary and secondary. The primary data are collected through structured questionnaire administered to the respondents in person and through email. The valid sample size for this study is determined on the basis of the aforesaid formula for the sample size. The population for deterring is in variation mode 3800 by getting information through web links and personal meeting with company authorities. The sample size may be determined as 370. IBMSPSS.22 is employed as a statistical tool for the purpose of data analysis. Demographic frequency of respondents, scale reliability test, correlations, factor analysis and regression analysis are conducted as statistical tests for achieving the objectives.

Finding

The data are interpreted after data analysis and findings are summarized as follows:

CRM: The Business Focus (CRMBF) factor is observed as significantly correlated with information quality (IQ). It can be concluded that respondents are more conscious on their job execution through ERP –CRM integration in terms of information accuracy, information preciseness, information completeness, information timeliness, Information compatibility, Information understandability, Information volume appropriateness and Information relevancy, collaborative customer relationship, customer problem solution, right choice of customer and installation process of CRM ($H_1$1). It is concluded from $H_1$1 that CRM-ERP integration plays important role on organizational performance in context to employees' voice. CRM: The Business Focus (CRMBF) factor is observed as significantly correlated with system quality (SQ). It can be concluded that respondents are more conscious on their job execution through ERP –CRM integration in terms of, limitations of unauthorized access Ease of system use in ERP, integrated reports, easy navigation to information appropriate style of design for business, transaction security and error free transactions are right choice of customer and installation process of CRM ($H_1$2). It is concluded from $H_1$2 that CRM-ERP integration plays important role on organizational performance in context to employees' voice. CRM: The Business Focus (CRMBF) factor is observed as significantly correlated with system quality (SU).

Suggestions

The main recommendations from this study are (1) Employees of engineering companies should focus on up gradation of employee technological knowledge through on the job or off the job trading. (2) ERP-CRM integration usage should be made more popular amongst the employees of engineering SMEs with a view to improve interdepartmental communication by enabling disparate departments to collaborate more easily.(3)ERP-CRM integration usage should be made more popular amongst the employees of engineering SMEs with a view to drive profitability in a better manner (4) ERP-CRM integration usage should be made more popular amongst the employees of engineering SMEs with a view to become more customer focused (5) ERP-CRM integration usage should be made more popular amongst the employees of engineering SMEs with a view to make more informed business decisions. (6) ERP-CRM integration usage should be made more popular amongst the employees of engineering SMEs with a view to take a business process view (7) The engineering SME employers should take measures on determining how ERP-CRM integration can benefit to the end users (8) The engineering SME employers should take measures on cultivating the ERP-CRM integration team (9)The engineering SME employers should take measures on assigning process ownership for ERP-CRM integration project (10)The engineering SMEs

employers should take measures on improving productivity through technology (11) Finally, employee opinion should not be ignored in decision making process in context to engineering SMEs.

Conclusions

It can be concluded that respondents are more conscious on their job execution through ERP – CRM integration in terms of Job performance improvement, goal achievement, flexible interaction clear and under stable interaction, productivity improvement, technical soundness, easy to access, usage reduces human power in organization, improvement in data control and informational decisions are right choice of customer and installation process of CRM, best customization, time saving, and improving customer services ($H_1$3). It is concluded from $H_1$2 that CRM-ERP integration plays important role on organizational performance in context to employees' voice. CRM: The Business Focus (CRMBF) factor is observed as significantly correlated with appropriateness (A). It can be concluded that respondents are more conscious on their job execution through ERP –CRM integration in terms of improving absenteeism management, improving training and development functions, improving reward management, improves profit ratio and improving data input processes are right choice of customer and installation process of CRM, best customization, time saving and improving customer services ($H_1$4). It is concluded from $H_1$2 that CRM-ERP integration plays important role on organizational performance in context to employees` voice.

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