Transforming Business: Integrating ERP with E-Business

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Abstract: All businesses are focusing more on productivity, efficiency and cost saving nowadays and to materialize these factors they are emphasizing on technology, innovation, expansion of existing market and to generate new business areas. Organization today can communicate with customers, suppliers and sellers at e-speed, hence it is must for an organization to reach outside the boundaries throughout the value chain system. Internal process can be integrated using ERP and it is expected that an ERP system can facilitate an E-business effort of an organization. By integrating ERP with E-business, a new extended ERP system emerges that create business which is more lively, more focused and highly competitive than traditionally structured business. Integration of ERP with E-business pushes activities within a business to the network edge and helps in expanding their market values, relationship with their customers and suppliers. As more and more companies realize that they need to open themselves to their customers and suppliers over the internet, integration with ERP system becomes a critical issue. This paper highlights the concepts of ERP and E-business and elaborates perspective of integrating ERP with E-business using Conceptual integrated model.

Keywords: ERP, E-BUSINESS, B2B, B2C, SCM, EDI

I.   Introduction

E-business is defined as "the use of electronically enabled communication networks that allow business enterprises to transmit and receive information" (Fellleenstein and Wood, 2000). It can significantly improve business performance by strengthening the linkages in the value chain between businesses (B2B: Business to Business) and consumers (B2C: Business to Consumer). Enterprises use Web, internet, intranets, extranets or some combination of these to provide a software solution that involves business processes covering entire value chain of web enabled business activities for payment, ordering, sale, purchase, customer services, ecommerce and various other client services. ERP, Enterprise Resource Planning systems integrate all resources of an organization into a unified system where complete data of various system modules are stored in unified database. ERP helps to replace the independent applications such that SCM, CRM in order to integrate them all into a single package to provide greater flexibility and interaction among inter and intra business activities

II.   Similarities and Differences between E-Business and ERP

E-business and ERP both include Electronic Data Interchange (EDI) for exchange of information among several enterprises over the internet. ERP systems are basically backbones of E-business in respect of implementing inter and intra organizational business activities such as order to cash, production planning, financial management, requisition to cash process chains, logistics etc. These business activities are necessary to provide the communication channel between internal enterprise activities with external entities. ERP presents companies with the opportunities to standardize and automate business processes throughout the organization, thus reducing cycle time and increasing productivity. On the other hand, E-business enables companies to link their internal and external data processing systems more efficiently and flexibly to work more closely with suppliers and partners and to better satisfy the needs and expectations of their customers. E-business is focused on efficiency and effectiveness of external cross enterprise processes. While ERP technology supports business strategy, E-business opens the door to new strategic opportunities which forces ERP to take one step further to move from the single ERP system model to the extended ERP system model. E-business is possible because of various web technologies which make multiple organizations and their business partners connected all together. On the other hand because of intra organizational focus of ERP, E-business makes ERP system more transparent and outward to make complete systems connected and web based.

III.   Traditional ERP Issues

Earlier, ERP system take care of internal value chain, its origin was basically manufacturing and production planning system. Scope of ERP used to be limited to an enterprise which could not cross the boundaries. The main drawback of traditional ERP was less effective communication with other business parties and thus organization could not make quick responses and decision making to the market changes through cooperation. One of the other issues with traditional ERP was that, main consideration was given to the product rather than whole value chain that consists of customer, supplier and other parties. No

consideration implies that it did not contain any information about the customers, hence, it wasn't able to reflect demands, needs and relative financial changes. In a traditional business process, after a customer order is received, the order information flows from one department to other department through order entry, manufacturing, warehousing, distribution and finance until the product is delivered to the customer and the payment is received. The key elements of the value chain have been controlled by separate and disparate information systems that could not communicate with one another. Hence, these transactions are typically carried out with minimal or no shared business processes. Thus, it was less interactive with outer world and there was no integration of different business areas of organization.

IV. Integrated ERP System: Technologies Associated with ERP

ERP is a structured approach to optimize a company's value chain. It connects the various components of enterprise through a logical transmission and sharing of data. Initially, ERP systems were standalone systems that contains modules like Finance, Inventory, Production planning, HR etc. Gradually technologies like Supply Chain Management (SCM), Customer Relationship Management (CRM), Product Information Management (PIM), Business Intelligence (BI) etc. came into light and can be interfaced with ERP systems. These technologies can be interfaced with ERP to improve efficiency, competitiveness and effectiveness of the system. A Supply Chain is a network of facilities and distribution options that performs functions of procurement of materials, transformation of these materials into intermediate and finished products and the distribution of these finished products to customers. According to Harland, 1996, Supply Chain management spans all movement and storage of raw materials, work in process inventory and finished goods from point of origin to point of consumption. Customer Relationship Management is a process or methodology used to learn more about needs and behaviors in order to develop stronger relationships with them. CRM can also be taken as a process that will help bring together lots of pieces of information about customers, sales, marketing effectiveness, responsiveness and market trends.

Product Information Management (PIM) or Product Data Management (PDM) systems provide the tools to control access to and manage all product definition data. It is basically the use of software or other tools to track and control data related to a particular product. The use of PIM allows a company to track the various costs associated with the creation and launch of a product. Business intelligence (BI) is a set of theories, methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information. BI can handle large amounts of information to help identify and develop new opportunities. Making use of new opportunities and implementing an effective strategy can provide a competitive market advantage and long-term stability. (Source: www.wikipedia.com)

ERP system can interact automatically with suppliers and customers by information interchange and results in highly comprehensive and integrated information that can be used for decision-making.

V. Need of Integrating ERP with E-Business

The use of the Internet and WWW for communication, collaboration and trading with customers and business partners is causing a fundamental shift in how organization defines and manages their business processes. As a result business systems and processes can no longer remain isolated and disparate; they must consider their trading partners and customers. As a result, they need systems that support E-business transactions. When E-business is integrated with ERP, the whole extended system provides a vision of business processes that span multiple businesses and enterprises.

VI. Benefits of Integrating ERP with E-Business

In many organizations ERP is separated from E-business which weakens planning and designing phases of ERP implementation. Also, purchasing data is not incorporated with financial and distribution data which leads to data inconsistency and data integrity problems. Hence integration is necessary and enhances the efficiency of entire procurement and customer relationship at the same time, link to a third party B2B website, implement E-business and then reduces the costs of intermediate links, enhance enterprise competitiveness in the market. As long as the existing customers or potential customers of enterprises can access the following information from the network interface like product catalogues, unit prices, discount rates and inventory information, they can decide whether or not to place an order.

Example 1:The orders input by customers on the network is the same as the orders entered by sales, and the information about orders can be immediately transmitted to ERP at the background. Then the ERP system will do calculating after receiving them. At last, the results data on the order price, order number and the amount of discount etc. will be sent back to the network interface. If customers record the information, they can track this order at any time through the call center or by contacting with sales staff. Also, now a day, big companies like BHEL, NTPC etc. are organizing online bidding and tendering in the form of reverse auction this helps to develop new vendors and get more competitive quotations.

VII. Conceptual Model for Integrated ERP System with E-Business

E-business has changed the definition of enterprise systems. Beyond the core business functions that ERP has traditionally focused on, E-business pushes the ERP from the inside core of the companies to the network edge. Companies are realizing that the most challenging part of E-Business initiatives is not in developing a web store front but in extending ERP to accomplish B2B and B2C solutions. A new extended enterprise system emerges by integrating ERP with E-Business which creates business that is more agile, more focused and more competitive than traditionally structure business and tight B2B

connections. Extending ERP out of network edge is basically integrating core business process to customers, suppliers outside the organization. By integration we mean that making an organization adapt the changes in commercial circumstances under comprehensively applying the Internet, information share and interactive conditions. Client can be either customer or supplier or any other enterprise. The bridge between companies and their business partners is provided by web technology to make E-business possible, while E-business makes the ERP system more transparent and outward. Instead of thinking about ERP within a company we may view an ERP as extended one that consist of entire value chain. The database manages integrated data related with all subsystems and Web has a role to connect client and subsystems. And adopting the Web technology to ERP is important since it is a fast growing sector. In the viewpoint of customers, customer can easily have access to the ERP system and the web application server gives business application developers the flexibility to combine ERP functionality with the other data sources and to inject new business logic into an application without changing anything in the ERP processes. Organizations are now rotating their attention outward to engage in business with customers, suppliers and business partners through the use of the Internet and WWW services. As most of the core business processes are being carried out on web so, ERP functionality has move onto Web. Integration creates a strategic, client focused business environment for shared business improvement, mutual benefits and joint rewards. The whole extended system provides a vision of business processes that cover multiple businesses and enterprises which is possible when E-business is integrated with ERP , thus organization must be able to connect distinct platforms, applications and data formats across the value chain, including not only suppliers, but also customers as well. Furthermore, companies should retain the flexibility to change and add functions to applications as business needs evolve. Companies need to be able to adapt their ERP systems to the emerging world of E-Business.
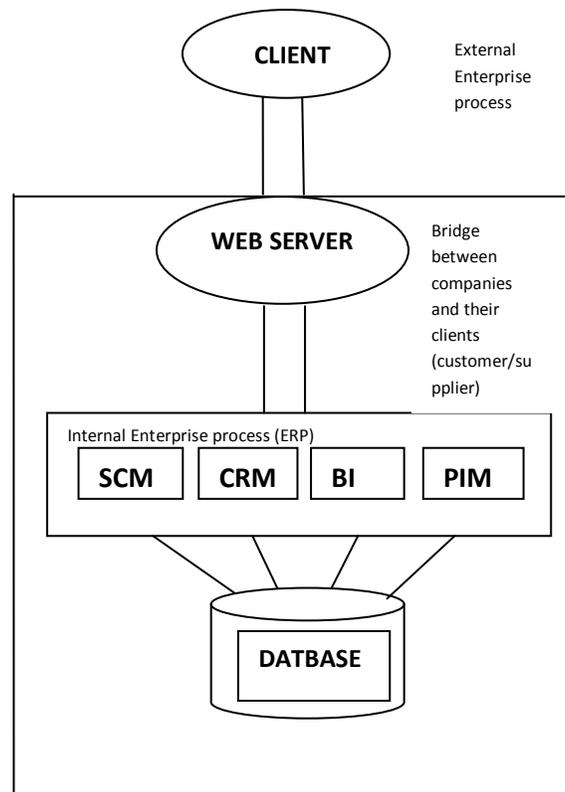
Fig 1 Conceptual Integrated model for ERP and E-business

VIII. Conclusions

Nowadays, ERP systems are expected to cover more than the internal processes taking place within the walls of an enterprise. E-Business is the solution to dictate a successful information economy. ERP and E-business applications are enabling technologies, which need to be part of a company-wide strategy ERP system based on E-Business model is embodied in the performance of information system integration. The integrated model helps in interacting automatically with customers and dealing with suppliers by information interchange. It also enhances the productivity, efficiency of entire procurement and customer relationship, link to third party B2B website, implements E-business and hence reduces the costs of intermediate links so that enterprise can compete in market more efficiently. Companies should constantly reinvent to leverage changes in E-Business technology and its ERP integration on other business applications. New E-Business models are emerging as companies are transforming themselves to compete in information economy. Successful transformation requires new E-

business strategies and processes, as well as it will transcend the walls of traditional environment to encompass an extended enterprise.

Acknowledgement

References
[1]   Prof. Tula Pramod Kumar, Dr. Thapliyal M.P (2010), *"Integration of E-Business with ERP systems"*, International Journal of Engineering Science and Technology, Vol. 2(5), 768-772.
[2]   Hesterbrink Christoph (1999), *"E-Business and ERP: Bringing two Paradigms together"*, (Source: http://sig2002.tripod.com/Lecturas/ebusinessandERP.pdf)
[3]   sharma Himanshu, Lavania Dolly, Gupta Nidhi (2011), *"ERP + E-BUSINESS = An emerging relationship"*, International Journal of Managing Value and Supply Chains (IJMVSC) Vol. 2, No. 2
[4]   Lidija Pulevska-Ivanovska (2007), *"ERP AND E-BUSINESS"*, Business Statistic – Economic Informatics, The Young Economists Journal,Vol. 1, Pg No.: 153-164
[5]   Zota Razvan Daniel (2002), *"E-business Integration: ERP systems"*, Economy Informatics, no. 1/2002, Open Access Journal, published by INFOREC Association, Bucharest ISSN 1582-7941 EISSN 2247-8523
[6]   Fellenstein, C., and Wood, R. (2000). *Exploring E-Commerce, Global EBusiness,and E-Societies*, Prentice Hall.