CHAPTER 2: BASIC ERP CONCEPTS

INTRODUCTION

To remain competitive, organizations must deliver products of the highest quality, on time, and at the best possible price. The set of business processes known as enterprise resources planning or ERP has proven to be an effective tool in achieving these objectives.

ERP is a set of tools and processes that integrates departments and functions across a company into one computer system. ERP runs off a single database, enabling various departments to share information and communicate with one another. ERP systems comprise function-specific modules designed to interact with the other modules, e.g., accounts receivable, accounts payable, purchasing, etc. ERP software is designed to function as a system for operating and managing a business.

ERP offers a means of effectively increasing and managing the required resources (materials, equipment, tools, labor, money, etc.). For each of these resources, ERP can identify what is needed, when it is needed, and how much is needed, thus making the operation of the organization efficient and effective. In this chapter, we will focus on three issues:

1. Will ERP fit the way a company does business?
2. Why ERP is important to a company?
3. How does ERP create value?

WILL ERP FIT THE WAY A COMPANY DOES BUSINESS?

It is critical for companies to figure out if their ways of doing business will fit within a standard ERP package before the checks are signed and the implementation begins. The most common reason that companies walk away from multi-million-dollar ERP projects is when they discover that the software does not support one of their important business processes. At this point, there are two things they can do. They can change the business process to accommodate the software, which will mean in-depth changes in long-established ways of doing business and redesignate important peoples' roles and responsibilities. Or they can modify the software to fit the process, which will slow down the project introduce dangerous bugs into the system, and make it excruciatingly difficult to upgrade the software to the RP vendor's next release, because the customizations will need to be torn apart and re-written to fit in with the new version.

WHY IS ERP IMPORTANT TO A COMPANY?

ERP is quite important to companies, because it improves the way a company takes a customer order and processes it into an invoice and revenue-otherwise known as the order fulfillment process. That is why ERP is often referred to as back-office software. It does not handle the up-front selling process rather; ERP takes a customer order and provides a software roadmap for automating the different seps along the path to fulfilling it. This roadmap shares the identical information at all stages of the transition, from the sales representative the loading dock, each will be able to view and modify the data. When one finishes with the order, it is automatically routed via the RP system to the next department. To find out there the order is at any point, you simply need only log in to the ERP system and track it down.

The truth about ERP is that it unifies a company, it allows the customer service team to understand the financial background of a client or to check if there is stock in the warehouse. It allows the warehouse to update the system if something is in stock or not, without having to send e-mails or documents. It minimizes inventory time. There is however a catch. People do not like to change and ERP asks them to change the way they do their jobs. That is why the value of ERP is so hard to pin down. The software is less important than the changes companies make in the ways they do business. If you use ERP to improve the ways your people take orders, manufacture goods, ship them and bill for them, you will see value from the software. If you simply install the software without changing the way people do their jobs, you may not see any value at all – indeed, the new software could slow you down by simply replacing the old software that everyone knew with new software that no one knows.

ERP systems are transforming the way organizations do business. They are indispensable tools with a huge impact on both the business and information technology (IT) worlds. An ERP system does the following:

- Affects almost all organizations – irrespective of their size and nature
- Forces the competition to change their strategies and processes
- Influences business partners to become more competitive
- Improves the profits of the consulting organizations
- Is the most important tool for business process reengineering
- Enforces best practice business processes in organizations
- Utilizes the true potential of client-server computing fully to deliver an enterprise product
- Changes the nature of the information systems (IS) function and IT professionals
- Changes the nature of jobs in all functional business areas
- Involves the organization in a very costly implementation process

ERP AFFECTS ALMOST ALL ORGANIZATIONS

ERP affects almost all organizations irrespective of their size, industry segment, and nature of business. It has changed the way organizations do business. It has increased the efficiencies and competitiveness of organizations. It has automated many business processes, streamlined day-to-day operations, and has helped organizations in serving customers better.

ERP FORCES COMPETITION TO CHANGE

ERP forces competitors to change their business strategies and processes. It provides competitive advantage and creates value. A properly implemented ERP system is a strategic weapon and can help in beating the competition and moving ahead as it provides the tools necessary for the company to react quickly to changes. So, when one organization implements ERP, the competitors have no option but to follow suit. If they fail in implementing the ERP system or fail to implement the system that is best suited for them in the best possible way, they will be left behind and will find it very difficult to survive.

ERP FORCES BUSINESS PARTNERS TO BECOME MORE COMPETITIVE

When an organization adopts ERP, it becomes more efficient. ERP systems automate the business processes and make the organization more agile. The company's decision-makers can make better decisions much faster as they have all the information they need at their fingertips. So, organizations that have implemented ERP systems can better process information and integrate it into their business procedures and decision-making. This increase in the speed and efficiency will put pressure on the organization's business partners and they too will be forced to implement the ERP system in their organizations in order to keep pace. Thus, the implementation of the ERP system in an organization forces the business partners to adapt to the changes—changes in speed and efficiency of operations. For example, companies that have implemented ERP systems operate in real-time and they will expect the same from their partners. Further, these companies will want their suppliers also to implement ERP systems so that the entire supply chain becomes integrated and operates at peak efficiencies. This is like a chain reaction, and companies that fail to join the ERP bandwagon will soon find them out of business.

ERP IMPROVES THE PROFITS OF THE CONSULTING FIRMS

Consulting firms offer a variety of ERP-related services. These services range from business process reengineering (BPR) to selecting the right ERP package, ERP implementation, end-user training, post-implementation support, and so on. ERP systems have been critically important to the growth of the major consulting organizations that offer consultancy in ERP-related areas. The advantage of consulting firms is that they gain more and more expertise and experience with each ERP implementation. For

example, if one company successfully implements ERP for competitive advantage, then the same software and consulting team would be chosen to implement ERP for its competitors, because they would have greater experience with the industry. Thus, the firms offering ERP consultancy are growing at a rate that is keeping pace with the growth of the ERP packages.

ERP IS THE MOST IMPORTANT TOOL FOR BUSINESS PROCESS REENGINEERING

Business process reengineering (BPR) is the analysis and re-design of workflow within and between enterprises. BPR reached its heyday in the early 1990s when Michael Hammer and James Champy published their best-selling book, Reengineering the Corporation. The authors promoted the idea that sometimes-radical re-design and re-organization of an enterprise (wiping the slate clean) was necessary to lower costs and increase quality of service and that IT was the key enabler for the radical change. Hammer and Champy felt that the design of workflow in most large corporations was based on assumptions about technology, people, and organizational goals that were no longer valid. They suggested seven principles of reengineering to streamline the work process and thereby achieve significant levels of improvement in quality, time management, and cost:

1. Organize around outcomes, not tasks
2. Identify all the processes in an organization and prioritize them in order of re-design urgency
3. Integrate information processing work into the real work that produces the information
4. Treat geographically dispersed resources as though they were centralized
5. Link parallel activities in the workflow instead of just integrating their results
6. Put the decision point where the work is performed, and build control into the process
7. Capture information once and at the source

Enterprise resource planning provides perhaps the primary tool for guiding those efforts, so much so that ERP is often called the electronic embodiment of reengineering.

ERP ENFORCES "BEST PRACTICE BUSINESS PROCESSES" IN ORGANIZATIONS

Best practice business processes deliver measurable, sustainable benefits over time, and improve business performance. They are an operational imperative for any organization whose goal is achieving world-class operations, characterized by the highest levels of service with the most cost-effective implementation. In finance, where there are numerous different processes, best practice solutions share the following attributes. They:

1. Support each organization's unique environment and requirements
2. Distil lengthy, complex, multi-step processes into the fewest number of steps
3. Consistently handle all document types (paper, fax, electronic) via a standard process
4. Automate the streamlined new processes
5. Ensure the inclusion of all key participants—from line-of-business managers to suppliers—in the process
6. Automatically associate all relevant information involved with each ERP transaction

HOW DOES ERP CREATE VALUE?

Enterprise resource planning systems provide firms with transaction processing models that are integrated with other activities of the firm, such as production planning and human resources. By implementing standard enterprise processes and a single database that spans the range of enterprise activities and locations, ERP systems provide integration across multiple locations and functional areas. As a result, ERP systems have led to improved decision-making capabilities that manifest themselves in a wide range of metrics, such as decreased inventory (raw materials, in-process, and finished goods), personnel reductions, speeding up the financial close process and others. Thus, ERP can be used to help firms create value. In particular, ERP facilitates value creation by changing the basic nature of organizations in a number of different ways, such as:

- Integrate the organizations activities
- Force the use of "best practices"
- Enable organizational standardization
- Eliminate information asymmetries
- Provide on-line and real-time information
- Allow simultaneous access to the same data for planning and control
- Facilitate intra-organization communication
- Enable inter-organization collaboration

SUMMARY

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ERP technical architecture basically defines layout of layers of application deployment between servers and desktops, interfaces, and software objects. ERP architecture is no more meant to just provide technical functionality, user interface, and platform support but should be able to absorb emerging technologies. The main ERP architectures are mainframe, two-tier and three-tier out of which the three-tier is most popular because of its many advantages