INFO 1400

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Tutorial 9

Project 1: Presentations: 10 minutes per group
Present 1: Group 5
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Present 2: Group 20
   Anil Lutchman Paige Bishop Zaahir Muhammad Troy Burns
Present 3: Group 23
   Kirron Lewis Zahrein Urban Stephens Rosella Latiff
Present 4: Group 37
   SHIVA HEERAMAN MARVIN FREDRICK
Present 5: Group 19
   Lindon Sinanan Nisha Seebaran
Present 6: Group 12
   Rajiv Ramroop Ahmad Abdullah Kyle Cardinez Eshwar Pooran
Present 7: Group 8
   Sherry Ann Garcia Gerardo Olivier Delani D'Abreau
Present 8: Group 4
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Case Study: Border States Industries Fuels Rapid Growth with ERP
1. What problems was Border States Industries encountering as it expanded? What management, organization, and technology factors were responsible for these problems?

Border States Industries had used its own legacy enterprise resource planning system since 1988 to support its core business processes. The system though had been designed exclusively for electrical wholesalers. The system could no longer support BSE’s new lines of business and extensive growth. BSE chose enterprise software from SAP AG as its new information system.

Management: Even though senior management worked closely with IBM and SAP during the system implementation, day-to-day operations suffered while managers were working on the project. The first group of “expert users” were trained too early in the project and had to be retrained when the new system finally went live.

Organization: Prior to the implementation, BSE had no experience with SAP software and only had a few consultants familiar with the version of the SAP software that BSE was using. Instead of adopting the best-practice business processes embedded in the SAP software, BSE hired consultants to further customize the SAP software to make its new system look like its old one in certain areas. Because of the extensive customization, the launch date was pushed back four months and the cost of implementation increased by $3 million.

Technology: The company chose to customize the system extensively, writing its own software to enable the ERP system to interface automatically with systems from other vendors. Converting and cleansing data from BSE’s legacy system took far longer than management anticipated. BSE never fully tested the system as it would be used in a working production environment before the system actually went live.

When the Internet brought about the need for additional changes, the existing SAP software did not support these changes. BSE was forced to manually process thousands of transactions outside the SAP system.
Case Study: Border States Industries Fuels Rapid Growth with ERP

2. How easy was it to develop a solution using SAP ERP software? Explain your answer.

When BSE upgraded its ERP system to a newer version of SAP software in 2004, it kept customization to a minimum and used the SAP best practices for wholesale distribution. It also replaced other software components with SAP software that provided more integration throughout the company’s business processes. Because the company did not customize as much the second time around, the implementation went smoother. The new system went live on its target date and costs were 14 percent below budget. When BSE acquired a large company that added 19 new branches, the new users were able to run BSE’s SAP software within a day after the acquisition had been completed.

3. List and describe the benefits from the SAP software.

Instead of waiting 15 to 20 days for monthly financial statements, monthly and year-to-date financial results are available within a day after closing the books. Manual work for handling incoming mail, preparing bank deposits, and taking checks physically to the bank is significantly reduced. Over 60 percent of vendor invoices arrive electronically, which has reduced staff size in accounts payable and the number of transaction errors. Transaction costs are lower.

Even though the IT staff used to support the SAP system increased significantly and IT costs rose by approximately $3 million per year after the first SAP implementation, sales expanded during the same period. The increased system overhead produced a cost increase of only .5 percent of total sales.

Much of the work that was automated by the ERP systems has been in the accounting department and involved activities that were purely transactional. This has freed up resources for adding more employees who work directly with customers trying to reduce costs and increase sales.

4. How much did the new system solution transform the business? Explain your answer.

BSE processes over 360,000 special pricing agreements with designated customers each year. The new software enabled BSE to reduce rebate fulfillment time to 72 hours and transaction processing time by 63 percent. In the past it took 15 to 30 days for BSE to receive rebates from vendors. Since BSE first deployed SAP software in 1998, sales have increased 300 percent, profits have climbed more than 500 percent, and 60 percent of accounts payable transactions take place electronically using EDI. The company turns over its inventory more than four times per year. Instead of waiting 15 to 20 days for monthly financial statements, monthly and year-to-date financial results are available within a day after closing the books.

Prior to the ERP implementation, management lacked a single company-wide version of corporate data because data were fragmented into many different systems. Now the company is standardized on one common platform and the information is always current and available to management. Management can obtain a picture of how the entire business is performing at any moment in time. Since the SAP system makes all of BSE’s planning and budgeting data available online, management is able to make better and quicker decisions.
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5. How successful was this solution for BSE? Identify and describe the metrics used to measure the success of the solution.

In 2006, Gartner Group Consultants performed an independent evaluation of BSE’s ERP implementation. Gartner analyzed BSE data on the impact of the ERP system on BSE’s business process costs, using costs as a percentage of sales as its final metric for assessing the financial impact of SAP software. Costs categories analyzed included costs of goods sold, overhead and administration, warehousing costs, IT support, and delivery.

The first implementation, 1998 to 2001, cost $9 million and the investment was returned within 2.5 years. Between 1998 and 2006 (when the second implementation occurred) BSE produced total savings of $30 million, approximately one-third of BSE’s cumulative earnings. As a percentage of sales, warehouse costs went down 1 percent, delivery costs decreased by .5 percent, and total overhead costs declined by 1.5 percent. Gartner calculated the total return on investment for the project between 1998 and 2006 was $3.3 million per year, or 37% of the original investment.

6. If you had been in charge of SAP’s ERP implementations, what would you have done differently?

ERP software is not designed for extensive customization like BSE did during the initial implementation in 1999. Rather than adopting the best-practice business processes embedded in the SAP software, BSE decided to customize the SAP software to make its new system look like its old system. BSE’s second implementation went much smoother and cost less because it did not try to customize the system as much and it adopted the built-in best practices. The initial implementation involved too many peripheral systems rather than having everything consolidated into one system. The initial training for “expert users” was not handled well. The system was not tested as it would be used in a working production environment before the system actually went live. All of these were serious, costly errors that the company corrected the second time around.

Review Questions

1. How do enterprise systems help businesses achieve operational excellence?

1.1 Define an enterprise system and explain how enterprise software works.

Enterprise software consists of a set of interdependent software modules that support basic internal business processes. The software allows data to be used by multiple functions and business processes for precise organizational coordination and control. Organizations implementing this software would have to first select the functions of the system they wish to use and then map their business processes to the predefined business processes in the software. A particular firm would use configuration tables provided by the software to tailor a particular aspect of the system to the way it does business. These include financial and accounting processes, human resources processes, manufacturing and production processes, and sales and marketing processes.

1.2 Describe how enterprise systems provide value for a business.

Enterprise systems provide value both by increasing operational efficiency and by providing firmwide information to help managers make better decisions. Large companies with many operating units in different locations have used enterprise systems to enforce standard practices and data so that everyone does business the same way. Enterprise systems help firms respond rapidly to customer requests for information or products. Manufacturing is better informed about producing only what customers have ordered, procuring exactly the right amount of components or raw materials to fill actual orders, staging production, and minimizing the time that components or finished products are in inventory.

Enterprise software includes analytical tools for using data captured by the system to evaluate overall organizational performance. Enterprise system data has common standardized definitions and formats that are accepted by the entire organization. Enterprise systems allow senior management to easily find out at any moment how a particular organizational unit is performing or to determine which products are most or least profitable.

Companies can use enterprise systems to support organizational structures that were not previously possible or to create a more disciplined organizational culture. They can also improve management reporting and decision making. Furthermore, enterprise systems promise to provide firms with a single, unified, and all-encompassing information system technology platform and environment. Lastly, enterprise systems can help create the foundation for a customer-driven organization.
2. How do supply chain management systems coordinate planning, production, and logistics with suppliers?

2.1 Define a supply chain and identify each of its components.

A supply chain is defined as a network of organizations and business processes for procuring materials, transforming raw materials into intermediate and finished products, and distributing the finished products to customers. It links suppliers, manufacturing plants, distribution centers, retail outlets, and customers to supply goods and services from source through consumption. Supply chain management is the integration of supplier, distributor, and customer logistics requirements into one cohesive process.

2.2 Explain how supply chain management systems help reduce the bullwhip effect and how they provide value for a business.

The bullwhip effect occurs when information about the demand for a product gets distorted as it passes from one entity to the next across the supply chain. It can also result from "gaming," as purchasers present manufacturers or suppliers with a false picture of consumer demand. It can be dealt with by reducing uncertainties about demand and supply when all the players in a supply chain have accurate and up-to-date information.

2.3 Define and compare supply chain planning systems and supply chain execution systems.

Supply chain planning systems enable the firm to generate demand forecasts for a product and to develop sourcing and manufacturing plans for that product. They help companies make better operating decisions such as determining how much of a specific product to manufacture in a given time period; establishing inventory levels for raw materials, intermediate products, and finished goods; determining where to store finished goods; and identifying the transportation mode to use for product delivery. One of the most important functions is demand planning, which determines how much product a business needs to make to satisfy all of its customers’ demands. These functions are referred to as order planning, advanced scheduling, demand planning, distribution planning, and transportation planning.

Supply chain execution systems manage the flow of products through distribution centers and warehouses to ensure that products are delivered to the right locations in the most efficient manner. They track the physical status of goods, the management of materials, warehouse and transportation operations, and financial information involving all parties. These functions are referred to as order commitments, final production, replenishment, distribution management, and reverse distribution.

2.4 Describe the challenges of global supply chains and how Internet technology can help companies manage them better.

Firms use intranets to improve coordination among their internal supply chain processes, and they can use extranets to coordinate supply chain processes shared with their business partners. Using intranets and extranets (both based on Internet technology), all members of the supply chain can instantly communicate with each other, using up-to-date information to adjust purchasing, logistics, manufacturing, packaging, and schedules. A manager can use a Web interface to tap into suppliers’ systems to determine whether inventory and production capabilities match demand for the firm’s products. Business partners can use Web-based supply chain management tools to collaborate online with suppliers and customers. Sales representatives can access suppliers’ production schedules and logistics information to monitor customers’ order status. The Internet has introduced new ways of managing warehousing, shipping, and packaging based on access to supply chain information that can give companies an edge in delivering goods and services at a reasonable cost.
2.5 Distinguish between a push-based and pull-based model of supply chain management and explain how contemporary supply chain management systems facilitate a pull-based model.

In a **push-based model**, production master schedules are based on forecasts or best guesses of demand for products, and products are "pushed" to customers. In a **pull-based model**, actual customer orders or purchases trigger events in the supply chain.

In contemporary supply chain management systems, the Internet and Internet technology make it possible to move from sequential supply chains, where information and materials flow sequentially from company to company, to concurrent supply chains, where information flows in many directions simultaneously among members of a supply chain network. Members of the network immediately adjust to changes in schedules or orders.

3. How do customer relationship management systems help firms achieve customer intimacy?

3.1 Define customer relationship management and explain why customer relationships are so important today.

**Customer relationship management**: A business and technology discipline that uses information systems to coordinate all of the business processes surrounding the firm's interaction with its customers in sales, marketing, and service. 

**Importance of customer relationships**: Globalization of business, the Internet, and electronic commerce have put more power in the hands of customers. Companies realize that their only enduring competitive strength may be their relationships with their customers. Some say that the basis of competition has switched from who sells the most products and services to who "owns" the customer, and that customer relationships represent the firm's most valuable asset.

3.2 Describe how partner relationship management (PRM) and employee relationship management (ERM) are related to customer relationship management (CRM)?

CRM systems capture and integrate customer data from all over the organization, consolidate the data, analyze the data, and then distribute the results to various systems and customer touch points across the enterprise. Companies can use this customer knowledge when they interact with customers to provide them with better service or to sell new products and services. CRM systems integrate and automate many customer-facing processes in sales, marketing, and customer service, providing an enterprise-wide view of customers. These systems track all of the ways in which a company interacts with its customers and analyze these interactions to maximize customer lifetime value for the firm. CRM extends to a firm's business partners who are responsible for selling to customers.

The more comprehensive CRM packages contain modules for partner relationship management (PRM) and employee relationship management (ERM).

PRM uses many of the same data, tools, and systems as CRM to enhance collaboration between a company and its selling partners. If a company does not sell directly to customers but rather works through distributors or retailers, PRM helps these channels sell to customers directly.

ERM software deals with employee issues that are closely related to CRM, such as setting objectives, employee performance management, performance-based compensation, and employee training.

3.3 Describe the tools and capabilities of customer relationship management software for sales, marketing, and customer service.

Customer relationship management systems typically provide software and online tools for sales, customer service, and marketing. Capabilities include the following:

**Sales**: 
Sales force automation modules in CRM systems help sales staff increase their productivity by focusing sales efforts on the most profitable customers, those who are good candidates for sales and services.

**Provide sales prospect and contact information, product information, product configuration capabilities, and sales quote generation capabilities.**

**Enable sales, marketing, and delivery departments to easily share customer and prospect information.**
3.3 Describe the tools and capabilities of customer relationship management software for sales, marketing, and customer service.

Increase salespeople’s efficiency in reducing the cost per sale as well as the cost of acquiring new customers and retaining old ones. Capabilities for sales, forecasting, territory management, and team selling. Supports direct-marketing campaigns by providing capabilities for capturing prospect and customer data, for providing product and service information, for qualifying leads for targeted marketing, and for scheduling and tracking direct-marketing mailings or e-mail.

Customer Service:
Provide information and tools to make call centers, help desks, and customer support staff more efficient. Includes capabilities for assigning and managing customer service requests. May also include Web-based self-service capabilities.

Marketing:
Support direct-marketing campaigns by providing capabilities for capturing prospects and customer data, for providing product and service information for qualifying leads for targeted marketing, and for scheduling and tracking direct-marketing mailings or e-mail. Includes tools for analyzing marketing and customer data. Identifies profitable and unprofitable customers, designs products and services to satisfy specific customer needs and interests, and identifies opportunities for cross-selling, up-selling, and bundling.

3.4 Distinguish between operational and analytical CRM.

Operational CRM includes customer-facing applications such as tools for sales force automation, call center and customer service support, and marketing automation.

Analytical CRM includes applications that analyze customer data generated by operational CRM applications to provide information for improving business performance management. Applications are based on data warehouses that consolidate data from operational CRM systems and customer touch points. The database serves online analytical processing, data mining, and other data analysis techniques. Provides information related to customer lifetime values.

4. What are the challenges posed by enterprise applications?

4.1 List and describe the challenges posed by enterprise applications.

Enterprise applications are very difficult to implement successfully. They require extensive organizational change, expensive new software investments, and careful assessment of how these systems will enhance organizational performance. Enterprise applications require both deep-seated technological changes and fundamental changes in business operations. Employees must accept new job functions and responsibilities. They must learn new work activities and understand how data they enter into the system can affect other parts of the company. Enterprise applications introduce switching costs that make it very expensive to switch vendors. Multiple organizations will share information and business processes. Management vision and foresight are required to take a firm- and industry-wide view of problems and to find solutions that realize strategic value from the investment.

4.2 Explain how these challenges can be addressed.

Enterprise applications create new interconnections among myriad business processes and data flows inside the firm (and in the case of supply chain management systems, between the firm and its external supply chain partners). Employees require training to prepare for new procedures and roles. Attention to data management is essential. Management must understand the impact that implementing enterprise applications will have on every facet of the business. Executives must not underestimate the time and costs of implementation, not just on the organization but also on customers, suppliers, and business partners.
5. How are enterprise applications used in platforms for new cross-functional services?

5.1 Define a service platform and describe the tools for integrating data from enterprise applications.

Service platforms integrate multiple applications from business functions, units, or partners to deliver a seamless experience for customers, employees, managers, or business partners. They provide complete information to everyone involved in a process from beginning to end. The service platforms can be further integrated into an enterprise-wide composite process.

The applications can be integrated with older legacy applications and systems from other vendors through the use of middleware, XML, and Web services tools. Portals provide frameworks for building new composite services and presenting them to users as though the information is coming from a single source.

5.2 How are enterprise applications taking advantage of cloud computing, wireless technology, Web 2.0, and open source technology?

Enterprise applications are moving towards integration of open source technology and cloud computing capacity. Small- and midsize-companies embrace these applications because they are cheaper and easier to implement. They don't require as much upfront infrastructure investment as traditional in-house enterprise applications. Customer relationship management applications are the primary type of enterprise applications adopted by companies.

Enterprise solutions, enterprise suites, or e-business suites let businesses tie together their CRM, SCM, and enterprise systems to each other and to systems of customers and suppliers. These next generation enterprise systems utilize Web 2.0 services and service-oriented architectures. Enterprise system software manufacturers also link the programs to function-specific Web services through Web sites. Some functions and data-driven processes are available to users through wireless connections like laptops, smartphones, and tablet computers.

Running Case Assignment: Improving Operational Excellence: Identifying Supply Chain Management Solutions

1. Compare alternative suppliers for motorcycle fuel tanks. Find out the amount of time and cost to ship a fuel tank (weighing about 5 pounds) via ground (surface delivery) from each supplier to Dirt Bikes in Carbondale, Colorado. Which supplier is most likely to take the shortest amount of time and least cost to ship the fuel tanks?

ATV Motorcycle Parts from given information.

Shipping: 3-4 days

Cost: $89.50 + $10.92 = $100.42

2. Dirt Bikes’s management would like to know if there is any supply chain management software for a small business that would be appropriate for Dirt Bikes. Look at the capabilities of the two pieces of software indicated and how they could help Dirt Bikes. Which supply chain management software product would be more appropriate for Dirt Bikes? Why?

Different software companies define the supply chain management function differently, and their software will support the function as defined.

Compiere gives the potential user the ability to download the system, and that enables the company to evaluate it more thoroughly. It is also very inexpensive to obtain although it does require support abilities within the company.

Enterprise Logix is more difficult to obtain a list of current users, and the cost is not readily available on-line. The choice is certainly up to Dirt Bikes, and the students might choose either of the two companies the student identifies, with its own reasons. The one value is that many software companies are addressing supply chain issues, however they define the function, so that the consultant can certainly find software that will fulfill the consultant’s requirements.