

# CHAPTER 12

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## Enterprise Applications to Manage Supply Chains and Respond to Customers

### LEARNING OBJECTIVES

After reading this chapter, you will be able to answer the following questions:

1. How do enterprise systems help businesses achieve operational excellence?
2. How do supply chain management systems coordinate planning, production, and logistics with suppliers?
3. How do customer relationship management systems help firms achieve customer intimacy?
4. What are the challenges posed by enterprise applications?
5. How are enterprise applications used in platforms for new cross-functional services?

### OPENING CASE: ALLAN CANDY: HOW SWEET INDEPENDENCE IS!

The opening case illustrates how Allan candy needed, as an independent company, the ability to improve its benefits to customers, including speed to market. Allan candy needed to manage both its upstream and downstream production and distribution processes and have real-time access to inventory, production, and distribution (e.g., customer, invoicing) data. The company's managers also needed easy access to real-time financial data. These needs are met by enterprise applications.

## 12.1 ENTERPRISE SYSTEMS

Over the last decade businesses have come to realize how important it is to totally integrate business processes across the enterprise. We've spoken about "islands of information" many times. In today's fast-paced world, managing information assets is more important than ever before. In this chapter we'll look at how important it is for information to be available in every nook and cranny in the enterprise.

We've look at enterprise resource planning systems in previous chapters and also discovered the importance of efficiently and effectively maintaining data that businesses can develop into useful information. As we've seen, it can be disastrous for an organization to have more than one set of data for customers, employees, and suppliers. The best idea is to have one database that supplies information where and when necessary across functional lines. Everyone from employees to managers, from customers to suppliers, would have the necessary tools to extract the data that they need and present it in the format that fits them best. That's where enterprise systems come into play.

### WHAT ARE ENTERPRISE SYSTEMS?

**Enterprise systems** aim to correct the problem of firms not having integrated information. Also known as enterprise resource planning (ERP) systems, their main goal is to bridge the communication gap among all departments and all users of information within a company. If production enters information about its processes, the data are available to accounting, sales, and human resources. If sales and marketing is planning a new advertising campaign, anyone anywhere within the organization will have access to that information. Enterprise systems truly allow a company to use information as a vital resource and enhance the bottom line.

Data integration throughout the firm is the key. Consolidated data from divisions and departments throughout the business, including key business processes, are immediately available to any authorized user.

The greatest enticement of enterprise systems is the chance to cut costs firm-wide and enhance the ability to pass information throughout the organization. Take the success of Oracle Corporation as an example. "The company now has an enterprise-wide system for managing customer contacts. Previously, the salesforce used a network that was different from the fulfillment and shipping network. By unifying these networks, salespeople don't have to duplicate the efforts of others in the organization, and thereby save time and money. At the beginning of the year, the company said that it expected the changeover to save \$1.2 billion over the next four quarters. Just three months later, Chief Financial Officer Jeff Henley told analysts that Oracle will save nearly twice that by year-end." (*BusinessWeek*, April 6, 2000)

## ENTERPRISE SOFTWARE

Many businesses assume that their operations are totally integrated across functional lines. After all, Manufacturing responds to an order from Sales and produces a product for which Accounting and Finance sends an invoice. A Production manager sends an e-mail to the Human Resources Department requesting five new employees. When the Marketing department decides on a new advertising campaign, a copy of the brochure is included in all employees' pay envelope at the end of the month. Once a week all department managers meet with the executive staff and review statistics from last month's business.

What's the problem? Many times, departments will fail to fully communicate with all the other departments about every process that is taking place in a company. They don't do it on purpose but forget how important total communication about every process and every piece of data is. Sales sends an order to Manufacturing with a shipment date that can't possibly be met. Accounting and Finance bills for supplies that Production never order. Human Resources holds a training class that interferes with a rush production job.

What's the solution? **Enterprise software** allows every functional area to share every process and every piece of data. A business can select specific processes in specific areas but eventually everything the company does will be shared across all lines. The software uses predefined processes and requires the company to adapt itself to the software. While many companies may balk at having to change, the software is designed around the **best practices** for that particular function. The company can benefit from using the most successful solutions in a particular industry to help achieve its objectives. The software helps the organization automate many of the steps in the best practices instead of having to do everything manually. And best of all, the software will help employees remember all of the necessary steps in a process and provide the data to all who need it.

While enterprise software can be somewhat modified, it is very expensive and very difficult to do so. Because the software is so complex, changing just one of the processes may disrupt some of the other interdependent modules. However, manufacturers of the enterprise software programs are modifying the software to envelope Internet services and make the data available to external sources such as suppliers, governmental agencies, and customers.

## BUSINESS VALUE OF ENTERPRISE SYSTEMS

Done correctly, enterprise systems can offer big rewards. Conversely, done incorrectly can cause loss of business, employee turmoil, and wasted dollars.

The changes in the enterprise will be tremendous:

- **A more uniform organization:** a more disciplined approach to business throughout the entire firm, regardless of physical location and/or organizational structure
- **More efficient operations and customer-driven business processes:** all functional areas can focus more on the customer and respond to product demand more efficiently
- **Management:** improved management decision making, with a comprehensive view of performance across all functional areas

**Bottom Line: Enterprise systems force a company to fully integrate all business processes. These systems usually require massive changes in the structure and organization of the business and are difficult to implement. However, the changes can make a tremendous improvement in the firm by using the best practices of the industry and requiring all functional areas to focus ore on the customer.**

## 12.2

## SUPPLY CHAIN MANAGEMENT SYSTEMS

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### THE SUPPLY CHAIN

A **supply chain** includes all of the internal functions of an organization, along with suppliers, distributors, retailers, and customers. They are all intertwined and rely on information from each other to effectively meet the business's objectives.

Exactly what are all the activities involved in getting a product from conception to delivery? There are probably many more than you can easily think. And there are many more people involved than you might imagine. It may be helpful to break the supply chain into three distinct groups:

- Upstream: suppliers that deal directly with the manufacturer and their suppliers
- Downstream: distributors and those that deliver the products to the customers
- Internally: the employees that transform the materials, components, and services into the actual products

Think of a mountain stream that starts very small, flows downhill, gathers more water as it combines with other streams, feeds into a river that continues to flow and eventually meets up with other rivers, and on into the ocean. The mountain stream is analogous to the suppliers, the river represents the manufacturer, and the ocean can be compared to the customers.

## INFORMATION AND SUPPLY CHAIN MANAGEMENT

As with other functional areas, information is the glue that holds the supply chain together. Lack of or faulty information can wreak havoc on the entire chain from getting supplies into the manufacturing process and getting the final product to the customer.

In a perfect world, **just-in-time** strategies for ordering and delivering supplies would be an ordinary process. Unfortunately, we don't live in a perfect world. Natural disasters, dock worker strikes, and terrorist activities such as September 11, 2001, can disrupt even the most carefully planned supply chains in an instant. Businesses have to plan as best they can around these kinds of events but they can't foresee every problem. The **bull-whip effect** on the supply chain is more natural than you might think and happens in virtually every industry.

“PC makers insist their inventories are in good shape. But there are signs of trouble further down the supply chain. Analysts were taken aback to learn that the Taiwan companies that make the guts of notebooks for market leaders Hewlett-Packard Co. and Dell Inc. saw February sales plunge 10% to 15%.

What's going on? PC makers, encouraged by robust 35% growth in third-quarter notebook unit sales and signs of even stronger holiday demand, ramped up their orders from Taiwan by a staggering 68%, according to the Taipei-based Market Intelligence Center. But while the sales surge kept going through the fourth quarter, analysts fear that the sudden drop in supplier orders means that the pace has slipped in the first quarter of this year. Analysts add that PC makers incorrectly assumed that laptops were so hot that they were immune from the post-Christmas sales slump that has traditionally afflicted desktops.” (*BusinessWeek*, March 15, 2004)

In the example of the bull-whip effect explained above, if the PC makers had been able to pass timely and accurate information to their parts suppliers, perhaps the sudden swing in supplying computer parts could have been avoided. Many companies don't want to give up too much of their information because they fear that outsiders will compromise the information. Unfortunately this way of old-style thinking costs too much money in terms of lost opportunities, overstocked and underused parts, and overpriced products.

## SUPPLY CHAIN MANAGEMENT SOFTWARE

**Supply chain planning systems** can provide information up and down the chain and help everyone involved do a better forecasting job. In the example above, the information could pass more easily between the PC retailers and the parts suppliers. Although the retailers were still remiss in accurately forecasting PC sales for the first quarter, the parts suppliers could have altered their manufacturing schedules quicker and avoided the huge inventory build-up.

Supply chain planning systems enable firms to

- Generate demand forecasts
- Develop sourcing and manufacturing plans
- Share information about changes easier and faster so work can be better coordinated
- Develop better **demand planning**
- Manage the flow of products through distribution centres and warehouses by using **supply chain execution systems**
- Coordinate activities with supply chain partners
- Handle complex interdependencies among various supply chain processes
- Allow users to balance the costs of transportation, delivery, and handling

## **WINDOW ON TECHNOLOGY: PROCTER & GAMBLE TRIES TO OPTIMIZE INVENTORY**

### **TO THINK ABOUT QUESTIONS**

#### **1. Why are larger supply chains more difficult to manage? List several reasons.**

Supply chains of a company as large as P&G are extremely complicated, featuring thousands of suppliers, manufacturing facilities, and markets. The upstream and downstream portions of the supply chain involve many more players in larger supply chains. Even the slightest of changes at any part of the supply chain may have significant effects on all of the other participants. Because larger supply chains are so extensive, the chance for any errors or inefficiencies to occur are greater than with small, more compact supply chains.

#### **2. Why is supply chain management so important at a company such as P&G?**

Large companies like P&G are constantly searching for ways to reduce supply chain costs and improve efficiency throughout its entire manufacturing and distribution network. Total supply chain costs represent the majority of operating expenses for many businesses and in some industries approach 75 percent of the total operating budget. Reducing supply chain costs may have a major impact on a company's profitability. Supply chain management systems help increase sales by providing more precise control of a firm's ability to have the right product available for customer purchases at the right time.

#### **3. How did inventory optimization impact operations and decision making at P&G?**

The PowerChain Suite multi-echelon inventory optimization solution that P&G used determines appropriate inventory configurations that can adapt smoothly to quickly changing demand. The suite balances costs, resources, and customer service to arrive at the configurations. It pools inventory to minimize risk across products, components, and

customers and coordinates inventory policy across different items. The software first configured P&G's existing cosmetics supply chain, pulling in the previous 18 months of demand data and using the previous three months' demand variability. It optimized the inventory strategy within the supply chain, aiming for target service levels above 99%. It identified alternate supply chain designs, and created an optimal redesign of the supply network.

P&G's beauty division trimmed its total inventory by 3 to 7 percent and maintained service levels above 99%. In the first fiscal year after implementation of the new software, the division's earnings rose 13% and sales rose 7%. Inventory days on hand were down by eight days compared to the previous fiscal year.

**4. Why wouldn't a small company derive as much benefit from multi-echelon inventory optimization as a large company? Explain your answer.**

Smaller companies don't have supply chains as large and complex as those found in larger companies like P&G. Multi-echelon networks have products stored in a variety of locations along their path to distribution. These networks consist of regional distribution centers and a larger number of forward distribution centers. Echelons may be isolated from other echelons, so changes in inventory made by one echelon may have unpredictable consequences on the others. It's unlikely small companies would have this kind of supply chain structure. The multi-echelon inventory optimization software would simply be overkill. Small companies would benefit more from using a Web-based software system for sourcing, work-in-progress tracking, production routing, product-development tracking, problem identification and collaboration, delivery-date projections, and production-related inquiries and reports.

## MIS IN ACTION QUESTIONS

**1. Surf the Web for the ingredients of a Procter & Gamble product such as Crest toothpaste or Cover Girl lipstick or look for the list of ingredients on the packaging for these products in a retail store. Make a list of the ingredients for the product you selected.**

**Cover Girl Lipstick ingredients:** Ricinus Communis Seed Oil Castor , Isopropyl Isostearate , Ethylhexyl Hydroxystearate , Acetylated Lanolin , Ozokerite , Euphorbia Cerifera Wax Candelilla , Paraffin , Cetyl Alcohol , Cetyl Lactate , Copernicia Cerifera Wax Carnauba , Retinyl Palmitate , Tocopheryl Acetate , Ascorbyl Palmitate , Propylparaben , Mica , Red 21 Lake - May Contain , Red 33 Lake - May Contain , Yellow 6 Lake - May Contain , Red 7 Lake - May Contain , Blue 1 Lake - May Contain , Red 21 - May Contain , Red 27 Lake - May Contain , Red 6 Lake - May Contain , Yellow 5 Lake - May Contain , Carmine - May Contain , Bismuth Oxychloride - May Contain , Green 5 - May Contain (copied from [www.walgreens.com](http://www.walgreens.com) Nov 2008)

**Crest toothpaste ingredients:** Active Ingredients: Sodium Fluoride 0.243% - 0.15% W/V Fluoride Ion Inactive Ingredients: Hydrated Silica , Sorbitol , Glycerin ,

Tetrapotassium Pyrophosphate , PEG-6 , Disodium Pyrophosphate , Tetrasodium Pyrophosphate , Flavor , Sodium Lauryl Sulfate , Alcohol 1.14% , Xanthan Gum , Sodium Saccharin , Carbomer 956 , Polysorbate 80 , Sodium Benzoate , Cetylpyridinium Chloride , Benzoic Acid , Domiphen Bromide .0002 wt% , Titanium Dioxide , Blue 1 , Yellow 5 (copied from [www.dentist.net](http://www.dentist.net) Nov 2008)

## **2. Use the Web to find the major suppliers for each of these ingredients and their locations.**

P&G maintains an extensive Web portal for its supply chain partners at <http://pgsupplier.com/main.html> . “The purpose of this web site is to provide easy access to Procter & Gamble information that is of value to *prospective* and *current* P&G *suppliers, agencies, and providers of goods, equipment, services* and *sponsorship opportunities*. The information on this site outlines the fundamentals of how P&G conducts business with its suppliers and how the Company views supplier relationships in general. It gives a brief sketch of how P&G Purchases is organized and offers an avenue for those interested in becoming P&G suppliers. It also provides information to current P&G suppliers who want to enhance their understanding and connectivity with P&G.” (copied from pgsupplier.com Nov 2008).

Just a couple ingredients in these two products show the extensive global supply chain available to P&G and all manufacturers. There are numerous supply chain directories available for all of these products on the Web.

Isopropyl Isostearate: Jarchem Industries, Inc. Newark, NJ  
 Ascorbyl Palmitate: Westco Chemicals, North Hollywood, CA  
 Sorbitol: ADM, Decatur, IL or Anhui Joyfood Import & Export, Anhui, China

## **3. What did you learn from your investigation about P&G's supply chains for these products? What factors would determine price and availability of these products?**

Student answers will vary, however they should include information about the extensive number of suppliers for product ingredients. There is no single source for every ingredient in a single product. Therefore, large manufacturers like P&G must coordinate with many different suppliers to procure the necessary ingredients. Student research for this question should confirm the necessity for a well-designed and well-managed supply chain that provides efficiencies upstream and downstream. That in turn will help reduce supply chain costs for not only P&G but for the suppliers themselves.

Factors that help determine price and availability of products include the cost of procuring raw materials, transforming the materials into intermediate and finished products, and distributing finished products to customers. Other factors that determine product price and availability depend on costs associated with members in the supply chain – distributors, logistics providers, suppliers, secondary suppliers, and tertiary suppliers.



## GLOBAL SUPPLY CHAINS AND THE INTERNET

The islands of information that we've frequently mentioned don't exist just inside the corporation but also exist all up and down the supply chain. Adapting the supply chain software to the Internet and opening up the information to suppliers, logistical experts, and distributors can greatly help a company reduce costs and ensure products are delivered when needed to the right location.

## GLOBAL SUPPLY CHAIN ISSUES

The same type of internal collaboration that organizations can generate through *intranets* can be extended to supply chain partners through *extranets*. Suppliers can log on to a company's extranet site and review next week's production schedule. The supplier can ensure enough production supplies are on hand by the manufacturer without over- or under-extending itself. Changes to the production schedule can be communicated easier to the supplier through Internet-enabled applications. Long-term forecasts can be posted to the extranet and schedules adjusted. No expensive proprietary systems are necessary since all the information is transmitted through ordinary Web-based applications. Anyone internal or external to the organization can view delivery schedules or determine the optimal logistics for moving products through online applications.

Figure 12-4 demonstrates how intranets and extranet provide the communication channels necessary to improve supply chain management.

## DEMAND-DRIVEN SUPPLY CHAINS: FROM PUSH TO PULL MANUFACTURING AND EFFICIENT CUSTOMER RESPONSE

Traditionally, customers purchase whatever products are available. Although the colors, sizes, and prices may have varied somewhat, generally the manufacturer decided what to produce by forecasting what the potential demand would be through a **push-based model**. That is quickly changing to a **pull-based model** in which the customer tells the manufacturer ahead of time what he/she wants to buy. One of the best examples of this new pull-based model is Dell Computer's build-to-order business model. Dell doesn't build a computer until it receives a customer order. Then it builds the computer to the customer's specifications. Granted, the customer must choose from a pre-determined list of options, but Dell doesn't have a huge stock of unsold inventory based on faulty demand forecasting that no one wants.

Figure 12-5 shows the differences between the push-based and pull-based supply chain models.

Automobile manufacturers are also adopting pull-based modeling for their customers. A customer in St. John's can log onto a Web site and select the color, engine, options and kind of tires for his/her new car. The order is sent to the factory in Oshawa and the

manufacturer's suppliers simultaneously. Although the customer must wait for delivery, at least he/she will get exactly the car they wanted.

## **BUSINESS VALUE OF SUPPLY CHAIN MANAGEMENT SYSTEMS**

The benefits of implementing an integrated, networked supply chain management system include:

- Match supply to demand
- Reduce inventory levels
- Improve delivery service
- Speed product time to market
- Use assets more effectively

In turn a company can

- Improve customer service and responsiveness
- Reduce costs
- Utilize cash better

These last three benefits of implementing a supply chain management system point directly to improving the bottom line for the company. By making the supply chain more efficient a company can save millions of dollars and improve its relationships with its customers.

**Bottom Line: Supply chain management systems integrate all of the processes by supplying information to all entities involved in the chain. The information allows organizations to improve demand forecasting and better measure the performance effectiveness of the supply chain. Better information also allows a firm to move from push-based to pull-based modeling to increase the speed of network access and will probably reach your world in the next few years.**

### **12.3**

## **CUSTOMER RELATIONSHIP MANAGEMENT SYSTEMS**

“Arun Jain, chairman of the marketing department at the University at Buffalo School of Management, said preserving relationships with existing customers is important for businesses because acquiring new ones is expensive. Once you build a relationship with a customer, then you can sell additional products to them, they recommend you to others, cost of serving goes down, they become less sensitive to price,” Jain said. “In the beginning, you may end up paying to acquire them, but if you have

selected the right type of customer, they become profitable.” (*USA Today Online*, March 14, 2004)

While many companies strive to be “customer-centric” very few have been able to completely focus every functional area on the customer. Largely due to the new avenues of information customers have through the Internet, organizations must fight harder to keep the customers they work so hard to get in the first place.

## WHAT IS CUSTOMER RELATIONSHIP MANAGEMENT?

The goals of customer relationship management systems are to optimize

- revenue
- profitability
- customer satisfaction
- customer retention

“Since the mid-1990s, companies have been trying to make their enterprise and customer data pay off. They know this data has value, but they don’t know how to effectively extract it. In their mining efforts, companies have built huge data warehouses, sunk millions of dollars into CRM systems and endured painful change management initiatives—often with lackluster results.

[Four companies were successful in implementing CRM systems: Ace Hardware, Academic Management Services, Continental Airlines, and Korn/Ferry International.]

These companies’ investments succeeded because they first analyzed their business needs and goals, reengineered existing business processes to take advantage of the data they were capturing, and put technology in place that’s both easy to use and supports the needs of users as well as the company’s business objectives. And they haven’t forgotten that it’s the customer-facing employee who can make all the difference in whether or not a customer feels well served—and that no technology, however superior, can make up for that human touch.” (*CIO Magazine*, Feb 15, 2004)

Many companies are overloaded with data about customers. Unfortunately, the companies don’t have any useful information that can help them increase customer satisfaction and retention, thereby increasing revenues and profitability. The ability to turn raw data into useful information is where CRM systems shine. CRM systems can gather customer information from all corners of a business, consolidate the information and then provide it to the customer **touch points**. By offering a consolidated viewpoint of the customer to these touch points, a company can cater to the customer that offers the most profitability.

Financial institutions are a prime example of how effective CRM systems can be to help identify the customers that offer the most “bang for the buck.” Most of the larger banks offer more than just chequing and savings accounts. They provide investment services, insurance policies, and loans. It's much cheaper for Wells Fargo bank for instance, to provide its current customers with all of these financial products, rather than trying to attract new customers for each of the product lines. Information gleaned from a CRM system can provide Wells Fargo with information about which customers are more likely to purchase these products and the sales force can target that market better.

## **CUSTOMER RELATIONSHIP MANAGEMENT SOFTWARE**

CRM application software ranges in size and complexity making it possible for an organization to select the type of software it needs the most. Modules focusing on partner relationship management or employee relationship management can be integrated into the customer relationship management software at a later date.

**Partner relationship management (PRM) systems** are a reflection of internal customer relationship management systems but extend past the immediate borders of a firm to its selling partners. For instance, Levi Jeans doesn't sell directly to its customer but rather through other retail outlets. How Levi's partners cater to the customer directly affects its profitability. Therefore, Levi is very interested in sharing information about its customers with its partners to increase sales of its products. Using partner relationship management systems not only helps Levi but also its retailers.

**Employee relationship management (ERM)** modules associated with CRM focus more on how employees perform and interact with customers. These modules help a company manage

- Employee objectives
- Employee performance
- Performance-based compensation
- Employee training

### **Sales Force Automation**

Sales force automation allows the sales force to focus on the most profitable customer. It also reduces the cost per sale for acquiring new customers and retaining old ones.

### **Customer Service**

Customer service gathers information from a variety of sources and makes it available across organizational functions so that data is input only once.

### **Marketing**

**Marketing** allows companies to engage in **cross-selling, up-selling**, and bundling through better analysis of customer data

## **WINDOW ON ORGANIZATIONS: WHY NOVARTIS BACKED OFF FROM ENTERPRISE SOFTWARE**

The Window on Organizations describes an organization's struggle to implement enterprise software. Novartis Pharmaceuticals was experiencing problems paying invoices on time because of incompatibilities between its SAP R/3 enterprise software and the company's business processes for initiating purchase requisitions and paying suppliers. It decided to simplify the process but chose to use other software to support it instead of enterprise software.

### **TO THINK ABOUT QUESTIONS**

#### **1. Why was Novartis having trouble with its requisition-to-pay process?**

Novartis was having trouble with its requisition-to-pay process because the accounts payable and strategic sourcing departments modified the original SAP product. Although Novartis had insisted that SAP be its global standard, this department decided that the software was not working for them, so they went about modifying and redesigning it. In the process, they scrapped SAP modules that did not meet their needs. On top of that, they had decided not to work with the Novartis information systems department. On the other hand, the information systems staff did not thoroughly understand the requisition-to-pay process and believed that an SAP R/3 software upgrade would solve the problems.

Tight deadlines and a limited budget resulted in inefficient training and not enough attention being paid to the new system's impact on business processes. In a nutshell, lack of understanding, communication, and working together as a team were the major problems with this process.

#### **2. What management, organization, and technology factors were involved?**

To overcome these problems, management needed to get all users and information groups to work together in a cooperative manner. Proper training is a major requirement of any successful system, so management must ensure that enough money is budgeted to handle this necessity.

Organizationally, the company needed a cultural change so that all departments would realize that they do not operate in isolation from each other. The directions and plans for software such as CRM must be clearly explained to all parties within the company. They must all share the same vision as to how it will best help them.

Certainly, it should not be an accepted standard for any group operating independently to make changes to any of the SAP modules. They simply would not have an in-depth knowledge of how these ripple effects would impede other modules. The implementation of a system such as this is complex and should not be done on tight budgets and time schedules. System training is paramount to success.

### 3. Was the solution to this problem a good one? Why or why not?

Certainly, students will agree that the solution to this problem was a good one for all concerned. In order to get user and information systems groups to cooperate, the VP for information and chief information officer spearheaded a program to foster joint leadership. This eventually resulted in both groups finally listening to each other and becoming committed to two outcomes: (1) create a new way for the information systems, accounts payable, and strategic sourcing departments to work together to facilitate rapid business transformation, and (2) a proposal to improve the purchasing process for Novartis departments so that they would no longer make independent purchases.

The result was that business information managers from the information systems department had a deeper appreciation of business requirements and how they matched up with SAP and other software providers. In the end, the information systems group agreed to what accounts payable and strategic sourcing had originally requested: a solution that was the “best of breed,” irrespective of the software vendor that would best support the company’s redesigned purchasing process.

## MIS IN ACTION QUESTIONS

Visit the Web site of Ariba and SAP and explore their “solutions” section. Then answer the following questions:

1. List and describe the capabilities of the purchasing or sourcing solutions/modules.
2. How would these modules benefit a company such as Novartis? Describe how Novartis would use these capabilities. What other modules do each of these companies have that could benefit Novartis?

<http://www.ariba.com>

<http://www.sap.com/canada/index.epx>

## OPERATIONAL AND ANALYTICAL CRM

It’s important to understand the difference between the operational and analytical aspects of CRM systems. **Operational CRM** includes everything a company should provide those employees who interface directly or indirectly with the customer: the sales force, call centres, and support activities. Managers and decision makers would use the **analytical CRM** to help them improve business performance. The analytical CRM uses

data from the operational CRM and provides managers with the opportunity to target smaller, specific customer groups or market segmentation. Rather than trying to blanket a huge group of potential customers, many of whom are not interested, managers use the analytical CRM to focus their efforts on those customers who can offer the most profit at the least cost.

One of the most important benefits of analytical CRM is the ability to determine the **customer lifetime value (CLTV)**. The text mention that it costs six times more to gain a new customer than to keep an old one. By measuring the CLTV of customers, organizations can calculate customer profitability and determine which customers they should cater to.

## **BUSINESS VALUE OF CUSTOMER RELATIONSHIP MANAGEMENT SYSTEMS**

As the old saying goes, “We’re wasting half of our advertising budget; we just don’t know which half.” CRM software will help managers better understand their customers thereby helping them make better decisions about product lines and marketing campaigns. CRM systems can also help reduce the customer **churn rate** and identify which customers are most profitable. Hopefully CRM will help them discover which half of the ad budget is wasted.

Once again, the benefits of using CRM systems are worth the challenges you’ll face.

### **Benefits:**

- Increased customer satisfaction
- Reduced marketing costs
- More effective marketing
- Lower costs for customer acquisition and retention
- Increased sales revenue
- Better response to customer needs

**Bottom Line:** Customer relationship management systems allow a firm to focus all of their energy and attention to developing profitable customers and foregoing unprofitable ones. Useful information produced by CRM systems allow firms to improve business performance while reducing costs associated with gaining and retaining customers. Information can be shared internally and externally.

### **12.4**

## **ENTERPRISE APPLICATIONS: NEW OPPORTUNITIES AND CHALLENGES**

Before implementing enterprise application systems, organizations need a very clear picture of where they are now and where they want to go. Organizations must decide which processes provide the most value and which processes need the most improvement. And, the firm must allocate the organization resources where they are most needed.

## ENTERPRISE APPLICATION CHALLENGES

The return on investment to companies that implement enterprise systems can be enormous in terms of enhanced information between suppliers, employees, customers, and business partners. The better the information is, the better the decisions. The better the information is, the better the products and services are for the customer. The more customers there are, the higher profits for the company.

- **Daunting Implementation:** technological and fundamental changes will pervade every corner of the organization. The organizational structure and culture will change. The most daunting task will be retraining thousands of workers and convincing them the change is good. It will be easier to fail than to succeed.
- **High Up-Front Costs and Future Benefits:** There is no such thing as an overnight success when implementing an enterprise system. On average, it takes three to five years to fully implement an enterprise system. Keeping the firm on track and focused on the end result is more difficult than most firms comprehend.
- **Data Management:** It's more important than ever before. Now that one database serves the entire organization, if data are mismanaged, it will affect the every business function and process.
- **Inflexibility:** Make a change in one area of the business is much more difficult after implementing an enterprise system. The software is just too complex to easily change.
- **Realizing Strategic Value:** Businesses that rely on unique or cutting-edge processes to gain a competitive advantage will lose that edge with enterprise system software. Enterprise systems are not the answer for every firm.

## NEXT-GENERATION ENTERPRISE SOFTWARE

As companies get more comfortable with supply chain management and customer relationship management programs they realize the importance of branching out to enterprise solutions, enterprise suites, or e-business suites. Software manufacturers are creating these programs and ensuring firms can integrate more easily with customers, suppliers, and business partners.

### Service Platforms

A **service platform** integrates multiple applications form multiple business functions, business units, or business partners to deliver a seamless experience for the customer, employee, manager, or business partner.



**Bottom Line: All of the challenges of implementing a new enterprise system are directly related to people. Many organizations fail to understand this fact and pay more attention to the hardware and software elements of the new system.**

## SUMMARY

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

Enterprise systems integrate the key business processes of a firm into a single software system so that information can flow seamlessly throughout the organization, improving coordination, efficiency, and decision making. Enterprise software is based on a suite of integrated software modules and a common central database. The database collects data from and feeds the data into numerous applications that can support nearly all of an organization's internal business activities. When new information is entered by one process, the information is made available immediately to other business processes. Organizations implementing enterprise software would have to adopt the business processes embedded in the software and, if necessary, change their business processes to conform to those in the software.

Enterprise systems support organizational centralization by enforcing uniform data standards and business processes throughout the company and a single unified technology platform. The firmwide data generated by enterprise systems helps managers evaluate organizational performance. By integrating business processes in sales, production, finance, and logistics, the entire organization will more efficiently respond to customer requests for products or information, forecast new products, and build and deliver them as demand requires.

### *2. How do supply chain management systems coordinate planning, production, and logistics with suppliers?*

Supply chain management systems automate the flow of information among members of the supply chain so they can use it to make better decisions about when and how much to purchase, produce, or ship. More accurate information from supply chain management systems reduces uncertainty and the impact of the bullwhip effect. The correct movement of information makes it possible to time orders, shipments, and production properly to minimize inventory levels and expedite deliveries to customers.

Supply chain management software includes software for supply chain planning and for supply chain execution. Supply chain planning systems enable the firm to generate demand forecasts for a product and to develop sourcing, manufacturing, and distribution plans. Supply chain execution systems manage the flow of products through the final stages of production, distribution, and delivery. Firms can 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. Internet technology facilitates the management of global supply chains by providing the connectivity for organizations in different countries to share supply chain information. Improved communication among supply chain members also facilitates efficient customer response and movement toward a demand-driven model.

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

Customer relationship management (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 systems capture and integrate customer data from all over the organization, analyzing the data and distributing the results to customer-related 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. These systems also identify profitable or nonprofitable customers or opportunities to reduce the churn rate.

The major customer relationship management software packages integrate customer-related processes in sales, marketing, and customer service and provide capabilities for both operational CRM and analytical CRM. They often include modules for managing relationships with selling partners (partner relationship management) and for employee relationship management.

If they are properly implemented, CRM systems help firms increase customer satisfaction, reduce direct marketing costs, and lower costs for customer acquisition and retention. Information from CRM systems increases sales revenue by identifying the most profitable customers and segments for focused marketing and cross-selling. Customer churn will be reduced as sales, service, and marketing better respond to customer needs.

**4. *What are the challenges posed by enterprise applications?***

Enterprise applications are difficult to implement. They require extensive organizational change, large new software investments, and careful assessment of how these systems will enhance organizational performance. 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). Enterprise applications cannot provide value if they are implemented atop flawed processes or if firms do not know how to use these systems to measure performance improvements. Employees require training to prepare for new procedures and roles. Attention to data management is essential.

**5. *How are enterprise applications used in platforms for new cross-functional services?***

Enterprise applications can serve as building blocks for new cross-functional services for customers, suppliers, or business partners. Service platforms integrate data and processes from the various enterprise applications (customer relationship management, supply chain management, and enterprise systems), as well as from disparate legacy applications to create new composite business processes. Application integration middleware or Web services tie various systems together. The new services are delivered through enterprise portals, which can integrate disparate applications so that information appears to be coming from a single source.

## KEY TERMS

The following alphabetical list identifies the key terms discussed in this chapter.

**Analytical CRM** — customer relationship management applications dealing with the analysis of customer data to provide information for improving business performance.

**Best practices** — the most successful solutions or problem-solving methods that have been developed by a specific organization or industry.

**Bullwhip effect** — distortion of information about the demand for a product as it passes from one entity to the next across the supply chain.

**Churn rate** — measurement of the number of customers who stop using or purchasing products or services from a company. Used as an indicator of the growth or decline of a firm's customer base.

**Cross-selling** — marketing complementary products to customers.

**Customer lifetime value (CLTV)** — difference between revenues produced by a specific customer and the expenses for acquiring and servicing that customer over the lifetime of the customer relationship, expressed in today's dollars.

**Demand planning** — determining how much product a business needs to make to satisfy all its customer's demands.

**Employee relationship management (ERM)** — software dealing with employee issues that are closely related to CRM, such as setting objectives, employee performance management, performance-based compensation, and employee training.

**Enterprise software** — set of integrated modules for applications such as sales and distribution, financial accounting, investment management, materials management, production planning, plant maintenance, and human resources that allow data to be used by multiple functions and business processes.

***Just-in-time*** — scheduling system for minimizing inventory by having components arrive exactly at the moment they are needed and finished goods shipped as soon as they leave the assembly line.

***Operational CRM*** — customer-facing applications, such as sales force automation, call centre and customer service support, and marketing automation.

***Partner relationship management (PRM)*** — automation of the firm's relationships with its selling partners using customer data and analytical tools to improve coordination and customer sales.

***Pull-based model*** — supply chain driven by actual customer orders or purchases so that members of the supply chain produce and deliver only what customers have ordered.

***Service platform*** — integrates multiple applications from multiple business functions, business units, or business partners to deliver a seamless experience for the customer, employee, manager, or business partner.

***Supply chain*** — network of organizations and business processes for procuring materials, transforming raw materials into intermediate and finished products, and distributing the finished products to customers.

***Supply chain execution systems*** — systems to manage the flow of products through distribution centres and warehouses to ensure that products are delivered to the right locations in the most efficient manner.

***Supply chain planning systems*** — systems that enable a firm to generate demand forecasts for a product and to develop sourcing and manufacturing plans for that product.

***Touch point*** — method of firm interaction with a customer, such as telephone, e-mail, customer service desk, conventional mail, or point of purchase.

## REVIEW QUESTIONS

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

**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. Table 12.1 describes some of the major business processes supported by

enterprise software. These include financial and accounting processes, human resources processes, manufacturing and production processes, and sales and marketing processes.

**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 helps 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 have 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?**

**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.

**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 of the supply chains have accurate and up-to-date information.

**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.

**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, 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.

**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?**

**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 are realizing 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.

**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.

**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. Refer to Figure 12-9 for a diagram of the business processes that CRM software supports for sales, marketing, and service. 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.
- 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.

### **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?**

### **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.

### **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?**

**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, employee, 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.

## **DISCUSSION QUESTIONS**

**1. Supply chain management is less about managing the physical movement of goods and more about managing information. Discuss the implications of this statement.**

The information obtained through a supply chain management system can be used to make better decisions regarding purchasing, production, and logistics. Information helps to reduce the bullwhip effect that comes about from not having enough or accurate information. Information can help supply chain planning systems generate forecasts and supply chain execution systems manage the flow of products through the supply chain to delivery. Supply chain management systems facilitate communication throughout the members of the chain.

**2. If a company wants to implement an enterprise application, it had better do its homework. Discuss the implications of this statement.**

Most students should agree that adopting an enterprise system is a key business decision first and foremost. CEOs and top executives must lead the change in the cultural climate. A firm understanding of business processes and the reorganization of those processes is essential to a successful implementation. Involving all parties, including end users, is also crucial to the success of such an undertaking. Creating a collaborative working environment is a key component. Also, the organization must realize how much time, money, and personnel resources will be required by the implementation of an enterprise application.

## COLLABORATION AND TEAMWORK: ANALYZING ENTERPRISE APPLICATION VENDORS

With a group of three or four students, use the Web to research and evaluate the products of two vendors of enterprise applications software. You could compare, for example, the SAP and Oracle enterprise systems, the supply chain management systems from i2 and SAP, or the customer relationship management systems of Oracle's Siebel Systems and Salesforce.com. Use what you have learned from these companies' Web sites to compare the software packages you have selected in terms of business functions supported, technology platforms, cost, and ease of use. Which vendor would you select? Why? Would you select the same vendor for a small business as well as a large one? Use Google Sites to post the results on the team's Web site.

Answers for this project will vary as students will select different sources from which to gather the information. The simplest method would be to go directly to each of the companies main Web page as listed in the question.

In their analysis, students should set up a table to evaluate the products of two vendors and make their comparison. They could list each of the suppliers of the enterprise application software that they selected. In their comparison they could list features they considered the most valuable. They may use a weighted factor scale and assign weights to each feature in order to determine which product they would select.

Direct your students to conduct their search on the Internet for the Web sites listed below.

<http://www.sap.com>  
<http://www.oracle.com>  
<http://www.i2.com/>  
<http://www.manugistics.com/>  
<http://www.siebel.com/>  
<http://www.salesforce.com/>

## LEARNING TRACK MODULES

1. *SAP Business Process Map*
2. *Business Processes in Supply Chain Management and Supply Chain Metrics*
3. *Best-Practice Business Processes in CRM Software*

Students will find Learning Track Modules on these topics at the MyMISLab for this chapter.

## HANDS-ON MIS: PROJECTS

## Management Decision Problems

**1. Toronto-based Mercedes-Benz Canada:** 55 car dealers provided customer data on an ad hoc basis. No real incentive for dealers to share information with the company. How could customer relationship management (CRM) and partner relationship management (PRM) systems help solve this problem?

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, like Mercedes-Benz Canada does, PRM helps these channels sell to customers directly. It provides the ability to trade information and distribute leads and data about customers, integrating lead generation, pricing, promotions, order configurations, and availability. It also provides tools to assess its partners' performances so it can make sure its best partners receive the support they need to close more business.

PRM systems could provide dealers with information that Mercedes-Benz Canada gathers from other sources to help boost customer contacts and sales. In turn, Mercedes-Benz Canada could make it easier for dealers to report customer information to the home office and provide incentives for those that do so. The system could be set up to provide management with more timely information on dealers that do not provide information (perhaps via digital dashboards) and give the company an easier way to reach out to those dealers via a Web site, email, or online audio- and videoconferencing.

**2. Office Depot:** The company tries to offer a wider range of office supplies at lower costs than other retailers by using just-in-time replenishment and tight inventory control systems. It uses information from a demand forecasting system and point-of-sale data to replenish its inventory in its 1,600 retail stores. Explain how these systems help Office Depot minimize costs and any other benefits they provide. Identify and describe other supply chain management applications that would be especially helpful to Office Depot.

Supply chain management systems provide organizations with more information and tighter controls over the upstream and downstream portions of the supply chain. The information can alert managers and executives to those areas of the supply chain that may bog down the rest of the channels. Because Office Depot receives effective information through its supply chain management system and passes that to suppliers, it knows how many units of product customers want, when they want them, and when they can be produced. Components arrive at the moment they are needed for production (at suppliers), and finished goods are shipped as they leave the assembly line. Office Depot's SCM system also helps it avert the bullwhip effect because information about product demand is less distorted. That reduces the chances of holding excess inventory, warehousing, and shipping costs.

SCM applications that would be especially helpful to Office Depot are:

- **Demand planning:** determines how much product Office Depot needs to have suppliers produce to satisfy all of its customers' demands

- **Supply chain execution system:** 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. Information from this system can be shared with logistics and transportation partners to improve shipping and reduce costs.

## IMPROVING DECISION MAKING: USING DATABASE SOFTWARE TO MANAGE CUSTOMER SERVICE REQUESTS

**Software skills:** Database design; querying and reporting

**Business skills:** Customer service analysis

The data for this exercise is found in the file named Ch12\_Managing\_Customer\_Service\_Question.mdb located in the Chapter 12 folder.

The solution file represents one of many alternative database designs that would satisfy Prime Service's requirements. There are three tables for Accounts, Requests, and Service Representatives (the Prime Service representative providing the requested service.) The Service Representatives table provides extra information, and one could develop the solution using just the Accounts and Requests tables. One can determine which service requests on a specific date require the highest priority by creating a report that sorts service request data first by date (in ascending order) and then by size of account (in descending order).

A suggested answer can be found in the file named Ch12\_Managing\_Customer\_Service\_Solution.mdb, also in the Chapter 12 folder.

## ACHIEVING OPERATIONAL EXCELLENCE: EVALUATING SUPPLY CHAIN MANAGEMENT SERVICES

**Trucking companies no longer merely carry goods from one place to another. Some also provide supply chain management services to their customers and help them manage their information. In this project, you will use the Web to research and evaluate two of these business services.**

**Investigate the Web sites of two companies, TransX and Schneider Logistics, to see how these companies' services can be used for supply chain management. Then, respond to the following questions:**

1. **What supply chain processes can each of these companies support for their clients?**

TransX Logistics (TX Logistics)	Schneider Logistics
TX Logistics performs as an extension of	Schneider Logistics has the solutions.

<p>your supply chain and offers on-site logistics management, drop lot management, Truckload and LTL services.</p> <p>Enabling companies to realize improved efficiencies and cost reduction through inventory and distribution management is our mandate. By eliminating non-strategic warehouses and taking advantage of cross docking centers, mixing centers and flow through centers, we'll inject maximum efficiency into your supply and distribution chain.</p> <p>Outside carrier management allows TX Logistics to negotiate the best rates and services for you from outside suppliers, and coordinate it all for a smoother, leaner transportation system</p> <p>Services Offered:</p> <ul style="list-style-type: none"> <li>•A variety of trucking options</li> <li>•Full customs and brokerage services</li> <li>•Other services are not clearly stated, except for the inferences mentioned above</li> </ul>	<p>Managing supply chains is a complicated business. You know it isn't just about moving goods. It's about replacing inventory with information. It's about creating product-level visibility. It's about staying connected with your supply chain partners.</p> <p>Schneider Logistics helps you manage your supply chain to its maximum efficiency.</p> <p>Services Offered:</p> <ul style="list-style-type: none"> <li>• Freight Management</li> <li>• Hosted Applications</li> <li>• Financial Services</li> <li>• Supply Chain Engineering</li> <li>• Business Intelligence</li> <li>• SUMIT CVA</li> <li>• SUMIT for Shippers</li> <li>• Schneider ExpressTrack</li> </ul>
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**2. How can customers use the Web site of each company to help with supply chain management?**

Customers can log onto the TX Logistics Web site for a variety of features that are not available to the casual visitor. Based on what TX Logistics says on its Web site that it can provide, customers can use the Web site for most supply chain management system needs, specifically in-bound and out-bound logistics, including ordering, shipping, and shipping to distributors and individual customers.

Schneider Logistics promotes that you do not need a one-size-fits-all template created for a "typical" supply chain. It views every customer and their needs as being unique.

**3. Compare the supply chain management services provided by these companies. Which company would you select to help your firm manage its supply chain? Why?**

Students' responses to the question will vary. The TX Logistics Web site gives a very limited overview of its services to the casual visitor. Without applying to be a partner or a customer, there is no real way to evaluate TX as a logistics company. On the

other hand, the Schneider Logistics Web site requires a bit more of a comfort level in using, but with exploring, it also is relatively straightforward. The site details the types of services the company provides, down to mathematical modelling.

## **CASE STUDY: SYMANTEC'S ERP TURMOIL**

### **1. What concepts in this chapter are illustrated in this case?**

Symantec Corporation started out with good intentions. Shortly after acquiring Veritas it began an ERP rollout that was designed to standardize and unify the Symantec and Veritas information systems. The goal was to create a single ERP system, within which all of the company's extensive network of resellers, integrators, distributors, and customers could place orders for over 250,000 different products Symantec offered in the same way. That follows the basic concept of enterprise systems which are based on a suite of integrated software modules and a common central database. When new information is entered by one process, the information is made immediately available to other business processes.

Although companies can rewrite some of the software in ERP systems, the software is unusually complex and extensive customization may degrade system performance, compromising the information and process integration. If companies want to reap the maximum benefits from enterprise software, they must change the way they work to conform to the business processes in the software. Although Symantec and Veritas had each used Oracle E-Business Suite 11d prior to the merger, both used highly customized versions of the systems that made integration a daunting task.

An overhaul of the combined company's enterprise systems was needed to join together Symantec and Veritas's data from key business processes. Enterprise systems help large companies enforce standard practices and data so that everyone does business the same way worldwide. Enterprise systems help firms respond rapidly to customer requests for information or products. Unfortunately, the two companies bungled the implementation of the enterprise system almost from the beginning.

### **2. What management, organization, and technology factors were responsible for Symantec's difficulties in overhauling its ERP systems?**

**Management:** Most of the issues were due to the company's shortsightedness in implementing Project Oasis. The initial reaction to the launch of the new system was decidedly negative. Once customers reached a Symantec employee, they could spend up to 20 more minutes troubleshooting problems, and were often told that there was nothing that could be done. There was simply too much change occurring all at once for typical customers to handle. Partners were unhappy with Symantec's slow response to many of the problems.

**Organization:** The company was unprepared to meet the increased demand for customer support after the rollout. Symantec neglected to coordinate the development of its new ERP system with the launch of other products from different divisions within the company. The changes to the licensing system were not coordinated with the rest of the project. Customers were unhappy with changes to the stock-keeping unit product system (SKU system). Symantec had overlooked the needs of many customers while designing a technically sound but user-unfriendly ERP system.

**Technology:** Both companies used highly customized versions of Oracle's E-Business Suite 11d prior to the merger. Users struggled to process the large amount of information provided to them and were overwhelmed by the increased number of steps, all of them new, required to place orders. Some smaller distributors and partners didn't update their systems to handle the new SKUs and were unable to submit purchase orders electronically. After the rollout, licensing became much more difficult for Symantec's customers and partners, forcing them to wait multiple weeks before receiving their licenses.

**3. Was Symantec's response to the problem adequate? Explain your reasoning.**

The company initiated a follow-up project named Project Nero. The goal of the project was to recapture the loyalty of customers who were disenchanted by the changes brought about by Oasis. The project reached out to customers and fixed the problems with the information systems to improve response times and streamline operations.

The company began by adding over 150 new customer representatives to handle the increased volume of calls, reducing wait times and increasing customer satisfaction. Executives traveled the country to improve relations with angered customers and partners. The company introduced a master list of product releases readily available and standardized its communication methods between departments regarding new projects and change management.

Symantec used Net Promoter methodology to measure and increase customer loyalty. The results identified specific criticisms and customer problems and dramatically aided Symantec in correcting those problems. Project Nero helped the company weather the worst of the crisis. However, the company does not release the results of its Net Promoter surveys to the public so the extent to which it has repaired its reputation is unclear.

**4. What would you have done differently to prevent the implementation problems that arose at Symantec?**

Student answers will vary but some of the principles that should be included in their answers are:



Even the most careful planning and well-designed systems can quickly go awry if customers are unable to make use of the new system. Enterprise applications involve complex pieces of software that are very expensive to purchase and implement. The total implementation cost of a large system, including software, database tools, consulting fees, personnel costs, training, and perhaps hardware costs, might amount to four to five times the initial purchase price for the software.

Enterprise applications require not only deep-seated technological changes but also fundamental changes in the way a business operates. Business processes must be changed to work with the software. Employees must accept new job functions and responsibilities. Most implementation projects fail or experience enormous problems because executives, managers, and employees did not understand how much organizational change was required.

Specific Symantec problems that perhaps could have been avoided:

- Communicate with employees better to counteract the negative attitude towards the project.
- Communicate with customers and distributors better about the upcoming changes.
- Make sure all of the systems that were changing were coordinated throughout the organization.
- Not change as many systems all at the same time. Even though stretching the implementation out over a longer period may have cost more money, perhaps it would have prevented some of the massive problems overall.

**5. If you were a partner or customer of Symantec, would you have switched vendors in response to the ERP overhaul issues? Why or why not?**

Student answers will vary. Some principles to keep in mind are:

Enterprise applications introduce switching costs that make it very costly to switch vendors. Companies become dependent on the vendor to upgrade its product and maintain the installation. Many of Symantec's partners and smaller distributors were reliant on Symantec and perhaps could not afford to switch vendors. That would mean they would have to switch all of their internal systems at great cost.

Customers are often reluctant to switch vendors based on historical relationships. If the problems seem temporary, the customers will hang on. If the problems seem insurmountable, some customers will desert the sinking ship.