CHAPTER 17 International Operations Management



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AFTER STUDYING THIS CHAPTER, YOU SHOULD BE ABLE TO:

- 1. Describe the nature of international operations management.
- 2. Analyze the supply chain management and vertical integration decisions facing international operations managers.
- Analyze the meaning of productivity and discuss how international firms work to improve it.
- 4. Explain how firms control quality and discuss total quality management in international business.
- 5. Analyze how international firms control the information their managers need to make effective decisions.

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RACING TO MARKET

ike two heavyweight fighters, Benetton Group SpA, the trendy Italian clothing chain, and Inditex, the Spanish parent of hot retailer Zara, have been constantly maneuvering for the last several years to see who can gain the upper hand in the mass-market trendy clothing industry. Benetton had a head-start, growing from a two-person operation in 1955 to a multinational clothing empire. The first Benetton retail store opened in a fashionable ski resort in the Italian Alps in 1968. Other stores quickly followed in the leading fashion capitals of Europe. It now has hundreds of stores throughout the former communist bloc, as well as stores in such far-flung locations as Turkey, Japan, and Egypt. Benetton has been opening stores in China at a steady pace and also recently started expanding in the Middle East (especially the United Arab Emirates). In total, Benetton distributes its goods through 6,500 outlets in some 120 countries. Almost all Benetton outlets are independently owned; Benetton licenses its name to these shop owners, who in turn must carry only Benetton goods. Italian styling and reasonable prices are two of the critical ingredients in Benetton's success. Benetton is well-known for sponsoring sporting events and its occasionally controversial advertising centered on the "United Colors" theme.

The first Zara store, meanwhile, was opened in 1975 in La Coruna, a port town near Artexio in northern Spain. Its first international store was opened in Portugal in 1989, followed soon thereafter by one in New York. There are now more than 3,700 Zara stores in 75 countries; the firm plans to continue an aggressive expansion campaign to open several hundred new stores per year. In addition to Zara, Inditex also owns and operates Massimo Dutti (more upscale stores located in high-fashion centers) and Bershka (more youth-oriented stores, often located in shopping malls). Unlike Benetton, though, Inditex does not franchise—it owns all of its stores. In another unusual move, Zara does virtually no advertising, choosing instead to focus its resources on opening new stores.

The real battlefield between the two firms, though, has been behind-the-scenes. Both Benetton and Inditex have worldclass operations management systems that have allowed them to stay a step ahead of the rest of the pack. Benetton centralizes design and production in Italy so the firm can maintain tight control over manufacturing costs, guality, and related considerations. Each retail transaction in a Benetton store is electronically coded and transmitted to a central informationprocessing center in Italy. Managers there can track sales levels, sales trends and patterns, and inventory distributions, and they can do so for individual stores, for clusters of stores in an area, by country, or on a global basis. Managers use this sales information to plan and adjust production activity. Whenever a new garment is designed, its creators try to plan for possible variations and alterations. For example, a new shirt will be designed so it can be produced with short, midlength, or full-length sleeves and with or without a collar. Early production runs and shipments will include all six possible styles. A portion of those runs also will be devoted to making shirt bodies without sleeves or collars. As sales figures begin to arrive, managers quickly can tailor production adjustments to these inventoried shirt bodies to finish them out according to customer demand. If shirts with midlength sleeves and a collar sell much faster than other variations, more of this type of shirt can be finished quickly and shipped to stores. The same approach also is used for colors.

Bar codes and scanners are used throughout Benetton factories and warehouses. Using fully networked computer workstations, managers can plan and initiate production runs based on style and color demand. Partially completed products are pulled from shelves by robots and placed on final production lines. As those products are finished out, bar codes are attached, and the products are automatically wrapped, packaged, and shipped to those stores that need inventory replenishment. Through the use of this sophisticated system Benetton can fill an order from any of its 6,500 stores spread throughout the globe in 13 to 27 days.

Zara, meanwhile, has taken some of these same techniques to a whole new level. Inditex makes most of its garments in Spain and near-by countries such as Portugal, Turkey, and Morocco. But it actually stocks its stores with new designs twice a week. New collections are often small, and the more successful ones sell out quickly. But this allows the firm to both maintain an air of exclusivity and avoid marking unsold merchandise down to lower prices. Like Benetton, though, Zara can quickly restock virtually any of its items guickly and efficiently. Zara is also constantly looking for new ways to get products into the hands of consumers at an ever faster pace. For instance, most retailers have store employees attach inventory control tags to new products after the items arrive in the stockroom. They also routinely replace the inexpensive hangers used to ship products with more substantial ones before taking the garments out to the sales floor. But Zara ships its products with the tags already affixed-saving several hours at the store level. Moreover, employees hang the garments on their original shipping hangers and only later replace them with standard display hangers. This practice has even had some unexpected bonus effects-savvy young shoppers know that garments still on their shipping hangers have just arrived and are thus the latest styles!

Most industry experts now see Zara as the top firm in its industry. Although Benetton has more stores in more countries, its growth has stalled and many of its target customers see it as outdated. The real issues turned out to require even more finesse than managers at Benetton imagined. For instance, even though Benetton was a pioneer in mass customization, it still only changes its basic product lines once per season. But Zara can actually alter its entire line within a few weeks. Indeed,

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Zara launches about 10,000 new designs each year! This has allowed Zara to slowly but surely creep ahead of its rival in terms of fashion cachet. The other end of the supply chain has also had an impact as well. For instance, because most of its stores are franchised, Benetton has less control over how retailers display and promote products. Meanwhile, though, Zara's company-owned store layouts can be tweaked and merchandise rearranged on the basis of a quick e-mail from company headquarters.

But Zara cannot afford to rest on its newfound laurels. U.S. retailers such as Abercrombie & Fitch and Gap have made inroads in many European cities currently controlled by Benetton and Zara. H&M, a Swedish fashion retailer, is coming on strong. And Urban Outfitters is also moving cautiously into this arena as well. Indeed, Urban Outfitters might eventually pose the greatest challenge to Zara. Although Zara and its competitors offer essentially the same product lines at each of their stores (just varying the mix), Urban Outfitters has invested in creating a separate design center in Europe; the firm has also indicated that as it finalizes plans for a big push into Asia it will establish yet another design center there as well. And the firm has also invested heavily in its own supply chain and has reached the point where it has the lowest manufacturing, warehousing, and shipping costs of all of the major chains and has reduced the time it takes to get new stock to a store to an astonishing 24 hours!¹

First Benetton and more recently Zara and Urban Outfitters have flourished for various reasons. Among them are their ability to track demand for various products and then to take the appropriate steps to satisfy that demand promptly and efficiently. By centralizing design and manufacturing systems in their home countries of Italy and Spain, Benetton and Zara are able to maintain tight control over those and related functions. By building flexibility into design, production, and distribution, the firms are able to get new inventory to their stores around the world much faster than most of their competitors. But upstarts like H&M and Urban Outfitters are closing the gap, not necessarily on the basis of style but instead by getting new products to market quickly and efficiently. The basis for planning and implementing these activities is operations management.

Some firms, such as Shell, Exxon Mobil, and BP, are concerned with physically transforming natural resources into various products through complex refining processes. Others, such as Dell, Sony, and Philips, purchase completed component parts from suppliers and then assemble the parts into electronics products. Still others, such as Emirates, United, British Airways, and JAL, use a global travel network to provide transportation services to people. Regardless of a firm's product, however, the goal of its international operations managers is to design, create, and distribute goods or services that meet the needs and wants of customers worldwide—and to do so profitably.

The Nature of International Operations Management

Operations management is the set of activities an organization uses to transform different kinds of inputs (materials, labor, and so on) into final goods and services.² **International operations management** refers to the transformation-related activities of an international firm. Figure 17.1 illustrates the international operations management process. As shown, a firm's strategic context provides a necessary backdrop against which it develops and then manages its operations functions. Flowing directly from the strategic context is the question of standardized versus customized production. The positioning of a firm along this continuum in turn helps dictate the appropriate strategies and tactics for other parts of the operations management process. The next part of international operations management is the activities and processes connected with the acquisition of the resources the firm needs to produce the goods or services it intends to sell. Location decisions—where to build factories and other facilities—are also important. In addition, international operations managers are concerned with logistics and materials management—the efficient movement of materials into, within, and out of the firm. We use this framework to organize this chapter's discussion of international operations management.

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Operations management is also closely linked with quality, productivity, and information technology. A firm's operations management system largely determines how inputs are transformed into goods or services. Properly designed and managed operating systems and procedures play a major role in determining product quality and productivity. For example, Zara is able to squeeze extra measures of productivity from its distribution centers because of its highly efficient and flexible design. Conversely, poorly designed operating systems are a major cause of poor quality and lower productivity. They promote inefficiency and can contribute in various ways to higher costs and suboptimal profit performance. Hence, we also describe productivity, quality, and information in this chapter as well.

The Strategic Context of International Operations Management

The central role of operations management is to create the potential for achieving superior value for the firm. That is, operations management is a value-adding activity intended to create or add new value to the organization's inputs in ways that directly impact outputs. If operations can take \$2 worth of inputs to create \$10 worth of goods or services, it has created considerable value. However, if it requires \$9 worth of inputs to create the same \$10 worth of goods or services, it has created much less value.

Figure 17.1 indicates that international operations management must be aligned closely with a firm's business strategy. Indeed, the business strategy set by top managers at the firm's corporate and regional levels will affect all facets of the planning and implementing of operations management activities, such as supply chain management strategies, location decisions, facilities design, and logistics management.³ For a company pursuing a differentiation strategy, the operations management function must be able to create goods or services that are clearly different from those of the company's competitors. For a firm like Porsche or Rolex that wants to compete on the basis of product performance and status, costs will be less important than product quality and design. As a result, production facilities may need to be located where there is a skilled labor force, even if the cost of employing that labor is relatively high.⁴ For example, Porsche has never considered shifting its production from Stuttgart to a lower-labor-cost locale because its highly skilled and committed workforce is vital to producing its high-quality cars.

Conversely, for a firm following a cost leadership strategy, the operations management function must be able to reduce the costs of creating goods or services to the absolute minimum so the firm can lower its prices while still earning an acceptable level of profits. In this case, cost and price issues are central, whereas quality may be less critical. As a result, locating production facilities where labor costs are especially low may be highly appropriate. IKEA has become a global retailer by offering a wide range of appealing products at extremely low prices. The firm has 31 distribution centers in 16 countries and uses a network of 1,350 suppliers in 50 countries



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PEOPLE, PLANET, AND PROFITS

ASKING FOR GOVERNMENT REGULATION

Most businesses are strongly opposed to any form of government regulation, especially regulation that raises their costs. But in an odd turn of events, several large shipping companies are actually lobbying government leaders in Hong Kong to do just that impose regulations that will increase their cost of doing business in China.

Hong Kong has some of the worst pollution of any major city in the world. A lot of the region's air pollution has come from its shipping port, one of the largest in the world. Hong Kong leaders recently asked shipping companies to voluntarily use low-sulfur fuel to help curb pollution and offered a modest financial incentive for them to do so. A total of 18 shippers agreed to this request, even though the financial incentive did not offset the higher fuel costs they began to incur. Maersk Line, the world's largest container shipping company, estimates that the government incentive covers about 40 percent of the higher fuel cost. Nevertheless, though, managers felt it was the right thing to do.

However, problems have cropped up because of the voluntary nature of the fuel switch. As it turns out, although 18 shippers signed on, about a dozen others did not. These shipping companies have continued to use "standard" fuel, which is cheaper but which also emits much more pollution. Maersk and the other shippers using the more expensive fuel have started to lobby the government, claiming that their voluntary compliance has put them at a competitive disadvantage to the dozen shippers using dirtier but cheaper fuel.

Things recently came to a head when Maersk and its allies threw down a gauntlet to the Hong Kong government: either make low-emission fuel a requirement for *all* shippers entering the port or else they will revert back to the dirtier fuel used by some of their competitors. Basically, they are arguing that they want to help with the city's efforts to reduce pollution and are willing to pay a price for doing so but they want a level playing field for all firms in the industry. For their part, Hong Kong's leaders have agreed to look into the situation. But many observers are skeptical about Hong Kong's sincerity in matters such as this. For example, they point out that even though the city set some ambitious air-quality targets back in 1987 they have never met those targets. And worse still, air pollution readings in 2011 showed a substantial deterioration in air quality over the preceding five years.

Sources: "Does Green Shipping Cost Too Much Green?" *Bloomberg Business-week*, January 14–20, 2013, pp. 20–21; "When it Doesn't Have to Be There Overnight," *Bloomberg Businessweek*, December 24, 2012–January 6, 2013, pp. 20–21; "Green Shipping International," www.greenshippinginternational .com, accessed on May 17, 2013.

to purchase or manufacture products as inexpensively as possible. The "People, Planet, and Profits" feature highlights some of the strategic issues associated with optimizing sustainability and profits in international shipping.

Another factor affecting the firm's choices is the extent to which it uses standardized or customized production processes and technologies. On the one hand, if the firm uses standardized production processes and technologies in every market where it does business, then its operations systems can—and almost certainly should be—globally integrated. Such firms may choose to adopt global product designs, for example, to capture more easily global efficiencies generated by their operations. On the other hand, if a firm uses a unique operations system in each market where it does business, such global integration is not only unnecessary but also likely to be impossible. Often such firms adopt a global area design to promote responsiveness of their operations managers to local conditions.

For example, Intel uses a standardized operations management strategy in that it makes its microprocessors using the same manufacturing processes around the world. Thus, it can share technology between plants and freely ship component parts between factories in different countries. Similarly, for years automakers have had a goal of creating a global automobile that could be manufactured and sold using the same design and brand name everywhere in the world. Ford has achieved that goal, and its Focus has become the best-selling car in the world (1,160,764 units in 2012).⁵ Conversely, Nestlé tailors its mix of products, as well as their ingredients and packaging, across markets. So although there may be some sharing of production technology, Nestlé tends to operate each production facility as more of a self-contained unit.

Complexities of International Operations Management

International operations management presents one of the most complex and challenging set of tasks managers face today. The basic complexities inherent in operations management stem from the production problem itself—where and how to produce various goods and services. Operations managers typically must decide important and complex issues in three areas:

1. *Resources:* Managers must decide where and how to obtain the resources the firm needs to produce its products. Key decisions relate to supply chain management and vertical integration.



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- **2.** *Location:* Managers must decide where to build administrative facilities, sales offices, and plants; how to design them; and so on.
- **3.** *Logistics:* Managers must decide on modes of transportation and methods of inventory control.

All firms, whether domestic or international, must address these issues. However, resolving them is far more complicated for international firms. A domestic manufacturer may deal with only local suppliers, be subject to one set of government regulations, compete in a relatively homogeneous market, have access to an integrated transportation network, and ship its goods relatively short distances. An international manufacturer, in contrast, is likely to deal with suppliers from different countries and confront different government regulations wherever it does business, as well as heterogeneous markets, disparate transportation facilities and networks, and relatively long shipping distances. International operations managers must choose the countries in which to locate production facilities, taking into account factors such as costs, tax laws, resource availability, and marketing considerations. They also must consider potential exchange rate movements and noneconomic factors such as government regulations, political risk, and predictability of a country's legal system. Further, they must consider the impact of facilities' locations on the firm's ability to respond to changes in customer tastes and preferences. Finally, they must factor in logistical problems. Just as long supply lines doomed Napoleon's invasion of Russia, locating factories far from one's suppliers may impede timely access to resources and materials.

In Practice

- Managers need a clear understanding of the basic elements of international operations management.
- The strategic importance of international operations management must be clearly understood by all managers in any international business.

For further consideration: How do decisions about resources, location, and logistics influence one another?

Production Management

Although some similarities exist between creating goods and creating services for international markets, there also are major fundamental differences. Operations management decisions, processes, and issues that involve the creation of tangible goods are called **production management**, and those involving the creation of intangible services are called **service operations management**. This section focuses on production management; service operations management is addressed later in the chapter.

Manufacturing is the creation of goods by transforming raw materials and component parts in combination with capital, labor, and technology. Some examples of manufacturing activities are Sony's production of digital cameras, BMW's production of automobiles, and Michelin's production of tires. BMW, for example, takes thousands of component parts, ranging from sheet metal to engine parts to upholstery to rubber molding, and combines them to make different types of automobiles.

Most successful manufacturers use many sophisticated techniques to produce highquality goods efficiently. These techniques are best covered in more advanced and specialized production management courses, so we focus here on three important dimensions of international production management: international supply chain management, international facilities location, and international logistics.

Supply Chain Management and Vertical Integration

Because the production of most manufactured goods requires a variety of raw materials, parts, and other resources, the first issue an international production manager faces is deciding how to acquire those inputs.⁶ Supply chain management is the set of processes and steps a firm uses to

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at least 10 years. By so doing, Honda reduced its capital investment but sacrificed the flexibility of changing suppliers during the 10-year period. This example also illustrates a major trend in buyer-supplier relationships. Not long ago, managers assumed it was useful to use a variety of suppliers to avoid becoming too dependent on a single one. A drawback of this approach, however, is the complexity associated with dealing with a large network of suppliers, especially if that network is global. More recently, some firms have come to realize that by engaging in exclusive or semi-exclusive long-term relationships with fewer suppliers, the firms can better benefit from these suppliers' experience and product knowledge. In the automobile industry many manufacturers are relying on so-called first-tier suppliers such as Johnson Controls or Magna International to work with the automakers' engineers to design component systems, such as seating systems or dashboard assemblies, for new vehicles. Companies also are saving additional money by relying on first-tier suppliers to manage and monitor the acquisition of parts and subassemblies from second-tier suppliers.

Location Decisions

An international firm that chooses to make rather than buy inputs faces another decision: Where should it locate its production facilities? In reaching a location decision, the firm must consider country-related issues, product-related issues, government policies, and organizational issues.

COUNTRY-RELATED ISSUES Several features of countries can influence the decision about where to locate an international facility. Chief among these are resource availability and cost, infrastructure, and country-of-origin marketing effects.

BRINGING THE WORLD INTO FOCUS

DEALING WITH THE UNEXPECTED

Relations between manufacturers and their suppliers can be vitally important to each other. Manufacturers depend on their suppliers to provide them with high-quality parts and supplies on a timely basis, whereas suppliers depend on their manufacturing customers for revenue. In general, both parties work to create and maintain a sound relationship. But sometimes disaster can get in the way—and create big problems.

In March 2011, for instance, a massive earthquake in Japan triggered an equally devastating tsunami. Between the two natural disasters, manufacturing facilities and shipping routes throughout the country were shut down. These events created obvious problems for just about every manufacturer in Japan. But the ripple effects were also felt in North America as well. For instance, Toyota's North American manufacturing plants get about 15 percent of their parts from suppliers back in Japan. As inventory was depleted, the North American plants began to cut back on production. Two months later they were operating at only 30 percent of normal capacity when they experienced critical shortages of 150 important component parts. And experts predicted that they might not be able to resume normal production until the end of 2011. Nissan and Honda faced similar problems.

Nor were problems limited to Toyota and other Japanese firms. General Motors, for instance, spends about 2 percent of its parts budget in Japan and so it too was affected. But GM managers responded effectively to the crisis. Four days after the earthquake, GM assembled hundreds of employees into teams that began working around the clock to identify critical parts likely to be affected and developing plans for dealing with anticipated shortages. The teams identified 118 parts most likely to be affected and quickly located alternative suppliers. Had GM run out of any of those products, production would have been halted for days. All told, it took more



One lesson that all of the major automakers say they learned was the need for more comprehensive crisis plans in the event of future disasters or other supply chain disruptions. One GM executive, for example, noted that although GM had a standing contingency plan for supply chain disruptions, it was not ready for anything "on this kind of scale or scope." Meanwhile, other sectors ranging from electronics to clothing manufacturing to food production also had to assess the impact of the earthquake and tsunami and make their own decisions about being better prepared in the future.

Although natural disasters can cause major problems, so too can those caused by humankind. For instance, an eight-story garment factory in Bangladesh collapsed in May 2013, killing 1,127 workers. Bangladesh is the second-largest garment exporter in the world (behind China) and employs 4 million people. Garment workers in this impoverished country actually make reasonable wages by local standards but working conditions are poor and subject to little government regulation. As it turned out, workers in the collapsed building had been busily making garments for Benetton, Gap, Target, Sears, and other major retailers. As a result, these retailers faced both disruptions in their product supply chains and damage to their reputations for not mandating proper oversight of the working conditions for workers in Bangladesh.

Sources: "Toyota rations Japanese parts; Honda to cut hours," *USA Today*, March 30, 2011, p. 1B; "Supply shortages likely following Japanese tsunami," *Supply Chain Review*, March 11, 2011, p. 1; "Asian supply chain rattled by Japan quake, tsunami," *International Business Times*, March 14, 2011, p. 1; "G.M. pieces together Japanese supply chain," *New York Times*, May 13, 2011, p. 5; "Will 1,127 Deaths Move the Needle for U.S. Shoppers?" *USA Today*, May 17, 2013, pp. 1A, 2A.



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ORGANIZATIONAL ISSUES An international firm's business strategy and its organizational structure also may affect the location decision. Inventory management policies are important considerations as well.

A firm's business strategy may affect its location decisions in various ways. A firm that adopts a cost leadership strategy must seek out low-cost locations, whereas a firm that focuses on product quality must locate facilities in areas that have adequate skilled labor and managerial talent. A firm may choose to concentrate production geographically to better meet organizational goals. Benetton does this with its Italian production facilities so as to better control product design and quality. Other firms find that strategic goals can be better met by dispersing facilities in various foreign locations. Most electronics firms take this approach. For example, Intel has manufacturing and assembly plants in Ireland, Israel, Malaysia, China, Costa Rica, and Vietnam to take advantage of the relatively low-cost resources available in each of these markets. Further, shipping the firm's computer chips to distant markets from those manufacturing facilities is relatively easy and inexpensive. Multiple production facilities also protect a firm against exchange rate fluctuations. FMC, for example, often shifts orders for its food-packaging machinery from plants in Chicago to plants in Italy or vice versa, depending on the relative values of the dollar and the euro.

A firm's organizational structure also influences the location of its factories. For example, as noted in Chapter 14, adoption of a global area structure decentralizes authority to area managers. These managers, seeking to maintain control over their area, are likely to favor locating factories within their area to produce goods sold within the area. For example, Ford once was structured as three area groups: North America, Europe, and Asia Pacific. The firm exported few automobiles from these regions: Rather, each area focused on producing automobiles to meet the needs of consumers in its area. Ford later abandoned this organizational structure, believing it hindered the company's ability to truly globalize its automobile production. Conversely, a firm having a global product structure will locate factories anywhere in the world to meet the firm's cost and quality performance goals.

A firm's inventory management policies are also affected by plant location decisions. Inventory management is a complex task all operations managers must confront. They must balance the costs of maintaining inventory against the costs of running out of materials or finished goods. The costs of maintaining inventory include those associated with storage (operating a warehouse, for example), spoilage and loss (some stored inventory gets ruined, damaged, or stolen), and opportunity costs (an investment in inventory cannot be put to other business uses). Factory location affects the level of inventory that firms must hold because of the distances and transit times involved in shipping goods. For example, if Walmart purchases private-label televisions for its U.S. stores from a Taiwanese factory, Walmart's inventory levels will be higher than if it purchases the televisions from a Mexican factory. Factory location becomes particularly critical when the just-in-time (JIT) inventory management system is adopted. With this approach, a firm's suppliers deliver their products directly to the firm's manufacturing center, usually in frequent small shipments, just as they are needed for production. The JIT system requires careful coordination between a firm and its internal and external suppliers. Often parts suppliers locate their facilities near the factories of their major customers to meet the JIT requirements of their customers. For example, many car-part makers, such as TRW Steering Systems, Denso, Bosch, and Johnson Controls, have located in Wales or the West Midlands region of England to better serve major customers like Jaguar and Range Rover. Parts manufacturers also have gravitated to the midwestern United States, Ontario, Brazil, Thailand, and other areas where auto assembly plants are clustered.

International Logistics and Materials Management

Regardless of the location of an international firm's factories, its operations management must address issues of international logistics. **International logistics** is the management of the flow of materials, parts, supplies, and other resources from suppliers to the firm; the flow of materials, parts, supplies, and other resources within and between units of the firm itself; and the flow of finished products, services, and goods from the firm to customers.

The first two sets of activities usually are called **materials management**, and the third set often is called physical distribution, or, more simply, distribution.¹⁶ Recall that we discussed distribution issues in Chapter 16 because they often are managed as part of the firm's marketing function. Thus, the focus here is on the materials management area of logistics. The role of

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International logistics is the management of the flow of materials, parts, supplies, and other resources. For multinational firms major shipping ports like this one in Singapore play a major role in international logistics. A complex web of highways, trucks, rail lines, trains, containerized shipping facilities, and cargo ships help move vast quantities of resources around the globe.



logistics is particularly important for firms that have developed integrated, but geographically dispersed, manufacturing and distribution networks where parts may be made in one country for assembly in a second country for sale in a third country.¹⁷ Three basic factors differentiate domestic and international materials management functions. The first is simply the distance involved in shipping. Shipments within even the largest countries seldom travel more than a couple of thousand miles, and many shipments travel much less. For example, the road distance between New York City and Los Angeles is around 2,800 miles, but the distances between New York and Warsaw, Tokyo, and Sydney are 4,300 miles, 6,700 miles, and 9,900 miles, respectively.¹⁸ Thus, assembling component parts in Kansas City, Chicago, and St. Louis and then shipping them to Cincinnati for final assembly is much easier than assembling component parts in San Diego, Montreal, and Cairo and then shipping them to Singapore for final assembly.

BRINGING THE WORLD INTO FOCUS

MOVING HERE, MOVING THERE...

It seems like just yesterday that manufacturers were moving their production facilities to Mexico. A business-friendly government combined with an abundant supply of low-cost labor made the northern Mexican border a perfect place to set up shop. The

North American Free Trade Agreement (NAFTA) made it relatively painless for businesses to move materials and finished goods back and forth across the border as needed. But the good times slowed in the early years of the twenty-first century as Mexican wages crept higher and higher and China emerged as the world's exciting new manufacturing center. So, by the droves businesses shut down their Mexican operations and moved to China. And for the next decade China's burgeoning manufacturing prowess firmly established that country as *the* low-cost manufacturing hub.

But sometimes history has a way of repeating itself. As China's economy boomed local workers demanded—and received—higher wages. For example, in 2003 Mexican wages were six times higher than comparable wages in China. By 2013, though, wages in China had escalated to the point where they were nearing comparable wages in Mexico. Factoring in international shipping costs, manufacturers whose primary markets are in the Western hemisphere came



to see that total costs of producing in Mexico versus China were about the same.

Not surprisingly, then, some firms that abandoned Mexico for China are reversing their course. Casabella, for example, makes cleaning supplies and kitchen gadgets. It moved from Mexico to China in 2003, but is now in the process of moving back. Similarly, Manufacturing Marvel produces toys and novelty items in both China and Mexico. But the firm's chief executive officer (CEO) says that when his current Chinese contracts expire in 2015 he plans to move all of his operations to Mexico. Will Mexico be the last stop for these firms? Probably not, because for low-cost manufacturers it generally pays to be where the lowest labor and materials costs are located. But now, at least, Mexico seems to be rising once again.

Sources: "Some Manufacturers Say 'Adios' to China," *USA Today*, March 19, 2013, p. 7B; "Mexican Manufacturing Rises Again," reuters.com, accessed on May 18, 2013; "Mexico's Manufacturing Base Rebounds," areadevelopment .com, accessed on May 19, 2013; "Mexico's Welcome Mat Attracts Aerospace Manufacturers," aviationweek.com, accessed on May 19, 2013; "Mexico: The New China," *New York Times*, January 26, 2013, p. B1.

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customer satisfaction. Firms such as Zara and Urban Outfitters that have aggressively and innovatively harnessed these new information technologies have improved the efficiency of their overall operations as well as their logistical operations. Cost savings can be huge. Volkswagen, for example, believes it can trim its overall operating costs by 1 percent using electronic data interchange for all of its internal and external transactions.

IT also has promoted a reconceptualization of the logistics process and a rethinking of the supplier-customer relationship. By harnessing IT, firms are able to analyze how to promote the efficiency and productivity of the entire supply chain, rather than just their particular component of it. Indeed, by using IT creatively, companies not only enhance their own productivity but also raise the satisfaction of their customers. IT has other advantages as well. Investments in IT can act as substitutes for investments in inventory and warehousing capacity, reducing capital costs and improving rates of return on assets. Moreover, IT helps firms monitor their progress toward attainment of their strategic goals.

In Practice

- Managers need to be thoroughly familiar with the role of supply chain management and vertical integration in their organization.
- The make-or-buy decision is a basic option that managers must consider.

For further consideration: Under what circumstances might production previously offshored be brought back into the home country?

International Service Operations

The service sector has emerged in recent years as an increasingly important part of many national economies, especially those of developed countries. For example, the service sector accounts for almost three-fourths of the U.S. gross domestic product and is the source of most new U.S. jobs.²³ It therefore should come as no surprise that services are becoming a more integral part of international trade and of the global economy. An **international service business** is a firm that transforms resources into an intangible output that creates utility for its customers. Examples of international services are British Airways' transporting of passengers from London to New Delhi; PricewaterhouseCooper's assistance with the accounting and auditing functions of firms such as BP, Baxter, and IBM; and Dai-Ichi Kangyo Bank's handling of international corporate business accounts.

Characteristics of International Services

Services have several unique characteristics that create special challenges for firms that want to sell services in the international marketplace. In particular, services often are intangible, are not storable, require customer participation, and may be linked with tangible goods.

SERVICES ARE INTANGIBLE A consumer who goes to a store and buys an Apple iPad has a tangible product, one that can be held, manipulated, used, stored, damaged, or returned. A consumer who goes to an accountant to obtain financial advice leaves with intangible knowledge that cannot be held or seen. (The pieces of paper or electronic documents sometimes associated with services— tax statements, insurance policies, and so on—although tangible themselves, are actually just symbols or representations of the service product itself.) Because of this intangibility, assessing a service's value or quality often is more difficult than assessing the value or quality of a good.

SERVICES GENERALLY ARE NOT STORABLE Often they cannot be created ahead of time and inventoried or saved for future usage. A service call to repair a broken washing machine can occur only when the technician is physically transported to the site of the broken appliance—and is wasted if no one is home to unlock the door. An empty airline seat, an unused table in a restaurant, and an unsold newspaper all lose their economic value as soon as their associated window of opportunity closes, that is, after the plane takes off, the restaurant kitchen closes, and the next day's newspaper is printed. The high degree of perishability of services makes capacity planning a critical problem for all service providers. **Capacity planning** is deciding how many customers a firm will be able to serve at a given time. Failure to provide sufficient capacity often means permanently lost sales, whereas provision of too much capacity raises the firm's costs and lowers its profits.

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SERVICES OFTEN REQUIRE CUSTOMER PARTICIPATION International services such as tourism cannot occur without the physical presence of the customer. Because of customer involvement in the delivery of the service, many service providers need to customize the product to meet the purchaser's needs. Thomas Cook, for example, can sell more bus tours in London if it provides Spanish-speaking guides for its Mexican, Venezuelan, and Argentinean clients and Japanese-speaking guides for its Japanese customers. Further, an identical service can be perceived quite differently by each of its customers, thereby creating strategic and marketing problems. The London bus tour, for instance, may be viewed with great excitement by Japanese honeymooners on their first trip outside of Osaka but with boredom by a harried Toshiba executive who has visited the city many times.

MANY SERVICES ARE TIED TO THE PURCHASE OF OTHER PRODUCTS Many firms offer productsupport services—assistance with operating, maintaining, or repairing products for customers. Such services may be critical to the sale of the related product. For example, Swedish appliance maker AB Electrolux manufactures vacuum cleaners, refrigerators, washing machines, and other appliances under such names as Eureka, Frigidaire, Tappan, and Weed Eater. The firm also has service operations set up to repair those products for consumers who buy them, to provide replacement parts, and so on. The firm's ability to sell its appliances would be harmed substantially if it did not offer these related services. Moreover, not only must it offer the services at its corporate headquarters in Stockholm, Sweden; if Electrolux wants to compete in the U.S., Canadian, and British markets, it must provide repair and parts distribution services there as well.

The Role of Government in International Services Trade

An important dimension of the international services market is the role of government. Many governments seek to protect local professionals and to ensure that domestic standards and credentials are upheld by restricting the ability of foreigners to practice such professions as law, accounting, and medicine. Government regulations often stipulate which firms are allowed to enter service markets and the prices they may charge. For instance, in the United States foreign banks and insurance firms are heavily regulated and must follow the directives of numerous state and federal regulatory agencies. In many countries telecommunications, transportation, and utility firms typically need governmental permission to serve individual markets. For example, airline routes between the United States and Australia are defined by a bilateral agreement between those two countries. Qantas, Australia's leading airline, can fly passengers in San Francisco and between Sydney and Dallas, but it cannot board passengers in San Francisco and fly them to Dallas. Similarly, a U.S. carrier can fly passengers between the United States and Sydney and Melbourne.

The past decade has seen a reduction in domestic and international regulation of many service industries. Continued reductions in barriers to service trade is a high priority of the World Trade Organization. Deregulation and reduced trade barriers have created opportunities for firms in industries such as banking and telecommunications and spurred them to aggressively seek new domestic markets and expand their operations to foreign markets. These changes have also triggered numerous strategic alliances, cross-border investments, and new start-up companies in every corner of the globe.

Managing Service Operations

The actual management of international service operations involves a number of basic issues, including capacity planning, location planning, facilities design and layout, and operations scheduling.

Recall that capacity planning is deciding how many customers the firm will be able to serve at one time. Because of the close customer involvement in the purchase of services, capacity planning affects the quality of the services provided to customers. For example, McDonald's first restaurant in Russia was considerably larger than many of its other restaurants to accommodate an anticipated higher level of sales volume. Despite this larger size, customer waiting times at the Moscow restaurant were much longer than those in the United States. The lack of restaurant alternatives made Muscovites more willing to stand in long lines for their "Big Mek." In contrast, if customers had to wait a half-hour to be served in Boulder, Columbus, or even Paris, McDonald's would lose much of its business.

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As with production management, location planning is important for international service operations. By definition most service providers must be close to the customers they plan to serve (exceptions might be information providers that rely on electronic communication). Indeed, most international service operations involve setting up branch offices in each foreign market and then staffing each office with locals.

International service facilities also must be carefully designed so the proper look and layout are established. At times firms operating internationally may highlight their foreign identity or blend their home country heritage with the local culture. At Disneyland Paris, for example, signs are in both English and French. At other times firms may chose to downplay their foreign identity. Most U.S. donut dunkers, for instance, were unaware that Dunkin' Donuts was owned by a British conglomerate for many years.

Finally, international service firms must schedule their operations to best meet the customers' needs. For example, airlines transporting passengers from the United States to Europe generally depart late in the evening. Doing this gives passengers the opportunity to spend some of the day working before they depart, and they arrive in the early morning the next day. In contrast, westbound flights usually leave Europe in midmorning and arrive in the United States late that same afternoon. This scheduling provides an optimal arrangement because it factors in customer preferences, time zones, jet lag, and aircraft utilization and maintenance requirements.

In Practice

- Managers need to recognize both the differences and similarities between managing production and service operations.
- Managers must have a clear understanding of the characteristics of international services and how they affect business operations.

For further consideration: How might the role of government be different for international service operations as opposed to manufacturing?

Managing Productivity in International Business

A key consideration in operations management for many international firms is productivity. At its simplest level **productivity** is an economic measure of efficiency that summarizes the value of outputs relative to the value of the inputs used to create the outputs.²⁴ Productivity is important for various reasons. For one thing, it helps determine a firm's overall success and contributes to its long-term survival. For another, productivity contributes directly to the overall standard of living within a particular country. If the firms within a country are especially productive, the country's citizens will have more products and services to consume. Moreover, the firm's goods and services can be exported to other countries, thereby bringing additional revenues back into the country of origin. Each of these factors positively impacts gross domestic product and thus benefits the whole country.

Regardless of where a firm operates, one of its fundamental goals must be to continue to enhance its productivity. There are several general strategies a firm can pursue in its efforts to maintain or boost productivity. Three approaches in particular often help firms become more productive: (1) spend more on research and development (R&D), (2) improve operations, and (3) increase employee involvement.

The starting point in improving productivity is often to invest more heavily in R&D. Through R&D firms identify new products, new uses for existing products, and new methods for making products. Each of these outcomes in turn contributes directly to higher productivity. U.S. firms often spend more on R&D than do their foreign competitors, but the gap is narrowing as more foreign firms increasingly invest in R&D. Moreover, U.S. firms have a long and painful history of achieving significant scientific breakthroughs but then being ineffective in getting them to market.²⁵

Another important way to increase productivity is to improve operations. This is where control comes in; a firm seeking to increase productivity needs to examine how it does things and then look for ways to do them more efficiently. Replacing outmoded equipment, automating

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selected tasks, training workers to be more efficient, and simplifying manufacturing processes are all ways to improve operations and boost productivity. Japanese manufacturers have been especially successful at increasing productivity through improved operations. JIT manufacturing and inventory control techniques, consistent investments in technology, and a concentration on efficiency have paid big dividends for many Japanese firms. U.S. firms also are paying more attention to operations. For example, General Electric once required three weeks to fill an order for a custom-made industrial circuit breaker box. Further, the firm had six plants making the boxes. Through improved operations—more efficient manufacturing methods and product simplification, among other improvements—the firm now fills such an order in only three days and makes all its circuit breaker boxes in a single facility.

Finally, productivity can be improved by increasing employee involvement. The idea is that if managers give employees more say in how they do their jobs, those employees will become more motivated to work and more committed to the firm's goals. Further, because they are the ones actually doing the jobs, the employees probably have more insights than anyone else into how to do the jobs better.²⁶ Increased involvement is generally operationalized through the use of self-managed teams. Groups of workers are formed into teams, each of which has considerable autonomy over how it does its job. Self-managed teams were pioneered in Sweden and the United Kingdom, refined in Japan, and are now used extensively worldwide.²⁷

For example, Lufthansa currently uses employee participation in its efforts to cut costs. The firm's overhead had grown out of control, and it needed to be reduced for the firm to remain competitive. Lufthansa wanted to cut its payroll in Germany but was stymied because of two strong national unions. So the firm enlisted the assistance of the unions to meet its cost-cutting goals. Representatives from the firm and both unions now meet regularly to devise ways to trim payroll costs without resorting to massive layoffs. So far the cuts have focused on reducing work rules and eliminating jobs through attrition and early retirement.

In Practice

- Managers need to understand the meaning and importance of productivity.
- Managers need to know various methods for improving productivity.

For further consideration: Is it possible for an organization to be *too* productive? Why or why not?

Managing Quality in International Business

Operations management also helps firms maintain and enhance the quality of their products and/or services. Indeed, quality has become such a significant competitive issue in most industries that control strategies invariably have quality as a central focus. The American Society for Quality has defined **quality** as the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.²⁸ The International Organization for Standardization (ISO) has been working to develop and refine an international set of quality guidelines. These guidelines, called collectively ISO 9000, provide the basis for a quality certification that is becoming increasingly important in international business. The guidelines were updated and revised in 2000.

The ISO 9000 standards cover such areas as product testing, employee training, record keeping, supplier relations, and repair policies and procedures. Firms that want to meet these standards apply for certification and are audited by a firm chosen by the ISO's domestic affiliate. These auditors review every aspect of the firm's business operations in relation to the standards. Many firms report that merely preparing for an ISO 9000 audit has been helpful. Many firms today, including General Electric, DuPont, British Telecom, and Philips Electronics are urging—or in some cases requiring—that their suppliers achieve ISO 9000 certification. All told, more than 162 countries have adopted ISO 9000 as a national standard, and more than 400,000 certificates of compliance have been issued. ISO 14000 is an extension of the same concept to environmental performance. Specifically, ISO 14000 requires that firms document how they are using raw materials more efficiently, managing pollution, and reducing their impact on the environment.

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of 99.9 percent of all bottles having content within this range. Samples of finished products are taken and their actual content measured. As long as 99.9 percent of all samples have between 22.8 and 23.2 ounces, production continues. However, if only 97 percent of one sample falls within the acceptable range, managers may stop production and adjust their bottling equipment.

Another important TQM technique is benchmarking. **Benchmarking** is the process of legally and ethically studying how other firms do something in a high-quality way and then either imitating or improving on their methods. Xerox started the benchmarking movement in the United States as a result of competitive pressures from foreign rivals. Canon, a Japanese firm, once introduced a midsized copier that sold for less than \$10,000. Xerox was sure Canon was selling it below cost to gain market share. To learn more about what was going on, Xerox sent a team of managers to Japan to work with Fuji-Xerox, a joint venture a Xerox affiliate had established with Fuji to make copiers in Asia. While there, the managers bought a Canon copier and took it apart. To their surprise they found the Canon copier to be of higher quality and lower cost than the copiers Xerox was making. By imitating various materials and methods used by Canon, Xerox was able to begin making its own higher-quality and lower-cost equipment. Today benchmarking is widely used. For example, smartphone manufacturers rely heavily on benchmarking to keep abreast of their competitors.

In Practice

- Managers must strive to understand the importance of quality in international business.
- International managers need to be familiar with the primary techniques used for TQM.
- *For further consideration*: Under what circumstances would benchmarking activities cross the line and become illegal? Would this vary from one country to another?

Managing Information in International Business

A final and increasingly important aspect of operations in international business involves information. **Information** is data in a form that is of value to a manager in making decisions and performing related tasks.

Information is vitally important to any firm. Managers use it in every phase of their work because it is necessary to the decision-making process. Obtaining accurate and timely information is of particular importance to international firms. Managers use information to better understand their firm's environment—its customers, competitors, and suppliers; the government policies that affect its hiring, producing, and financing decisions; and virtually every other element of its environment.

Managers also use information to help them decide how to respond to the environment. Meetings, reports, data summaries, telephone calls, and e-mail messages are all used as managers set strategic goals and map out strategic plans. Information is also critical to implementing those strategic plans. For example, top managers must communicate their goals and expectations to managers of their foreign operations. Information is needed continually because managers make decisions daily and provide feedback to others in the firm about the consequences of those decisions. Finally, information is an important part of the control process itself as managers monitor and assess how well they are meeting goals and executing plans. No manager likes to be taken by surprise. Having ready access to information that can be used to gauge ongoing performance and actual accomplishments is an important part of a manager's ability to function effectively.³¹

The importance of information management depends on the type of strategy and organization design the firm uses. If a firm is using related diversification, it is important that various parts of the firm be able to communicate with other parts so the firm can most effectively capitalize on the potential synergies of this strategy. If the firm is highly centralized, information systems are vital for top managers so they can maintain the control they seek from using this particular design. On the other hand, if a firm is using unrelated diversification, its information systems needs will be quite different. Communication among the various businesses within the firm will be far less important. Finally, if the firm is using a decentralized form of organization

CHAPTER REVIEW

Summary

International operations management is the set of activities used by an international firm to transform resources into goods or services. Effective operations management is a key ingredient in any firm's success. A firm's business strategy provides the major direction it will take regarding its operations management activities.

Production management refers to the creation of tangible goods. One of the first decisions production managers must make concerns supply chain management and vertical integration. Supply chain management, also called sourcing or procuring, encompasses the set of processes and steps used in acquiring resources and materials. Vertical integration refers to the extent to which a firm either provides its own resources or obtains them externally.

A key decision is whether to make or buy inputs. Several options exist. Production managers attempting to select from among them must consider strategic issues as well as risks, flexibility, investments in facilities, and questions of control.

Location decisions are also of paramount importance to effective international operations management. Country-related considerations include resource availability and costs, infrastructure, and country-of-origin marketing effects. Product-related issues are the value-to-weight ratio, production technology, and the importance of customer feedback. Governmental factors that must be considered include stability of the political process, tariffs and other trade barriers, economic development incentives, and the existence of FTZs. Finally, organizational issues include the firm's strategy, its structure, and its inventory management policies.

International logistics and materials management are also a basic part of production management. Several factors differentiate international from domestic materials management, including shipping distance, transportation modes, and the regulatory context. Packaging, weight, and factory location also must be considered. Technological changes in information technology are revolutionizing logistics and redefining relationships between suppliers and end users.

Service operations management is concerned with the creation of intangible products. The service sector is an increasingly important part of the global economy. International services are generally characterized as being intangible, not storable, requiring customer participation, and linked with tangible goods. The basic issues involved in managing service operations include capacity planning, location planning, design and layout, and operations scheduling.

Productivity is an economic measure of efficiency that summarizes the value of outputs relative to the value of inputs used to create the outputs. Productivity can be assessed at a variety of levels and in many different forms. Experts agree that a firm can improve productivity by spending more on R&D, improving operations, and increasing employee involvement.

Quality is the total set of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs. Quality has become a critical factor in both domestic and global competition. To improve quality, many firms are relying on TQM. TQM starts with a strategic commitment and is based on employee involvement, highquality materials, up-to-date technology, and effective methods. Quality improvement tools include statistical process control and benchmarking.

Information is data in a form that is of value to a manager. It plays a major role in international business. Managers use information to understand their environment and to make decisions. Information is also an important element in effective control. Managing information in an international firm is complex, and many firms use sophisticated electronic information systems to do so more effectively.

Review Questions

- 17-1. How does a firm's corporate strategy affect its operations management?
- 17-2. How do production management and service operations management differ?
- 17-3. What is supply chain management? What is vertical integration?
- 17-4. What basic set of factors must a firm consider when selecting a location for a production facility?
- 17-5. What basic factors must be addressed when managing international service operations?
- 17-6. Why is it important for organizations to control productivity?

Questions for Discussion

- 17-7. How does international operations management relate to international marketing (discussed in Chapter 16)?
- 17-8. How are a firm's strategy and operations management interrelated?
- 17-9. How do each of the basic business strategies (differentiation, cost leadership, and focus) relate to operations management?

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- 17-10. What are the basic similarities and differences between production management and service operations management?
 - 17-11. What is your country's GDP, and trends of manufacturing and services?
- 17-12. Identify your country's top 10 export products. This could be assessed by volume, value or their importance in terms of employment. What is their ranking in the world market?
- 17-13. What types of information are particularly important to an international firm?

Building Global Skills

You have been brought in to advise a Palestinian olive oil cooperative. The majority of Palestinians live on less than U.S. \$2 per day. However, up to 80 percent of the West Bank and Gaza are planted with olive trees. For the farmers, the olive harvest provides between 25 to 50 percent of their annual income.

In the past, a kilo of olive oil sold for just over U.S. \$4; recently, this has dropped to half that price due to the political situation.

On the positive side, there is significant demand for olive oil outside the immediate region. At present, only a third of the estimated 15,000 tons of olive is actually exported outside the region. The majority of the oil is sold at low prices to Israel or is unsold. This state of affairs is plunging farmers into debt; they can barely justify their focus on olive oil production.

The olive oil cooperative has a deal with a fair trade organization to ship and distribute their produce across Europe. This means that the olive oil can be sold at a premium price, significantly improving the income of the members of the cooperative.

The deal has also ensured that there are distributors and on-line retailers who can sell the olive oil to a broader target market, although this has not yet been the case in the Middle East. At present, it is impossible for the cooperative to fulfill direct orders themselves and therefore, keep the majority of the profits on each sale.

The member of the cooperative responsible for online sales service has been monitoring foreign orders for several years, and has noticed a steady but dramatic increase in online order attempts from the Middle East. Indeed, the attempted order volume has grown to the point where the online service manager has brought it up at a recent meeting of the cooperative. He suggests that if the orders could be fulfilled directly then the cooperative's total revenue would increase by at least 25 percent. The primary reasons for the cooperative not being able to fulfill orders from these locations are that the normal shipping times are simply too long and the customs regulations too complicated.

Each season's costs and distributions are different. The order quantity affects the costs of bottling, labeling, overseas shipping, brokerage, inspection costs and transportation. Collectively, this can equate to 50 percent of the total cost of each bottle.

When you meet the cooperative to find out what they would like you to investigate and advise them on, they present you with four options:

- Continue to follow their current business model and ignore the broader European and Middle Eastern market.
- Bottle and ship the olive oil to key overseas locations. They are suggesting that they partner with fair trade distributors in Dubai (to serve the Middle East) and in London (to handle the European distribution). The cooperative would have to buy a bottling plant, package the bottles of olive oil and organize their shipping (probably via Lebanon or Egypt). The cooperative believes that orders received from the distributors should be fulfilled within around 10 days. The cooperative would have to store the olive oil in bulk tanks, and ready to be bottled, when needed. They propose that the bottling and shipping costs would be passed on to the distributors.
- Ship the olive oil in bulk to the distributors so that they can break down the bulk shipment into bottles, cans and drums for onward sales to retailers and consumers. The bulk shipments would have to be made via freighters and this will mean that the olive oil will have to be shipped out of Lebanon. The distributors would handle all branding and marketing on behalf of the cooperative.
- Identify a fair trade bulk buyer who will handle the shipments of olive oil out of Palestine, by whatever means. The cooperative is prepared to consider bottling the olive oil for the distributor as this is likely to be the more favored approach. Once the olive oil leaves the cooperative, the responsibility and subsequent profits will pass to the distributor.

Form groups of three or four with your classmates and take the following steps:

- Advise the cooperative on the advantages and disadvantages of the four options.
- Which one of these options would you recommend the cooperative to pursue?
- If the best option cannot be achieved, which is the second best option, and is it a poor choice for the cooperative?
- Share and discuss your findings and recommendations with others in your group.

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CLOSING CASE Out Supply-Chaining the King of Supply Chainers

It's no secret that Walmart is the largest retailer (indeed, the second-largest corporation) on the planet, with total revenues in 2012 of \$469 billion. It's more than six times bigger than the number-two retailer in the United States, Home Depot (2012 revenue: \$75 billion), and it's bigger than Europe's three largest retailers-France's Carrefour, Britain's Tesco, and Germany's Metro AG-combined. It is, according to the business-information service Hoover's, "an irresistible (or at least unavoidable) retail force that has yet to meet any immovable objects." One key to Walmart's success has been astute supply chain management. For example, Walmart was among the first to use point-of-sale scanners to track product sales and reorder quickly to meet shifting consumer buying patterns. And Walmart has also been ruthless at forcing its suppliers to continuously lower their own costs.

But some experts have recently noted that Walmart is actually getting beaten at its own game by one of its European rivals, Tesco. Food-retail analyst Kevin Coupe points out that "there isn't a place in the world where Tesco has gone one-on-one with Walmart and Tesco hasn't won." In Britain, for example, U.K.-owned Tesco, the world's third-largest retailer, commands a 34-percent market share double that of Walmart-owned Asda.

Tesco's 4,000 stores in 13 countries utilize five basic formats, customized to match the needs of the local market. Its ability to manage stores in multiple formats as well as multiple markets is one of the company's greatest strengths. The key to this core competence is technology-or more precisely, data management, which is critical in any effort to optimize inventory selection, size, and distribution. Tesco, reports retail-industry analyst Scott Langdoc, "is ruthless in supply-chain management." In the United Kingdom, for instance, a wireless network connecting all Tesco stores facilitates real-time management of distribution and transportation. Workers use handheld PDAs for data entry and reporting, and radio frequency identification (RFID) tags allow them to conduct crates and pallets to stores carrying anywhere from 3,500 to 60,000 different products in markets located anywhere from Sussex to Seoul.

Tesco is good not only at applying data management to supply chain management, but it has also developed considerable skill in applying data management to the analysis of consumer preferences in different markets. Tesco relies on a data-mining firm called Dunnhumby (of which it has majority control) to manage everything from targeting sales promotions to designing store formats and, perhaps most importantly, developing private-label products. Along with its ability to manage multiple store formats, many analysts regard Tesco's ability to provide a better and broader range of private brands—products manufactured for retailers who sell them under their own names—as one of the most important factors in the company's marketing success. U.S. retailers, on the other hand, have never been quite able to convince consumers that private-label products are as good as their brandname counterparts. Walmart, for example, struggles to get 35 percent of its sales from private-label goods. In many countries, however, Tesco gets as much as 60 percent of its revenue from private-label products.

The difference? Tesco, explains New York retail consultant Burt P. Flickinger III, knows which products to develop, how to price them, and how to integrate them into the product lines of its various stores. "[Our] range of high-quality own-label products," says CEO Terry Leahy, "... is an integral part of our offer in every market in which we operate." Tesco offers about 12,000 private-label and specialty brands at every price point. Some high-range products, such as Tesco Finest Chocolates, even sell at 50-percent premiums to established brands like Cadbury, and all of them sell at significantly higher margins than national brands.

According to Flickinger, "Tesco is arguably the finest food retailer in the world," and he suggests that, armed with a unique set of competencies, the British grocer may well be "Walmart's worst nightmare." But, like every business, Tesco isn't perfect. In 2007, it rolled out a new chain of food stores, called Fresh & Easy, in California, Arizona, and Nevada. Unfortunately its timing and location choice couldn't have been worse. Tesco acquired its properties at the height of the U.S. property boom of the mid-2000s. Unfortunately, California, Arizona, and Nevada were among the worst-hit areas when the bubble in the U.S. housing market burst, dooming Fresh & Easy's viability. Tesco is now in the process of winding down the chain's operations. Despite this setback, Walmart knows it cannot rest easy, for the U.S. market is too big for a skillful and aggressive rival like Tesco to ignore.

Case Questions

- 17-14. What is the basis of Tesco's success?
- 17-15. How easy (or hard) would it be for rivals like Walmart or Carrefour to adopt Tesco's data management techniques?
- 17-16. The global recession slowed down Tesco's plans for expansion. Why might Tesco have been more harmed by the recession than Walmart?

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- **17-18.** What are the basic similarities and differences between managing in a production environment and managing in a services environment?
- 17-19. Mymanagementlab Only—comprehensive writing assignment for this chapter.

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