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Operations Strategy in a Global Environment

Chapter Outline

10 OM Strategy Decisions

- Design of Goods and Services
- Managing Quality
- Process Strategy
- Location Strategies
- Layout Strategies
- Human Resources
- Supply Chain Management
- Inventory Management
- Scheduling
- Maintenance

Boeing's Global Strategy Yields Competitive Advantage

Boeing's strategy for its 787 Dreamliner is unique from both an engineering and global perspective.

The Dreamliner incorporates the latest in a wide range of aerospace technologies, from airframe and engine design to superlightweight titanium graphite laminate, carbon fibre and epoxy, and composites. Another innovation is the electronic monitoring system that allows the airplane to report maintenance requirements to ground-based computer systems. Boeing has also worked with General Electric and Rolls-Royce to develop more efficient engines. The advances in engine technology contribute as much as 8% of the increased fuel/payload efficiency of the new airplane, representing a nearly two-generation jump in technology.

Boeing's collaborative technology enables a "virtual workspace" that allows engineers on the 787, including partners in Australia, Japan, Italy, Canada, and across the United States, to make concurrent design changes to the airplane in real time. Designing, building, and testing the 787 digitally before production reduced design errors and improved production efficiencies.

Some of the International Suppliers of Boeing 787 Components

Latecoere	France	Passenger doors
Labinel	France	Wiring
Dassault	France	Design and PLM software
Messier-Bugatti	France	Electric brakes
Thales	France	Electrical power conversion system and integrated standby flight display
Messier-Dowty	France	Landing gear structure
Diehl	Germany	Interior lighting
Cobham	UK	Fuel pumps and valves
Rolls-Royce	UK	Engines
Smiths Aerospace	UK	Central computer system
BAE Systems	UK	Electronics
Alenia Aeronautica	Italy	Upper centre fuselage and horizontal stabilizer
Toray Industries	Japan	Carbon fibre for wing and tail units
Fuji Heavy Industries	Japan	Centre wing box
Kawasaki Heavy Industries	Japan	Forward fuselage, fixed sections of wing, landing gear wheel well
Teijin Seiki	Japan	Hydraulic actuators
Mitsubishi Heavy Industries	Japan	Wing box
Chengdu Aircraft Group	China	Rudder
Hafei Aviation	China	Parts
Korean Airlines	South Korea	Wingtips
Saab	Sweden	Cargo and access doors

This state-of-the-art Boeing 787 is also *global*. Led by Boeing at its Everett, Washington facility, an international team of aerospace companies developed the airplane. New technologies, new design, new manufacturing processes, and committed international suppliers are helping Boeing and its partners achieve unprecedented levels of performance in design, manufacture, and operation.

The 787 is global not only because it has a range of 13 800 km but also because it is built all over the world—with a huge financial risk of over $5 billion (USD), Boeing needed partners. The global nature of both technology and the aircraft market meant finding exceptional developers and suppliers, wherever they might be. It also meant finding firms willing to step up to the risk associated with a very expensive new product. These partners not only spread the risk but also bring commitment to the table. Countries that have a stake in the 787 are more likely to buy from Boeing than from the European competitor Airbus Industries.

Boeing teamed with more than 20 international systems suppliers to develop technologies and design concepts for the 787. Boeing found its 787 partners in over a dozen countries; a few of them are shown in the table on the left.

State-of-the-art composite sections of the 787 are built around the world and shipped to Boeing for final assembly.

Components from Boeing's worldwide supply chain come together on an assembly line in Everett, Washington. Although components come from throughout the world, about 35% of the 787 structure comes from Japanese companies.

The Japanese companies Toray, Teijin Seiki, Fuji, Kawasaki, and Mitsubishi are producing over 35% of the project, providing whole composite fuselage sections. Italy's Alenia Aeronautica is building an additional 10% of the plane.

Many U.S. companies, including Crane Aerospace, Fairchild Controls, Goodrich, General Dynamics, Hamilton Sundstrand, Honeywell, Moog, Parker Hannifin, Rockwell Collins, and Triumph Group are also suppliers. Boeing has 70% to 80% of the Dreamliner built by other companies. And even some of the portion built by Boeing is produced at Boeing facilities outside the United States, in Australia and Canada.

The global Dreamliner is efficient, has a global range, and is made from components produced around the world. The result: a state-of-the-art airplane reflecting the global nature of business in the 21st century and one of the fastest-selling commercial jets in history.

Chapter 2 Learning Objectives

AUTHOR COMMENT
As Prof. Thomas Sewell observed, "No great civilization has developed in isolation."

A Global View of Operations

Today's operations manager must have a global view of operations strategy. Since the early 1990s, nearly 3 billion people in developing countries have overcome the cultural, religious, ethnic, and political barriers that constrain productivity and are now players on the global economic stage. As these barriers disappear, simultaneous advances are being made in technology, reliable shipping, and cheap communication. The unsurprising result is the growth of world trade (see Figure 2.1), global capital markets, and the international movement of people. This means increasing economic integration and interdependence of countries—in a word, globalization. In response, organizations are hastily extending their operations globally with innovative strategies. For instance:

- Boeing is competitive because both its sales and production are worldwide.
- Italy's Benetton moves inventory to stores around the world faster than its competition by building flexibility into design, production, and distribution.
- Sony purchases components from suppliers in Thailand, Malaysia, and elsewhere around the world for assembly in its electronic products.
- Volvo, considered a Swedish company, was recently controlled by a U.S. company (Ford) and has been subsequently acquired by Geely of China. But the current Volvo S40 is built in Belgium on a platform shared with the Mazda 3 (built in Japan) and the Ford Focus (built and sold in Europe.)

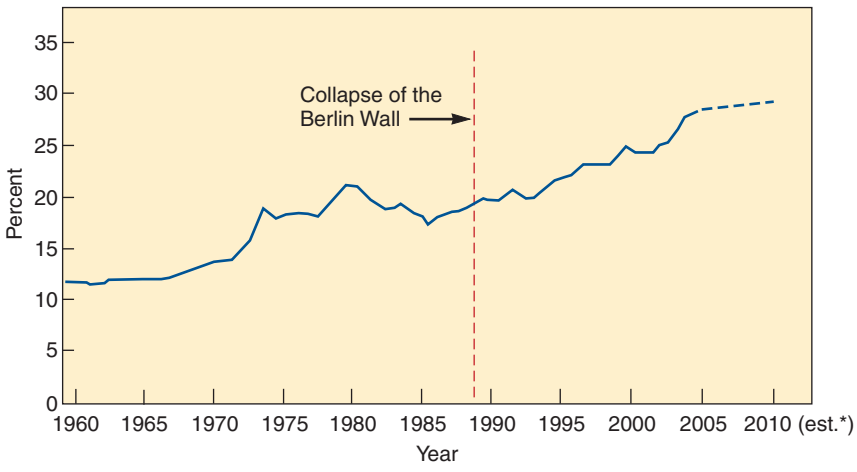
Globalization means that domestic production and exporting may no longer be a viable business model; local production and exporting no longer guarantee success or even survival. There are new standards of global competitiveness that impact quality, variety, customization, convenience, timeliness, and cost. The globalization of strategy contributes efficiency and adds value to products and services, but it also complicates the operations manager's job. Complexity, risk, and competition are intensified; companies must carefully account for them.

We have identified six reasons why domestic business operations decide to change to some form of international operation. They are:

1. Reduce costs (labour, taxes, tariffs, etc.).
2. Improve the supply chain.
3. Provide better goods and services.
4. Understand markets.
5. Learn to improve operations.
6. Attract and retain global talent.

Let us examine, in turn, each of the six reasons.

REDUCE COSTS Many international operations seek to take advantage of the tangible opportunities to reduce their costs. Foreign locations with lower wages can help lower both direct and indirect costs. (See the OM in Action box "Cartoon Production at Home in Manila.") Less stringent government regulations on a wide variety of operation practices (e.g., environmental



▶ FIGURE 2.1
Growth of World Trade (world trade as a percentage of world GDP)

*Author estimate for 2010.

Source: Growth of World Trade based on a speech by Mark A. Wynne, Federal Reserve Bank of Dallas, June 2009.

control, health and safety, etc.) reduce costs. Opportunities to cut the cost of taxes and tariffs also encourage foreign operations. In Mexico, the creation of **maquiladoras** (free trade zones) allows manufacturers to cut their costs of taxation by paying only on the value added by Mexican workers. If a Canadian manufacturer brings a $500 machine to a maquiladora operation for assembly work costing $25, tariff duties will be charged only on the $25 of work performed in Mexico.

Maquiladoras
Mexican factories located along the U.S.–Mexico border that receive preferential tariff treatment.

Shifting low-skilled jobs to another country has several potential advantages. First, and most obviously, the firm may reduce costs. Second, moving the lower skilled jobs to a lower cost location frees higher cost workers for more valuable tasks. Third, reducing wage costs allows the savings to be invested in improved products and facilities (and the retraining of existing workers, if necessary) at the home location. The impact of this approach is shown in the *OM in Action* box "Going Global to Compete" on the next page.

Trade agreements have also helped reduce tariffs and thereby reduce the cost of operating facilities in foreign countries. The **World Trade Organization (WTO)** has helped reduce tariffs from 40% in 1940 to less than 3% today. Another important trade agreement is the **North American Free Trade Agreement (NAFTA)**. NAFTA seeks to phase out all trade and tariff barriers among Canada, Mexico, and the U.S. Other trade agreements that are accelerating global trade include APEC (the Pacific Rim countries), SEATO (Australia, New Zealand, Japan, Hong Kong, South Korea, New Guinea, and Chile), MERCOSUR (Argentina, Brazil, Paraguay, and Uruguay), and CAFTA (Central America, Dominican Republic, and United States).

World Trade Organization (WTO)
An international organization that promotes world trade by lowering barriers to the free flow of goods across borders.

NAFTA
A free trade agreement between Canada, Mexico, and the United States.

Another trading group is the **European Union (EU)**.[1] The European Union has reduced trade barriers among the participating European nations through standardization and a common currency, the euro. However, this major Canadian trading partner, with almost 500 million people, is also placing some of the world's most restrictive conditions on products sold in the EU. Everything from recycling standards to automobile bumpers to hormone-free farm products must meet EU standards, complicating international trade.

European Union (EU)
A European trade group that has 27 member states.

IMPROVE THE SUPPLY CHAIN The supply chain can often be improved by locating facilities in countries where unique resources are available. These resources may be expertise, labour, or raw material. For example, a trend is evident in which precious metals companies are relocating to the mining regions of Northern Ontario. Auto-styling studios from throughout the world are migrating to the auto mecca of southern California to ensure the necessary expertise in contemporary auto design. Similarly, world athletic shoe production has migrated from South Korea to Guangzhou, China: this location takes advantage of the low-cost labour and production competence in a city where 40 000 people work making athletic shoes for the world. And a perfume essence manufacturer wants a presence in Grasse, France, where much of the world's perfume essences are prepared from the flowers of the Mediterranean.

OM *in Action* ► Cartoon Production at Home in Manila

Fred Flintstone is not from Bedrock. He is actually from Manila, capital of the Philippines. So are Tom and Jerry, Aladdin, and Donald Duck. More than 90% of North American television cartoons are produced in Asia and India, with the Philippines leading the way. With their competitive advantage of English as an official language and a strong familiarity with North American culture, animation companies in Manila now employ more than 1700 people. Filipinos understand Western culture, and "you need to have a group of artists that can understand the humour that goes with it," says Bill Dennis, a Hanna-Barbera executive.

Major studios like Disney, Marvel, Warner Brothers, and Hanna-Barbera send *storyboards*—cartoon action outlines—and voice tracks to the Philippines. Artists there draw, paint, and film about 20,000 sketches for a 30-minute episode. The cost of $130 000 to produce an episode in the Philippines compares with $160 000 in Korea and $500 000 in the United States.

Sources: Journal of Global Information Technology Management (2007): 1–6; *The New York Times* (February 26, 2004): A29; and *The Wall Street Journal* (August 9, 2005): D8.

[1]The 27 members of the European Union (EU) as of 2010 were Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom. Not all have adopted the euro. In addition, Croatia, Macedonia, and Turkey are candidates for entry into the European Union.

OM *in Action* ▶ Going Global to Compete

Headquartered in Montreal and founded in 1880, Bell Canada is one of Canada's prominent players in wireless telecommunications, controlling about 30% of the domestic market. Approximately 50% of Bell Canada's revenue stems from its wireless initiatives. It is active in contracting suitable vendors as part of outsourcing key voice-based projects for its satellite TV, Bell Mobility, Solo Mobility, and internet divisions. Bell Canada intends to outsource these particular projects via fixed payouts as part of a deal worth roughly between $25 and $30 million (CAD) per year. India is the beneficiary of these outsourced contracts, and the projects include inbound customer contact. Bell remains watchful for outsourcing partners with strong competencies in managing this type of front-end work.

In a similar fashion, the Canadian Bar Association reported through its in-house magazine about the "commoditization" of legal services, and noted a trend towards outsourcing certain aspects of legal work. Although the concept is fairly new to Canadian lawyers, firms that do engage in it suggest they provide hourly savings of up to 75%.

Resourceful organizations, such as Bell Canada and these certain law firms, use a global perspective to become more efficient, which allows them to develop new products, retrain employees, and invest in new plant and equipment.

Sources: www.cba.org/cba/PracticeLink/national/outsourcing.aspx *and www.bell.ca*

PROVIDE BETTER GOODS AND SERVICES Although the characteristics of goods and services can be objective and measurable (e.g., number of on-time deliveries), they can also be subjective and less measurable (e.g., sensitivity to culture). We need an ever better understanding of differences in culture and of the way business is handled in different countries. Improved understanding as the result of a local presence permits firms to customize products and services to meet unique cultural needs in foreign markets.

Another reason to have international operations is to reduce response time to meet customers' changing product and service requirements. Customers who purchase goods and services from Canadian firms are increasingly located in foreign countries. Providing them with quick and adequate service is often improved by locating facilities in their home countries.

UNDERSTAND MARKETS Because international operations require interaction with foreign customers, suppliers, and other competitive businesses, international firms inevitably learn about opportunities for new products and services. Europe led the way with cell phone innovations, and now the Japanese lead with the latest cell phone fads. Knowledge of these markets not only helps firms understand where the market is going but also helps firms diversify their customer base, add production flexibility, and smooth the business cycle.

A worldwide strategy places added burdens on operations management. Because of economic and lifestyle differences, designers must target products to each market. For instance, clothes washers sold in northern countries must spin-dry clothes much better than those in warmer climates, where consumers are likely to line-dry them. Similarly, as shown here, Whirlpool refrigerators sold in Bangkok are manufactured in bright colours because they are often put in living rooms.

Another reason to go into foreign markets is the opportunity to expand the *life cycle* (i.e., stages a product goes through; see Chapter 5) of an existing product. While some products in Canada are in a "mature" stage of their product life cycle, they may represent state-of-the-art products in less developed countries. For example, the Canadian market for personal computers could be characterized as "mature" but as in the "introductory" stage in many developing countries, such as Albania, Vietnam, and Myanmar (Burma).

LEARN TO IMPROVE OPERATIONS Learning does not take place in isolation. Firms serve themselves and their customers well when they remain open to the free flow of ideas. For example, GM found that it could improve operations by jointly building and running, with the Japanese, an auto assembly plant in San Jose, California. This strategy allowed GM to contribute its capital and knowledge of North American labour and environmental laws while the Japanese contributed production and inventory ideas. Similarly, operations managers have improved equipment and layout by learning from the ergonomic competence of the Scandinavians.

ATTRACT AND RETAIN GLOBAL TALENT Global organizations can attract and retain better employees by offering more employment opportunities. They need people in all functional areas and areas of expertise worldwide. Global firms can recruit and retain good employees because they provide both greater growth opportunities and insulation against unemployment during times of economic downturn. During economic downturns in one country or continent, a global firm has the means to relocate unneeded personnel to more prosperous locations.

So, to recap, successfully achieving a competitive advantage in our shrinking world means maximizing all of the possible opportunities, from tangible to intangible, that international operations can offer.

CULTURAL AND ETHICAL ISSUES

AUTHOR COMMENT
As the owner of a Guatemala plant said, "The ethics of the world markets is very clear: Manufacturers will move wherever it is cheapest or most convenient to their interests."

While there are great forces driving firms toward globalization, many challenges remain. One of these challenges is reconciling differences in social and cultural behaviour. With issues ranging from bribery, to child labour, to the environment, managers sometimes do not know how to respond when operating in a different culture. What one country's culture deems acceptable may be considered unacceptable or illegal in another. It is not by chance that there are fewer female managers in the Middle East than in India.

In the last decade, changes in international laws, agreements, and codes of conduct have been applied to define ethical behaviour among managers around the world. The WTO, for example, helps to make uniform the protection of both governments and industries from foreign firms that engage in unethical conduct. Even on issues where significant differences between cultures exist, as in the area of bribery or the protection of intellectual property, global uniformity is slowly being accepted by most nations.

In spite of cultural and ethical differences, we live in a period of extraordinary mobility of capital, information, goods, and even people. We can expect this to continue. The financial sector, the telecommunications sector, and the logistics infrastructure of the world are healthy institutions that foster efficient and effective use of capital, information, and goods. Globalization, with all its opportunities and risks, is here and will continue. It must be embraced as managers develop their missions and strategies.

Developing Missions And Strategies

AUTHOR COMMENT
Getting an education and managing an organization both require a mission and strategy.

An effective operations management effort must have a *mission* so it knows where it is going and a *strategy* so it knows how to get there. This is the case for a small domestic organization, as well as a large international organization.

MISSION

Economic success, indeed survival, is the result of identifying missions to satisfy a customer's needs and wants. We define the organization's **mission** as its purpose—what it will contribute to society. Mission statements provide boundaries and focus for organizations and the concept around which the firm can rally. The mission states the rationale for the organization's existence.

Mission
The purpose or rationale for an organization's existence.

▶ FIGURE 2.2
Mission Statements for Three Organizations

Sources: Annual reports: courtesy of Royal Canadian Mounted Police, Hard Rock Cafe: ~~*Employee Handbook*~~, Arnold Palmer Childrens' Care Team.

Royal Canadian Mounted Police
The RCMP is Canada's national police service. Proud of our traditions and confident in meeting future challenges, we commit to preserve the peace, uphold the law and provide quality service in partnership with our communities.
Hard Rock Cafe
Our Mission: To spread the spirit of rock 'n roll by creating authentic experiences that rock.
Arnold Palmer Hospital
Arnold Palmer Hospital for Children provides state of the art, family-centered healthcare focused on restoring the joy of childhood in an environment of compassion, healing and hope.

NOTE: The missio
statement has bee
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LO1: Define mission and strategy

Developing a good strategy is difficult, but it is much easier if the mission has been well defined. Figure 2.2 provides examples of mission statements.

Once an organization's mission has been decided, each functional area within the firm determines its supporting mission. By *functional area* we mean the major disciplines required by the firm, such as marketing, finance/accounting, and production/operations. Missions for each function are developed to support the firm's overall mission. Then within that function lower-level supporting missions are established for the OM functions. Figure 2.3 provides such a hierarchy of sample missions.

STRATEGY

Strategy
How an organization expects to achieve its missions and goals.

With the mission established, strategy and its implementation can begin. **Strategy** is an organization's action plan to achieve the mission. Each functional area has a strategy for achieving its mission and for helping the organization reach the overall mission. These strategies exploit opportunities and strengths, neutralize threats, and avoid weaknesses. In the following sections, we will describe how strategies are developed and implemented.

LO2: Identify and explain three strategic approaches to competitive advantage

VIDEO 2.1
Operations Strategy at Regal Marine

Firms achieve missions in three conceptual ways: (1) differentiation, (2) cost leadership, and (3) response. This means operations managers are called on to deliver goods and services that are (1) *better*, or at least different, (2) *cheaper*, and (3) more *responsive*. Operations managers translate these *strategic concepts* into tangible tasks to be accomplished. Any one or combination of these three strategic concepts can generate a system that has a unique advantage over competitors. For example, Hunter Fan has differentiated itself as a premier maker of quality ceiling fans that lower heating and cooling costs for its customers. Nucor Steel, on the other hand, satisfies customers by being the lowest-cost steel producer in the world. And Dell achieves rapid response by building personal computers with each customer's requested software in a matter of hours.

Clearly, strategies differ. And each strategy puts different demands on operations management. Hunter Fan's strategy is one of *differentiating* itself via quality from others in the industry. Nucor focuses on value at *low cost*, and Dell's dominant strategy is quick, reliable *response*.

AUTHOR COMMENT
For many organizations, the operations function provides *the* competitive advantage.

Achieving Competitive Advantage Through Operations

Competitive advantage
The creation of a unique advantage over competitors.

Each of the three strategies provides an opportunity for operations managers to achieve competitive advantage. **Competitive advantage** implies the creation of a system that has a unique advantage over competitors. The idea is to create customer value in an efficient and sustainable way. Pure forms of these strategies may exist, but operations managers will more likely be called

Sample Company Mission	
To manufacture and service an innovative, growing, and profitable worldwide microwave communications business that exceeds our customers' expectations.	
Sample Operations Management Mission	
To produce products consistent with the company's mission as the worldwide low-cost manufacturer.	
Sample OM Department Missions	
Product design	To design and produce products and services with outstanding quality and inherent customer value.
Quality management	To attain the exceptional value that is consistent with our company mission and marketing objectives by close attention to design, procurement, production, and field service opportunities.
Process design	To determine, design, and produce the production process and equipment that will be compatible with low-cost product, high quality, and a good quality of work life at economical cost.
Location	To locate, design, and build efficient and economical facilities that will yield high value to the company, its employees, and the community.
Layout design	To achieve, through skill, imagination, and resourcefulness in layout and work methods, production effectiveness and efficiency while supporting a high quality of work life.
Human resources	To provide a good quality of work life, with well-designed, safe, rewarding jobs, stable employment, and equitable pay, in exchange for outstanding individual contribution from employees at all levels.
Supply-chain management	To collaborate with suppliers to develop innovative products from stable, effective, and efficient sources of supply.
Inventory	To achieve low investment in inventory consistent with high customer service levels and high facility utilization.
Scheduling	To achieve high levels of throughput and timely customer delivery through effective scheduling.
Maintenance	To achieve high utilization of facilities and equipment by effective preventive maintenance and prompt repair of facilities and equipment.

◀ **FIGURE 2.3**
Sample Missions for a Company, the Operations Function, and Major OM Departments

on to implement some combination of them. Let us briefly look at how managers achieve competitive advantage via *differentiation*, *low cost*, and *response*.

COMPETING ON DIFFERENTIATION

Safeskin Corporation is number one in latex exam gloves because it has differentiated itself and its products. It did so by producing gloves that were designed to prevent allergic reactions about which doctors were complaining. When other glove makers caught up, Safeskin developed hypoallergenic gloves. Then it added texture to its gloves. Then it developed a synthetic disposable glove for those allergic to latex—always staying ahead of the competition. Safeskin's strategy is to develop a reputation for designing and producing reliable state-of-the-art gloves, thereby differentiating itself.

Differentiation is concerned with providing *uniqueness*. A firm's opportunities for creating uniqueness are not located within a particular function or activity but can arise in virtually everything the firm does. Moreover, because most products include some service, and most services include some product, the opportunities for creating this uniqueness are limited only

Differentiation
Distinguishing the offerings of an organization in a way that the customer perceives as adding value.

by imagination. Indeed, **differentiation** should be thought of as going beyond both physical characteristics and service attributes to encompass everything about the product or service that influences the value that the customers derive from it. Therefore, effective operations managers assist in defining everything about a product or service that will influence the potential value to the customer. This may be the convenience of a broad product line, product features, or a service related to the product. Such services can manifest themselves through convenience (location of distribution centres, stores, or branches), training, product delivery and installation, or repair and maintenance services.

In the service sector, one option for extending product differentiation is through an *experience*. Differentiation by experience in services is a manifestation of the growing "experience economy." The idea of **experience differentiation** is to engage the customer—to use people's five senses so they become immersed, or even an active participant, in the product. Disney does this with the Magic Kingdom. People no longer just go on a ride; they are immersed in the Magic Kingdom—surrounded by a dynamic visual and sound experience that complements the physical ride. Some rides further engage the customer by having them steer the ride or shoot targets or villains.

Experience differentiation
Engaging a customer with a product through imaginative use of the five senses, so the customer "experiences" the product.

VIDEO 2.2
Hard Rock's Global Strategy

Theme restaurants, such as Hard Rock Cafe, likewise differentiate themselves by providing an "experience." Hard Rock engages the customer with classic rock music, big-screen rock videos, memorabilia, and staff who can tell stories. In many instances, a full-time guide is available to explain the displays, and there is always a convenient retail store so the guest can take home a tangible part of the experience. The result is a "dining experience" rather than just a meal. In a less dramatic way, both Tim Hortons and your local supermarket deliver an experience when they provide music and the aroma of fresh coffee or freshly baked bread.

COMPETING ON COST

Porter Airlines has been a consistent success while other North American airlines have lost billions. Porter has done this by fulfilling a need for low-cost and short-hop flights. Its operations strategy has included use of secondary airports and terminals, few fare options, smaller crews, and no expensive ticket offices.

Additionally, and less obviously, Porter has very effectively matched capacity to demand and effectively utilized this capacity. It has done this by designing a route structure that matches the capacity of its Bombardier Dash-8 Q400, the only plane in its fleet. Second, it achieves more air miles than other airlines through faster turnarounds—its planes are on the ground less.

One driver of a low-cost strategy is a facility that is effectively utilized. Porter and others with low-cost strategies understand this and utilize resources effectively. Identifying the optimum size (and investment) allows firms to spread overhead costs, providing a cost advantage. For instance, Walmart continues to pursue its low-cost strategy with superstores that are open 24 hours a day. For 20 years, it has successfully grabbed market share. Walmart has driven down store overhead costs, shrinkage, and distribution costs. Its rapid transportation of goods, reduced warehousing costs, and direct shipment from manufacturers have resulted in high inventory turnover and made it a low-cost leader. Franz Colruyt, as discussed in the *OM in Action* box, is also winning with a low-cost strategy.

Low-cost leadership
Achieving maximum value as perceived by the customer.

Low-cost leadership entails achieving maximum *value* as defined by your customer. It requires examining each of the 10 OM decisions in a relentless effort to drive down costs while meeting customer expectations of value. A low-cost strategy does *not* imply low value or low quality.

COMPETING ON RESPONSE

The third strategy option is response. Response is often thought of as *flexible* response, but it also refers to *reliable* and *quick* response. Indeed, we define **response** as including the entire range of values related to timely product development and delivery, as well as reliable scheduling and flexible performance.

Response
A set of values related to rapid, flexible, and reliable performance.

Flexible response may be thought of as the ability to match changes in a marketplace where design innovations and volumes fluctuate substantially.

OM *in Action* ► Low-Cost Strategy Wins at Franz Colruyt

Belgian discount food retailer Franz Colruyt NV is so obsessed with cutting costs that there are no shopping bags at its checkout counters, the lighting at its stores is dimmed to save money on electricity, and employees clock out when they go on 5-minute coffee breaks. And to keep costs down at the company's spartan headquarters on the outskirts of Brussels, employees don't have voice mail on their phones. Instead, two receptionists take messages for nearly 1,000 staffers. The messages are bellowed out every few minutes from loudspeakers peppered throughout the building.

This same approach is evident at all 160 of Colruyt's shopping outlets, which are converted factory warehouses, movie theaters, or garages, with black concrete floors, exposed electrical wires, metal shelves, and discarded boxes strewn about. There is no background music (estimated annual cost saving: € 2 million, or $2.5 million), nor are there bags for packing groceries (estimated annual cost saving: € 5 million). And all the store's freezers have doors, so the company can save about € 3 million a year on electricity for refrigeration.

The company also employs a team of 30 "work simplifiers"—in Colruyt jargon—whose job is to come up with new ways to improve productivity. One recently discovered that 5 seconds could be shaved from every minute it takes customers to check out if they paid at a separate station from where groceries are scanned, so that when one customer steps away from the scanner, another can step up right away.

Chief Executive Rene De Wit says Colruyt's strategy is simple: cut costs at every turn and undersell your competitors. In an industry where margins of 1% to 2% are typical, Colruyt's cost cutting is so effective that a profit margin of 6.5% dwarfs those of rivals.

A low-cost strategy places significant demands on operations management, but Franz Colruyt, like Walmart, makes it work.

Sources: The Wall Street Journal (January 5, 2005): 1 and (September 22, 2003): R3, R7.

Hewlett-Packard is an exceptional example of a firm that has demonstrated flexibility in both design and volume changes in the volatile world of personal computers. HP's products often have a life cycle of months, and volume and cost changes during that brief life cycle are dramatic. However, HP has been successful at institutionalizing the ability to change products and volume to respond to dramatic changes in product design and costs—thus building a *sustainable competitive advantage*.

The second aspect of response is the *reliability* of scheduling. One way the German machine industry has maintained its competitiveness despite having the world's highest labour costs is through reliable response. This response manifests itself in reliable scheduling. German machine firms have meaningful schedules—and they perform to these schedules. Moreover, the results of these schedules are communicated to the customer and the

Whether it is because of a busy lifestyle or other reasons, customers can shop at home for groceries by placing an order with grocerygateway.com and arranging for a delivery time within a 90 minute window. Reliability is vital for this type of service.

OM *in Action* ▶ Response Strategy at Hong Kong's Johnson Electric

Patrick Wang, managing director of Johnson Electric Holdings, Ltd., walks through his Hong Kong headquarters with a micromotor in his hand. This tiny motor, about twice the size of his thumb, powers a Dodge Viper power door lock. Although most people have never heard of Johnson Electric, we all have several of its micromotors nearby. This is because Johnson is the world's leading producer of micromotors for cordless tools, household appliances (such as coffee grinders and food processors), personal care items (such as hair dryers and electric shavers), and cars. A luxury Mercedes, with its headlight wipers, power windows, power seat adjustments, and power side mirrors, may use 50 Johnson micromotors.

Like all truly global businesses, Johnson spends liberally on communications to tie together its global network of factories, R&D facilities, and design centres. For example, Johnson Electric installed a $20 million videoconferencing system that allows engineers in Cleveland, Ohio and Stuttgart, Germany to monitor trial production of their micromotors in China.

Johnson's first strength is speed in product development, speed in production, and speed in delivering—13 million motors a month, mostly assembled in China but delivered throughout the world. Its second strength is the ability to stay close to its customers. Johnson has design and technical centres scattered across the United States, Europe, and Japan. "The physical limitations of the past are gone" when it comes to deciding where to locate a new centre, says Patrick Wang. "Customers talk to us where they feel most comfortable, but products are made where they are most competitive."

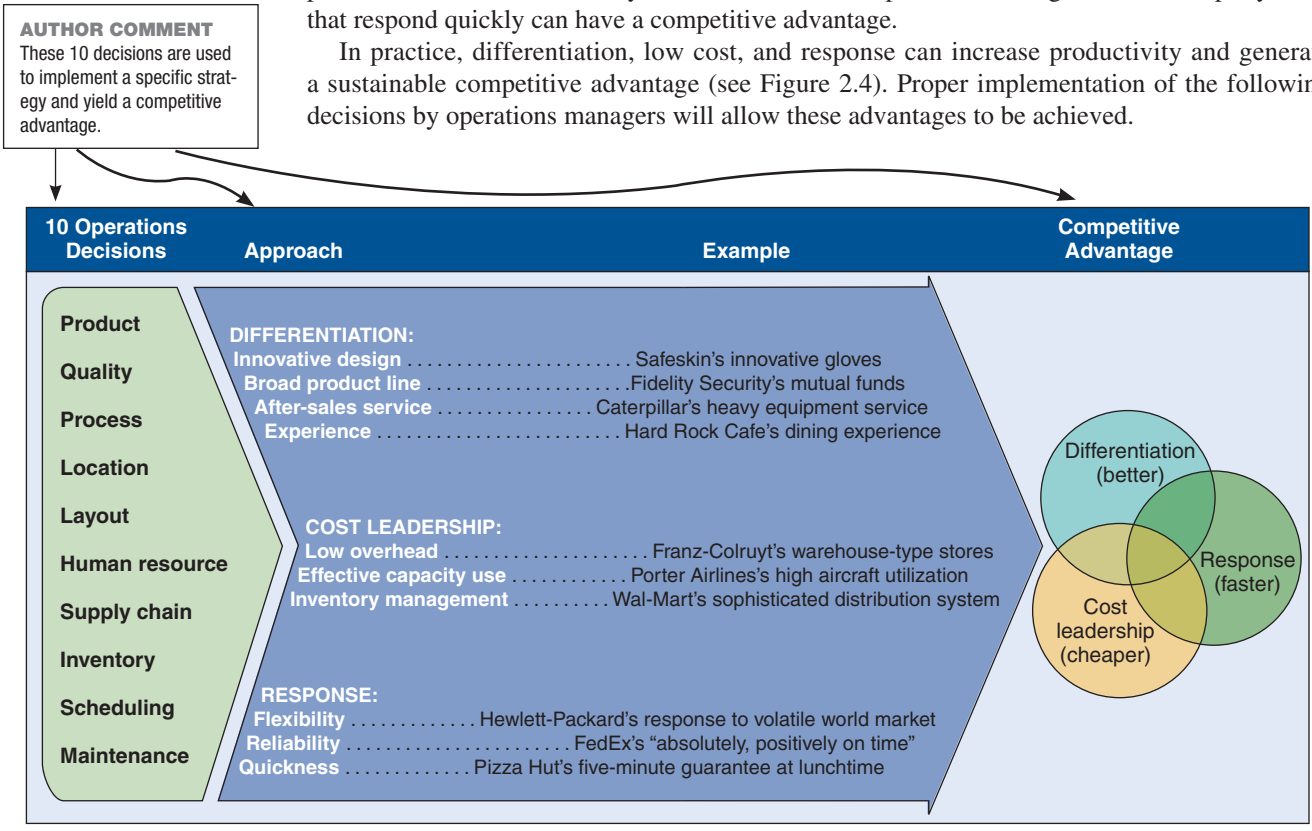
Sources: Hoover's Company Records (January 1, 2006): 58682; *Far Eastern Economic Review* (May 16, 2002): 44–45; and *Just Auto* (November 2008): 18–19.

customer can, in turn, rely on them. Consequently, the competitive advantage generated through reliable response has value to the end customer. This is also true for organizations such as grocerygateway.com, where reliability in scheduling and adhering to these schedules is an expectation of customers.

The third aspect of response is *quickness*. Johnson Electric, discussed in the *OM in Action* box, competes on speed—speed in design, production, and delivery. Whether it is a production system at Johnson Electric, a pizza delivered in 5 minutes by Pizza Hut, or customized phone products delivered in three days from Motorola, the operations manager who develops systems that respond quickly can have a competitive advantage.

AUTHOR COMMENT
These 10 decisions are used to implement a specific strategy and yield a competitive advantage.

In practice, differentiation, low cost, and response can increase productivity and generate a sustainable competitive advantage (see Figure 2.4). Proper implementation of the following decisions by operations managers will allow these advantages to be achieved.



▲ **FIGURE 2.4** Achieving Competitive Advantage Through Operations

Ten Strategic Om Decisions

AUTHOR COMMENT
This text is structured around these 10 decisions.

Differentiation, low cost, and response can be achieved when managers make effective decisions in 10 areas of OM. These are collectively known as **operations decisions**. The 10 decisions of OM that support missions and implement strategies are:

Operations decisions
The strategic decisions of OM are goods and service design, quality, process design, location selection, layout design, human resources and job design, supply-chain management, inventory, scheduling, and maintenance.

1. *Goods and service design:* Designing goods and services defines much of the transformation process. Costs, quality, and human resource decisions are often determined by design decisions. Designs usually determine the lower limits of cost and the upper limits of quality.
2. *Quality:* The customer's quality expectations must be determined and policies and procedures established to identify and achieve that quality.
3. *Process and capacity design:* Process options are available for products and services. Process decisions commit management to specific technology, quality, human resource use, and maintenance. These expenses and capital commitments determine much of the firm's basic cost structure.
4. *Location selection:* Facility location decisions for both manufacturing and service organizations may determine the firm's ultimate success. Errors made at this juncture may overwhelm other efficiencies.
5. *Layout design:* Material flows, capacity needs, personnel levels, technology decisions, and inventory requirements influence layout.
6. *Human resources and job design:* People are an integral and expensive part of the total system design. Therefore, the quality of work life provided, the talent and skills required, and their costs must be determined.
7. *Supply-chain management:* These decisions determine what is to be made and what is to be purchased. Consideration is also given to quality, delivery, and innovation, all at a satisfactory price. Mutual trust between buyer and supplier is necessary for effective purchasing.
8. *Inventory:* Inventory decisions can be optimized only when customer satisfaction, suppliers, production schedules, and human resource planning are considered.
9. *Scheduling:* Feasible and efficient schedules of production must be developed; the demands on human resources and facilities must be determined and controlled.
10. *Maintenance:* Decisions must be made regarding desired levels of reliability and stability, and systems must be established to maintain that reliability and stability.

LO3: Identify and define the 10 decisions of operations management

Operations managers implement these 10 decisions by identifying key tasks and the staffing needed to achieve them. However, the implementation of decisions is influenced by a variety of issues, including a product's proportion of goods and services (see Table 2.1 on page xx). Few products are either all goods or all services. Although the 10 decisions remain the same for both goods and services, their relative importance and method of implementation depend on this ratio of goods and services. Throughout this text, we discuss how strategy is selected and implemented for both goods and services through these 10 operations management decisions.

Let's look at an example of strategy development through one of the 10 decisions.

EXAMPLE 1

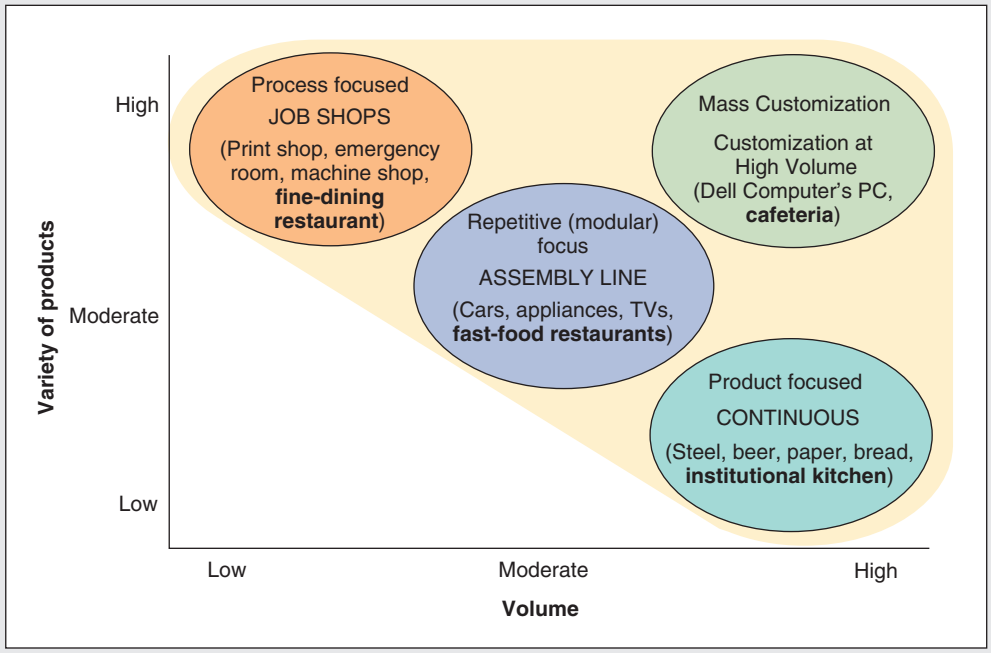
Strategy development

Pierre Alexander has just completed culinary school and is ready to open his own restaurant. After examining both the external environment and his prospective strengths and weaknesses, he makes a decision on the mission for his restaurant, which he defines as "To provide outstanding French fine dining for the people of Calgary."

APPROACH ► Alexander's supporting operations strategy is to ignore the options of ***cost leadership*** and ***quick response*** and focus on ***differentiation***. Consequently, his operations strategy requires him to evaluate product designs (menus and meals) and selection of process, layout, and location. He must also evaluate the human resources, suppliers, inventory, scheduling, and maintenance that will support his mission and a differentiation strategy.

SOLUTION ► Examining just one of these 10 decisions, ***process design***, requires that Alexander consider the issues presented in the following figure.

(*Continued*)



The first option is to operate in the lower right corner of the preceding figure, where he could produce high volumes of food with a limited variety, much as in an institutional kitchen. Such a process could produce large volumes of standard items such as baked goods and mashed potatoes prepared with state-of-the-art automated equipment. Alexander concludes that this is not an acceptable process option.

Alternatively, he can move to the middle of the figure, where he could produce more variety and lower volumes. Here he would have less automation and use prepared modular components for meals, much as a fast-food restaurant does. Again, he deems such process designs inappropriate for his mission.

Another option is to move to the upper right corner and produce a high volume of customized meals, but neither Alexander nor anyone else knows how to do this with gourmet meals.

Finally, Alexander can design a process that operates in the upper left corner of the figure, which requires little automation but lends itself to high variety. This process option suggests that he build an extremely flexible kitchen suitable for a wide variety of custom meals catering to the whims of each customer. With little automation, such a process would be suitable for a huge variety. This process strategy will support his mission and desired product differentiation. Only with a process such as this can he provide the fine French-style gourmet dining that he has in mind.

INSIGHT ▶ By considering the options inherent in each of the 10 OM decisions, managers—Alexander, in this case—can make decisions that support the mission.

LEARNING EXERCISE ▶ If Alexander's mission were to offer less expensive meals and reduce the variety offered but still do so with a French flair, what might his process strategy be? [Answer: Alexander might try a repetitive (modular) strategy and mimic the La Madeleine cafeteria-style restaurants. The La Madeleine chain has more than 60 locations and would be a good model for Alexander to mirror. It has the approach, atmosphere, style, and menu he is seeking.]

The 10 decisions of operations management are implemented in ways that provide competitive advantage, not just for fine-dining restaurants, but for all the goods and services that enrich our lives. How this might be done for two drug companies, one seeking a competitive advantage via differentiation, and the other via low cost, is shown in Table 2.2.

AUTHOR COMMENT
An effective strategy finds the optimum fit for the firm's resources in the dynamic environment.

Issues In Operations Strategy

Resources view
A method managers use to evaluate the resources at their disposal and manage or alter them to achieve competitive advantage.

Whether the OM strategy is differentiation, cost, or response (as shown earlier in Figure 2.4), OM is a critical player. Therefore, prior to establishing and attempting to implement a strategy, some alternate perspectives may be helpful. One perspective is to take a **resources view**. This means thinking in terms of the financial, physical, human, and technological resources available

▼ TABLE 2.1
The Differences between Goods and Services Influence How the 10 Operations Management Decisions Are Applied

Operations Decisions	Goods	Services
Goods and service design	Product is usually tangible (a computer).	Product is not tangible. A new range of product attributes (a smile).
Quality	Many objective quality standards (battery life).	Many subjective quality standards (nice colour).
Process and capacity design	Customer is not involved in most of the process (auto assembly).	Customer may be directly involved in the process (a haircut).
		Capacity must match demand to avoid lost sales (customers often avoid waiting).
Location selection	May need to be near raw materials or labour force (steel plant near ore).	May need to be near customer (car rental).
Layout design	Layout can enhance production efficiency (assembly line).	Can enhance product as well as production (layout of a classroom or a fine-dining restaurant).
Human resources and job design	Workforce focused on technical skills (stone mason). Labour standards can be consistent (assembly line employee). Output-based wage system possible (garment sewing).	Direct workforce usually needs to be able to interact well with customer (bank teller); labour standards vary depending on customer requirements (legal cases).
Supply-chain management	Supply chain relationships critical to final product.	Supply chain relationships important but may not be critical
Inventory	Raw materials, work-in-process, and finished goods may be inventoried (beer).	Most services cannot be stored; so other ways must be found to accommodate fluctuations in demand (can't store haircuts, but even the barber shop has an inventory of supplies).
Scheduling	Ability to inventory may allow leveling of production rates (lawn mowers).	Often concerned with meeting the customer's immediate schedule with human resources.
Maintenance	Maintenance is often preventive and takes place at the production site.	Maintenance is often "repair" and takes place at the customer's site.

AUTHOR COMMENT
The production of both goods and services requires execution of the 10 OM decisions.

AUTHOR COMMENT
Notice how the 10 decisions are altered to build two distinct strategies in the same industry.

▼ TABLE 2.2
Operations Strategies of Two Drug Companies

	Brand Name Drugs, Inc.	Generic Drug Corp.
Competitive Advantage	**Product Differentiation**	**Low Cost**
Product Selection and Design	Heavy R&D investment; extensive labs; focus on development in a broad range of drug categories	Low R&D investment; focus on development of generic drugs
Quality	Quality is major priority, standards exceed regulatory requirements	Meets regulatory requirements on a country-by-country basis, as necessary
Process	Product and modular production process; tries to have long product runs in specialized facilities; builds capacity ahead of demand	Process focused; general production processes; "job shop" approach, short-run production; focus on high utilization
Location	Still located in city where it was founded	Recently moved to low-tax, low-labour-cost environment
Layout	Layout supports automated product-focused production	Layout supports process-focused "job shop" practices
Human Resources	Hire the best; nationwide searches	Very experienced top executives provide direction; other personnel paid below industry average
Supply Chain	Long-term supplier relationships	Tends to purchase competitively to find bargains
Inventory	Maintains high finished goods inventory primarily to ensure all demands are met	Process focus drives up work-in-process inventory; finished goods inventory tends to be low
Scheduling	Centralized production planning	Many short-run products complicate scheduling
Maintenance	Highly trained staff; extensive parts inventory	Highly trained staff to meet changing demands

Value-chain analysis
A way to identify those elements in the product/service chain that uniquely add value.

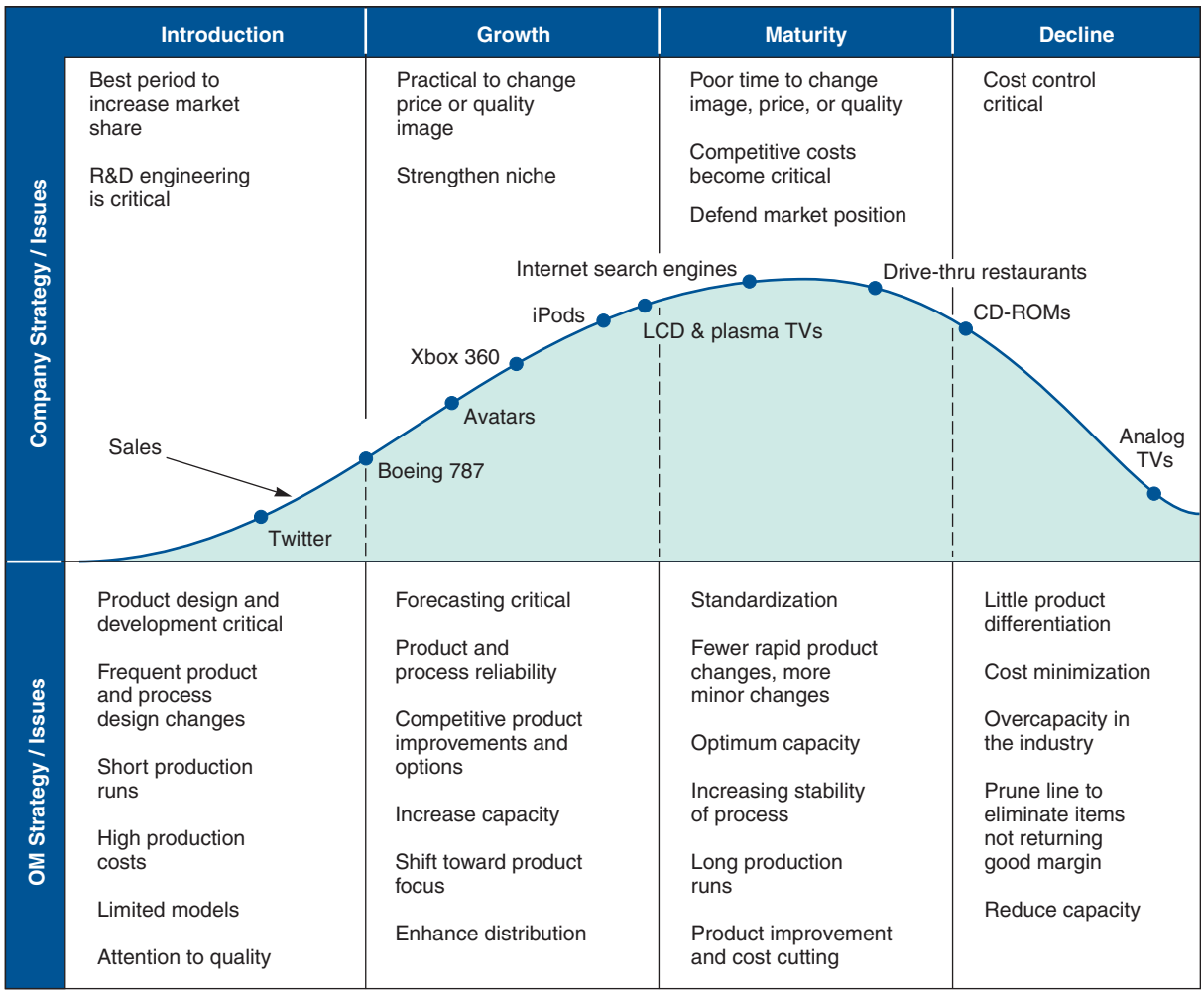
Five forces model
A method of analyzing the five forces in the competitive environment.

and ensuring that the potential strategy is compatible with those resources. Another perspective is Porter's value-chain analysis.[2] **Value-chain analysis** is used to identify activities that represent strengths, or potential strengths, and may be opportunities for developing competitive advantage. These are areas where the firm adds its unique *value* through product research, design, human resources, supply-chain management, process innovation, or quality management. Porter also suggests analysis of competitors via what he calls his **five forces model**.[3] These potential competing forces are immediate rivals, potential entrants, customers, suppliers, and substitute products.

In addition to the competitive environment, the operations manager needs to understand that the firm is operating in a system with many other external factors. These factors range from political, to legal, to cultural. They influence strategy development and execution and require constant scanning of the environment.

The firm itself is also undergoing constant change. Everything from resources, to technology, to product life cycles is in flux. Consider the significant changes required within the firm as its products move from introduction, to growth, to maturity, and to decline (see Figure 2.5). These internal changes, combined with external changes, require strategies that are dynamic.

In this chapter's *Global Company Profile*, Boeing provides an example of how strategy must change as technology and the environment change. Boeing can now build planes from carbon fibre, using a global supply chain. Like many other OM strategies, Boeing's strategy has changed with technology and globalization. Microsoft has also had to adapt quickly to a changing



▲ **FIGURE 2.5 Strategy and Issues During a Product's Life**

[2]M. E. Porter, *Competitive Advantage: Creating and Sustaining Superior Performance.* New York: The Free Press, 1985.
[3]Michael E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors.* New York: The Free Press, 1980, 1998.

environment. Faster processors, new computer languages, changing customer preferences, increased security issues, the internet, and Google have all driven changes at Microsoft. These forces have moved Microsoft's product strategy from operating systems to office products, to internet service provider, and now to integrator of computers, cell phones, games, and television.

The more thorough the analysis and understanding of both the external and internal factors, the more likely that a firm can find the optimum use of its resources. Once a firm understands itself and the environment, a SWOT analysis, which we discuss next, is in order.

Strategy Development And Implementation

AUTHOR COMMENT
A SWOT analysis provides an excellent model for evaluating a strategy.

A **SWOT analysis** is a formal review of the internal Strengths and Weakness and the external Opportunity and Threats. Beginning with SWOT analyses, organizations position themselves, through their strategy, to have a competitive advantage. A firm may have excellent design skills or great talent at identifying outstanding locations. However, it may recognize limitations of its manufacturing process or in finding good suppliers. The idea is to maximize opportunities and minimize threats in the environment while maximizing the advantages of the organization's strengths and minimizing the weaknesses. Any preconceived ideas about mission are then reevaluated to ensure they are consistent with the **SWOT analysis.** Subsequently, a strategy for achieving the mission is developed. This strategy is continually evaluated against the value provided customers and competitive realities. The process is shown in Figure 2.6. From this process, key success factors are identified.

SWOT analysis
A method of determining internal strengths and weaknesses and external opportunities and threats.

KEY SUCCESS FACTORS AND CORE COMPETENCIES

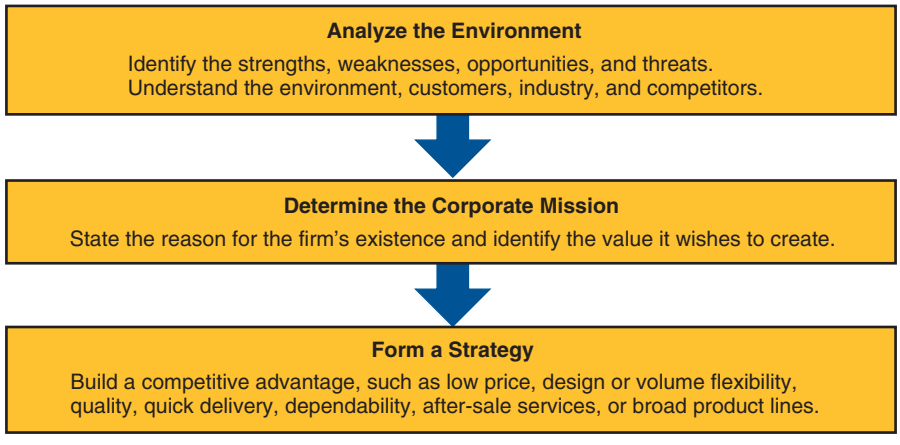
Because no firm does everything exceptionally well, a successful strategy requires determining the firm's critical success factors and core competencies. **Key success factors (KSFs)** are those activities that are necessary for a firm to achieve its goals. Key success factors can be so significant that a firm must get them right to survive in the industry. A KSF for McDonald's, for example, is layout. Without a play area, an effective drive-thru, and an efficient kitchen, McDonald's cannot be successful. KSFs are often necessary, but not sufficient for competitive advantage. On the other hand, **core competencies** are the set of unique skills, talents, and capabilities that a firm does at a world-class standard. They allow a firm to set itself apart and develop a competitive advantage. Organizations that prosper identify their core competencies and nurture them. While McDonald's KSFs may include layout, its core competency may be consistency and quality. Honda Motors's core competence is gas-powered engines—engines for automobiles, motorcycles, lawn mowers, generators, snow blowers, and more. The idea is to build KSFs and core competencies that provide a competitive advantage and support a successful strategy and mission. A core competence may be a subset of KSFs or a combination of KSFs. The operations manager begins this inquiry by asking:

Key success factors (KSFs)
Activities or factors that are *key* to achieving competitive advantage.

Core competencies
A set of skills, talents, and activities in which a firm is particularly strong.

- "What tasks must be done particularly well for a given strategy to succeed?"
- "Which activities will help the OM function provide a competitive advantage?"
- "Which elements contain the highest likelihood of failure, and which require additional commitment of managerial, monetary, technological, and human resources?"

LO4: Understand the significance of key success factors and core competencies



◀ **FIGURE 2.6**
Strategy Development Process

Honda's core competence is the design and manufacture of gas-powered engines. This competence has allowed Honda to become a leader in the design and manufacture of a wide range of gas-powered products. Tens of millions of these products are produced and shipped around the world.

Only by identifying and strengthening key success factors and core competencies can an organization achieve sustainable competitive advantage.

In this text we focus on the 10 OM decisions that typically include the KSFs. Potential KSFs for marketing, finance, and operations are shown in Figure 2.7. The 10 OM decisions we develop in this text provide an excellent initial checklist for determining KSFs and identifying core competencies within the operations function. For instance, the 10 decisions, related KSFs, and core competencies can allow a firm to differentiate its product or service. That differentiation may be via a core competence of innovation and new products, where the KSFs are product design and speed to market, as is the case for 3M and Rubbermaid. Similarly, differentiation may be via quality, where the core competence is institutionalizing quality, as at Toyota. Differentiation may also be via maintenance, where the KSFs are product reliability and after-sale service, as is the case at IBM and Canon.

Activity map
A graphical link of competitive advantage, KSFs, and supporting activities.

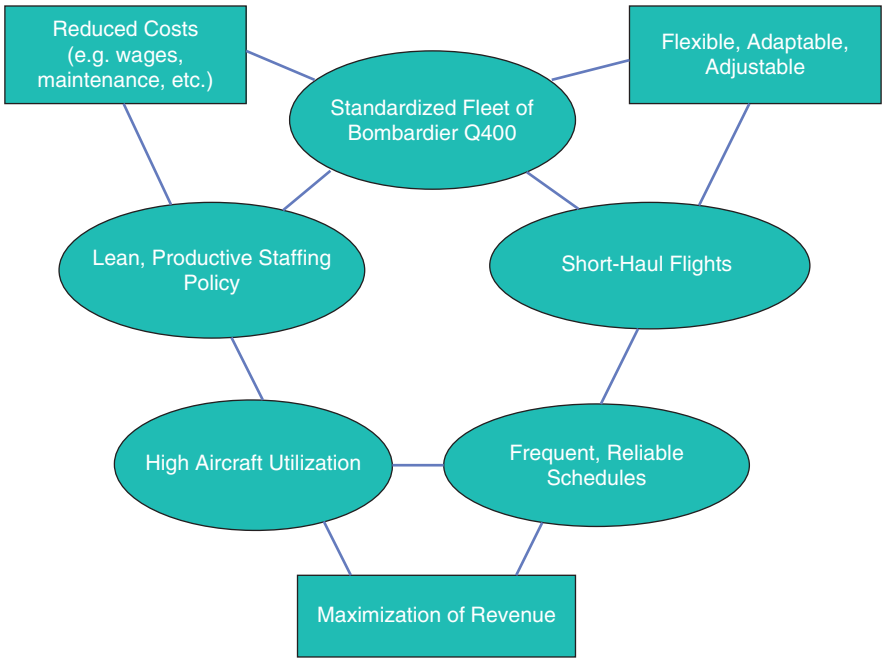
Whatever the KSFs and core competences, they must be supported by the related activities. One approach to identifying the activities is an **activity map**, which links competitive advantage, KSFs, and supporting activities. For example, Figure 2.8 shows how Porter Airlines, whose core competence is operations, built a set of integrated activities to support its low-cost competitive advantage. Notice how the KSFs support operations and in turn are supported by other activities. The activities fit together and reinforce each other. And the better they

▶ FIGURE 2.7
Implement Strategy by Identifying and Executing Key Success Factors That Support Core Competences

Support a Core Competence and Implement Strategy by Identifying and Executing the Key Success Factors in the Functional Areas

Marketing	Finance/Accounting	Operations
Service	Leverage	
Distribution	Cost of capital	
Promotion	Working capital	
Price	Receivables	
Channels of distribution	Payables	
Product positioning (image, functions)	Financial control	
	Lines of credit	

Decisions	Sample Options	Chapter
Product	Customized or standardized	5
Quality	Define customer expectations and how to achieve them	6,S6
Process	Facility design, capacity	7,S7
Location	Near supplier or near customer	8
Layout	Work cells or assembly line	9
Human resource	Specialized or enriched jobs	10
Supply chain	Single or multiple suppliers	11, S11
Inventory	When to reorder; how much to keep on hand	12,14,16
Schedule	Stable or fluctuating production rate	13,15
Maintenance	Repair as required or preventive maintenance	17



▲ FIGURE 2.8 Activity Mapping of Porter Airline's Low-Cost Competitive Advantage

To achieve a low cost competitive advantage, Porter Airlines addresses a number of key success factors. As the figure illustrates, a low cost advantage is highly dependent on a very well-run operations function.

fit and reinforce each other, the more sustainable the competitive advantage. By focusing on enhancing its core competence and KSFs with a supporting set of activities, Porter Airlines has become one of the great airline success stories.

BUILD AND STAFF THE ORGANIZATION

The operations manager's job is a three-step process. Once a strategy and key success factors have been identified, the second step is to group the necessary activities into an organizational structure. The third step is to staff it with personnel who will get the job done. The manager works with subordinate managers to build plans, budgets, and programs that will successfully implement strategies that achieve missions. Firms tackle this organization of the operations function in a variety of ways. The organization charts shown in Chapter 1 (Figure 1.1) indicate the way some firms have organized to perform the required activities.

INTEGRATE OM WITH OTHER ACTIVITIES

The organization of the operations function and its relationship to other parts of the organization vary with the OM mission. Moreover, the operations function is most likely to be successful when the operations strategy is integrated with other functional areas of the firm, such as marketing, finance, information technology, and human resources. In this way, all of the areas support the company's objectives. For example, short-term scheduling in the airline industry is dominated by volatile customer travel patterns. Day-of-week preference, holidays, seasonality, school schedules, and so on all play a role in changing flight schedules. Consequently, airline scheduling, although an OM activity, can be a part of marketing. Effective scheduling in the trucking industry is reflected in the amount of time trucks travel loaded. However, scheduling of trucks requires information from delivery and pickup points, drivers, and other parts of the organization. When the OM function results in effective scheduling in the air passenger and commercial trucking industries, a competitive advantage can exist.

The operations manager transforms inputs into outputs. The transformations may be in terms of storage, transportation, manufacturing, dissemination of information, and utility of the product or service. *The operations manager's job is to implement an OM strategy, provide competitive advantage, and increase productivity.*

AUTHOR COMMENT
Firms that ignore the global economy will not survive.

Global Operations Strategy Options

As we suggested early in this chapter, many operations strategies now require an international dimension. We tend to call a firm with an international dimension an international business or a multinational corporation. An **international business** is any firm that engages in international trade or investment. This is a very broad category and is the opposite of a domestic, or local, firm.

International business
A firm that engages in cross-border transactions.

A **multinational corporation (MNC)** is a firm with *extensive* international business involvement. MNCs buy resources, create goods or services, and sell goods or services in a variety of countries. The term *multinational corporation* applies to most of the world's large, well-known businesses. Bombardier is a good example of an MNC. It has a presence in 60 countries worldwide, including 76 production and engineering sites. Bombardier acquires parts and raw materials from around the world, and ships its finished products (including planes, trains and buses) to its customers where ever they may be.

Multinational corporation (MNC)
A firm that has extensive involvement in international business, owning or controlling facilities in more than one country.

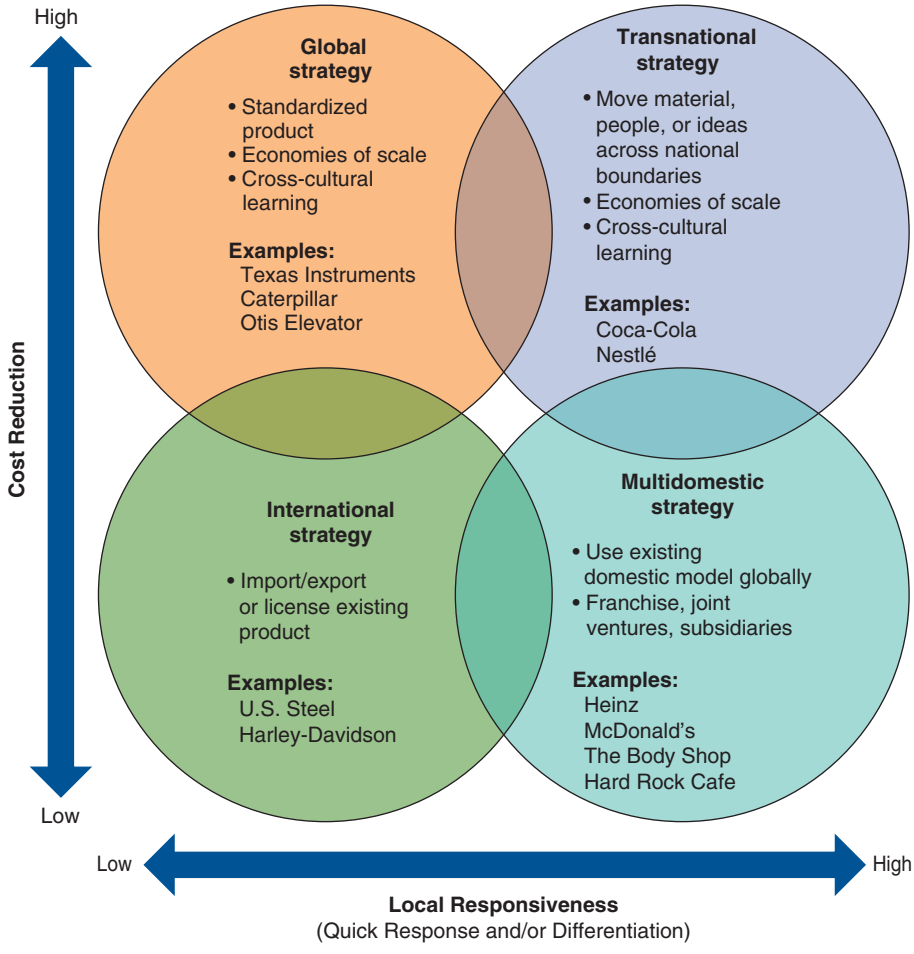
Operations managers of international and multinational firms approach global opportunities with one of four operations strategies: *international*, *multidomestic*, *global*, or *transnational* (see Figure 2.9). The matrix of Figure 2.9 has a vertical axis of cost reduction and a horizontal axis of local responsiveness. Local responsiveness implies quick response and/or the differentiation necessary for the local market. The operations manager must know how to position the firm in this matrix. Let us briefly examine each of the four strategies.

INTERNATIONAL STRATEGY

International strategy
A strategy in which global markets are penetrated using exports and licenses.

An **international strategy** uses exports and licences to penetrate the global arena. As Figure 2.9 suggests, the international strategy is the least advantageous, with little local responsiveness and little cost advantage. There is little responsiveness because we are exporting or licensing goods from the home country. And the cost advantages may be few because we are using the existing production process at some distance from the new market. However, an international strategy is often the easiest, as exports can require little change in existing operations, and licensing agreements often leave much of the risk to the licensee.

LO5: Identify and explain four global operations strategy options



▶ FIGURE 2.9
Four International Operations Strategies

Sources: See a similar presentation in M. Hitt, R. D. Ireland, and R. E. Hoskisson, *Strategic Management, Competitiveness and Globalization,* 7th ed. (Cincinnati: Southwestern College Publishing, 2009).

MULTIDOMESTIC STRATEGY

Multidomestic strategy
A strategy in which operating decisions are decentralized to each country to enhance local responsiveness.

The **multidomestic strategy** has decentralized authority with substantial autonomy at each business. Organizationally these are typically subsidiaries, franchises, or joint ventures with substantial independence. The advantage of this strategy is maximizing a competitive response for the local market; however, the strategy has little or no cost advantage. Many food producers, such as Heinz, use a multidomestic strategy to accommodate local tastes because global integration of the production process is not critical. The concept is one of "we were successful in the home market; let's export the management talent and processes, not necessarily the product, to accommodate another market." McDonald's is operating primarily as a multidomestic, which gives it the local responsiveness needed to modify its menu country by country. McDonald's can then serve beer in Germany, wine in France, McHuevo (poached egg hamburger) in Uruguay, and hamburgers without beef in India. With over 2000 restaurants in Japan and a presence for more than a generation, the average Japanese family thinks Japan invented McDonald's. Interestingly, McDonald's prefers to call itself *multilocal*.[4]

GLOBAL STRATEGY

Global strategy
A strategy in which operating decisions are centralized and headquarters coordinates the standardization and learning between facilities.

A **global strategy** has a high degree of centralization, with headquarters coordinating the organization to seek out standardization and learning between plants, thus generating economies of scale. This strategy is appropriate when the strategic focus is cost reduction but has little to recommend it when the demand for local responsiveness is high. Caterpillar, the world leader in earth-moving equipment, and Texas Instruments, a world leader in semiconductors, pursue global strategies. Caterpillar and Texas Instruments find this strategy advantageous because the end products are similar throughout the world. Earth-moving equipment is the same in Nigeria as in Prince Edward Island, which allows Caterpillar to have individual factories focus on a limited line of products to be shipped worldwide. This results in economies of scale and learning within each facility. A global strategy also allows Texas Instruments to build optimum-size plants with similar processes and to then maximize learning by aggressive communication between plants. The result is an effective cost reduction advantage for Texas Instruments.

TRANSNATIONAL STRATEGY

Transnational strategy
A strategy that combines the benefits of global-scale efficiencies with the benefits of local responsiveness.

A **transnational strategy** exploits the economies of scale and learning, as well as pressure for responsiveness, by recognizing that core competence does not reside in just the "home" country but can exist anywhere in the organization. *Transnational* describes a condition in which material,

In a continuing fierce worldwide battle, both Komatsu and Caterpillar seek global advantage in the heavy equipment market. As Komatsu (left) moved west to the UK, Caterpillar (right) moved east, with 13 facilities and joint ventures in China. Both firms are building equipment throughout the world as cost and logistics dictate. Their global strategies allow production to move as markets, risk, and exchange rates dictate.

[4]James L. Watson, ed., *Golden Arches East: McDonald's in East Asia* (Stanford University Press, 1997): 12.
Note: McDonald's also operates with some of the advantages of a global organization. By using very similar product lines throughout the world, McDonald's obtains some of the standardization advantages of a global strategy. However, it manages to retain the advantages of a multidomestic strategy.

people, and ideas cross—or *transgress*—national boundaries. These firms have the potential to pursue all three operations strategies (i.e., differentiation, low cost, and response). Such firms can be thought of as "world companies" whose country identity is not as important as its interdependent network of worldwide operations. Key activities in a transnational company are neither centralized in the parent company nor decentralized so that each subsidiary can carry out its own tasks on a local basis. Instead, the resources and activities are dispersed, but specialized, so as to be both efficient and flexible in an interdependent network. Nestlé is a good example of such a company. Although it is legally Swiss, 95% of its assets are held and 98% of its sales are made outside Switzerland. Fewer than 10% of its workers are Swiss. Similarly, service firms such as Asea Brown Boveri (an engineering firm that is Swedish but headquartered in Switzerland), Reuters (a news agency), Bertelsmann (a publisher), and Citicorp (a banking corporation) can be viewed as transnationals. We can expect the national identities of these transnationals to continue to fade.

CHAPTER SUMMARY

Global operations provide an increase in both the challenges and opportunities for operations managers. Although the task is challenging, operations managers can and do improve productivity. They can build and manage OM functions that contribute in a significant way to competitiveness. Organizations identify their strengths and weaknesses. They then develop effective missions and strategies that account for these strengths and weaknesses and complement the opportunities and threats in the environment. If this procedure is performed well, the organization can have competitive advantage through some combination of product differentiation, low cost, and response. This competitive advantage is often achieved via a move to international, multidomestic, global, or transnational strategies.

Effective use of resources, whether domestic or international, is the responsibility of the professional manager, and professional managers are among the few in our society who *can* achieve this performance. The challenge is great, and the rewards to the manager and to society substantial.

Key Terms

Maquiladoras (p. 33)
World Trade Organization (WTO) (p. 33)
North American Free Trade Agreement (NAFTA) (p. 33)
European Union (EU) (p. 33)
Mission (p. 35)
Strategy (p. 36)
Competitive advantage (p. 36)
Differentiation (p. 38)
Experience differentiation (p. 38)
Low-cost leadership (p. 38)
Response (p. 38)
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Five forces model (p. 44)
SWOT analysis (p. 45)
Key success factors (KSFs) (p. 45)
Core competencies (p. 45)
Activity map (p. 46)
International business (p. 48)
Multinational corporation (MNC) (p. 48)
International strategy (p. 48)
Multidomestic strategy (p. 49)
Global strategy (p. 49)
Transnational strategy (p. 49)

Ethical Dilemma

As a manufacturer of athletic shoes whose image, indeed performance, is widely regarded as socially responsible, you find your costs increasing. Traditionally, your athletic shoes have been made in Indonesia and South Korea. Although the ease of doing business in those countries has been improving, wage rates have also been increasing. The labour-cost differential between your present suppliers and a contractor who will get the shoes made in China now exceeds $1 per pair. Your sales next year are projected to be 10 million pairs, and your analysis suggests that this cost differential is not offset by any other tangible costs; you face only the political risk and potential damage to your commitment to social responsibility. Thus, this $1 per pair savings should flow directly to your bottom line. There is no doubt that the Chinese government engages in censorship, remains repressive, and is a long way from a democracy. Moreover, you will have little or no control over working conditions, sexual harassment, and pollution. What do you do and on what basis do you make your decision?

Discussion Questions

1. Based on the descriptions and analyses in this chapter, would Boeing be better described as a global firm or a transnational firm? Discuss.
2. List six reasons to internationalize operations.
3. Coca-Cola is called a global product. Does this mean that Coca-Cola is formulated in the same way throughout the world? Discuss.
4. Define *mission*.
5. Define *strategy*.
6. Describe how an organization's *mission* and *strategy* have different purposes.
7. Identify the mission and strategy of your automobile repair garage. What are the manifestations of the 10 OM decisions at the garage? That is, how is each of the 10 decisions accomplished?
8. As a library or internet assignment, identify the mission of a firm and the strategy that supports that mission.
9. How does an OM strategy change during a product's life cycle?
10. There are three primary ways to achieve competitive advantage. Provide an example, not included in the text, of each. Support your choices.
11. Given the discussion of Porter Airlines in the text, define an *operations* strategy for that firm.
12. How must an operations strategy integrate with marketing and accounting?

Solved Problem

Virtual Office Hours help is available at www.myomlab.com

▼ SOLVED PROBLEM 2.1

The global tire industry continues to consolidate. Michelin buys Goodrich and Uniroyal and builds plants throughout the world. Bridgestone buys Firestone, expands its research budget, and focuses on world markets. Goodyear spends almost 4% of its sales revenue on research. These three aggressive firms have come to dominate the world tire market, with total market share approaching 60%. And the German tire maker Continental AG has strengthened its position as fourth in the world, with a dominant presence in Germany. Against this formidable array, the old-line Italian tire company Pirelli SpA found it difficult to respond effectively. Although Pirelli still had 5% of the market, it was losing millions a year while the competition was getting stronger. Tires are a tough, competitive business that rewards companies having strong market shares and long production runs. Pirelli has some strengths: an outstanding reputation for excellent high-performance tires and an innovative manufacturing function.

Use a SWOT analysis to establish a feasible strategy for Pirelli.

▼ SOLUTION

First, find an opportunity in the world tire market that avoids the threat of the mass-market onslaught by the big three tire makers. Second, utilize the internal marketing strength represented by Pirelli's strong brand name and history of winning World Rally Championships. Third, maximize the internal innovative capabilities of the operations function.

To achieve these goals, Pirelli made a strategic shift out of low-margin standard tires and into higher-margin performance tires. Pirelli established deals with luxury brands Jaguar, BMW, Maserati, Ferrari, Bentley, and Lotus Elise and established itself as a provider of a large share of tires on new Porsches, S-class Mercedes, and Saabs. As a result, more than 70% of the company's tire production is now high-performance tires. People are willing to pay a premium for Pirellis.

The operations function continued to focus its design efforts on performance tires and developing a system of modular tire manufacture that allows much faster switching between models. This modular system, combined with investments in new manufacturing flexibility, has driven batch sizes down to as small as 150 to 200, making small-lot performance tires economically feasible. Manufacturing innovations at Pirelli have streamlined the production process, moving it from a 14-step process to a 3-step process. A threat from the big three going after the performance market remains, but Pirelli has bypassed its weakness of having a small market share. The firm now has 24 plants in 12 countries and a presence in more than 160 countries, with sales exceeding $4.5 billion.

Sources: Just Auto (February 2009): 14–15 and (December 2008): 14–15; *Hoover's Company Records* (October 15, 2005): 41369; and http://www.pirelli.com/corporate/en/investors/pirelli_at_glance/default.html.

Problems*

• **2.1** The text provides three primary ways—strategic approaches (differentiation, cost, and response)—for achieving competitive advantage. Provide an example of each not given in the text. Support your choices. (*Hint:* Note the examples provided in the text.)

•• **2.2** Within the food service industry (restaurants that serve meals to customers, but not just fast food), find examples of firms that have sustained competitive advantage by competing on the basis of (1) cost leadership, (2) response, and (3) differentiation. Cite one example in each category; provide a sentence or two in support of each choice. Do not use fast-food chains for all categories. (*Hint:* A "99¢ menu" is very easily copied and is not a good source of sustained advantage.)

•• **2.3** Browse through the financial section of a daily paper or read business news online. Seek articles that constrain manufacturing innovation and productivity—workers aren't allowed to do this, workers are not or cannot be trained to do that, this technology is not allowed, this material cannot be handled by workers, and so forth. Be prepared to share your articles in class discussion.

•• **2.4** Match the product with the proper parent company and country in the table below:

Product	Parent Company	Country
Arrow Shirts	a. Volkswagen	1. France
Braun Household Appliances	b. Bidermann International	2. Great Britain
Lotus Autos	c. Bridgestone	3. Germany
Firestone Tires	d. Campbell Soup	4. Japan
Blackberry	e. Credit Lyonnais	5. Canada
Godiva Chocolate	f. Tata	6. U.S.
Häagen-Dazs Ice Cream (USA)	g. Procter & Gamble	7. Switzerland
Jaguar Autos	h. Michelin	8. Malaysia
MGM Movies	i. Nestlé	9. India
Lamborghini Autos	j. Research in Motion	
Goodrich Tires	k. Proton	
Alpo Pet Foods		

••• **2.5** Identify how changes within an organization affect the OM strategy for a company. For instance, discuss what impact the following internal factors might have on OM strategy:
a) Maturing of a product.
b) Technology innovation in the manufacturing process.
c) Changes in laptop computer design that builds in wireless technology.

••• **2.6** Identify how changes in the external environment affect the OM strategy for a company. For instance, discuss what impact the following external factors might have on OM strategy:
a) Major increases in oil prices.
b) Water- and air-quality legislation.
c) Fewer young prospective employees entering the labour market.
d) Inflation versus stable prices.
e) Legislation moving health insurance from a pretax benefit to taxable income.

••• **2.7** Develop a ranking for corruption in the following countries: Mexico, Turkey, Canada, Denmark, Taiwan, Brazil, and another country of your choice. (*Hint:* See sources such as *Transparency International*, *Asia Pacific Management News*, and *The Economist*.)

•• **2.8** Develop a ranking for competitiveness and/or business environment for Britain, Canada, Singapore, Hong Kong, and Italy. (*Hint:* See the *Global Competitive Report, World Economic Forum*, Geneva, and *The Economist*.)

Case Studies

▶ Mr. Lube

A substantial market exists for automobile tune-ups, oil changes, and lubrication service for the more than 12 million cars on Canadian roads. Some of this demand is filled by full-service auto dealerships, some by Canadian Tire, and some by other tire/service dealers. However, Mr. Lube, Great Canadian Oil Change, Jiffy Lube, and others have also developed strategies to accommodate this opportunity.

Mr. Lube stations perform oil changes, lubrication, and interior cleaning in a spotless environment. The buildings are clean, freshly painted, and often surrounded by neatly trimmed landscaping and clean parking areas. To facilitate fast service, cars can be driven though the facility. At Mr. Lube, the customer is greeted by service representatives who take their order, which typically includes fluid checks (oil, water, brake fluid, transmission fluid, and differential grease) and the necessary lubrication, as well as filter changes for air and oil. Service personnel in neat uniforms then move into action. The standard team has one person checking fluid levels under the hood, another in the garage pit removing the oil filter, draining the oil, checking the differential and transmission, and lubricating as necessary. Precise task assignments and good training are designed to move the car into and out of the bay in minutes. The idea is to charge no more, and hopefully less, than gas stations, automotive repair chains, and auto dealers. While doing so Mr. Lube strives to provide better service than their competitors.

Discussion Questions

1. What constitutes the mission of Mr. Lube?
2. How does the Mr. Lube operations strategy provide competitive advantage? (Hint: Evaluate how Mr. Lube's traditional competitors perform the 10 decisions of operations management compared to how Mr. Lube performs them.)
3. Is it likely that Mr. Lube has increased productivity over its more traditional competitors? Why? How would we measure productivity in this industry?

▶ Strategy at Regal Marine

Video Case

Regal Marine, one of the U.S.'s 10 largest power-boat manufacturers, achieves its mission—providing luxury performance boats to customers worldwide—using the strategy of differentiation. It differentiates its products through constant innovation, unique features, and high quality. Increasing sales at the Orlando, Florida, family-owned firm suggest that the strategy is working.

As a quality boat manufacturer, Regal Marine starts with continuous innovation, as reflected in computer-aided design (CAD),

high-quality moulds, and close tolerances that are controlled through both defect charts and rigorous visual inspection. In-house quality is not enough, however. Because a product is only as good as the parts put into it, Regal has established close ties with a large number of its suppliers to ensure both flexibility and perfect parts. With the help of these suppliers, Regal can profitably produce a product line of 22 boats, ranging from the $14,000 19-foot boat to the $500,000 44-foot Commodore yacht.

"We build boats," says VP Tim Kuck, "but we're really in the 'fun' business. Our competition includes not only 300 other boat, canoe, and yacht manufacturers in our $17 billion industry, but home theatres, the internet, and all kinds of alternative family entertainment." Fortunately Regal has been paying down debt and increasing market share.

Regal has also joined with scores of other independent boat makers in the American Boat Builders Association. Through economies of scale in procurement, Regal is able to navigate against billion-dollar competitor Brunswick (makers of the Sea Ray and Bayliner brands). The *Global Company Profile* featuring Regal Marine (which opens Chapter 5) provides further background on Regal and its strategy.

Discussion Questions*

1. State Regal Marine's mission in your own words.
2. Identify the strengths, weaknesses, opportunities, and threats that are relevant to the strategy of Regal Marine.
3. How would you define Regal's strategy?
4. How would each of the 10 operations management decisions apply to operations decision making at Regal Marine?

*You may wish to view the video that accompanies this case before addressing these questions.

Hard Rock Cafe's Global Strategy

Video Case

Hard Rock brings the concept of the "experience economy" to its cafe operation. The strategy incorporates a unique "experience" into its operations. This innovation is somewhat akin to mass customization in manufacturing. At Hard Rock, the experience concept is to provide not only a custom meal from the menu but a dining event that includes a unique visual and sound experience not duplicated anywhere else in the world. This strategy is succeeding. Other theme restaurants have come and gone while Hard Rock continues to grow. As Professor C. Markides of the London Business School says, "The trick is not to play the game better than the competition, but to develop and play an altogether different game."* At Hard Rock, the different game is the experience game.

From the opening of its first cafe in London in 1971, during the British rock music explosion, Hard Rock has been serving food and rock music with equal enthusiasm. Hard Rock Cafe has 40 U.S. locations, about a dozen in Europe, and the remainder scattered throughout the world, from Bangkok and Beijing to Beirut. New construction, leases, and investment in remodelling are long term; a global strategy means special consideration of political risk, currency risk, and social norms in a context of a brand fit. Although Hard Rock is one of the most recognized brands in the world, this does not mean its cafe is a natural everywhere. Special consideration must be given to the supply chain for the restaurant and its accompanying retail store. About 48% of a typical cafe's sales are from merchandise.

The Hard Rock Cafe business model is well defined, but because of various risk factors and differences in business practices and employment law, Hard Rock elects to franchise about half of its cafes. Social norms and preferences often suggest some tweaking of menus for local taste. For instance, Hard Rock focuses less on hamburgers and beef and more on fish and lobster in its British cafes.

Because 70% of Hard Rock's guests are tourists, recent years have found it expanding to "destination" cities. While this has been a winning strategy for decades, allowing the firm to grow from 1 London cafe to 157 facilities in 57 countries, it has made Hard Rock susceptible to economic fluctuations that hit the tourist business hardest. So Hard Rock is signing a long-term lease for a new location in Nottingham, England, to join recently opened cafes in Manchester and Birmingham—cities that are not standard tourist destinations. At the same time, menus are being upgraded. Hopefully, repeat business from locals in these cities will smooth demand and make Hard Rock less dependent on tourists.

Discussion Questions†

1. Identify the strategy changes that have taken place at Hard Rock Cafe since its founding in 1971.
2. As Hard Rock Cafe has changed its strategy, how has its responses to some of the 10 decisions of OM changed?
3. Where does Hard Rock fit in the four international operations strategies outlined in Figure 2.9? Explain your answer.

*Constantinos Markides, "Strategic Innovation," *MIT Sloan Management Review* 38, no. 3 (spring 1997): 9.

†You may wish to view the video that accompanies the case before addressing these questions.

▶ **Additional Case Study:** Visit **www.myomlab.com** or **www.pearsonhighered.com/heizer** for this free case study:
Motorola's Global Strategy: Focuses on Motorola's international strategy.

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CHAPTER 2 Rapid Review

Main Heading	Review Material	MyOMLab
A GLOBAL VIEW OF OPERATIONS (pp. 32–35)	Domestic business operations decide to change to some form of international operations for six main reasons: 1. Reduce costs (labour, taxes, tariffs, etc.) 2. Improve supply chain 3. Provide better goods and services 4. Understand markets 5. Learn to improve operations 6. Attract and retain global talent • **NAFTA—**A free trade agreement between Canada, Mexico, and the United States. • **Maquiladoras**—Mexican factories located along the U.S.–Mexico border that receive preferential tariff treatment. • **World Trade Organization (WTO)**—An international organization that promotes world trade by lowering barriers to the free flow of goods across borders. • **European Union (EU)—**A European trade group that has 27 member states. Other trade agreements include APEC (the Pacific Rim countries), SEATO (Australia, New Zealand, Japan, Hong Kong, South Korea, New Guinea, and Chile), MERCOSUR (Argentina, Brazil, Paraguay, and Uruguay), and CAFTA (Central America, the Dominican Republic, and the United States). The World Trade Organization helps to make uniform the protection of both governments and industries from foreign firms that engage in unethical conduct.	
DEVELOPING MISSIONS AND STRATEGIES (pp. 35–36)	An effective operations management effort must have a *mission* so it knows where it is going and a *strategy* so it knows how to get there. • **Mission—**The purpose or rationale for an organization's existence. • **Strategy—**How an organization expects to achieve its missions and goals. The three strategic approaches to competitive advantage are: 1. Differentiation 2. Cost leadership 3. Response	**VIDEO 2.1** Operations Strategy at Regal Marine
ACHIEVING COMPETITIVE ADVANTAGE THROUGH OPERATIONS (pp. 36–40)	• **Competitive advantage—**The creation of a unique advantage over competitors. • **Differentiation—**Distinguishing the offerings of an organization in a way that the customer perceives as adding value. • **Experience differentiation—**Engaging the customer with a product through imaginative use of the five senses, so the customer "experiences" the product. • **Low-cost leadership—**Achieving maximum value, as perceived by the customer. • **Response—**A set of values related to rapid, flexible, and reliable performance. Differentiation can be attained, for example, through innovative design, by providing a broad product line, by offering excellent after-sale service, or through adding a sensory experience to the product or service offering. Cost leadership can be attained, for example, via low overhead, effective capacity use, or efficient inventory management. Response can be attained, for example, by offering a flexible product line, reliable scheduling, or speedy delivery.	**VIDEO 2.2** Hard Rock's Global Strategy
TEN STRATEGIC OM DECISIONS (pp. 40–41)	• **Operations decisions—**The strategic decisions of OM are goods and service design, quality, process and capacity design, location selection, layout design, human resources and job design, supply-chain management, inventory, scheduling, and maintenance.	
ISSUES IN OPERATIONS STRATEGY (pp. 41–45)	• **Resources view—**A view in which managers evaluate the resources at their disposal and manage or alter them to achieve competitive advantage. • **Value-chain analysis—**A way to identify the elements in the product/service chain that uniquely add value. • **Five-forces model—**A way to analyze the five forces in the competitive environment. The potential competing forces in Porter's five-forces model are (1) immediate rivals, (2) potential entrants, (3) customers, (4) suppliers, and (5) substitute products. Different issues are emphasized during different stages of the product life cycle: • **Introduction—**Company strategy: Best period to increase market share, R&D engineering is critical. OM strategy: Product design and development critical, frequent product and process design changes, short production runs, high production costs, limited models, attention to quality. • **Growth—**Company strategy: Practical to change price or quality image, strengthen niche. OM strategy: Forecasting critical, product and process reliability, competetive product improvements and options, increase capacity, shift toward product focus, enhance distribution.	

Main Heading	Review Material	MyOMLab
	• **Maturity—**Company strategy: Poor time to change image or price or quality, competitive costs become critical, defend market position. OM strategy: Standardization, less rapid product changes (more minor changes), optimum capacity, increasing stability of process, long production runs, product improvement and cost cutting. • **Decline—**Company strategy: Cost control critical. OM strategy: Little product differentiation, cost minimization, overcapacity in the industry, prune line to eliminate items not returning good margin, reduce capacity.	
STRATEGY DEVELOPMENT AND IMPLEMENTATION (pp. 45–47)	• **SWOT analysis**—A method of determining internal strengths and weaknesses and external opportunities and threats. The strategy development process first involves performing environmental analysis, followed by determining the corporate mission, and finally forming a strategy. • **Key success factors (KSFs)—**Activities or factors that are key to achieving competitive advantage. • **Core competencies—**A set of skills, talents, and activities that a firm does particularly well. A core competence may be a subset of, or a combination of, KSFs. • **Activity map—**A graphical link of competitive advantage, KSFs, and supporting activities. An operations manager's job is to implement an OM strategy, provide competitive advantage, and increase productivity.	Virtual Office Hours for Solved Problem: 2.1
GLOBAL OPERATIONS STRATEGY OPTIONS (pp. 47–50)	• **International business—**A firm that engages in cross-border transactions. • **Multinational corporation (MNC)—**A firm that has extensive involvement in international business, owning or controlling facilities in more than one country. • **International strategy—**A strategy in which global markets are penetrated using exports and licences. • **Multidomestic strategy—**A strategy in which operating decisions are decentralized to each country to enhance local responsiveness. • **Global strategy—**A strategy in which operating decisions are centralized and headquarters coordinates the standardization and learning between facilities. • **Transnational strategy—**A strategy that combines the benefits of global-scale efficiencies with the benefits of local responsiveness. These firms transgress national boundaries. The four operations strategies for approaching global opportunities can be classified according to local responsiveness and cost reduction: 1. **International—**Little local responsiveness and little cost advantage 2. **Multidomestic—**Significant local responsiveness but little cost advantage 3. **Global—**Little local responsiveness but significant cost advantage 4. **Transnational—**Significant local responsiveness and significant cost advantage	

Self Test

■ **Before taking the self-test,** refer to the learning objectives listed at the beginning of the chapter and the key terms listed at the end of the chapter.

LO1. A mission statement is beneficial to an organization because it:
a) is a statement of the organization's purpose.
b) provides a basis for the organization's culture.
c) identifies important constituencies.
d) details specific income goals.
e) ensures profitability.

LO2. The three strategic approaches to competitive advantage are _____, _____, and _____.

LO3. The 10 decisions of OM:
a) are functional areas of the firm.
b) apply to both service and manufacturing organizations.
c) are the goals that are to be achieved.
d) form an action plan to achieve a mission.
e) are key success factors.

LO4. The relatively few activities that make a difference between a firm having and not having a competitive advantage are known as:
a) activity maps.
b) SWOT.
c) key success factors.
d) global profile.
e) response strategy.

LO5. A company that is organized across international boundaries, with decentralized authority and substantial autonomy at each business via subsidiaries, franchises, or joint ventures has:
a) a global strategy.
b) a transnational strategy.
c) an international strategy.
d) a multidomestic strategy.
e) a regional strategy.

Answers: LO1. a; LO2. differentiation, cost leadership, response; LO3. b; LO4. c; LO5. d.