

CHAPTER 2: Organizational Strategy, Competitive Advantage, and Information Systems

Chapter Overview

- 2.1 Business Pressures, Organizational Responses, and Information Technology Support
- 2.2 Competitive Advantage and Strategic Information Systems

Learning Objectives

1. Identify effective IT responses to different kinds of business pressures.
2. Describe the strategies that organizations typically adopt to counter Porter's five competitive forces.

Teaching Tips and Strategies

The modern business environment forces organizations to rely heavily on information technology for everyday operations. Those businesses that do not keep up with technology will find themselves at a strategic disadvantage with their competitors. Until students are actually working in a business, they may not understand how important strategic advantage is to an organization. A focus of this chapter is to illustrate how IT can enable a business to become more competitive.

Students can relate to some of the competition among businesses that is out there. A good example is the demise of Blockbuster and Hollywood Video. Show students examples of how Redbox and Netflix were in a better competitive position than the traditional movie rental businesses, and how this led to their going out of business. A good question for students would be: What could Blockbuster and Hollywood Video have done to remain competitive? Perhaps the answer would be that there was nothing they could do. Was IT a factor in their downfall?

The three eras of globalization can be illustrated by examples of what happened during those years. In essence, the global economy progressed from a non-mechanized environment utilizing horses and steam power that lasted for more than 300 years, to the 200-year second globalization era where companies became multinational and made use of increased mechanization and better transportation (a modern society), and finally to the current environment where the world has been made smaller by the Internet and intense competition.

It is also important to point out how both the workforce and customers have changed. Consumers are more tech-savvy than in the past (for the most part), and

businesses have to realize that. Customers want information very quickly and accurately, and if they don't get it, they will switch to a competitor who can provide that information. The workforce is increasingly comprised of people who have grown up with technology and who can bring innovation to organizations. Allowing employees to provide suggestions to improve Web presence and other IT-related ideas are important factors.

The students are probably aware of the ways that goods and services can be exchanged over the Internet. They may not be aware of how much is given away for free. This is a good chance to have the students come up with ideas or find Web sites they like on this topic and then report to the class. This encouragement may help them decide to become contributors to the new digital society.

OPENING CASE – GrubHub Seamless

1. *Look ahead in this chapter. Which one of Porter's strategies for competitive advantage is GrubHub Seamless pursuing? Explain your answer.*

GrubHub's strategy is a combination of innovation and being customer-oriented. The system is one of the first movers to benefit both restaurant operations (streamlined order processing) and customer satisfaction (self-service and food delivery).

2. *Propose additional applications that GS could develop to gain a competitive advantage in the marketplace.*

Additional applications that GS could offer include

- 1) Customer loyalty programs that reward customers with special coupons or discounts based on order history.
- 2) A meal or party planner for customers who would like to entertain but don't want to worry about cooking. They can customize the menu from different restaurants and have them delivered right before the event.

Review Questions

Section 2.1 – Before you go on...

1. *What are the characteristics of the modern business environment?*

The modern business environment is very competitive. The operations of an organization are affected by a combination of social, legal, economic, physical, and political factors.

2. *Discuss some of the pressures that characterize the modern global business environment.*

Pressures that characterize the modern global business environment include the following: Globalization, the changing nature of the workforce, powerful customers, technology pressures, technological innovation and obsolescence, information overload, societal/political/legal pressures, social responsibility, compliance with government regulations, protection against terrorist attacks, and ethical issues.

3. *Identify some of the organizational responses to these pressures. Are any of these responses specific to a particular pressure? If so, which ones?*

Organizations respond to these pressures through strategic systems, customer focus, make-to-order and mass customization, and e-business. Strategic systems address the pressure of competition by allowing an organization to increase market share and profits, improve negotiation with suppliers, and prevent competitors from entering their market. Make-to-order customization allows a business to focus on the needs of individual, powerful customers, thereby discouraging those customers from going to the competition. E-business addresses a number of needs. It helps organizations avoid technological obsolescence, and it enhances competitiveness.

Section 2.2 - Before you go on...

1. *What are strategic information systems?*

Strategic information systems give a business a competitive advantage by assisting the business in achieving its strategic goals and improving performance and productivity. These benefits apply to any form of information system.

2. *According to Porter, what are the five forces that could endanger a firm's position in its industry or marketplace?*

- (a) The threat of entry of new competitors.
- (b) The bargaining power of suppliers.
- (c) The bargaining power of customers (buyers).
- (d) The threat of substitute products or services.
- (e) The rivalry among existing firms in the industry.

3. *Describe Porter's value chain model. Differentiate between Porter's competitive forces model and his value chain model.*

Porter's value chain model identifies specific activities (primary and secondary) that an organization should use to create the biggest competitive impact. It also indicates where information technology can provide the greatest competitive advantage. It is different from Porter's competitive forces model because it focuses on the internal operations from raw materials to end customers. The competitive forces model, on the other hand, looks at the competitive factors from outside the organization.

4. *What strategies can companies use to gain competitive advantage?*

Many strategies can be employed to gain a competitive advantage by countering the competitive forces identified by Porter. Five of those strategies are: (1) Cost leadership strategy (where an organization becomes the low-cost leader in their industry), (2) differentiation strategy (a business offers different products or services than their competitors), (3) innovation strategy (offer new products or services, or add new features to existing products or services), (4) operational effectiveness strategy (improve internal processes within the organization), and (5) customer-orientation strategy (concentrate on making customers happy).

5. *What is business-IT alignment?*

Business-IT alignment is a tight integration of the IT function with the strategy, mission, and goals of the organization.

6. *Give examples of business-IT alignment at your university, regarding student systems. (HINT: What are the “business” goals of your university with regard to student registration, fee payment, grade posting, etc.?)*

Students should come up with many different ideas for this answer. Some examples are: online registration, online fee payment, online transcripts and plans of study, and online grade posting. They may also suggest things like the HR component of a university for employees (employees can see their benefits and payroll information online), scheduling of rooms electronically, the use of networks to connect computer labs around the entire campus, etc.

Apply the Concept

Section 2.1

Student answers may vary. Below is an example of the deliverable.

Broad Category: Economic (market)

Business Pressure: Strong competition and powerful customers

IT Response: Customer focus and self-service

Description: Mobile apps allow customers to conveniently deposit checks using their mobile devices.

Broad Category: Technology

Business Pressure: Information overload

IT Response: Intelligence data management

Description: Business intelligence applications allow organizations to quickly process data and produce useful, timely management reports.

Broad Category: Societal/political/legal

Business Pressure: Compliance with government regulations and deregulations

IT Response: ERP systems

Description: The Sarbanes-Oxley Act states that IT systems have to have adequate internal controls and procedures for financial reporting and there must be real-time access to operational and financial corporate data. ERP systems incorporate such functionalities, allowing organizations to be in compliance with the law.

Section 2.2

Student answers may vary. Below is an example of a potential deliverable.

What are the challenges that restaurants are facing these days? The manager's feedback include:

- Rising costs of food (Bargaining power of suppliers)
- A large number of other restaurant options for customers to get food (threat of substitute products or services; bargaining power of customers)
- Other companies are offering promotions and sales discounts to attract customers (rivalry among existing firms)

What are the manager's responses to these challenges?

- Look for other suppliers if possible and try to limit waste in the kitchen (Operational effectiveness strategy)
- Maintain the quality menu offerings, provide exceptional customer service (Customer orientation strategy)
- Advertise in local newspapers or websites, offer coupons for lunch specials (customer orientation strategy)

"IT's About Business" Questions

2.1– "Bring Your Own Device" Can Cause Problems

1. *What are the advantages of allowing employees to use any mobile device to connect to the corporate network? The disadvantages?*

Advantages:

- Less learning curve because employees are already familiar with the devices.
- Convenient as employees can carry fewer devices for both personal and professional use.
- (Potentially) reduce cost because organizations do not have to purchase a device for the employees.
- Instant access could improve employees' productivity.

Disadvantages:

- Security concerns because mobile devices are more susceptible to getting lost or stolen. Security issues on mobile devices are also less known and understood.
- Constant connectivity could cause employees to be more stressful.

2. *Why is it necessary to be able to erase corporate data when a mobile device is lost or stolen?*

Because data are company's valuable assets. Security features of the lost or stolen mobile devices could easily be compromised, allowing unauthorized access to corporate networks and data.

2.2– Solar-Powered Tablets in Ethiopia

1. *What advantages could result from increasing the literacy of 100 million children around the world? Be specific.*

At the minimum, literacy helps individuals improve their standard of living. For example, it can help people find clean water, produce and consume healthy food, be aware of medical issues, and, as a result, avoid illnesses. In

the global economy, children who can read are more inclined to be financially independent and become contributing members of any society.

2. *In this experiment, the tablets were not connected to the Internet. Discuss the advantages and disadvantages to the children if the tablets were connected.*

Advantages

- Allow access to broader and more varied content.

Disadvantages

- Access to too much information could overwhelm early learners. They could have a hard time focusing on relevant, useful information.
- Children could be unknowingly exposed to harmful content. They won't know that were learning about things they should not see or do from the Internet.

2.3- The Weather Channel

1. *Identify several reasons (not discussed in the case) why accurate weather predictions are so important. Can an accurate weather prediction be considered a competitive advantage for an organization that receives this information? Why or why not? Support your answer with specific examples.*

Accurate weather forecast could provide strategic advantages for organizations for many reasons. Operations of such organizations in construction, agriculture, and shipping and logistics directly rely on weather conditions. For example, farmers could effectively plan their planting, harvesting, etc. if they can predict the weather as well as soil and air conditions. Shipping companies could deliver packages on time if they can predict the weather patterns and adjust the delivery routes and times accordingly.

Weather could also indirectly affect operations of many other organizations. For example, Mrs. Fields found that their cookie sales at shopping malls went up on rainy days. Using this data and accurate weather forecast, Mrs. Fields could plan to produce larger or smaller batches of cookies depending on weather (and other factors) to meet customer demand.

2. *Will Dark Sky, Sky Motion, and WeatherSphere have a lasting competitive advantage over The Weather Channel? Why or why not? Support your answer.*

Although difficult, these start-up companies may be able to compete with The Weather Channel in the long run if they can find niche markets to operate in. For example, integrating weather services in 'everyday things' like cars, outdoor sporting equipment, and other appliances could expand the market reach of the weather forecast industry, allowing these companies to compete and survive in this already tight market.

2.4- The University of Pittsburgh Medical Center Makes Effective Use of IT

1. *Describe the strategic advantages that IT provides to UPMC.*

UPMC's IT helps improve operations of the hospitals and health insurance plans, enhance patient care, and drive down the company's costs.

2. *Which of Porter's competitive strategies is UPMC employing? Support your answer.*

UPMC utilizes multiple different strategies as follow:

- The Telemedicine system called Virtual Care Collaboration (VCC) is an example of innovation and differentiation strategy.
- Using cloud computing for storage infrastructure is an example of cost leadership strategy.
- Providing financial incentives to increase preventative care efforts is an example of customer-oriented strategy.
- A recent UPMC study of the use of a particular catheter is an example of using data analytics to improve operational effectiveness.

3. *Describe how UPMC illustrates effective business-IT alignment.*

According to the website, UPMC's mission is to "serve our community by providing outstanding patient care and to shape tomorrow's health system through clinical and technological innovation, research, and education." The objectives of Technology Development Center (TDC) were described as strategic moves that closely follow the UPMC mission. Specifically, according to the website, TDC "identifies, analyzes and develops new solutions to address health care's greatest challenges and create the next generation of health care IT products. The TDC assesses new and existing technology investment opportunities to pursue a fresh vision for health care innovation."

(Sources: <http://www.upmc.com/ABOUT/WHY-UPMC/MISSION/Pages/default.aspx> and <http://www.upmctdc.com/Pages/About.aspx>)

Discussion Questions

1. *Explain why IT is both a business pressure and an enabler of response activities that counter business pressures.*

IT is a business pressure because a business must keep up with technology in order to compete. Computer systems and related technologies change constantly, and a business needs to find a balance in keeping up with the changes and making those changes work for their organization. At the same time, IT can help an organization respond to business pressures by serving as the catalyst for change in the organization. The change can enhance the organization's competitive edge and enable the organization to enter the global marketplace that has only been possible since the widespread integration of the Internet into the business environment.

2. *What does a flat world mean to you in your choice of major? In your choice of a career? Will you have to be a “lifelong learner”? Why or why not?*
A flat world means that workers now have the chance to compete globally in their field of choice. In the early days of the Internet, this meant that workers outside of the United States had a much better chance of competing for jobs in this country. Today, U.S. workers can compete in the global workforce. Everyone must be a lifelong learner in order to keep their edge in the business environment. Additional degrees or simply training in new software and procedures will enable workers to keep their skills current and allow them to move on to new opportunities as they arise, whether it is near home or in another country.
3. *What might the impact of a flat world be on your standard of living?*
The standard of living in developing countries can be significantly impacted by a flat world. There are more jobs available to people in such countries, giving them more income to buy durable goods. In a developed country such as the U.S., there may be a worsening of the standard of living if a significant number of jobs are moved overseas. If a large organization moves its operations to another country and no other industry is available to the workers in that community, the standard of living will fall because fewer people will be employed and have sufficient income to buy necessities.
4. *Is IT a strategic weapon or a survival tool? Discuss.*
It can be argued that IT is both a strategic weapon and a survival tool. It is a strategic weapon because businesses must use IT to achieve a competitive advantage. At the same time, if an organization does not use IT, it will likely not survive.
5. *Why might it be difficult to justify a strategic information system?*
Organizations traditionally have considered information systems to be ‘overhead.’ The IT department does not generate a physical product and therefore is difficult to justify. The costs of hardware and software plus the personnel to write and maintain software can be a contentious issue when budgets are being examined. The bottom line in any corporation is to make money, and because the IT department generally does not contribute directly to the bottom line in the organization, it is hard to justify the expense.
6. *Describe five forces in Porter’s competitive forces model, and explain how the Internet has affected each one.*
 - a) The threat of new competitors means that new businesses can enter the market to compete with your product/service. The Internet has actually caused this threat to become a bigger problem, because everything is global, and more competitors exist worldwide.
 - b) The bargaining power of suppliers is a force because you may be forced to pay more or choose from fewer options if there are a limited number of suppliers of the products you need. The Internet has reduced this force

because there are many more suppliers available around the world. Suppliers can attempt to counter this force by locking in customers, preventing them from shopping around for other suppliers.

- c) The bargaining power of customers (buyers) is enhanced when customers have more choices. The Internet allows a much larger number of choices. Organizations can respond by offering incentive programs that encourage customer loyalty.
- d) The threat of substitute products or services means that there are many products available that may draw customers away from a business. An example is wireless versus landline telephones. Many customers have chosen to eliminate their landline phones, resulting in less business for those telephone companies that only offer that service. Searching for such substitutes has been made significantly easier through the introduction of Internet searches.
- e) The rivalry among existing firms in the industry is a force that exists when there are many competitors in a specific industry. The Internet has made it very difficult to keep proprietary systems secret, thus allowing more competitors into many markets. When many businesses share the same features in their products, competition can become more intense as each business tries to single itself out as the best company with superior products.

7. *Describe Porter's value chain model. What is the relationship between the competitive forces model and the value chain model?*

The value chain model describes how companies can use IT to gain competitive advantage. All of the activities of the organization are defined as primary or support activities that turn inputs into valuable outputs for the organization. The value chain model relates to the competitive forces model because organizations use the latter to design general strategies and then use the former to refine those general strategies into specific activities that can be used to create value for the organization.

8. *Describe how IT can be used to support different value chains for different companies.*

IT can be used to support different value chains for different companies following the organization's strategies for competitive advantage. For example, Walmart and Target are direct competitors in the retail industry. Walmart's main strategy is cost leadership and IT is extensively utilized to achieve operational effectiveness, thus, reduce cost. Target's strategy, on the other hand, is customer-oriented where it invests more in product design and development in order to improve customer's shopping experiences. One example is to integrate the gift registry with mobile computing and e-commerce (<https://corporate.target.com/discover/article/Registry-Reloaded-Target-s-Fresh-Take-on-an-Old-Gi>).

9. *Discuss the idea that an information system by itself can rarely provide a sustainable competitive advantage.*

An information system without the relationship to a business cannot provide a sustainable competitive advantage. The business-IT connection is critical to strategic advantage. Understanding how the business works is important for IT managers, and understanding how to put IT to work for the business is important for the upper management of the organization.

Problem-Solving Activities

Each student will have different ideas of what to include in the following:

1. *Surf the Internet for information about the Department of Homeland Security. Examine the available information, and comment on the role of information technologies in the department.*

Developed in 2012, the DHS Federal Digital Strategy consists of four overarching principles: Information-centric, shared platform, customer-centric, and security and privacy. This strategy is used to guide DHS initiatives related to information gathering, storage, analysis, and utilization. The implementation of information technology is tightly integrated with these strategies in order to serve the American People.

2. *Experience customization by designing your own shoes at www.nike.com, your car at www.jaguar.com, your CD at www.easternrecording.com, your business card at www.iprint.com, and your diamond ring at www.bluenile.com. Summarize your experiences.*

Students should have a good time with this exercise, coming up with some customized items. Their creativity can be reflected in the item that they choose to customize. This activity can demonstrate how a company's Web site can convince customers to come back to a company when the site is easy to use and gives customers what they want.

3. *Access www.go4customer.com. What does this company do and where is it located? Who are its customers? Which of Friedman's flatteners does this company fit? Provide examples of how a U.S. company would use its services.*

This organization is a call center located in India. It also conducts market research. Its customers are organizations that want an overseas call center to handle orders. The company fits into Friedman's Outsourcing flatteners. A U.S. company could use the call center for order placement, debt collection, market surveys, and product promotion.

4. *Enter Walmart China (www.wal-martchina.com/english/index.htm). How does Walmart China differ from your local Walmart (consider products, prices, services, etc.)? Describe these differences.*

Students should compare the US Walmart site with the English version of the Walmart China site. Student answers will vary.

5. *Apply Porter's value chain model to Costco (www.costco.com). What is Costco's competitive strategy? Who are Costco's major competitors? Describe Costco's business model. Describe the tasks that Costco must accomplish for each primary value chain activity. How would Costco's information systems contribute to Costco's competitive strategy, given the nature of its business?*

Costco strives to be a low-cost leader, using its quantity discounts to reduce its prices. Its primary competitor is Sam's Club from Walmart and BJ's Wholesale Club. Costco's business model is to sell a high volume of products at a low price. It does not buy products from multiple brand names; rather, it purchases large quantities of products from single suppliers. Students should list the value chain activities and the tasks for each activity. Costco's competitive strategy would not be possible without an IT system that could search out the best deals and keep track of the organization's huge inventory.

6. *Apply Porter's value chain model to Dell (www.dell.com). What is Dell's competitive strategy? Who are Dell's major competitors? Describe Dell's business model. Describe the tasks that Dell must accomplish for each primary value chain activity. How would Dell's information systems contribute to Dell's competitive strategy, given the nature of its business?*

Dell's competitive strategy is to provide computer products and services to specific niches of the business/personal world. The company has separate divisions that produce computers for businesses and homes, respectively. They were the first company to implement the user-configuration model for selling computer systems. Their major competitors are: Hewlett-Packard (HP), Acer, Toshiba, Gateway, Sony, Asus, Lenovo, IBM, Samsung, Apple, and Oracle. Students should list the value chain activities and the tasks for each activity. The user-configuration techniques would be very difficult to perform without a sophisticated IT system that enables Dell to customize each order. Customers can even create a customized computer online and determine the cost before they order it.

7. *The market for optical copiers is shrinking rapidly. It is expected that 90 percent of duplicated documents are generated by computer printers. Can a company such as Xerox Corporation survive?*

a. *Read about the problems and solutions of Xerox from 2000-2010 at www.fortune.com, www.findarticles.com, and www.google.com.*

b. *Identify all the business pressures on Xerox.*

Students should come up with issues such as competition around the world and the overwhelming number of people who no longer make copies but simply import documents into a computer. The cost of making copies is generally higher than that of printing from a computer.

- c. *Find some of Xerox's response strategies (see www.xerox.com, www.yahoo.com, and www.google.com).*
Xerox has moved into the printer business in an attempt to keep its business from failing. They offer many types of printers (multifunction, color, black and white), scanners, and digital copiers.
- d. *Identify the role of IT as a contributor to the business technology pressures (for example, obsolescence).*
Every business is interested in reducing its costs, because copying can be a huge expense. IT for Xerox has introduced a way for businesses to reduce their copying costs by either eliminating it (sending copies of products through e-mail) or by printing using computer-connected printers. This has placed pressure on Xerox to find other ways to stay in business by using this IT pressure to diversify its products.
- e. *Identify the role of IT as a facilitator of Xerox's critical response activities.*
Students should come up with suggestions for using IT to respond to adverse situations. Xerox used IT as the mechanism to facilitate research into ways to transform their copy technology into something that would work in the digital world.

CLOSING CASE 1– IBM's Watson

Questions

- What applications can you think of for Watson in a university setting?*
Examples of applications for Watson in a university include:
 - Advising: Provide customized academic advising according to individual student's interest, professional goals, past and current performance, and university's course offering.
 - Course scheduling: Develop course offerings and scheduling based on projected students' demand, the university budget, faculty capacity, and infrastructure (e.g., building space and parking).
 - Housing: Estimate housing demand, conduct room assignments based on student compatibility profiles, manage customizable meal plans, and manage inventory and employee scheduling for dining services.
 - Financial aid: Analyze the financial aid structure and develop recommendations following students' needs and academic performance.
- What are potential disadvantages of using Watson in healthcare settings?*
Watson is a computer program and, for the most part, utilizes rule-based reasoning. Medical decisions are quite complex in nature, requiring more complex analysis and interpretation. Watson could quickly calculate correlations between symptoms and diagnoses. However, correlation should not be interpreted as causation.

3. *Would you consider being diagnosed only by Watson? Why or why not?*
This question asks for personal preferences. I would say no. Compared to human doctors, Watson is still a machine that lacks proper social etiquette such as empathy. Watson doesn't really know how to skillfully or tactfully deliver bad news!
4. *Would you consider being diagnosed by your personal physician, if he or she consulted Watson? Why or why not?*
This question asks for personal preferences. I would say yes. I trust that my doctor would ultimately rely on his or her professional training and experience when diagnosing my symptoms. Watson would be one of many resources my doctor could use to help form his or her opinion.

CLOSING CASE 2– A Tool to Combat Terrorism and Fight Crime

Questions

1. *Is the Palantir system a strategic information system to the organization using it? Why or why not? Support your answer.*
Palantir can definitely be a strategic information system for organizations because the main feature of Palantir is to effectively identify patterns. This type of application could be applied to any context including criminal activity, fraud detection, consumer buying behavior, etc.
2. *What are potential problems that could arise with this high-level, massive amount of data integration?*
Some problems with data integration include:
 - Privacy concerns as individual information can be extracted to form a complete profile. Individuals' physical locations can be mapped out and their behaviors may be predicted.
 - Incorrect data in one place could cause incorrect data and analyses in other systems.
 - Sophisticated software products require complex security configurations which may not be well planned and understood, and can also be quite costly.
 - Highly integrated system means more opportunities for single system vulnerability to expose risks in other systems.

Spreadsheet Activity

See Solution file in Wiley Plus and on the book companion site. This exercise can be graded using the Office Grader Application.

Database Activity

See Solution file in Wiley Plus and on the book companion site. This exercise can be graded using the Office Grader Application.