The Information Systems Strategy Triangle

The Information Systems Strategy Triangle highlights the alignment necessary between decisions regarding business strategy, information systems, and organizational design. This chapter reviews models of business strategy, organizational strategy and design, and information systems strategy. It concludes with a simple framework for creating a social business strategy.

In February 2015,¹ health care giant Kaiser Permanente named Dick Daniels to the CIO position and the leadership team for the next stage of the company’s business strategy: to provide better health care at lower costs. To achieve those goals, Kaiser Permanente, one of the nation’s largest not-for-profit health care systems with over 9.5 million members and 2014 operating revenue of $56.4 billion, invested in numerous information systems projects aimed at streamlining operations, offering new services, and meeting government obligations. For example, in 2014, 13% of all the medical appointments were fulfilled digitally—through e-mail—to the delight of patients who did not have to make a trip to the doctor’s office and to the delight of doctors who were able to check in on their patients, particularly those with chronic conditions, more frequently. Doctors particularly liked this because their annual bonuses were based, in part, on improvements in patient health metrics such as lower blood pressure, reduced blood sugar levels if at risk for diabetes, and improvement in cholesterol scores rather than on the number of tests they ordered or the total billing they brought in. The organization invested heavily in video conferencing technology, mobile apps, and analytics as they finished implementing a $4 billion electronic health records system, KP HealthConnect.

KP HealthConnect began in 2003, but by 2008, all members had online access to their health records; by 2010, all system services were available at all medical offices and hospitals in the system; and by 2012, all members had access to their health records on mobile devices. Kaiser Permanente has been a regular innovator in the use of technologies, being one of the first health care organizations to experiment with chat rooms, secure messaging, and private e-mail correspondence between patients, physicians, and care providers. The new system connects each member to all caregivers and services available at Kaiser Permanente. Further, it enabled patients to participate in the health care they received at a new level and access information directly from the system.

The organizational design supported the business strategy of better health care at lower costs.² At the core of this strategy was a shift from a “fix-me system” with which patients seek health care when something is broken and needs repair to a system that was truly proactive and focused on promoting health. Under the “fix-me system,” health care was expensive and often sought too late to

² Note that the organizational design puts the organizational strategy into practice. For instance, rewarding billings, sharing little information, and late involvement with patients are organizational design elements of a “fix-me” organizational strategy.
The Information Systems Strategy Triangle

The success at Kaiser Permanente was achieved in part because of the alignment between its business strategy, its information systems strategy, and its organization design. Physicians were part of the decision-making processes. Managers were involved in the design and implementation of the information systems. The decision to move from a “fix-me system” to a “proactive health system” was not made in isolation from the organization or the information systems.

The information systems (IS) department is not an island within a firm. Rather, IS manages an infrastructure that is essential to the firm’s functioning. Further, the Kaiser Permanente case illustrates that a firm’s IS must be aligned with the way it manages its employees and processes. For Kaiser Permanente, it was clear that not only did the physicians need a fast, inexpensive, and useful way to communicate with patients outside of regular in-person appointments but also incentive systems and patient service processes had to be updated. Information systems provided a solution in conjunction with new operational and control processes.

This chapter introduces a simple framework for describing the alignment necessary with business systems and for understanding the impact of IS on organizations. This framework is called the **Information Systems Strategy Triangle** because it relates business strategy with IS strategy and organizational strategy. This chapter also presents key frameworks from organization theory that describe the context in which IS operates as well as the business imperatives that IS support. The Information Systems Strategy Triangle presented in Figure 1.1 suggests three key points about strategy.

1. Successful firms have an overriding business strategy that drives both organizational strategy and IS strategy. The decisions made regarding the structure, hiring practices, vendor policies, and other components of the organizational design, as well as decisions regarding applications, hardware, and other IS components, are all driven by the firm’s business objectives, strategies, and tactics. Successful firms carefully balance these three strategies—they purposely design their organization and their IS strategies to complement their business strategy.

2. IS strategy can itself affect and is affected by changes in a firm’s business and organizational design. To perpetuate the balance needed for successful operation, changes in the IS strategy must be accompanied by changes in the organizational strategy and must accommodate the overall business strategy. If a firm designs its business strategy to use IS to gain strategic advantage, the leadership position in IS can be sustained only by constant innovation. The business, IS, and organizational strategies must constantly be adjusted.

3. IS strategy always involves consequences—intended or not—within business and organizational strategies. Avoiding harmful unintended consequences means remembering to consider business and organizational strategies when designing IS implementation. For example, deploying tablets to employees without an accompanying set of changes to job expectations, process design, compensation plans, and business tactics will fail to achieve expected productivity improvements. Success can be achieved only by specifically designing all three components of the strategy triangle so they properly complement each other.

![The Information Systems Strategy Triangle](image)
Before the changes at Kaiser Permanente, incentives for doctors were misaligned with the goals of better health care. Its IS Strategy Triangle was out of alignment at that time. Its organizational strategy (e.g., a “fix-me” system) was not supported by the IS strategy (e.g., tracking and reporting billable procedures). Neither the organizational strategy nor the IS strategy adequately supported their purported business strategy (helping patients at lower cost). For Kaiser Permanente, success could be achieved only by specifically designing all three components of the strategy triangle to work together.

Of course, once a firm is out of alignment, it does not mean that it has to stay that way. To correct the misalignment described earlier, Kaiser Permanente used on-line services to enable quick communications between patients, physicians, and care providers. Further, it changed its bonus structure to focus on health rather than billing amounts. The new systems realign people, process, and technology to provide better service, save time, and save money.

What does alignment mean? The book Winning the 3-Legged Race defines alignment as the situation in which a company’s current and emerging business strategy is enabled and supported yet unconstrained by technology. The authors suggest that although alignment is good, there are higher states, namely synchronization and convergence, toward which companies should strive. With synchronization, technology not only enables current business strategy but also anticipates and shapes future business strategy. Convergence goes one step further by exhibiting a state in which business strategy and technology strategy are intertwined and the leadership team members operate almost interchangeably. Although we appreciate the distinction and agree that firms should strive for synchronization and convergence, alignment in this text means any of these states, and it pertains to the balance between organizational strategy, IS strategy, and business strategy.

A word of explanation is needed here. Studying IS alone does not provide general managers with the appropriate perspective. This chapter and subsequent chapters address questions of IS strategy squarely within the context of business strategy. Although this is not a textbook of business strategy, a foundation for IS discussions is built on some basic business strategy frameworks and organizational theories presented in this and the next chapter. To be effective, managers need a solid sense of how IS are used and managed within the organization. Studying details of technologies is also outside the scope of this text. Details of the technologies are relevant, of course, and it is important that any organization maintain a sufficient knowledge base to plan for and adequately align with business priorities. However, because technologies change so rapidly, keeping a textbook current is impossible. Instead, this text takes the perspective that understanding what questions to ask and having a framework for interpreting the answers are skills more fundamental to the general manager than understanding any particular technology. That understanding must be constantly refreshed using the most current articles and information from experts. This text provides readers with an appreciation of the need to ask questions, a framework from which to derive the questions to ask, and a foundation sufficient to understand the answers received. The remaining chapters build on the foundation provided in the Information Systems Strategy Triangle.

### Brief Overview of Business Strategy Frameworks

A **strategy** is a coordinated set of actions to fulfill objectives, purposes, and goals. The essence of a strategy is setting limits on what the business will seek to accomplish. Strategy starts with a mission. A **mission** is a clear and compelling statement that unifies an organization’s effort and describes what the firm is all about (i.e., its purpose). Mark Zuckerberg’s reflection on the mission of Facebook provides an interesting example. Originally conceived as a product rather than a service, the CEO of Facebook commented, “after we started hiring more people and building out the team, I began to get an appreciation that a company is a great way to get a lot of people involved in a mission you’re trying to push forward. Our mission is getting people to connect.”

In a few words, the mission statement sums up what is unique about the firm. The information in Figure 1.2 indicates that even though Zappos, Amazon, and L.L. Bean are all in the retail industry, they view their missions quite differently. For example, Zappos’ focus is on customer service, Amazon is about customer sets, and L.L. Bean is

---

about the merchandise and treating people the right way. It’s interesting to note that although Amazon purchased Zappos in 2009, the acquisition agreement specified that Zappos would continue to run independently of its new parent. Today, Zappos continues to remain both culturally and physically separate from Amazon. Zappos is located near Las Vegas, Nevada, and Amazon is in Seattle, Washington.

A **business strategy** is a plan articulating where a business seeks to go and how it expects to get there. It is the means by which a business communicates its goals. Management constructs this plan in response to market forces, customer demands, and organizational capabilities. Market forces create the competitive context for the business. Some markets, such as those faced by package delivery firms, laptop computer manufacturers, and credit card issuers, face many competitors and a high level of competition, such that product differentiation becomes increasingly difficult. Other markets, such as those for airlines and automobiles, are similarly characterized by high competition, but product differentiation is better established. Customer demands comprise the wants and needs of the individuals and companies who purchase the products and services available in the marketplace. Organizational capabilities include the skills and experience that give the corporation a currency that can add value in the marketplace.

Consider Dell, originally a personal computer company. Initially Dell’s business strategy was to sell personal computers directly to the customer without going through an intermediary. Reaching customers in this way was less expensive and more responsive than selling the computers in retail stores. The Internet, combined with Dell’s well-designed IS infrastructure, allowed customers to electronically contact Dell, which then designed a PC for a customer’s specific needs. Dell’s ordering system was integrated with its production system and shared information automatically with each supplier of PC components. This IS enabled the assembly of the most current computers without the expense of storing large inventories, and inventory uncertainties were pushed back to the vendors. Cost savings were passed on to the customer, and the direct-to-customer model allowed Dell to focus its production capacity on building only the most current products. With small profit margins and new products quickly able to replace existing products, IS aligned with Dell’s business strategy to provide low-cost PCs. The cost savings from the IS was reflected in the price of systems. In addition, Dell executives achieved a strategic advantage in reducing response time, building custom computers that had one of the industry’s lowest costs, and eliminating inventories that could become obsolete before they are sold. Thus, this business strategy was consistent with Dell’s mission of delivering the best customer experience in the markets it serves.

But things aren’t always as they seem. If the direct-to-customer strategy was so effective, why is Dell now also selling its computers at major retail outlets such as Walmart, Staples, and Best Buy? It is likely that the sales figures and profit margins were not measuring up to Dell’s stated objectives and performance targets. And Dell has branched out to other hardware, such as printers and servers, and more recently, providing IT services. Consequently, Dell adjusted its business strategy, and we can expect to see changes in its organizational design and information systems to reflect its altered direction.

Now consider your favorite dot-com company. Every dot-com company has a business strategy of delivering its products or services over the Internet. To do so, the dot-coms need organizations filled with individuals and processes that support this business strategy. Their employees must be Internet savvy; that is, they must have

---

**FIGURE 1.2** Mission statements of three retail businesses.

<table>
<thead>
<tr>
<th>Company</th>
<th>Mission Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zappos</td>
<td>To provide the best customer service possible. Internally we call this our WOW philosophy.</td>
</tr>
<tr>
<td>Amazon</td>
<td>We seek to be Earth's most customer-centric company for three primary customer sets: consumer customers, seller customers and developer customers.</td>
</tr>
<tr>
<td>L.L. Bean</td>
<td>Sell good merchandise at a reasonable profit, treat your customers like human beings and they will always come back for more.</td>
</tr>
</tbody>
</table>

---

*a* [http://about.zappos.com](http://about.zappos.com) (accessed March 19, 2015).


**Business Models versus Business Strategy**

Some new managers confuse the concept of a business model with the concept of a business strategy. The **business strategy**, as discussed in this chapter, is the coordinated set of actions used to meet the business goals and objectives. It’s the path a company takes to achieve its goals. One of the components of the business strategy is the business model, the design of how the business will make money and how customers will get value from its products and services. Some might argue that a business model is the outcome of strategy.*

Some examples of business models commonly seen in the digital world include†:

- **Subscription**: Customers pay a recurring fee for the product or service.
- **Advertising**: Customers access the product or service for “free,” and sponsors or vendors pay fees for advertising that goes with the product or service.
- **Cost plus**: Somewhat like a traditional retailer, customers purchase the product or service for a specific price that is usually the cost plus some markup for profit.
- **Renting/Licensing**: Customers pay a fee to use the product or service for a specified period of time.
- **All-you-can-Eat**: Customers pay one fee for access to as much of the product or service as they want to consume, usually over a specific period of time.
- **Freemium**: Customers get something for “free,” and the company makes money from selling customers something after they get the giveaway. This is similar to a business model used in brick-and-mortar businesses that give away something or sell something for a very low price, but the customer has to pay for refills or upgrades such as giving razors away but making money from selling razor blades.

† For a list of 15 different business models, see http://www.digitalbusinessmodelguru.com/2012/12/15-business-models-complete-list.html (accessed August 21, 2015).

skills and knowledge that are relevant to the dot-com business. Their processes must support the dot-com strategy. Imagine what would happen if the order process for their services was not Internet based. It seems silly to even consider a dot-com that would insist that orders be placed in person or even by telephone. The dot-com processes are aligned with companies’ on-line-based business strategy. Further, their IS strategy must also be aligned with their processes. It would be equally silly to expect information to be based on paper files rather than electronic files.

A classic, widely used model developed by Michael Porter still frames most discussions of business strategy. In the next section, we review Porter’s generic strategies framework as well as dynamic environment strategies.³ We then share questions that a general manager must answer to understand the business’ strategy.

**The Generic Strategies Framework**

Companies sell their products and services in a marketplace populated with competitors. Michael Porter’s framework helps managers understand the strategies they may choose to build a competitive advantage. In his book *Competitive Advantage*, Porter claims that the “fundamental basis of above-average performance in the long run is sustainable competitive advantage.”⁴ Porter identified three primary strategies for achieving competitive advantage: (1) cost leadership, (2) differentiation, and (3) focus. These advantages derive from the company’s relative position

---

³ Another popular model by Michael Porter, the value chain, provides a useful model for discussing internal operations of an organization. Some find it a useful model for understanding how to link two firms. This framework is used in Chapter 5 to examine business process design. For further information, see M. Porter, *Competitive Advantage*, 1st ed. (New York: The Free Press, 1985).
in the marketplace, and they depend on the strategies and tactics used by competitors. See Figure 1.3 for a summary of these three strategies for achieving competitive advantage.

**Cost leadership** results when the organization aims to be the lowest-cost producer in the marketplace. The organization enjoys above-average performance by minimizing costs. The product or service offered must be comparable in quality to those offered by others in the industry so that customers perceive its relative value. Typically, only one cost leader exists within an industry. If more than one organization seeks an advantage with this strategy, a price war ensues, which eventually may drive the organization with the higher cost structure out of the marketplace. Through mass distribution, economies of scale, and IS to generate operating efficiencies, Walmart epitomizes the cost-leadership strategy.

Through **differentiation**, the organization offers its product or service in a way that appears unique in the marketplace. The organization identifies which qualitative dimensions are most important to its customers and then finds ways to add value along one or more of those dimensions. For this strategy to work, the price charged customers for the differentiator must seem fair relative to the price charged by competitors. Typically, multiple firms in any given market employ this strategy. Progressive Insurance is able to differentiate itself from other automobile insurance companies.

In its earlier days, Progressive Insurance’s service was unique. Representatives responded to accident claims 24-7, arriving at the scene of the accident with powerful laptops and software that enabled them to settle claims and cut a check on the spot. More recently, Progressive was the first to offer a usage-based insurance product, called Snapshot, that bases insurance rates on the miles driven by customers. These innovations enabled a strategy that spurred Progressive’s growth and widened its profit margins. Apple Inc. is another example of a company that competes in its markets on its ability to differentiate its products. Apple’s various innovations in its operating system, laptop design, iPads, iPhones, iPods, iTunes and iWatches have created a strategy based on the uniqueness of its products and services.

**Focus** allows an organization to limit its scope to a narrower segment of the market and tailor its offerings to that group of customers. This strategy has two variants: (1) **cost focus**, in which the organization seeks a cost advantage within its segment and (2) **differentiation focus**, in which it seeks to distinguish its products or services within the segment. This strategy allows the organization to achieve a local competitive advantage even if it does not achieve competitive advantage in the marketplace overall. Porter explains how the focuser can achieve competitive advantage by focusing exclusively on certain market segments:

Breath of target is clearly a matter of degree, but the essence of focus is the exploitation of a narrow target’s differences from the balance of the industry. Narrow focus in and of itself is not sufficient for above-average performance.7

Marriott International demonstrates both types of focus with two of its hotel chains: Marriott has a cost focus, and Ritz-Carlton has a differentiation focus. To better serve its business travelers and cut operational expenses, Marriott properties have check-in kiosks that interface with their Marriott Rewards loyalty program. A guest can swipe a credit card or Marriott Rewards card at the kiosk in the lobby and receive a room assignment and keycard

---

7 Porter, *Competitive Advantage: Creating and Sustaining*. 

---

**FIGURE 1.3** Three strategies for achieving competitive advantage.

from the machine. She can also print airline boarding passes at the kiosks. Further, the kiosks help the Marriott chain implement its cost focus by cutting down on the personnel needed in at the front desk. The kiosk system is integrated with other systems such as billing and customer relationship management (CRM) to generate operating efficiencies and enhanced corporate standardization.

In contrast, stand-alone kiosks in the lobby would destroy the feeling that the Ritz-Carlton chain, acquired by Marriott in 1995, creates. To the Ritz-Carlton chain, CRM means capturing and using information about guests, such as their preference for wines, a hometown newspaper, or a sunny room. Each Ritz-Carlton employee is expected to promote personalized service by identifying and recording individual guest preferences. To demonstrate how this rule could be implemented, a waiter, after hearing a guest exclaim that she loves tulips, could log the guest’s comments into the Ritz-Carlton CRM system called “Class.” On her next visit to a Ritz-Carlton hotel, tulips could be placed in the guest’s room after querying Class to learn more about her as her visit approaches. The CRM is instrumental in implementing the differentiation-focus strategy of the Ritz-Carlton chain. Its strategy allows the Ritz-Carlton chain to live up to its unique motto which emphasizes that its staff members are distinguished people with distinguished customers.

Airline JetBlue adopted a differentiation strategy based on low costs coupled with unique customer experience. It might be called a “value-based strategy.” It is not the lowest cost carrier in the airline industry; at 12.3 cents per passenger seat mile, JetBlue has one of the lowest costs, but Virgin America, Spirit, and Allegiant had even lower per seat mile costs in 2013. But JetBlue manages its operational costs carefully, making decisions that keep its per passenger costs among the lowest in the business, such as a limited number of airplane models in its fleet, gates at less congested airports, paperless cockpit and many other operations, and snacks instead of meals on flights. JetBlue has one of the longest stage length averages (the length of the average flight) in the industry, and the longer the flight, the lower the unit costs. Competing network carriers, who are more well known and established, may have different pay scales because they’ve been in the business longer and have a different composition of staff. These carriers also have higher maintenance costs for their older, more diverse fleets. If it could realize its plans for growth while maintaining its low cost structure, JetBlue could move from its cost focus based on serving a limited, but growing, number of market segments to a cost leadership strategy.

While sustaining a cost focus, JetBlue’s chairman believes that JetBlue can compete on more than price, which is part of its unique differentiation strategy. It is why the airline continually strives to keep customers satisfied with frills such as extra leg room, leather seats, prompt baggage delivery, DirectTV, and movies. It has been recognized with many awards for customer satisfaction in the North American airline industry.

Dynamic Environment Strategies

Porter’s generic strategies model is useful for diagnostics, for understanding how a business seeks to profit in its chosen marketplace, and for prescriptions, or building new opportunities for advantage. It reflects a careful balancing of countervailing competitive forces posed by buyers, suppliers, competitors, new entrants, and substitute products and services within an industry. As is the case with many models, dynamic environment strategies offer managers useful tools for thinking about strategy.

However, the Porter model was developed at a time when competitive advantage was sustainable because the rate of change in any given industry was relatively slow and manageable. Since the late 1980s, when this framework was at the height of its popularity, newer models have been developed to take into account the increasing turbulence and velocity of the marketplace. Organizations need to be able to respond instantly and change rapidly, which requires dynamic structures and processes. One example of this type of approach is the hypercompetition framework. Discussions of hypercompetition take a perspective different from that of the previous framework. Porter’s framework focuses on creating competitive advantage in relatively stable markets, whereas hypercompetition frameworks suggest that the speed and aggressiveness of the moves and countermoves in a highly competitive and

---


turbulent market create an environment in which advantages are rapidly created and eroded. In a hypercompetitive market, trying to sustain a specific competitive advantage can be a deadly distraction because the environment and the marketplace change rapidly. To manage the rapid speed of change, firms value agility and focus on quickly adjusting their organizational resources to gain competitive advantage. Successful concepts in hypercompetitive markets include dynamic capabilities, creative destruction, and blue ocean strategy.\(^\text{10}\)

**Dynamic capabilities** are means of orchestrating a firm’s resources in the face of turbulent environments. In particular, the dynamic capabilities framework focuses on the ways a firm can integrate, build, and reconfigure internal and external capabilities, or abilities, to address rapidly changing environments. These capabilities are built rather than bought. They are embedded in firm-specific routines, processes, and asset positions. Thus, they are difficult for rivals to imitate. In sum, they help determine the speed and degree to which the firm can marshal and align its resources and competences to match the opportunities and requirements of the business environment.\(^\text{11}\)

Since the 1990s, a competitive practice, called **creative destruction**, has emerged. First predicted over 60 years ago by the economist Joseph Schumpeter, it was made popular more recently by Harvard Professor Clay Christensen. Coincidentally (or maybe not), the accelerated competition has occurred concomitantly with sharp increases in the quality and quantity of information technology (IT) investment. The changes in competitive dynamics are particularly striking in sectors that spend the most on IT.\(^\text{12}\)

One example of using dynamic models was implemented by leadership guru Jack Welch at General Electric (GE). Often nicknamed “Neutron Jack” because of the way businesses were radically changed, Welch’s approach to creative destruction was termed **destroy your business** (DYB). Welch recognized that GE could sustain its competitive advantage only for a limited time as competitors attempted to outmaneuver the company. He knew that if GE did not identify its weaknesses, its competitors would relish doing so. DYB is an approach that places GE employees in the shoes of their competitors.\(^\text{13}\) Through the DYB lenses, GE employees develop strategies to destroy the company’s competitive advantage. Then, in light of their revelations, they apply the **grow your business** (GYB) strategy to find fresh ways to reach new customers and better serve existing ones. This allows GE to protect its business from its competitors and sustain its position in the marketplace over the long run.

A similar strategy of cannibalizing its own products was used by Apple. Steve Jobs, Apple’s founder and former CEO, felt strongly that if a company was not willing to cannibalize its own products, someone else would come along and do it for them. That was evident in the way Apple introduced the iPhone while iPod sales were brisk and the iPad while its Macintosh sales were strong.\(^\text{14}\) Apple continues to exhibit this strategy with subsequent releases of new models of all of its products.

Most discussions of strategy focus on gaining competitive advantage in currently existing industries and marketplaces, which are referred to by Kim and Mauborgne as **red ocean strategy**. Using a red ocean strategy, firms fiercely compete to earn a larger share of existing demand. Kim and Mauborgne recommend a better approach: Firms adopt a **blue ocean strategy** in which they create new demand in untapped marketspaces where they have the “water” to themselves. When applying the blue ocean strategy, the goal is not to beat the competition but to make it irrelevant. This is what Dell did when it challenged current industry logic by changing the computer purchasing and delivery experiences of its customers. “With its direct sales to customers, Dell was able to sell its PCs for 40 percent less than IBM dealers while still making money.”\(^\text{15}\) Dell also introduced into uncharted seas an unprecedented delivery process that allowed buyers to receive their new computers within four days of ordering them as compared to the red ocean process, which typically required 10 weeks.


Why Are Strategic Advantage Models Essential to Planning for Information Systems?

A general manager who relies solely on IS personnel to make IS decisions may not only give up any authority over IS strategy but also hamper crucial future business decisions. In fact, business strategy should drive IS decision making, and changes in business strategy should entail reassessments of IS. Moreover, changes in IS potential should trigger reassessments of business strategy—as in the case of the Internet when companies that understood or even considered its implications for the marketplace quickly outpaced their competitors who failed to do so. For the purposes of our model, the Information Systems Strategy Triangle, understanding business strategy means answering the following questions:

1. What is the business goal or objective?
2. What is the plan for achieving it? What is the role of IS in this plan?
3. Who are the crucial competitors and partners, and what is required of a successful player in this marketplace?
4. What are the industry forces in this marketplace?

Porter’s generic strategies framework and the dynamic frameworks (summarized in Figure 1.4) are revisited in the next few chapters. They are especially helpful in discussing the role of IS in building and sustaining competitive advantages (Chapter 2) and for incorporating IS into business strategy. The next section of this chapter establishes a foundation for understanding organizational strategies.

### Brief Overview of Organizational Strategies

**Organizational strategy** includes the organization’s design as well as the choices it makes to define, set up, coordinate, and control its work processes. How a manager designs the organization impacts every aspect of operations from dealing with innovation to relationships with customers, suppliers, and employees. The organizational strategy is a plan that answers the question: “How will the company organize to achieve its goals and implement its business strategy?”

A useful framework for organizational design can be found in the book *Building the Information Age Organization* by Cash, Eccles, Nohria, and Nolan. This framework (Figure 1.5) suggests that the successful execution of a company’s organizational strategy comprises the best combination of organizational, control, and cultural variables. Organizational variables include decision rights, business processes, formal reporting relationships, and informal networks. Control variables include the availability of data, nature and quality of planning, effectiveness of performance measurement and evaluation systems, and incentives to do good work. Cultural variables comprise the values of the organization. These organizational, control, and cultural variables are **managerial levers** used by decision makers to effect changes in their organizations. These managerial levers are discussed in detail in Chapter 3.

---

Our objective is to give the manager a framework to use in evaluating various aspects of organizational design. In this way, the manager can review the current organization and assess which components may be missing and what future options are available. Understanding organizational design means answering the following questions:

1. What are the important structures and reporting relationships within the organization?
2. Who holds the decision rights to critical decisions?
3. What are the important people-based networks (social and informational), and how can we use them to get work done better?
4. What are the characteristics, experiences, and skill levels of the people within the organization?
5. What are the key business processes?
6. What control systems (management and measurement systems) are in place?
7. What are the culture, values, and beliefs of the organization?

The answers to these questions inform the assessment of the organization’s use of IS. Chapters 3, 4, and 5 use the Managerial Levers model to assess the impact of information systems (IS) on the firm. Chapters 8 and 9 use this same list to understand the business and governance of the IS organization.

### Brief Overview of Information Systems Strategy

**IS strategy** is the plan an organization uses to provide information services. IS allow a company to implement its business strategy. JetBlue’s former Vice President for People explains it nicely: “We define what the business needs and then go find the technology to support that.”

Business strategy is a function of competition (What does the customer want and what does the competition do?), positioning (In what way does the firm want to compete?), and capabilities (What can the firm do?). IS help

---

17 Hogue et al., *Winning the 3-Legged Race*, 111.
determine the company’s capabilities. An entire chapter is devoted to understanding key issues facing general managers concerning IT architecture, but for now a more basic framework is used to understand the decisions related to IS that an organization must make.

The purpose of the matrix in Figure 1.6 is to give the manager a high-level view of the relation between the four IS infrastructure components and the other resource considerations that are keys to IS strategy. Infrastructure

<table>
<thead>
<tr>
<th>What</th>
<th>Who</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>The physical devices of the system</td>
<td>System users and managers</td>
</tr>
<tr>
<td>Software</td>
<td>The programs, applications, and utilities</td>
<td>System users and managers</td>
</tr>
<tr>
<td>Networking</td>
<td>The way hardware is connected to other hardware, to the Internet, and to other outside networks</td>
<td>System users and managers; company that provides the service</td>
</tr>
<tr>
<td>Data</td>
<td>Bits of information stored in the system</td>
<td>Owners of data; data administrators</td>
</tr>
</tbody>
</table>

**FIGURE 1.6** IS strategy matrix.

Social Business Lens: Building a Social Business Strategy

Some companies use social IT as point solutions for business opportunities, but others build a social business strategy that considers the application of social IT tools and capabilities to solve business opportunities holistically. A **social business strategy** is a plan of how the firm will use social IT that is aligned with its organizational strategy and IS strategy. Social business strategy includes a vision of how the business would operate if it seamlessly and thoroughly incorporated social and collaborative capabilities throughout the business model. It answers the same type of questions of what, how, and who, as do many other business strategies.

Social businesses infuse social capabilities into their business processes. Most of the social business opportunities fall into one of three categories:

**Collaboration**—using social IT to extend the reach of stakeholders, both employees and those outside the enterprise walls. Social IT such as social networks enable individuals to find and connect with each other to share ideas, information, and expertise.

**Engagement**—using social IT to involve stakeholders in the traditional business of the enterprise. Social IT such as communities and blogs provide a platform for individuals to join in conversations, create new conversations, and offer support to each other and other activities that create a deeper feeling of connection to the company, brand, or enterprise.

**Innovation**—using social IT to identify, describe, prioritize, and create new ideas for the enterprise. Social IT offers community members a “super idea box” where individuals suggest new ideas, comment on other ideas, and vote for their favorite idea, giving managers a new way to generate and decide on products and services.

National Instruments (ni.com) is an example of a company that has embraced social IT and created a social business strategy. Managers developed a branded community consisting of a number of social IT tools like Facebook, Twitter, blogs, forums, and more. By thinking holistically about all the ways that customers and employees might interact with one another, the branded community has become the hub of collaboration, engagement, and idea generation.

The Information Systems Strategy Triangle includes hardware, such as desktop units and servers. It also includes software, such as the programs used to do business, to manage the computer itself and to communicate between systems. The third component of IS infrastructure is the network, which is the physical means by which information is exchanged among hardware components. Examples include fiber networks such as Google Fiber, cable networks such as those provided by Time Warner, AT&T, and Comcast, WiFi provided by many local services, and 3G/4G/WiMax technologies (which are actually Internet communication standards, but some phone companies adopt those terms as the name of networks they offer). Some communications are conducted through a private digital network, managed by an internal unit). Finally, the fourth part of the infrastructure is the data. The data include the bits and bytes stored in the system. In current systems, data are not necessarily stored alongside the programs that use them; hence, it is important to understand what data are in the system and where they are stored. Many more detailed models of IS infrastructure exist, and interested readers may refer to any of the dozens of books that describe them. For the purposes of this text, the IS strategy matrix provides sufficient information to allow the general manager to assess the critical issues in information management.

Because of the advanced state of technology, many managers are more familiar with the use of platforms and applications, or apps. Platforms are technically any set of technologies upon which other technologies or applications run. Often they are a combination of hardware and operating system software. Microsoft Windows and Apple’s Macintosh with its latest operating system are two examples of platforms. Also common are mobile platforms such as the iPhone and Samsung/Android phone. Applications or apps, on the other hand, are self-contained software programs that fulfill a specific purpose and run on a platform. The term “apps” became popular from the smart phone industry, beginning when Apple offered an online marketplace for customers to download small programs to run on their devices. But more recently, because all platforms have applications that run on them, the term apps has taken on a broader meaning.

SUMMARY

The Information Systems Strategy Triangle represents a simple framework for understanding the impact of IS on businesses. It relates business strategy with IS strategy and organizational strategy and implies the balance that must be maintained in business planning. The Information Systems Strategy Triangle suggests the following management principles.

Business Strategy
Business strategy drives organizational strategy and IS strategy. The organization and its IS should clearly support defined business goals and objectives.

• Definition: A well-articulated vision of where a business seeks to go and how it expects to get there
• Example Models: Porter’s generic strategies model; dynamic environment models

Organizational Strategy
Organizational strategy must complement business strategy. The way a business is organized either supports the implementation of its business strategy or it gets in the way.

• Definition: The organization’s design, as well as the choices it makes to define, set up, coordinate, and control its work processes
• Example Model: managerial levers

IS Strategy
IS strategy must complement business strategy. When IS support business goals, the business appears to be working well. IS strategy can itself affect and is affected by changes in a firm’s business and organizational strategies. Moreover, IS strategy always has consequences—intended or not—on business and organizational strategies.
• Definition: The plan the organization uses in providing information systems and services

• Models: A basic framework for understanding IS decisions for platform, applications, network and data-relating architecture (the “what”), and the other resource considerations (“who” and “where”) that represent important planning constraints

Strategic Relationships
Organizational strategy and information strategy must complement each other. They must be designed so that they support, rather than hinder, each other. If a decision is made to change one corner of the triangle, it is necessary to evaluate the other two corners to ensure that balance is preserved. Changing business strategy without thinking through the effects on the organization and IS strategies will cause the business to struggle until balance is restored. Likewise, changing IS or the organization alone will cause an imbalance.

KEY TERMS

<table>
<thead>
<tr>
<th>apps (p. 27)</th>
<th>dynamic capabilities (p. 24)</th>
<th>managerial levers (p. 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>blue ocean strategy (p. 24)</td>
<td>engagement (p. 28)</td>
<td>mission (p. 19)</td>
</tr>
<tr>
<td>business model (p. 20)</td>
<td>focus (p. 22)</td>
<td>organizational strategy (p. 25)</td>
</tr>
<tr>
<td>business strategy (p. 21)</td>
<td>hypercompetition (p. 23)</td>
<td>red ocean strategy (p. 24)</td>
</tr>
<tr>
<td>collaboration (p. 28)</td>
<td>Information Systems Strategy</td>
<td>social business strategy (p. 27)</td>
</tr>
<tr>
<td>cost leadership (p. 22)</td>
<td>Triangle (p. 18)</td>
<td>strategy (p. 19)</td>
</tr>
<tr>
<td>creative destruction (p. 24)</td>
<td>innovation (p. 28)</td>
<td></td>
</tr>
<tr>
<td>differentiation (p. 22)</td>
<td>IS strategy (p. 26)</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION QUESTIONS

1. Why is it important for business strategy to drive organizational strategy and IS strategy? What might happen if the business strategy was not the driver?

2. In 2015, the NFL decided to hand out Microsoft Surface tablets to all coaches for use during games, and there are reports that in the future, they will add HoloLens devices to provide augmented reality. A HoloLens device is a high-definition, head-mounted display that allows coaches to see the plays with text and animation superimposed right on the live images. If the NFL simply handed them out without making any other formal changes in organizational strategy or business strategy, what might be the outcome? What unintended consequences might occur?

3. Consider a traditional manufacturing company that wants to build a social business strategy. What might be a reasonable business strategy, and how would organization and IS strategy need to change? How would this differ for a restaurant chain? A consumer products company? A nonprofit?

4. This chapter describes key components of an IS strategy. Describe the IS strategy of a consulting firm using the matrix framework.

5. What does this tip from Fast Company mean: “The job of the CIO is to provide organizational and strategic flexibility”?

---


Lego has long been an industry leader in children’s toys with its simple yet unique building block-style products. A Danish carpenter whose family still owns Lego today founded the privately held company in 1932. But by 2004, the company found itself close to extinction, losing $1 million a day. A new CEO was brought in, and within five years sales were strong, profits were up, and naysayers who felt the new strategy was going to fail were proved wrong. In fact, sales, revenues and profits continued to be strong. Revenues grew from 16 billion Danish krone (DKK) in 2010 to over 28 billion DKK in 2014, and in the same period, profit almost doubled from 3.7 billion DKK to 7 billion DKK.

With the advent of high-tech forms of entertainment, such as the iPod and PlayStation, Lego found itself more antique than cutting edge in the toy world. When new CEO Jorgen Vig Knudstorp, a father and former McKinsey consultant, took over, the company was struggling with poor performance, missed deadlines, long development times, and a poor delivery record. The most popular toys frequently would be out of stock, and the company was unable to ship enough products or manage the production of its more complicated sets. Retail stores were frustrated, and that translated into reduced shelf space and ultimately to business losses.

Knudstorp changed all of that. He reached out to top retailers, cut costs, and added missing links to the supply chain. For example, prior to the new strategy, 90% of the components were used in just one design. Designers were encouraged to reuse components in their new products, which resulted in a reduction from about 13,000 different Lego components to 7,000. Because each component’s mold could cost up to 50,000 euros on average to create, this reduction saved significant expense.

Lego was known for its traditional blocks and components that would allow children to build just about anything their imagination could create. The new strategy broadened the products, targeting new customer segments. Lego managers created products based on themes of popular movies, such as Star Wars and the Indiana Jones series. The company moved into video games, which featured animated Lego characters sometimes based on movies. The company created a product strategy for adults and engaged the communities who had already set up thousands of Web sites and blogs featuring Lego creations. It embraced the community who thought of Lego as a way to create art rather than simply as a building toy. And the company designed a line of Legos aimed at girls because the majority of its products had primarily targeted boys.

The culture of Lego changed to one that refused to accept nonperformance. The company’s past showed a tendency to focus on innovation and creativity, often at the expense of profits. But that changed. “Knudstorp . . . made it clear that results, not simply feeling good about making the best toys, would be essential if Lego was to succeed. . . . Its business may still be fun and games, but working here isn’t,”20 describes the current culture at Lego.

Some of the most drastic changes came from within the Lego organization structure. After its massive losses in 2004, Lego switched its employee pay structure, offering incentives for appropriate product innovation and sales. Key performance indicators encourage product innovation that catalyzes sales while decreasing costs. Development time dropped by 50%, and some manufacturing and distribution functions were moved to less expensive locations, but the focus on quality remained. The creation of reusable parts alleviated some of the strain on Lego’s supply chain, which in turn helped its bottom line.

Lego also expanded into the virtual world, extending into video gaming and virtual-interaction games on the Internet. Thinking outside the company’s previous product concepts cut costs while encouraging real-time feedback from customers across a global market. Additionally, Lego created brand ambassadors who organized conventions across the world to discuss product innovation and to build communities of fellow customers. With increased revenue, Lego managers considered entering the movie-making business—a risky proposition for a toy company. However, Lego’s success with Hollywood-type action figures fueled its interest in a movie-making endeavor.

The growth put strains on the IS supporting the business. Order management and fulfillment were particularly affected, resulting in the inability to meet customer demand. Employee management systems were stretched as new employees were added to support the growth and additional locations. Product design and development, especially the virtual and video games, required new technology, too.

To solve some of these problems, Lego managers used the same approach they used for their blocks. They created a modularized and standardized architecture for their IS, making it possible to expand more quickly and add capacity and functionality as it was needed. They implemented an integrated enterprise system that gave them new applications for human capital management, operations support, product life cycle management, and data management. The new systems and services, purchased from vendors such as SAP and IBM, simplified the IT architecture and the management processes needed to oversee the IS.

Case Study

One manager at Lego summed it up nicely, “The toy world moves onwards constantly, and Lego needs to re-invent itself continuously. Significant corporate re-shaping introduced new energy to the company.”

He went on to say that simplifying Lego’s IT systems and implementing an efficient product development process that was able to maintain quality and cost favorably positioned Lego to respond to the fast changing pace of the toy industry.

Discussion Questions

1. How did the information systems and the organization design changes implemented by Knudstorp align with the changes in business strategy?
2. Which of the generic strategies does Lego appear to be using based on this case? Provide support for your choice.
3. Are the changes implemented by Knudstorp an indication of hypercompetition? Defend your position.
4. What advice would you give Knudstorp to keep Lego competitive, growing, and relevant?


CASE STUDY 1-2  Google

Started in the late 1990s, Google grew rapidly to become one of the leading companies in the world. Its mission is “to organize the world’s information and make it universally accessible and useful.” It is operating on a simple but innovative business model of attracting Internet users to its free search services and earning revenue from targeted advertising. In the winner-takes-all business of Internet search, Google has captured considerably more market share than its next highest rival, Yahoo. This has turned Google’s Web pages into the Web’s most valuable real (virtual) estate. Through its two flagship programs, AdWords and AdSense, Google has capitalized on this leadership position in searching to capture the lion’s share in advertisement spending. AdWords enables businesses to place ads on Google and its network of publishing partners using an auction-engine algorithm to decide which ad will appear on a given page. On the other hand, Google uses AdSense to push advertisements on publishing partners’ Web sites targeting a specific audience and share ad revenue with the publishing partner. This creates a win–win situation for both advertisers and publishers; Google makes more than 90% of its revenue from ads.

Even as a large company, Google continues to take risks and expand into new markets. Innovation is at the core of their enterprise. Sergey Brin and Larry Page, the founders, declared in Google’s IPO prospectus, “We would fund projects that have a 10% chance of earning a billion dollars over the long term . . . We place smaller bets in areas that seem very speculative or even strange. As the ratio of reward to risk increases, we will accept projects further outside our normal areas.” They add that they are especially likely to fund new types of projects when the initial investment is small.

Google promotes a culture of creativity and innovation in a number of ways. It encourages innovation in all employees by allowing them to spend 20% of their time on a project of their own choosing. In addition, the company offers benefits such as free meals, on-site gym, on-site dentist, and even washing machines at the company for busy employees.

Despite an open and free work culture, a rigid and procedure-filled structure is imposed for making timely decisions and executing plans. For example, when designing new features, the team and senior managers meet in a large conference room. They use the right side of the conference room walls to digitally project new features and the left side to project any transcribed critique with a timer clock giving everyone 10 minutes to lay out ideas and finalize features. Thus, Google utilizes rigorous, data-driven procedures for evaluating new ideas in the midst of a chaotic innovation process.

Nine notions of innovations are embedded in the organizational culture, processes, and structure of Google:22

1. “Innovation Comes from Anywhere”: All Google employees can innovate.
2. “Focus on the User”: When focus is on the user, the money and all else will follow.

3. “Aim to be Ten Times Better”: To get radical and revolutionary innovation, think 10 times improvement to force out-of-the-box thinking.

4. “Bet on Technical Insights”: Trust your organization’s unique insights and bet on them for major innovation.

5. “Ship and Iterate”: Do not wait for perfection; let users help you to “iterate.”

6. “Give Employees 20 Percent Time”: Employees will delight you with their creative thinking. Give them 20 percent of their work time to pursue projects they are passionate about.

7. “Default to Open Processes”: Make processes open to all to tap into the collective energy of the user base to find great ideas.

8. “Fail Well”: Do not attach stigma to failure. If you do not fail often, you are not trying hard enough. Let people and projects fail with pride.

9. “Have a Mission That Matters”: Google believes that its work has a positive impact on millions of people and that this is motivating its people every day.

Keeping up with the organizational strategy of Google, its IT department provides free and open access to IT for all employees. Rather than keeping tight control, Google allows employees to choose from several options for computer and operating systems, download software themselves, and maintain official and unofficial blog sites. Google’s intranet provides employees information about every piece of work at any part of the company. In this way, employees can find and join hands with others working on similar technologies or features.

In building the necessary IT infrastructure, Google’s IT department balances buying and making its own software depending on its needs and off-the-shelf availability. Google thinks of every IT decision “at Web Scale” to make sure its technology works well for its customers. Given the nature of business, security of information resources is critical for Google. For instance, its master search algorithm is considered a more valuable secret formula than Coca-Cola’s. However, rather than improving IT security by stifling freedom through preventive policy controls, Google puts security in the infrastructure and focuses more on detective and corrective controls. Its network management software tools combined with a team of security engineers constantly look for viruses and spyware as well as strange network traffic patterns associated with intrusion.

Discussion Questions
1. How is Google’s mission statement related to its business strategy?
2. How does Google’s information systems strategy support its business strategy?
3. How does Google’s organizational strategy support its business strategy?
4. Which of Porter’s three generic strategies does Google appear to be using based on this case? Provide a rationale for your response.
5. Analyze Google’s strategy and the type of market disruption it has created using a dynamic environment perspective.