Chapter 2.
Strategic Use of Information Resources

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Discussion Board Question

Some claim that the only sustainable competitive advantage for an organization is its relationships with its customers. All other advantages eventually erode. Do you agree or disagree? How can information systems play a role in maintaining the organization’s relationship with its customers? Defend your position. (What is the sustainable competitive advantage for an organization?) (Any sustainable competitive advantages?)

DBQ -answer

- As the chapter discusses, sustainable advantage is hard to come by. Just about any advantage gained by a company seems to be copied by another at some point in the future.

DBQ –answer (cont.)

- Students who agree with this statement might argue that the key to sustaining any advantage comes from the way all business resources are organized and used, and ultimately that comes down to how the managers and the people are able to perform.
- Students who disagree with this statement might argue that even the capability of the IT organization is not a sustainable advantage because people come and go, they can be bought by another organization as a move to create the capability elsewhere, and their skills and knowledge atrophy over time, when new capabilities arise.
- Witness IT organizations who excelled at managing mainframe applications, who are now struggling to keep up with web-based applications.

DBQ –answer (cont.)

- IT can provide sustainable advantage. Name other examples ...
  - Walmart (SCM)
  - FedEx, UPS (is it a package delivery company or others?) – see next slide
  - ZIP car
    - Add a new question “Analyze the business model of ZIPCAR using Information Systems Strategy Triangle” to (p.53)

Co-Creating IT and Business Strategy

- Q: Is FedEx is a package delivering company?
  - Y/N (and Why?)
  - Are you paying only for the delivery?
  - Or are you also paying for information about the delivery?
  - Fedex can not function without IS even though they are primarily a package delivering company.
  - Other companies such as Walmart, UPS, or Zipcar
- IT strategy is business strategy – they cannot be created without each other.
- Not just alignment, but partnership
- The trend is towards integrating the two
**Brief overview of Business Strategy Framework: Why are strategies constructed?**

"Fundamental basis for above average performance in the long run is sustainable competitive advantage" – M. Porter

![Diagram](brief_overview)

**Strategy**

- **Market Force**
- **Customer Demands**
- **Organization Capabilities**

- A plan to add value to offerings in the market place

Advantages derive from the firm’s relative position in the market place and depend on the strategies and tactics employed by competitors

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**How Do SMIS Advance Organizational Strategy?**

- **Porter’s 5-Forces**
- **Strategy**
- **Value Chains**
- **Business Processes**
- **Strategic MIS (SMIS)**
- **Information Systems**

![Diagram](how_do_smis)

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**The Most Important Chapter**

**Strategy**

- **Organization’s Competitive Advantage**

- Planning and managing the enterprise

- Information Systems

- Organizations

- Technology

- Management

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**What is the “Competitive Advantage”?**

- A competitive advantage is a benefit derived from something a company does or has that its customers want and its competitors cannot (or choose not to) match.
- If a company can sustain its competitive advantage, the company will succeed in its industry – how?
- Two types of people lead a company to succeed – Those know how to innovate the enterprise – Those know how to execute their strategy onto the enterprise using IS/IT.

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**Sustainable Competitive Advantages**

- Any sustainable competitive advantages?
- How can an organization sustain its competitive advantage?
- Firms may create/improve their competitive advantages only if they:
  - have **capacity** to learn,
  - employ **revenue management** approach
    - With the service economy accounting for over 70 percent of GDP in OECD (Organization for Economic Co-operation and Development) countries, service firms are becoming increasingly competitive with revenue management (RM) and pricing becoming central in their focus for sustaining long term profitability (and competitive advantage).
    - learning to **learn** and learning to **change** (life-long learning environment)

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**Understand the following three issues**

- Business Strategy vs.
- Business Model and
- Revenue Model
**What is a business strategy? (p.21)**

- It is where a business seeks to go and how it expects to get there.
- It is not a business model, although it includes business models as one component of a business strategy.
- A simple definition of business model: “All it really meant was how you planned to make money” – by Michael Lewis.
- The process of business model construction is part of business strategy.

**Why New Models?**

- We need some new models:
  - for how we go about exploring IT for competitive advantage,
  - for IT infrastructure how we create it and manage it,
  - for how we acquire, manage and deploy the skills that are needed to run that infrastructure.

**Business Model vs. Revenue Model**

- A business model is a set of planned activities (sometimes referred to as *business processes*) designed to result in a profit in a marketplace.
  - It is the architectural configuration of the components of transactions designed to exploit business opportunities.
  - The business model is at the center of the business plan.
- Revenue model refers to “the specific ways in which a business model enables revenue generation.”
- Revenue mechanism is a key component of the business model because it provides a sustainable financial source for the business’ effort of innovation (Afuah, 2004).

**Revenue Management**

- If you are interested in the issues of RM.
- International Journal of Revenue Management.
- http://www.inderscience.com/ijrm

**HW**

- visit www.ooma.com and study its business model and revenue model.
- Mini Case 2-2: ZIPCAR
  - Add a new question “Analyze the business model of ZIPCAR using Information Systems Strategy Triangle” to (p.53)
Learning Objectives

• List the identifying factors of the eras of information usage.
• Know what makes an information resource valuable.
• Explain how information resources are used strategically in context of the 5-forces model.
• Understand how information resources can be used to alter the value chain.
• Explain the importance of strategic alliances.
• Know the risks of information resources.

Chapter Overview

• A long-standing management topic for information systems courses is the use of information and information systems for strategic advantage.
• The triangle model of chapter 1 sets up this discussion by making the link between IT and business strategy. This chapter explores some of these concepts, building on the classic Porter models.

Zara Opening Case Overview — Strategic Use of Information Resources

• Innovative use of a firm’s information resources can provide companies with substantial advantages over competitors.
• The introduction to this chapter explores Zara, a global retail and apparel manufacturer based in Spain that has successfully implemented this idea by having a continuous flow of new products that are typically limited in supply.
• Zara has created a system that draws its clientele into its stores, on average, 17 times per year as compared to 4 times per year for most stores. This is made possible by aligning its IS model with its business model. The conclusion is that a company can achieve substantial advantage over its competitors through innovative use of its information resources.

Opening Case — Zara (Q/A)

1. How often do customers visit Zara each year?
   – 17 times a year compared to 4 times a year in an average store

2. When do customers buy the designs? Why?
   – Customers need to buy designs on the spot: it will be gone next time they visit

3. How many designs do they make each year?
   – More than 30,000

4. Is this possible without IT?
   – No, of course not!

Evolution Of Information Resources

• IS strategy from the 1960s to the 1990s was driven by internal organizational needs
  – Lower existing transaction costs
  – Provide support for managers by collecting and distributing information
  – Redesign business processes
• In the 2010 era IS strategy was driven by social IT platforms and new capabilities
  – A new evolution of applications, processes, and strategic opportunities
Information Resources

- The term information resources is defined as the available data, technology, people, and processes available to perform business processes and tasks.
- Organizations have moved from an “efficiency model” of the 1960’s to a “value creation and social business model” of the 2010’s.
- Companies seek to utilize those technologies that give them competitive advantage.
- Maximizing the effectiveness of the firm’s business strategy requires the general manager to identify and use information resources.
- Figure 2.1 shows this change.

Information Resources as Strategic Tools

What are information resources?

IT assets and capabilities (not just assets!)

Relationship between profits and time of market introduction

Keen’s Six-Stage Competitive Advantage Model

Stimulus for action

First major move

Customer acceptance

Competitor catch-up moves

First-mover expansion moves

Commoditization
**When to Perform Activities**

- **First Movers**
  - **Advantages**
    - Build brand recognition
    - Control scarce resources
    - Establish networks
    - Early Economies-of-Scale
  - **Disadvantages**
    - Newer product/technology will fail due to market uncertainty
    - Higher development costs
    - Reverse engineering by competitors

**Virtual Companies (Portable Computing)**

A Virtual Company is an Organization composed of several Business Partners that Uses Information Technology to Link/Share People, Assets, Ideas, Costs, and Resources for the purpose of producing a product or service.

Virtual Companies are Adaptable and Opportunity-Exploiting Organizations Providing World-Class Excellence in Their Competencies and Technologies.

**Characteristics of Virtual Companies**

- Excellence
- Trust-Based
- Technology
- Opportunism
- Adaptability
- Borderless

**Six Characteristics of Virtual Companies**

**Striving for Competitive Advantage - Multiple Views of the Strategic Landscape**

- **Firm** level: Industry & Competitive Analysis (across the firms)
  - Porter’s Five Competitive Forces Model
  - Competitive Strategy
  - D’Aveni’s Hypercompetition Model (7-Ss)
- **Business** level (inside the firm)
  - Value-Chain Analysis
According to Porter, there are five competitive forces in any industry, and the attractiveness of the industry depends on the strength of each force.

- **Porter’s Five Forces Model**
  - **Activities**
  - **Two broad categories:**
    - Using Porter’s Model, General Managers can:
      - **Value Chain model** addresses the activities that result in the value delivered to customers.
    - **Under the perspective of market structure,** Porter’s model includes five key sources of competition they face.
    - The Five Forces Model provides a way to think about the activities used at each stage.
      - **Consider likely changes in competitive threats over time:**
        - **uses of information technology** as the underpinning for investigating the effect of competitive forces model has been broadly adopted.

**Figure 2.4 Application of five competitive forces – Zara example**

<table>
<thead>
<tr>
<th>Competitive Force</th>
<th>IT Influence on Competitive Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threat of New Entrants</td>
<td>Zara’s IT supports its tightly knit group of designers, market specialists, production managers, and planners. These relationships take time. Rich customer information in its database would take time to develop.</td>
</tr>
<tr>
<td>Bargaining Power of Buyers</td>
<td>Recently, Zara has created a laser-created database of sizes for 10,000 “real” women volunteers. New products will be more likely to fit.</td>
</tr>
<tr>
<td>Bargaining Power of Suppliers</td>
<td>Computer-controlled cutting machine can cut 1,000 layers at a time. A large number of sewers are available.</td>
</tr>
<tr>
<td>Threat of Substitute Products</td>
<td>IT helps Zara offer extremely fashionable clothing that would last 10 years. The result is trendy clothes at reasonable prices, making substitutes difficult.</td>
</tr>
<tr>
<td>Industrial Competitors</td>
<td>Zara tracks breaking trends and customer preferences. The result is the highest sales per square foot in the world.</td>
</tr>
</tbody>
</table>

**The Five Forces Model and IS**

- **The Five Forces Model provides a way to think about how information resources can create competitive advantage.**
- **Using Porter’s Model, General Managers can:**
  - **Identify key sources of competition they face.**
  - **Recognize uses of information resources** to enhance their competitive position against other companies and customers.
  - **Consider likely changes in competitive threats over time**

**Porter’s Value Chain Model**

- **Value Chain model** addresses the activities that create, deliver, and support a company’s product or service.
- **Two broad categories:**
  - **Primary activities** – relate directly to the value created in a product or service.
  - **Support activities** – make it possible for the primary activities to exist and remain coordinated.
- **It suggests that competition can come from:**
  - **Lowering the cost** to perform an activity, increasing profit.
  - **Adding value** to a product or service so buyers will be willing to pay more (again, increasing profit).
Address activities that create, deliver and support a firm’s product or service. Each activity may affect how other activities are performed.

Therefore, the value chain model can be employed to identify specific, critical leverage points where a firm can use IT most effectively to enhance its competitive position.

The company, suppliers, and channels can all benefit through better recognition and exploitation of such linkages.

The value system is a collection of firm value chains connected through a business relationship.

Information is transferred across the Value System to different Value Chains.

Information Resources Strategy: The Strategic Landscape

- Slim tolerance for error requires managers take multiple view of the strategic landscape, such as:
  - First view: Porter’s five competitive forces model
  - Second view: Porter’s value chain
  - Third view: Piccoli & Ivec’s sustainability framework
  - Fourth view

File name on your Individual/ Group work

- Grouping
- Please name your group files as follows:
  - Group:
    - mbus626-G1-SouthWest-Airlines (.pptx or .docx)
    - Other group, please change G1 to your designated group#.
  - Same way for IT Seminar
    - Make sure upload to the Bb (from the group manager only)
    - Each group emails me your IT topic (first in, first gets)

The Value System (Fig 2.6)

- Value chain analysis can be extended beyond the company to include other firms in the industry, such as suppliers and customers, in a ‘value system’ analysis.
  - c.g. revenue streams for websites can also be added potentially profitable opportunities in support services, infrastructure provision, security software and venture capital.

Much of the advantage of supply chain management comes from understanding how information is used within each value chain within the larger system.

Information Resources

- Strategy:

  The Strategic Landscape

  - Slim tolerance for error requires managers take multiple view of the strategic landscape, such as:
    - First view: Porter’s five competitive forces model
    - Second view: Porter’s value chain
    - Third view: Piccoli & Ivec’s sustainability framework
    - Fourth view

  - Focuses on the types of IS resources needed (Resource-Based View [RBV])
Sustaining Competitive Advantage from Sustainability Framework - Piccoli & Ives

- Two ways for a firm to sustain competitive advantage:
  - 1) seeks ways to build sustainability by looking into each of the **four potential barriers** to identify promising ways to block the competition and at the same time (i.e., to **increase** the barrier(s) for competitors)
  - 2) continue to **innovate** and **change** the industry (new business models)

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT project barrier</td>
<td>It would be a large undertaking for a competitor to build the system to copy the capability.</td>
<td>- Requires a large investment - Requires a long time to build - Complicated to build</td>
</tr>
<tr>
<td>IT assets and capabilities barrier</td>
<td>Competitors might lack the IT resources to copy the capability.</td>
<td>- Database of customers that cannot be copied - Expert developers or project managers</td>
</tr>
<tr>
<td>Complementary resources barrier</td>
<td>The firm has other resources that create a synergy with the IT that provides competitive advantage.</td>
<td>- Respected brand - Partnership agreements - Exclusivity arrangements - Good location</td>
</tr>
<tr>
<td>Preemption barrier</td>
<td>The firm “got there first.”</td>
<td>- Loyal customer base built at the beginning - Firm known as “the” source</td>
</tr>
</tbody>
</table>

Source: Piccoli & Ives

Sustainability and Resource-Based View

- The Resource-Based View (RBV) looks at gaining competitive advantage through the **use** of information resources.
  - Determining whether a firm’s strategy has created **value**.
- Two subsets of information resources have been identified for sustainability:
  - Those that enable firms to **attain** competitive advantage (A firm often **exploits rare and valuable resources implemented using social IT.**)  
  - Those that enable firms to **sustain** competitive advantage over the long-term (resources must be **difficult to transfer or relatively immobile** and need to continue to **innovate** and to protect against resource imitation, substitution, or transfer.)

Porter’s Model vs. Resource-Based View

<table>
<thead>
<tr>
<th>Porter’s Model/Value Chain</th>
<th>Resource-Based View (RBV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Advantage (CA)</td>
<td>Sustains CA from the information and other resources at the firm</td>
</tr>
<tr>
<td>Focus (what adds value to the firm)</td>
<td>Resources that firm can manage and create value by using IT</td>
</tr>
</tbody>
</table>

**Piccoli and Ives framework focuses on sustaining CA by raising competitive barriers.**

More to be discussed on the **special topic** of “Strategic IT Resources”

STRATEGIC ALLIANCES
Using multiple approaches to evaluating the strategic value chain model processing/storage/transmission capital

I. Major options to secure a competitive advantage

<table>
<thead>
<tr>
<th>Suppliers</th>
<th>Customers</th>
<th>Competitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differentiation</td>
<td>Cost</td>
<td>Innovation</td>
</tr>
</tbody>
</table>

II. Option Generator

1. What is our strategic target?
2. What strategic thrust can be used against the target?
3. What strategic mode can be used?
   - offensive or defensive
4. What direction of thrust can be used?
   - usage or provision
5. What IS skills can we use?
   - processing/storage/transmission

Wiseman’s Strategic Options Generator

• Charles Wiseman’s theory of ‘Strategic Thrusts’ identifies five major efforts (thrusts) that organizations undertake to gain competitive advantage.
  - 1. Differentiation thrusts
  - 2. Cost thrusts
  - 3. Innovation thrusts
  - 4. Growth thrusts
  - 5. Alliance thrusts
• An example
  - demonstrate Wiseman’s strategic options generator using the first “Three” thrusts (i.e., differentiation, cost, and innovation) only

What Is the Value of Social Capital?

• Value of social capital
  - **Number** of relationships,
  - **Strength** of relationships, and
  - Resources controlled

Social Capital = Number of Relationships × Strength of Relationship × Entity Resources

In IS development teams, social capital may improve the willingness and ability of team members to coordinate their tasks in completing a project.

Wiseman’s theory of strategic thrusts and strategic option generator

Help structure decision making around the use of information resources for competitive advantage.

Social Capital as an IT Resource

• Capital
  - Investment of resources for future profit
• Types of business capital
  - **Physical capital**: produce goods and services (factories, machines, manufacturing equipment)
  - **Human capital**: human knowledge and skills investments
  - **Social capital**: social relations with expectation of marketplace returns
    - is the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit.
    - The focus on the theory is not on managing individuals, but rather managing relationships

Competitive Scope

<table>
<thead>
<tr>
<th>Business Strategies and Strategic Relationships with Other Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uniqueness Perceived by Customer</td>
</tr>
<tr>
<td>Industry wide (Broad Target)</td>
</tr>
<tr>
<td>Strategic Alliance: interorganizational relationship that affords one or more companies a strategic advantage</td>
</tr>
<tr>
<td>Particular Segment only (Narrow Target)</td>
</tr>
<tr>
<td>Industrial economy</td>
</tr>
</tbody>
</table>

Aligning IS strategy with Business Strategy

• Using multiple approaches to evaluating the strategic landscape is helpful in determining strategic opportunities.
• Here, we look at three such approaches:
  - Porter’s five forces model of the competitive advantage of firms
  - Porter’s value chain model of internal organizational operations
  - Wiseman’s theory of strategic thrusts and strategic option generator (results in nine possible major options to secure a competitive advantage)
    - provides a comprehensive framework that General Managers use to identify opportunities to use the Firm’s information resources competitively.
Potential Risks

There are many potential risks that a firm faces when attempting to use IT to outpace their competition.

- **Awakening a sleeping giant** – a large competitor with deeper pockets may be nudged into implementing IS with even better features
- **Demonstrating bad timing** – sometimes customers are not ready to use the technology designed to gain strategic advantage
- **Implementing IS poorly** – information systems that fail because they are poorly implemented
- **Failing to deliver what users want** – systems that don’t meet the firm’s target market likely to fail
- **Web-based alternative removes advantages** – consider risk of losing any advantage obtained by an information resource that later becomes available as a service on the web
- **Running afoul of the law** – Using IS strategically may promote litigation if the IS results in the violation of laws or regulations.

Summary

- Using IS for strategic advantage requires more than just knowing the technology.
- Remember that not just the local competition is a factor in success but the 5 competitive forces model reminds us of other issues.
- Value chain analysis show us how IS add value to the primary activity of a business.
- Know the risks associated with using IS to gain strategic advantage.