Strategic Use of Information Resources

Managing and Using Information Systems: A Strategic Approach
Introduction

This presentation enables a manager to understand the link between business strategy and information strategy.

The chapter looks at:

- How the strategic use of information resources has evolved.
- Highlights the difference between simply using IS and using IS strategically.
- Looks at how information resources can be used to support the strategic goals of an organization.
EVOLUTION OF INFORMATION RESOURCES
IT Eras (Figure 4.1)

- IT has evolved through 4 eras since the 1960s
- Era I (1960s-70s) focused on using IT to increase efficiency
- Era II (1980s) focused on using IT to increase worker productivity through the use of PCs
- Era III (1990s) used client-server technologies to improve the competitive position of the organization
- Era IV is about using IT to create value for the corporation.
- Era V (now) – IT becomes a commodity
Fig. 4.1 Eras of information usage in organizations

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<tr>
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<tbody>
<tr>
<td>Primary Role of IT</td>
<td>Efficiency</td>
<td>Effectiveness</td>
<td>Strategic</td>
<td>Value creation</td>
</tr>
<tr>
<td>Justify IT expenditure</td>
<td>ROI</td>
<td>Increasing productivity and decision making</td>
<td>Competitive position</td>
<td>Adding Value</td>
</tr>
<tr>
<td>Target of systems</td>
<td>Organizational</td>
<td>Individual manager/Group</td>
<td>Business processes</td>
<td>Customer, supplier, ecosystem</td>
</tr>
<tr>
<td>Information model</td>
<td>Application specific</td>
<td>Data-driven</td>
<td>Business-Driven</td>
<td>Knowledge-driven</td>
</tr>
<tr>
<td>Dominant technology</td>
<td>Mainframe-based</td>
<td>Minicomputer-based</td>
<td>Client-Server “distribution intelligence”</td>
<td>Internet “ubiquitous intelligence”</td>
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</table>
INFORMATION RESOURCES AS STRATEGIC TOOLS
Using Information resources to create strategic advantage

Strategic advantage must be crafted by combining all of the firm’s resources including:

- production resources,
- human resources, and
- Information resources

Information resources include not only data, but also technology, people and processes.
Examples of information resources available to a firm:

- IS infrastructure
- Information and knowledge
- Proprietary technology
- Technical skills of the IT staff
- End users of the IS
- *Relationship* between IT and business managers
- Business processes
What advantages might an information resource create?

- A manager might consider the following to understand the type of advantage the information resource might create:
  - What makes the information resource valuable?
  - Who appropriates the value created by the information resource?
  - Is the information resource equally distributed across firms?
  - Is the information resource highly mobile?
  - How quickly does the information resource depreciate?
HOW CAN INFORMATION RESOURCES BE USED STRATEGICALLY?
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
Porter’s Five Forces Model of Competitive Advantage (Fig. 4.2)

- Porter’s Five Forces Model divides entities in the competitive landscape into five groups as follows:
  - **Threat of New Entrants**: new firms that may enter a company's market.
  - **Bargaining Power of Buyers**: the ability of buyers to use their market power to decrease a firm’s competitive position.
  - **Bargaining Power of Suppliers**: the ability suppliers of the inputs of a product or service to lower a firm’s competitive position.
  - **Threat of Substitutes**: providers of equivalent or superior alternative products.
  - **Industry Competitors**: current competitors for the same product.
Figure 4.2 Porter’s competitive forces with potential strategic use of information

Potential threat of new entrants

Strategic use
- Cost effectiveness
- Market access
- Differentiation of product or service

Bargaining power of suppliers

Strategic use
- Selection of supplier
- Threat of backward integration

Industry competitors

Threat of substitutes

Strategic use
- Redefine products and services
- Improve price/performance

Bargaining power of buyers

Strategic use
- Switching costs
- Access to distribution channels
- Economics of scale

Strategic use
- Buyer selection
- Switching costs
- Differentiation
Porter’s Five Forces

- **Threat of New Entrants**: can be lowered if there are barriers to entry. Sometimes IS can be used to create barriers to entry.

- **Bargaining Power of Buyers**: can be high if it’s easy to switch. *Switching costs* are increased by giving buyers things they value in exchange such as lower costs or useful information.

- **Bargaining Power of Suppliers**: forces is strongest when there are few firms to choose from, quality is inputs is crucial or the volume of purchases is insignificant to the supplier.
Porter’s Five Forces (cont.)

- **Threat of Substitutes**: depends on buyers’ willingness to substitute and the level of switching costs buyer’s face.

- **Industry Competitors**: Rivalry is high when it is expensive to leave and industry, the industry’s growth rate is declining, or products have lost differentiation.
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.
- Identify uses of information resources to enhance their competitive position against competitive threats.
- Consider likely changes in competitive threats over time.
Porter’s Value Chain Model

Porter’s Value Chain Model looks at increasing competitive advantage by reorganizing the activities related to create, support and deliver a firm’s product or service.

These activities can be divided into two broad categories (See Figure 4.3):

- **Primary activities** that relate directly to how value is created for a product or service.
- **Support activities** that make the primary activities possible and that manage the coordinate of different activities.
Figure 4.3 Value Chain of the Firm

Firm Infrastructure
- Human Resource Management
- Technology Development

Procurement

Inbound Logistics
- Materials handling delivery

Operations
- Mfg. & assembly

Outbound Logistics
- Order processing
- Shipping

Marketing & Sales
- Product pricing
- Promotion
- Place

Service
- Customer service
- Repair
Gaining competitive value

The Value Chain model suggests that competition can come from two sources:

- Lowering the cost to perform an activity
- Adding value to a product or service so buyers will be willing to pay more.

Lowering costs only achieves competitive advantage if the firm possesses information on the competitor’s costs.

Adding value is a strategic advantage if a firm possesses accurate information regarding its customer such as: which products are valued? Where can improvements be made?
The Value System (Fig 4.4)

- The model can be extended by linking many value chains into a value system.
- Much of the advantage of supply chain management comes from understanding how information is used within each value chain of the system.
- This can lead to the formation of entire new businesses designed to change the information component of value-added activities.
Figure 4.4 The value system: interconnecting Relationships between organizations

Supplier’s value chain

Firm’s value chain

Channel’s value chains

Buyer’s value chains

21
The Value System and Strategic Alliances

- Many industries are experiencing the growth of strategic alliances that are directly linked to sharing information resources across existing value systems.

- An alliance between American Airlines, Marriott and Budget Rent-A-Car called AMRIS provides travelers with a single point of contact.

- Thus, electronically pooling information services of several companies can create competitive advantage by saving customers time.
Wiseman’s Strategic Options Generator

**Wiseman’s theory of strategic thrusts helps identify how a firm’s information resources can be used for competitive advantage.**

**Wiseman asks three questions to refine the process of identifying strategic opportunities:**

- What is the mode of the thrust?
- What is the direction of the thrust?
- What is the strategic target of the thrust?

**The heart of Wiseman’s model is built around five strategic thrusts organizations use to gain competitive advantage (see next slide).**
Types of Strategic Thrusts

- Differentiation Thrusts: focus resources on unfilled product or service gaps.
- Cost Thrusts: focus is on reducing costs or increasing competitor’s costs
- Innovation Thrusts: focus on creating new products or new ways to sell, create, produce or deliver products.
- Growth Thrusts: focus on increasing size of the market size or adding more value adding activities in the value chain
- Alliance Thrusts: combine with other groups to create a more competitive position.
What is the Mode?

- A firm has two choices for the mode of a strategic thrust:
  - The firm can act offensively to improve its competitive advantage -- or
  - A firm can act defensively to reduce the opportunities available to competitors.

- For example, a firm can innovate offensively to gain product leadership in a market, while others use innovation defensively to imitate the product leader.
What is the Direction?

A firm also has two choices for the direction of a strategic thrust:

- The firm can use the information system to create competitive advantage -- or
- A firm can provide the system to its chosen strategic target.

Many firms have done both: developed systems for internal use and then offered them to customers or suppliers.
What is the Strategic Target? (Figure 4.5)

Wiseman describes three target’s on which the firm can focus its strategic thrusts (see Figure 4.5):

- Suppliers
- Customers
- Competitors
Figure 4.5 Example of strategic targets

<table>
<thead>
<tr>
<th>Suppliers:</th>
<th>Customers:</th>
<th>Competitors:</th>
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<tbody>
<tr>
<td>Raw materials</td>
<td>Channel distributors</td>
<td>Direct</td>
</tr>
<tr>
<td>Information</td>
<td>Consumers</td>
<td>Potential</td>
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<tr>
<td>Labor</td>
<td>Industrial</td>
<td>Substitute</td>
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<tr>
<td>Capital</td>
<td>Reseller</td>
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<td>Insurance</td>
<td>Government</td>
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<td>Utilities</td>
<td>International</td>
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<td>Transportation</td>
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Strategic Options Generator

Wiseman combined the questions of mode, direction and strategic thrust into a strategic options generator (Figure 4.6).

Example: Dell computer’s initial thrust:
- Strategic Target: (direct market to) the customer
- Mode: Offensive
- Direction: Use IS to gain advantage

Second thrust: provide customer information to suppliers

Third thrust: let customers auto-configure systems directly via the Internet.
Figure 4.6 Strategic option generator

<table>
<thead>
<tr>
<th>What is the strategic target?</th>
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<td>Supplier</td>
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<th>What is the strategic market?</th>
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<th>What is the mode?</th>
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<th>What is the direction?</th>
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<tr>
<td>Use</td>
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FOOD FOR THOUGHT: TIME-BASED COMPETITIVE ADVANTAGE
Time-Based Competitive Advantage

- The Internet is increasing the pace of technological change by refocusing competitive efforts towards creating time-based competitive advantage.
- Information resources are the key to creating those advantages.
- For example, Dell’s direct strategy has been to build and deliver computers in as little as 5 days.
- Thus, the speed at which an organization adapts its business processes will be the true measure of its’ ability to maintain competitive advantage.
End