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

	1960s	1970s	1980s	2000	2010
Primary Role of IT	Efficiency	Effectiveness	Strategic	Value creation	Commodity
Justify IT expenditure	ROI	Increasing productivity and decision making	Competitive position	Adding Value	Maintaining market position
Target of systems	Organization	Individual manager/ Group	Business processes	Customer, supplier, ecosystem	Collaborative environments
Information model	Application specific	Data-driven	Business-Driven	Knowledge-driven	Knowledge-driven
Dominant technology	Mainframe-based	Minicomputer-based	Client-Server "distribution intelligence"	Internet "ubiquitous intelligence"	Mobile intelligence

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?

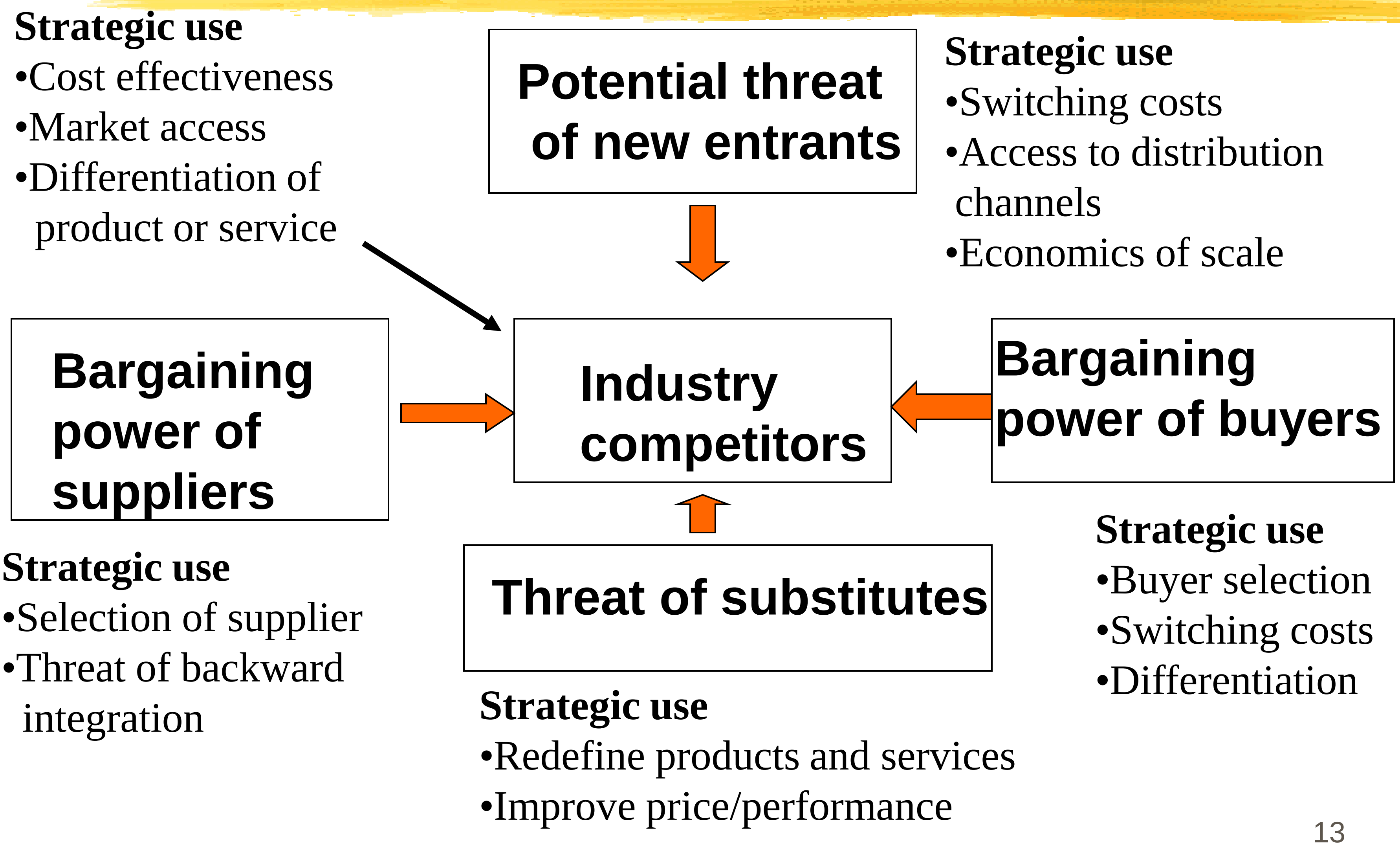
Aligning IS strategy with business strategy

- 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 companies 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



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.

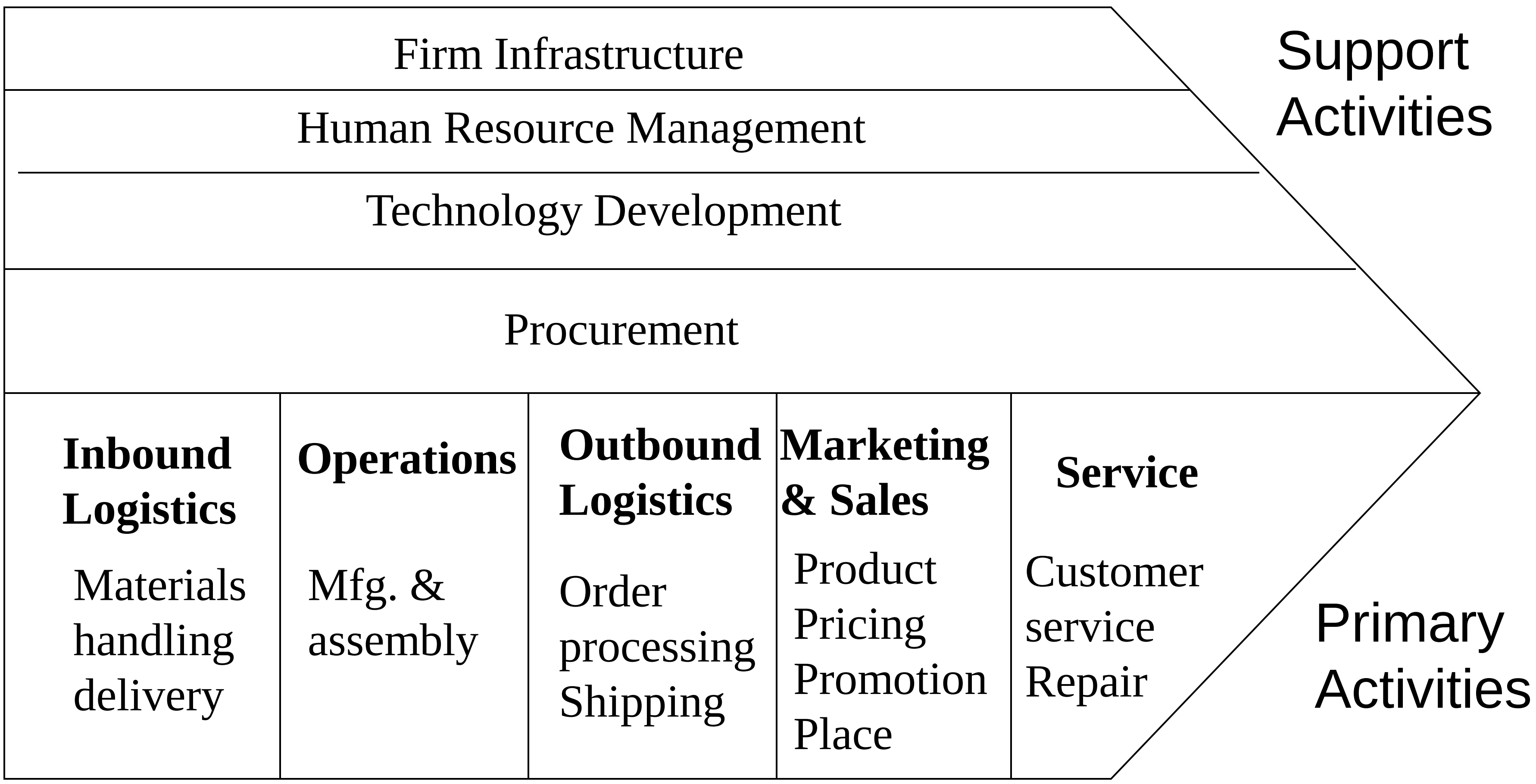
The Five Forces Model and IS

- 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



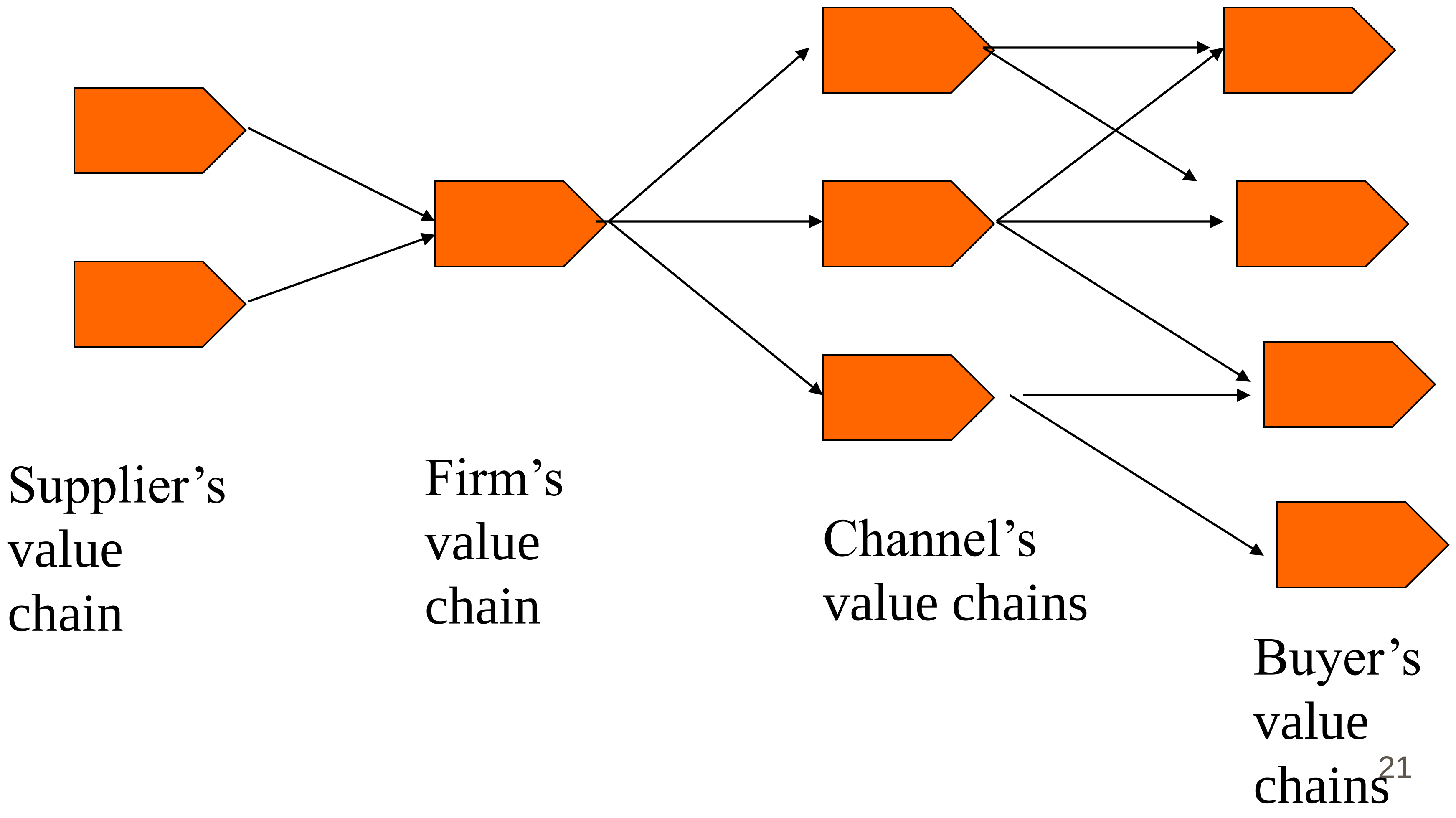
Gaining competitive value

- The Value Chain model suggest that competition can come from two sources:
  - **<u>Lowering the cost</u>** to perform an activity and
  - **<u>Adding value to a product or service</u>** 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



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 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 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

Suppliers:	**Customers:**	**Competitors:**
Raw materials	Channel distributors	Direct
Information	Consumers	Potential
Labor	Industrial	Substitute
Capital	Reseller	
Insurance	Government	
Utilities	International	
Transportation		

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

What is the strategic target?		
Supplier	Customer	Competitor

What is the strategic market?				
Differentiation	Cost	Innovation	Growth	Alliance

What is the mode?	
Offensive	Defensive

What is the direction?	
Use	Provide

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 the true measure of its’ ability to maintain competitive advantage.

End