Chapter 3

Information Systems, Organizations, and Strategy

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LEARNING OBJECTIVES

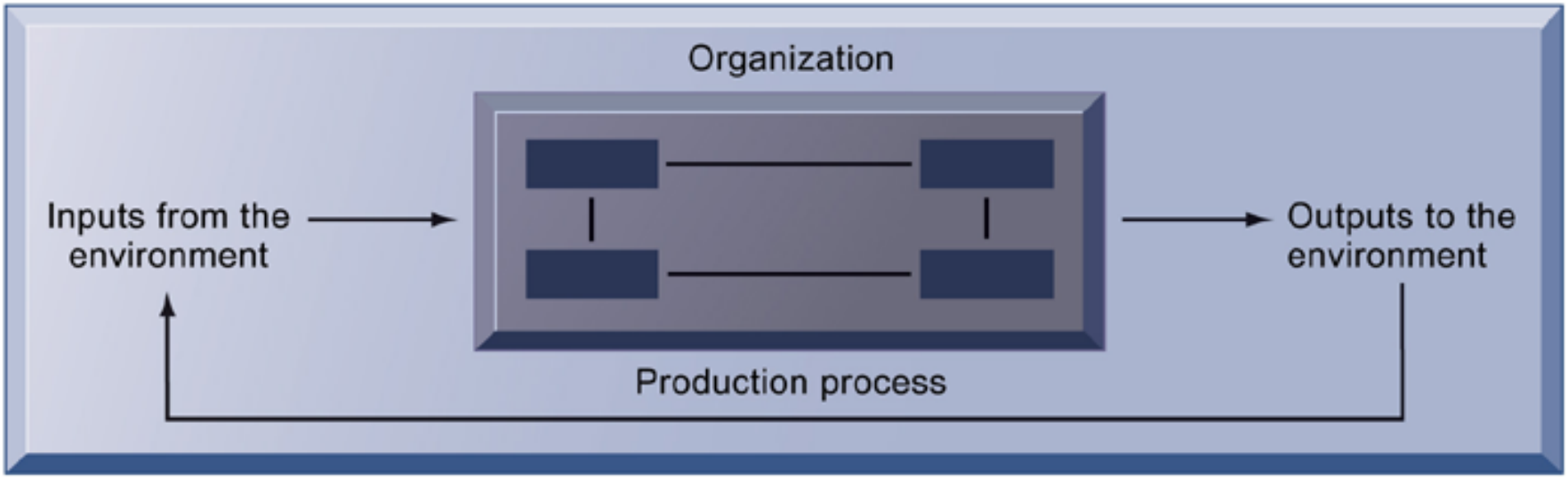
- **Identify and describe important features of organizations that managers need to know about in order to build and use information systems successfully.**
- **Demonstrate how Porter's competitive forces model helps companies develop competitive strategies using information systems.**
- **Explain how the value chain and value web models help businesses identify opportunities for strategic information system applications.**

Organizations and Information Systems

- **What is an organization?**
  - **Technical definition:**
    - Stable, formal social structure that takes resources from environment and processes them to produce outputs
    - A formal legal entity with internal rules and procedures, as well as a social structure
  - **Behavioral definition**:
    - A collection of rights, privileges, obligations, and responsibilities that is delicately balanced over a period of time through conflict and conflict resolution

Organizations and Information Systems

The Technical Microeconomic Definition of the Organization

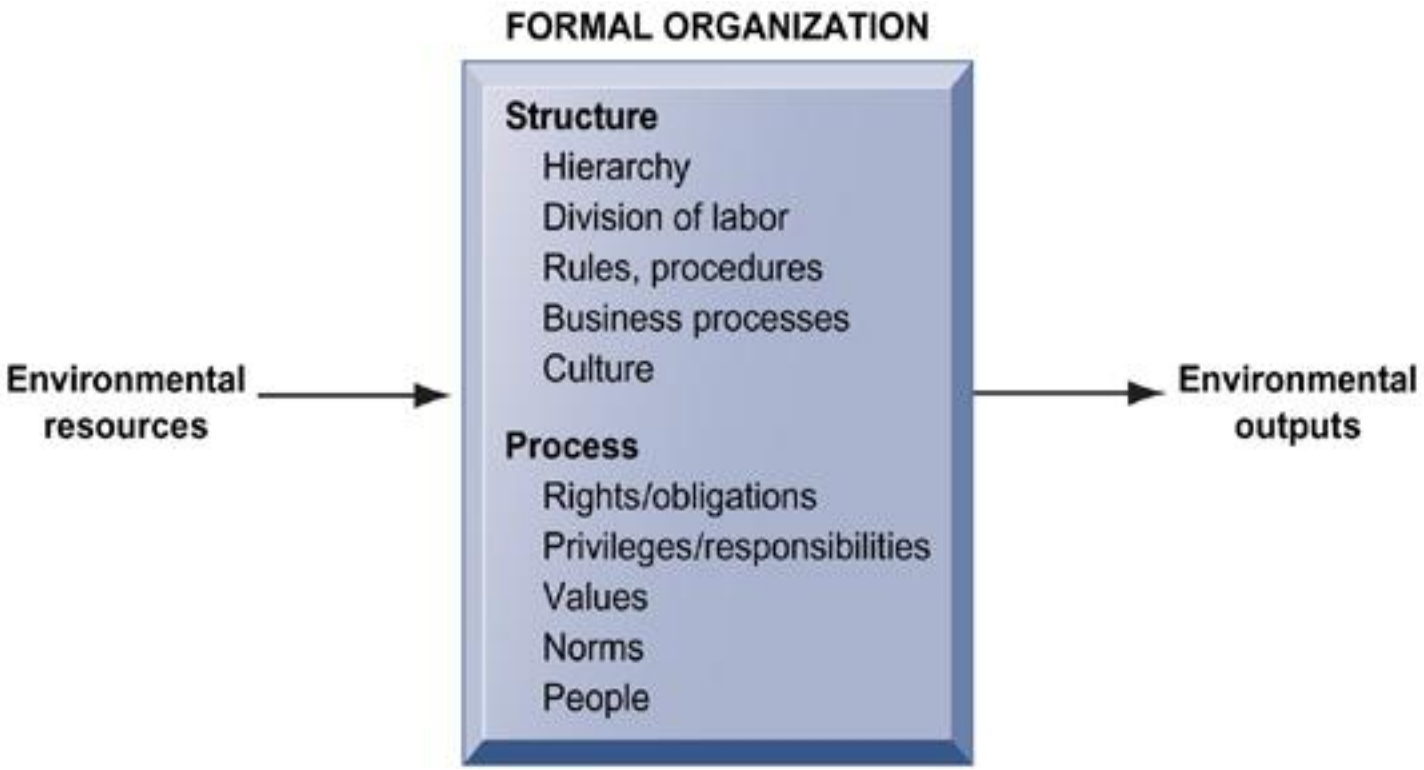


In the microeconomic definition of organizations, capital and labor (the primary production factors provided by the environment) are transformed by the firm through the production process into products and services (outputs to the environment). The products and services are consumed by the environment, which supplies additional capital and labor as inputs in the feedback loop.

Figure 3-2

Organizations and Information Systems

The Behavioral View of Organizations



The behavioral view of organizations emphasizes group relationships, values, and structures.

Figure 3-3

Organizations and Information Systems

Environments and Organizations Have a Reciprocal Relationship

Environments shape what organizations can do, but organizations can influence their environments and decide to change environments altogether. Information technology plays a critical role in helping organizations perceive environmental change and in helping organizations act on their environment.

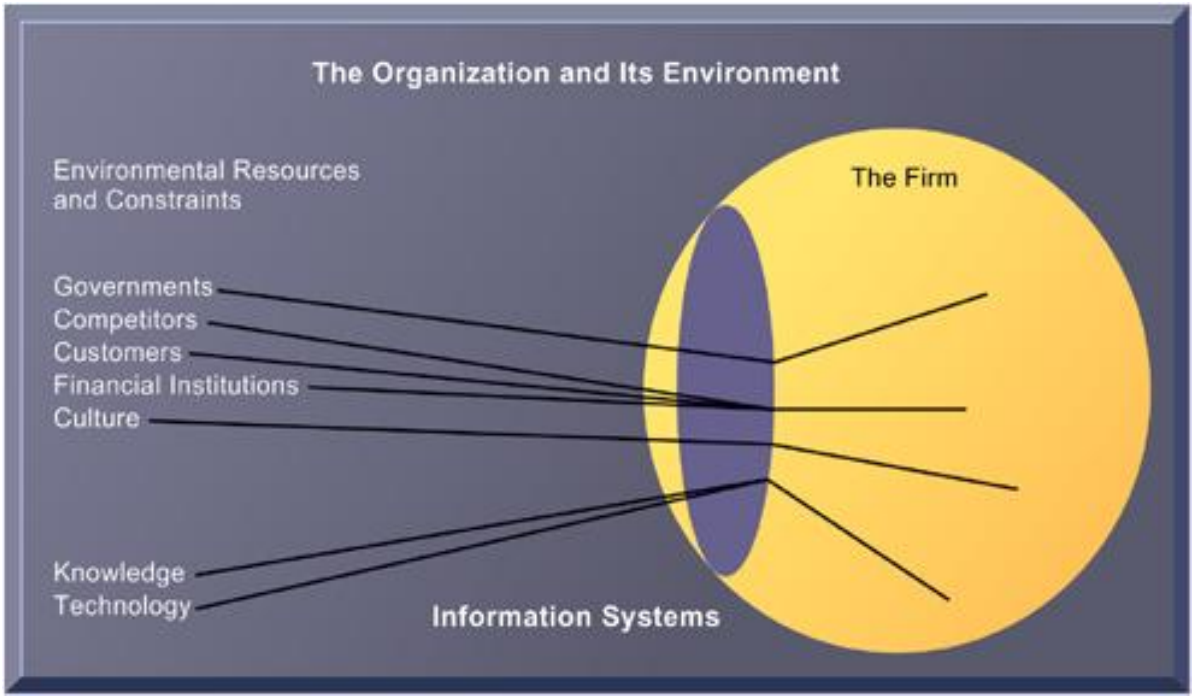


Figure 3-5

How Information Systems Impact Organizations and Business Firms

- **Economic impacts**
  - IT changes relative costs of capital and the costs of information
  - Information systems technology is a factor of production, like capital and labor
    - Information technology helps firms contract in size because it can reduce transaction costs (the cost of participating in markets)
      - Outsourcing

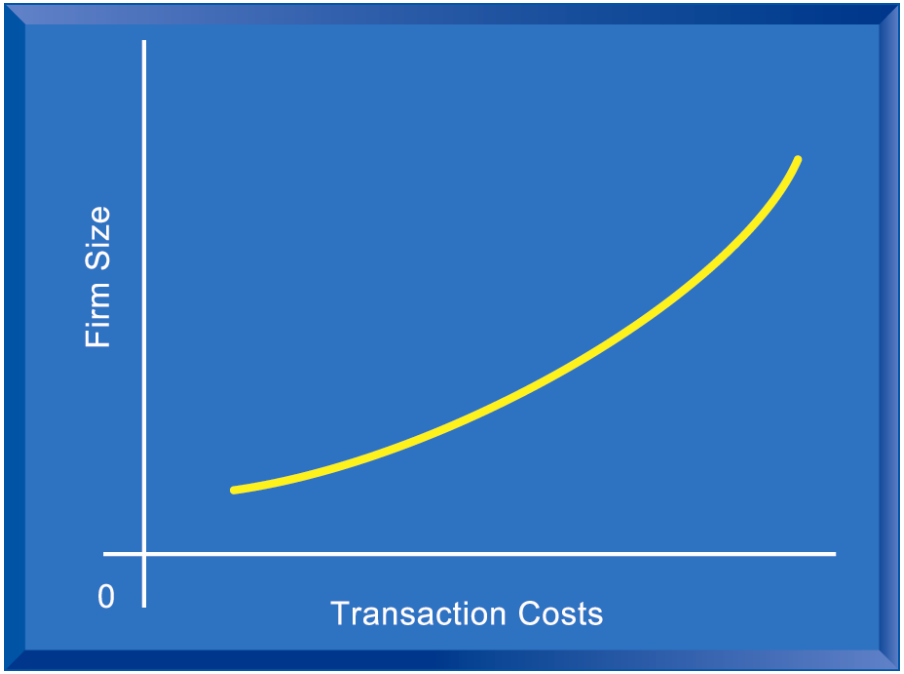
VIDEO CONFERENCING

How Information Systems Impact Organizations and Business Firms

- **Transaction cost theory**
  - Firms seek to economize on cost of participating in market (transaction costs)
  - IT lowers market transaction costs for firm, making it worthwhile for firms to transact with other firms rather than grow the number of employees

How Information Systems Impact Organizations and Business Firms

The Transaction Cost Theory of the Impact of Information Technology on the Organization



Firms traditionally grew in size to reduce transaction costs. IT potentially reduces transaction costs for a given size.

Figure 3-6

How Information Systems Impact Organizations and Business Firms

- **Agency theory:**
  - Firm is nexus of contracts among self-interested parties requiring supervision
  - Firms experience agency costs (the cost of managing and supervising) which rise as firm grows
  - IT can reduce agency costs, making it possible for firms to grow without adding to the costs of supervising, and without adding employees

How Information Systems Impact Organizations and Business Firms

The Agency Cost Theory of the Impact of Information Technology on the Organization

As firms grow in size and complexity, traditionally they experience rising agency costs.

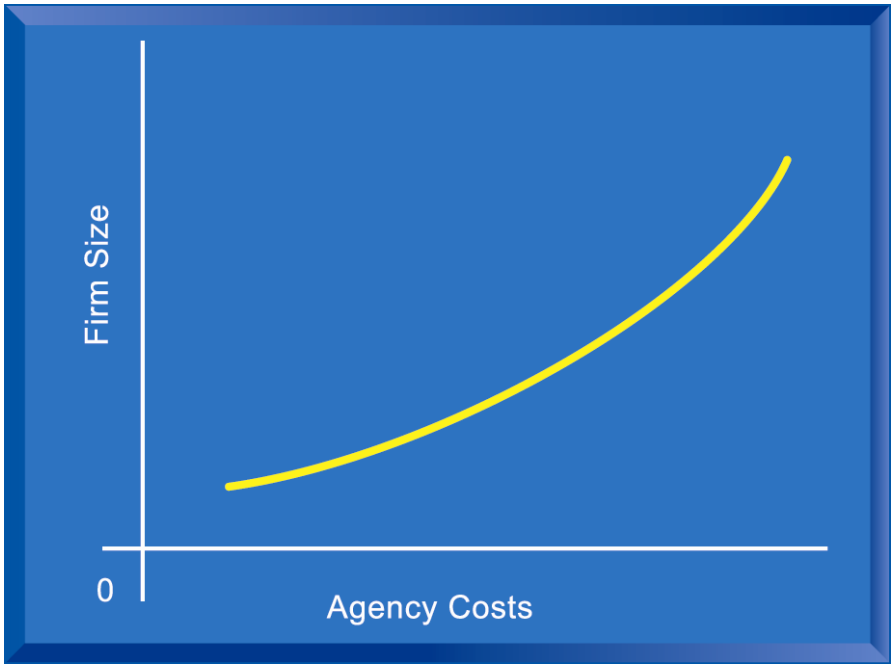


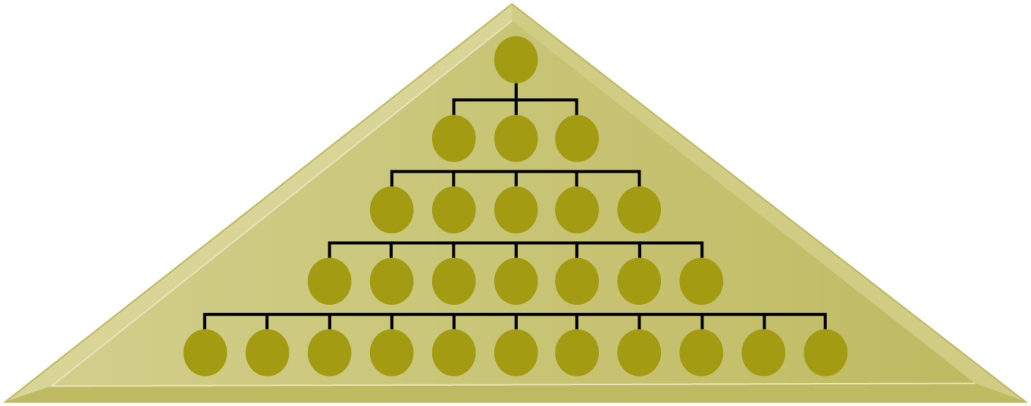
Figure 3-7

How Information Systems Impact Organizations and Business Firms

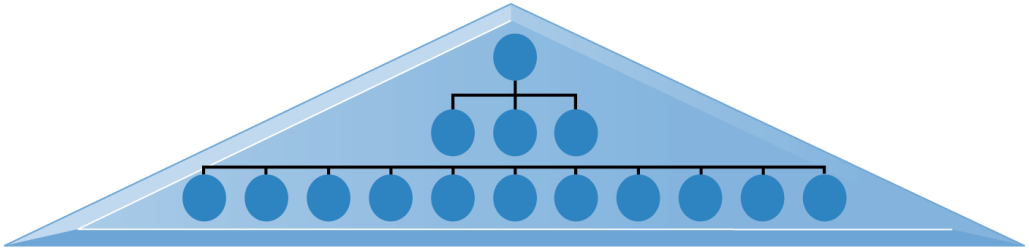
- **Organizational and behavioral impacts**
  - **IT flattens organizations**
    - Decision making pushed to lower levels
    - Fewer managers needed (IT enables faster decision making and increases span of control)
  - **Postindustrial organizations - Today**
    - Organizations flatten because in postindustrial societies, authority increasingly relies on knowledge and competence rather than formal positions

How Information Systems Impact Organizations and Business Firms

Flattening Organizations



A traditional hierarchical organization with many levels of management



An organization that has been "flattened" by removing layers of management

Information systems can reduce the number of levels in an organization by providing managers with information to supervise larger numbers of workers and by giving lower-level employees more decision-making authority.

Figure 3-8

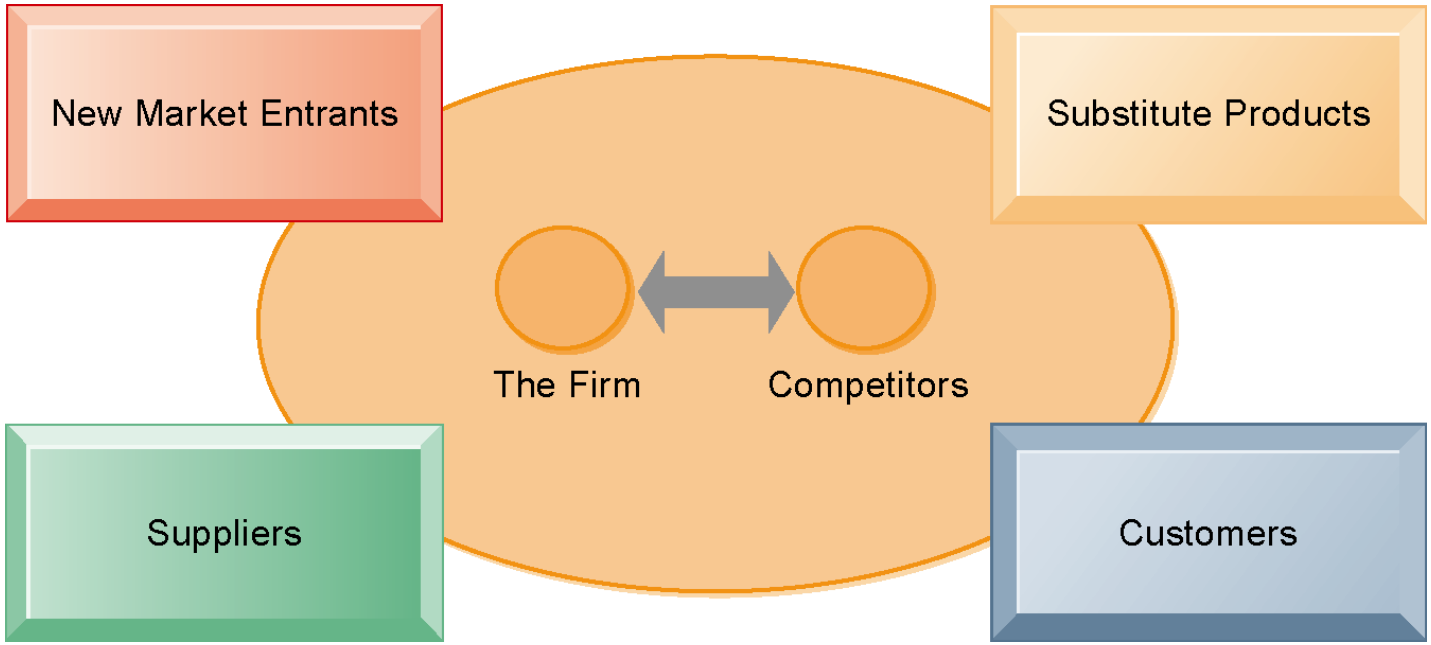
Examining Business Competitiveness By PORTER'S COMPETITIVE FORCES MODEL

Using Information Systems to Achieve Competitive Advantage

- **Why do some firms become leaders within their industry?**
- **Michael Porter's competitive forces model**
  - Provides general view of firm, its competitors, and environment
  - Five competitive forces shape fate of firm
    - Traditional competitors
    - New market entrants
    - Substitute products and services
    - Customers
    - Suppliers

Using Information Systems to Achieve Competitive Advantage

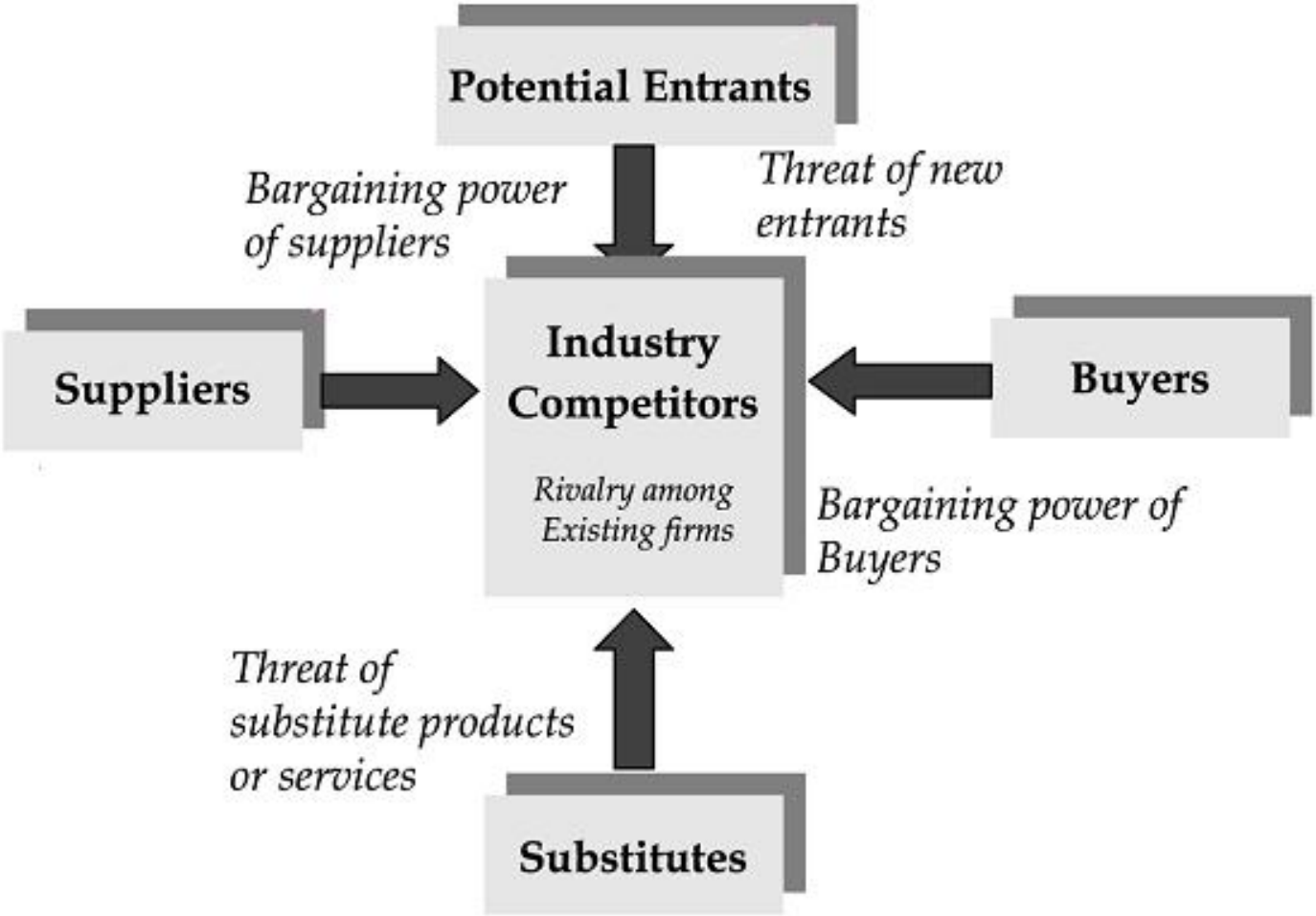
Porter's Competitive Forces Model



In Porter's competitive forces model, the strategic position of the firm and its strategies are determined not only by competition with its traditional direct competitors but also by four forces in the industry's environment: new market entrants, substitute products, customers, and suppliers.

Figure 3-10

Information Systems and Business Strategy



Using Information Systems to Achieve Competitive Advantage

- **Traditional competitors**
  - All firms share market space with competitors who are continuously devising new products, services, efficiencies, switching costs
- **New market entrants**
  - Some industries have high barriers to entry, e.g. computer chip business
  - New companies have new equipment, younger workers, but little brand recognition

Using Information Systems to Achieve Competitive Advantage

- **Substitute products and services**
  - Substitutes customers might use if your prices become too high, e.g. KASAPREKO
- **Customers**
  - Can customers easily switch to competitor's products? Can they force businesses to compete on price alone in transparent marketplace?
- **Suppliers**
  - Market power of suppliers when firm cannot raise prices as fast as suppliers

Using Information Systems to Achieve Competitive Advantage

- **Four generic strategies for dealing with competitive forces, enabled by using IT**
  - Low-cost leadership
  - Product differentiation
  - Focus on market niche
  - Strengthen customer and supplier intimacy

Using Information Systems to Achieve Competitive Advantage

- **Low-cost leadership**
  - produce products and services at a lower price than competitors while enhancing quality and level of service
  - Examples: Wal-Mart, Dell
- **Product differentiation**
  - Enable new products or services, greatly change customer convenience and experience
  - Examples: Google, Land's End, Apple iPhone

Using Information Systems to Achieve Competitive Advantage

- **Focus on market niche**
  - Use information systems to enable a focused strategy on a single market niche; specialize
  - Example: Hilton Hotels
- **Strengthen customer and supplier intimacy**
  - Use information systems to develop strong ties and loyalty with customers and suppliers; increase switching costs
  - Example: Chrysler, Amazon

Impact of Internet on Competitive Forces

- Reduces barriers to entry
- Enables new substitute products and services
- Shifts bargaining power to customer
- Raises firm's bargaining power over suppliers
- Suppliers benefit from reduced barriers to entry and from elimination of intermediaries
- Widens geographic market, increases number of competitors, reduces differentiation among competitors

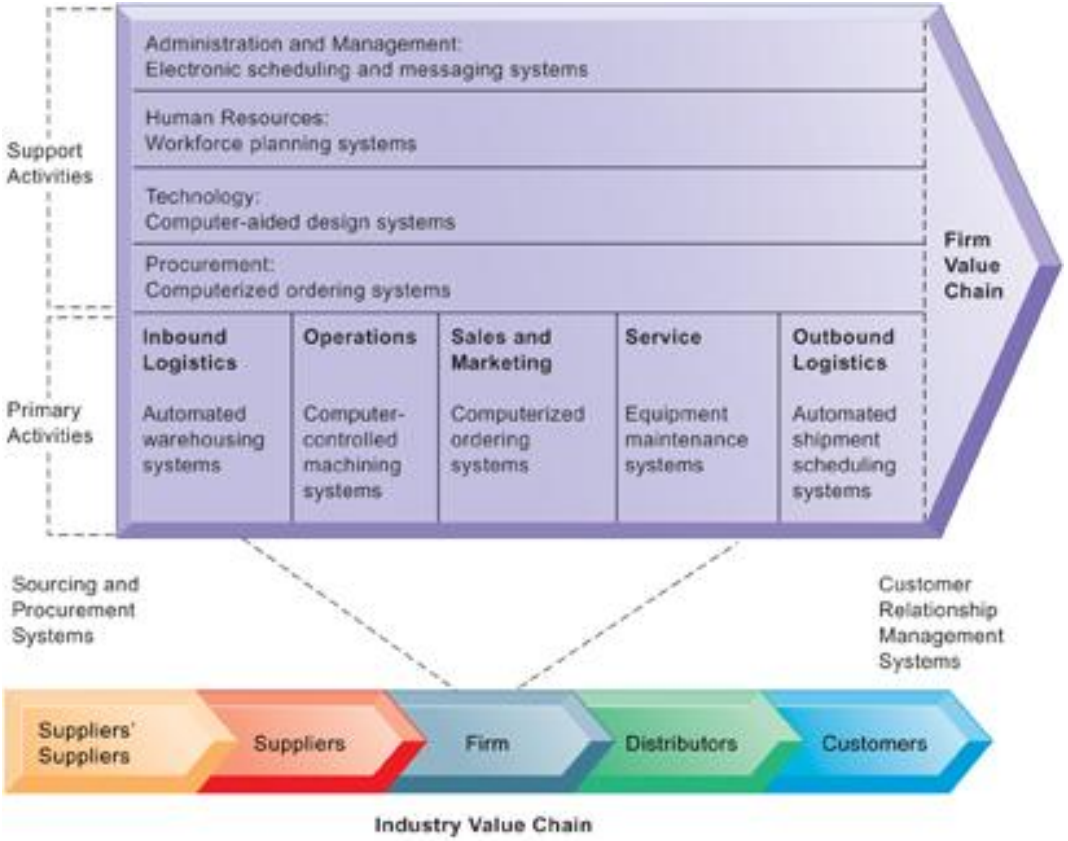
Examining Business Competitiveness By VALUE CHAIN MODEL

Using Information Systems to Achieve Competitive Advantage

- **Business value chain model**
  - Views firm as series of activities that add value to products or services
  - Highlights activities where competitive strategies can best be applied
    - Primary activities vs. support activities
  - At each stage, determine how information systems can improve operational efficiency and improve customer and supplier intimacy
  - Utilize benchmarking, industry best practices

Using Information Systems to Achieve Competitive Advantage

The Value Chain Model



This figure provides examples of systems for both primary and support activities of a firm and of its value partners that can add a margin of value to a firm's products or services.

Figure 3-11

Using Information Systems to Achieve Competitive Advantage

- **Value web**:
  - Collection of independent firms using highly synchronized IT to coordinate value chains to produce product or service collectively
  - More customer driven, less linear operation than traditional value chain

Using Information Systems to Achieve Competitive Advantage

- **Network-based strategies**
  - Take advantage of firm's abilities to network with each other
  - Include use of:
    - Network economics
    - Virtual company model
    - Business ecosystems

Using Information Systems to Achieve Competitive Advantage

- **Network economics**
  - **Traditional economics**: Law of diminishing returns
    - The more any given resource is applied to production, the lower the marginal gain in output, until a point is reached where the additional inputs produce no additional outputs
  - **Network economics**:
    - Marginal cost of adding new participant almost zero, with much greater marginal gain
    - Value of community grows with size
    - Value of software grows as installed customer base grows

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New Likes?	Lifetime Likes?	Monthly Active Users?
57 ↑1.8%	7,316	1,910 ↓14%

Active Users?

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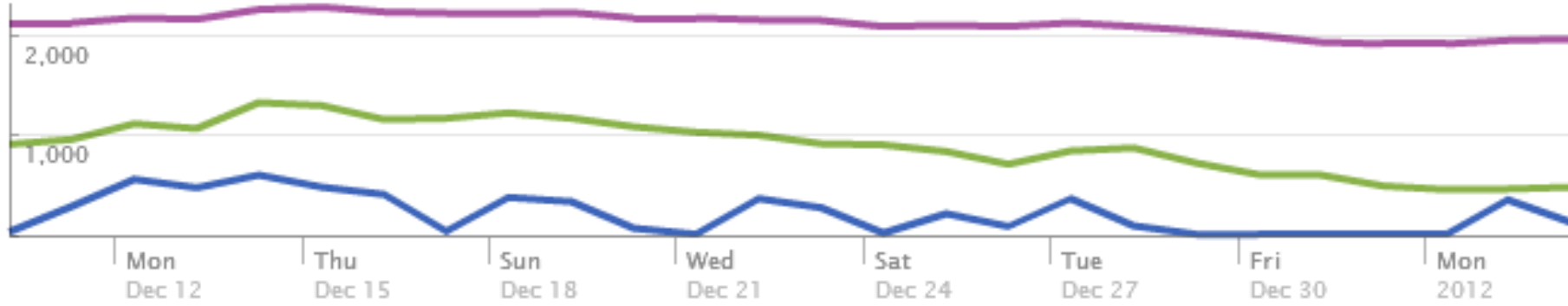

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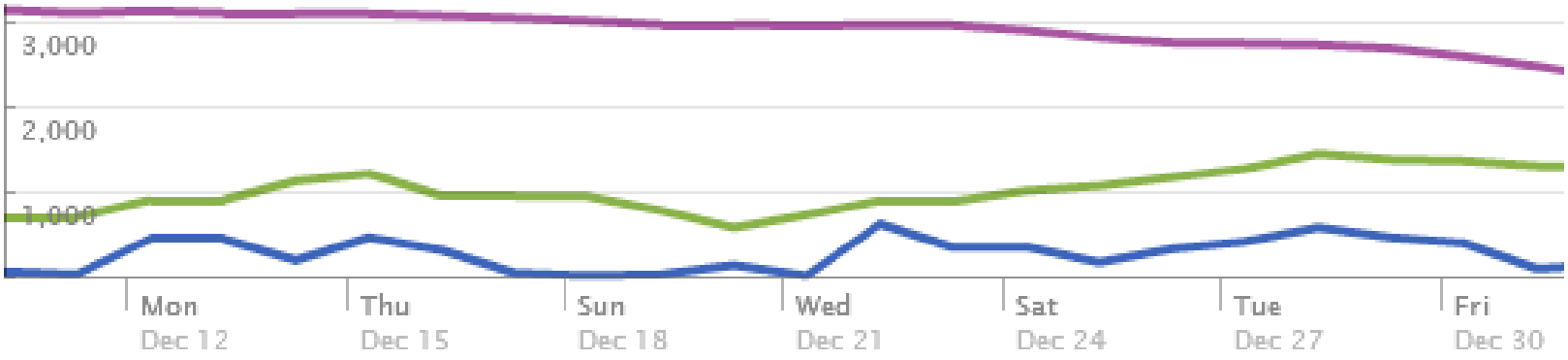
22 ↓68%	5,591	2,464 ↓23%

Active Users ?

Daily Active Users Weekly Active Users Monthly Active Users



Using Systems for Competitive Advantage: Management Issues

- **Sustaining competitive advantage**
  - Because competitors can retaliate and copy strategic systems, competitive advantage is not always sustainable; systems may become tools for survival
- **Performing strategic systems analysis**
  - What is structure of industry?
  - What are value chains for this firm?
- **Managing strategic transitions**
  - Adopting strategic systems requires changes in business goals, relationships with customers and suppliers, and business processes