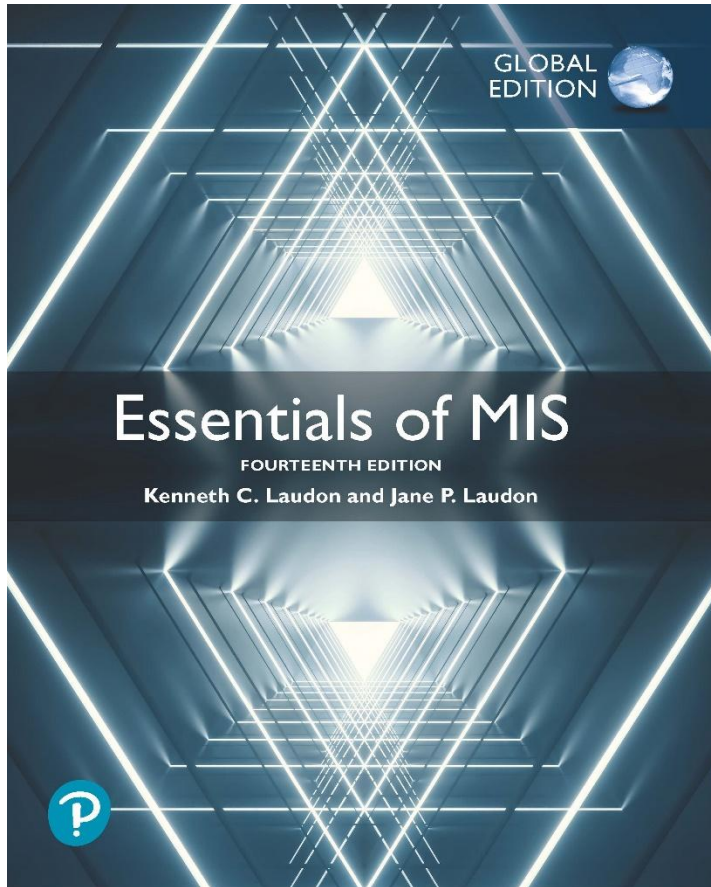


Essentials of Management Information Systems

Fourteenth Edition, Global Edition



Chapter 3

Achieving Competitive Advantage
with Information Systems

Learning Objectives

- 3.1** How do Porter's competitive forces model, the value chain model, synergies, core competencies, and network-based strategies help companies use information systems for competitive advantage?
- 3.2** How do information systems help businesses compete globally?
- 3.3** How do information systems help businesses compete using quality and design?
- 3.4** What is the role of business process management (B P M) in enhancing competitiveness?
- 3.5** How will M I S help my career?

Video Cases

- Case 1: G E Becomes a Digital Firm: The Emerging Industrial Internet
- Case 2: National Basketball Association: Competing on Global Delivery with Akamai O S Streaming

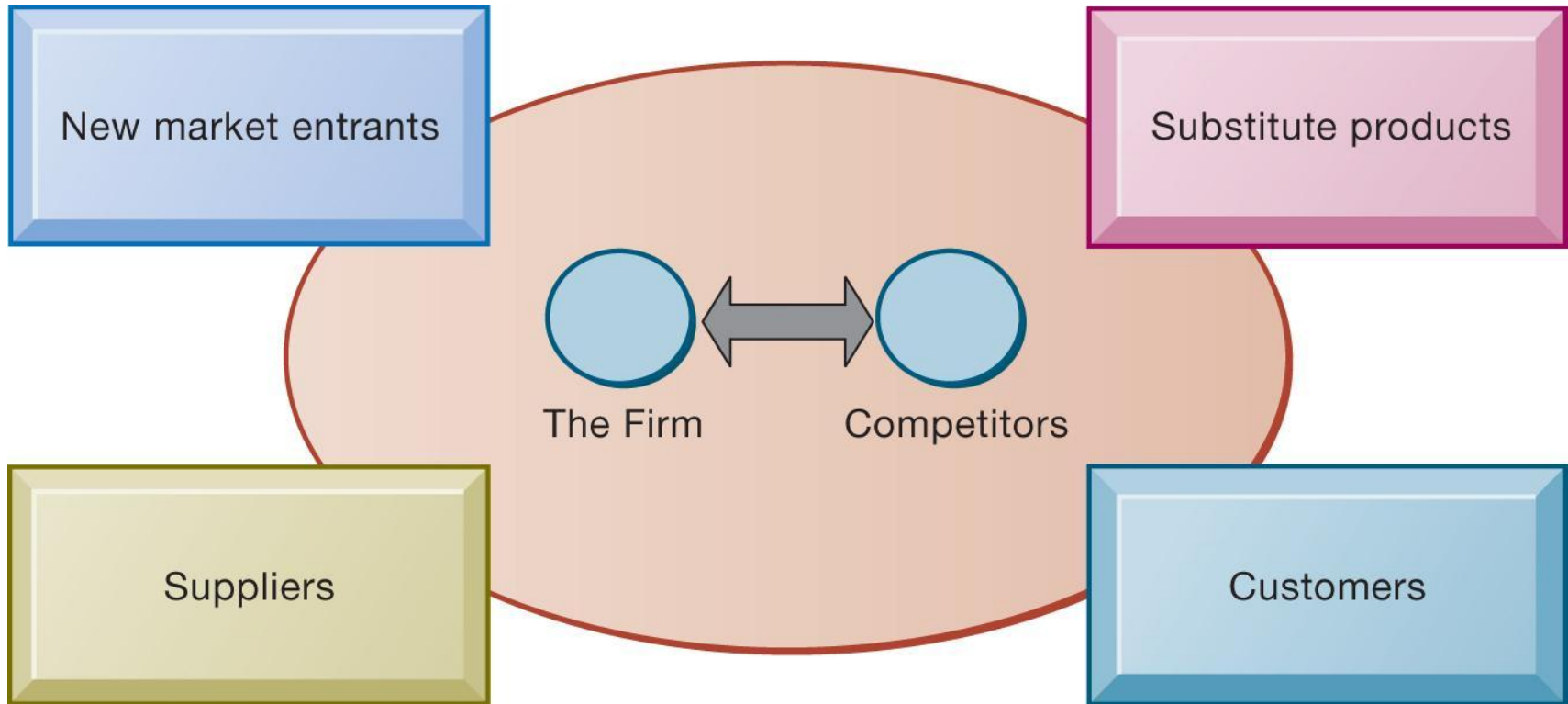
N26: A Bank Without Branches

- Problem
 - Improving operational efficiency
 - Improve customer experience
- Solutions
 - Online customer-centric processes
 - Improved cash-based operations
 - Security systems
- Illustrates use of IT to differentiate services and improve customer experience

Porter's Competitive Forces Model

- Five competitive forces shape fate of firm
 - Traditional competitors
 - New market entrants
 - Substitute products and services
 - Customers
 - Suppliers

Figure 3.1 Porter's Competitive Forces Model



Information System Strategies for Dealing with Competitive Forces

(1 of 5)

- Basic strategy: Align I T with business objectives
 - Identify business goals and strategies
 - Break strategic goals into concrete activities and processes
 - Identify metrics for measuring progress
 - Determine how I T can help achieve business goals
 - Measure actual performance

Information System Strategies for Dealing with Competitive Forces

(2 of 5)

- Low-cost leadership
 - Use information systems to achieve the lowest operational costs and the lowest prices
 - E.g. Walmart
 - Inventory replenishment system sends orders to suppliers when purchase recorded at cash register
 - Minimizes inventory at warehouses, operating costs
 - Efficient customer response system

Information System Strategies for Dealing with Competitive Forces

(3 of 5)

- Product differentiation
 - Use information systems to enable new products and services, or greatly change the customer convenience in using your existing products and services
 - E.g., Google's continuous innovations, Apple's i Phone
 - Use information systems to customize, personalize products to fit specifications of individual consumers
 - E.g., Nike's NIKE i D program for customized sneakers

Information System Strategies for Dealing with Competitive Forces

(4 of 5)

- Focus on market niche
 - Use information systems to enable specific market focus, and serve narrow target market better than competitors.
 - Analyzes customer buying habits, preferences
 - Advertising pitches to smaller and smaller target markets
 - E.g., Hilton Hotel's On Q System
 - Analyzes data collected on guests to determine preferences and guest's profitability

Information System Strategies for Dealing with Competitive Forces

(5 of 5)

- Strengthen customer and supplier intimacy.
 - Strong linkages to customers and suppliers increase switching costs and loyalty
 - Toyota: uses I S to facilitate direct access from suppliers to production schedules
 - Permits suppliers to decide how and when to ship supplies to plants, allowing more lead time in producing goods
 - Amazon: keeps track of user preferences for purchases, and recommends titles purchased by others

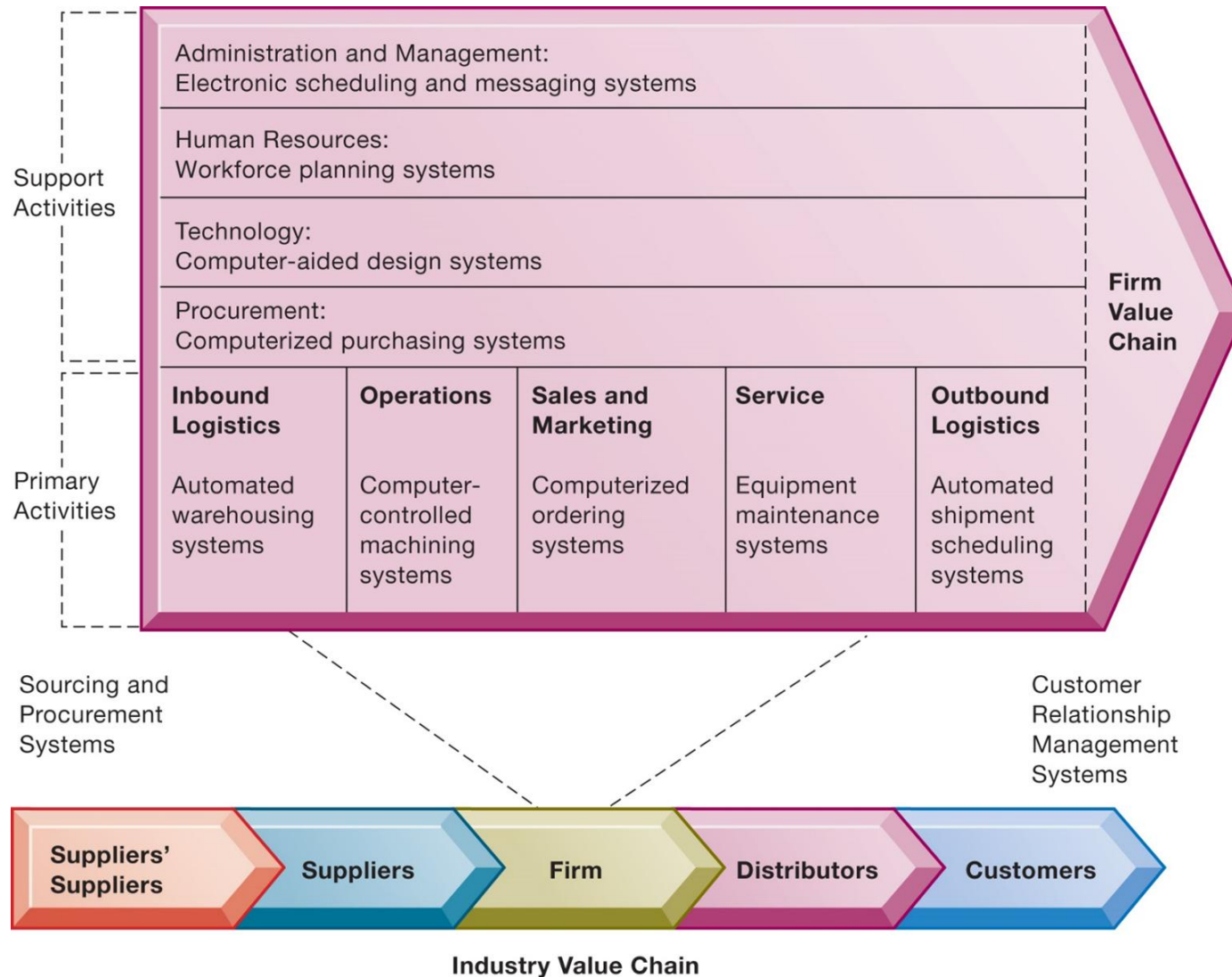
The Internet's Impact on Competitive Advantage

- Enables new products and services
- Encourages substitute products
- Lowers barrier to entry
- Changes balance of power of customers and suppliers
- Transforms some industries
- Creates new opportunities for creating new markets, building brands, and large customer bases
- Smart products and the Internet of Things

The Business Value Chain Model

- Highlights specific activities in a business where competitive strategies can best be applied and where information systems are likely to have a strategic impact.
 - Primary activities
 - Support activities
 - Benchmarking
 - Best practices

Figure 3.2 The Value Chain Model



The Value Chain Model

- The value chain model, developed by Michael Porter, outlines how a company creates value through various activities. It helps identify the primary and support activities that contribute to a firm's competitive advantage.
- This model is a useful framework for strategic planning and can help organizations optimize their operations to enhance profitability and competitiveness.

The Value Chain Model

- Primary Activities
 - **1.Inbound Logistics:** Receiving, warehousing, and inventory management of raw materials.
 - **2.Operations:** Processes that transform inputs into final products or services.
 - **3.Outbound Logistics:** Activities required to get the finished product to customers, including storage and order fulfillment.
 - **4.Marketing and Sales:** Strategies and activities to promote and sell the product.
 - **5.Service:** Activities related to maintaining and enhancing the product's value post-sale, such as customer support.

The Value Chain Model

- Support Activities
- **1.Firm Infrastructure:** Organizational structure, management, planning, and control systems(It's the overall support structure needed to manage the business.).
- **2.Human Resource Management:** Recruitment, hiring, training, and development of personnel.
- **3.Technology Development:** Research and development, process automation, and product design.
- **4.Procurement:** Acquiring goods and services needed for the company's operations.

The Value Chain Model

- **Use cases for the Value Chain Model**
 1. **Identify Competitive Advantage:** Analyze which activities provide the most value and differentiate the firm from competitors.
 2. **Cost Analysis:** Determine where costs can be reduced without sacrificing quality.
 3. **Improve Efficiency:** Streamline operations and processes for better performance.
 4. **Enhance Customer Value:** Focus on activities that improve customer satisfaction and loyalty.

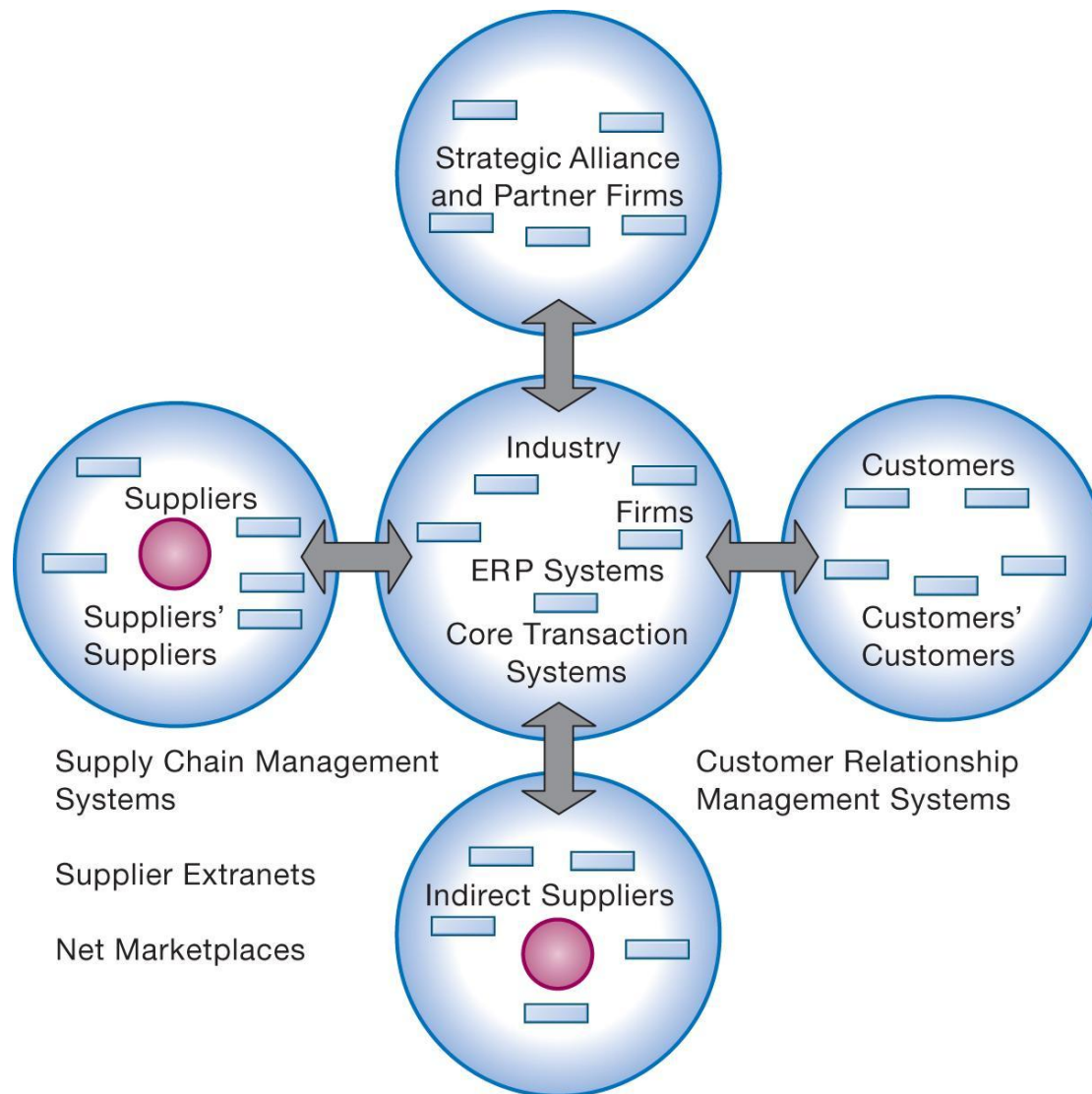
Interactive Session: Singapore as a Smart Nation

- Class Discussion
 - What are the factors driving the Smart Nation initiative?
 - What are the possible downsides of the Smart Nation projects?
 - Describe the smart city initiatives of an urban center in your country or region.

The Value Web

- A firm's value chain is linked to the value chains of its suppliers, distributors, and customers.
- Value web
 - Collection of independent firms that use information technology to coordinate their value chains to produce a product collectively
 - Value webs are flexible and adapt to changes in supply and demand

Figure 3.3 The Value Web



Value chain vs value web

	Value Chain Model	Value Web
Definition	A linear framework outlining the sequence of activities that create value within an organization.	A dynamic network of interconnected organizations, individuals, and processes that collaboratively create value.
Structure	Linear and sequential, often visualized as a chain of activities from inbound logistics to service.	Non-linear and networked, emphasizing collaboration and interdependencies among multiple stakeholders.
Focus	Internal processes and efficiencies to optimize value creation.	External collaboration, customer involvement, and adaptability to market changes.

Value chain vs value web

	Value Chain Model	Value Web
Stakeholders	Primarily focused on the organization and its direct operations (suppliers, operations, etc.).	Includes a wide range of stakeholders: suppliers, partners, customers, and even competitors in collaborative networks.
Flexibility	Generally more rigid due to its sequential nature; changes require re-evaluation of the entire chain.	Highly flexible, allowing for quick adaptation to changing market conditions and new partnerships.
Technology Role	Technology supports operational efficiencies and process improvements within the chain.	Technology enables real-time communication, collaboration, and data sharing across the network.
Customer Involvement	Customers are typically considered at the end of the chain (post-sale service).	Customers are actively involved throughout the value creation process, providing feedback and insights.

Value chain vs value web

	Value Chain Model	Value Web
Innovation	Focuses on improving existing processes for efficiency.	Encourages co-innovation through collaboration and shared knowledge among stakeholders.
Examples	Manufacturing processes, traditional supply chains.	Platforms like Amazon, where suppliers, distributors, and customers interact dynamically.

Synergies, Core Competencies, and Network-Based Strategies

- Large corporations comprised of business units
 - Financial returns overall are tied to performance of business units
- Information systems improve performance of business units by promoting
 - Communication
 - Synergies
 - Core competencies

Synergies

- When output of some business units can be used as inputs to other units
- When two firms can pool markets and expertise (e.g., recent bank mergers)
- Lower costs and generate profits
- Enabled by information systems that ties together disparate units so they act as whole

Core Competency

- Activities for which firm is world-class leader
 - E.g., world's best miniature parts designer, best package delivery service, etc
- Relies on knowledge gained over years of experience as well as knowledge research
- Any information system that encourages the sharing of knowledge across business units enhances competency
 - E.g., Procter & Gamble uses intranet to help people working on similar problems share ideas and expertise.

Core Competency

- **Core competencies** allow companies to focus on what they do best, enabling them to create products or services that are difficult for competitors to imitate.
- Core competencies typically have **three** characteristics:
 - Unique**: They are not easily replicated by competitors.
 - Valuable**: They contribute to creating value for customers.
 - Relevant**: They are essential for achieving strategic objectives and sustaining competitive advantage.

Network-Based Strategies

Network economics

- Marginal costs of adding another participant are near zero, whereas marginal gain is much larger
- E.g., larger number of participants in Internet, greater value to all participants

Virtual company

- Uses networks to link people, resources, and ally with other companies to create and distribute products without traditional organizational boundaries or physical locations
- **Network-Based Strategies** emphasize the importance of **collaboration, partnerships, and interdependencies** between firms and organizations. This can involve partnerships, joint ventures, alliances, outsourcing, and creating ecosystems that involve multiple stakeholders (suppliers, customers, competitors, etc)

Strategies vs value chain model

- **Synergies, core competencies, and network-based strategies** all add depth to **the value chain model** by emphasizing how companies create value either through internal efficiencies, leveraging unique strengths, or collaborating within a broader ecosystem.
- **The value chain** is a foundational framework that helps businesses identify and optimize the critical activities that deliver value to customers, while the other three concepts provide strategic tools for enhancing or expanding that value creation process.

Comparison between strategies

- **Synergies** are about the combined value achieved by collaboration, **core competencies** focus on what a company does best, and network-based strategies emphasize external partnerships to expand capabilities or access new opportunities.
- **Synergies and network-based strategies** both involve leveraging external relationships, but synergies are more about the value generated from specific collaborations (like mergers), while network-based strategies focus on continuous external relationships (like alliances).
- Core competencies are an internal focus and are what allow a company to differentiate itself, whereas synergies and network-based strategies are outward-looking, focusing on external collaboration.

What is Business Process Management (B P M)?

- Technology alone is often not enough to improve business
- Organizational changes often necessary
 - Minor changes in work habits
 - Redesigning entire business processes
- Aims to continuously improve processes
- Uses variety of tools and methodologies to
 - Understand existing processes
 - Design and optimize new processes

Steps in B P M

1. Identify processes for change
2. Analyze existing processes
3. Design new process
4. Implement new process
5. Continuous measurement

Figure 3.6 As-Is Business Process for Purchasing a Book from a Physical Bookstore

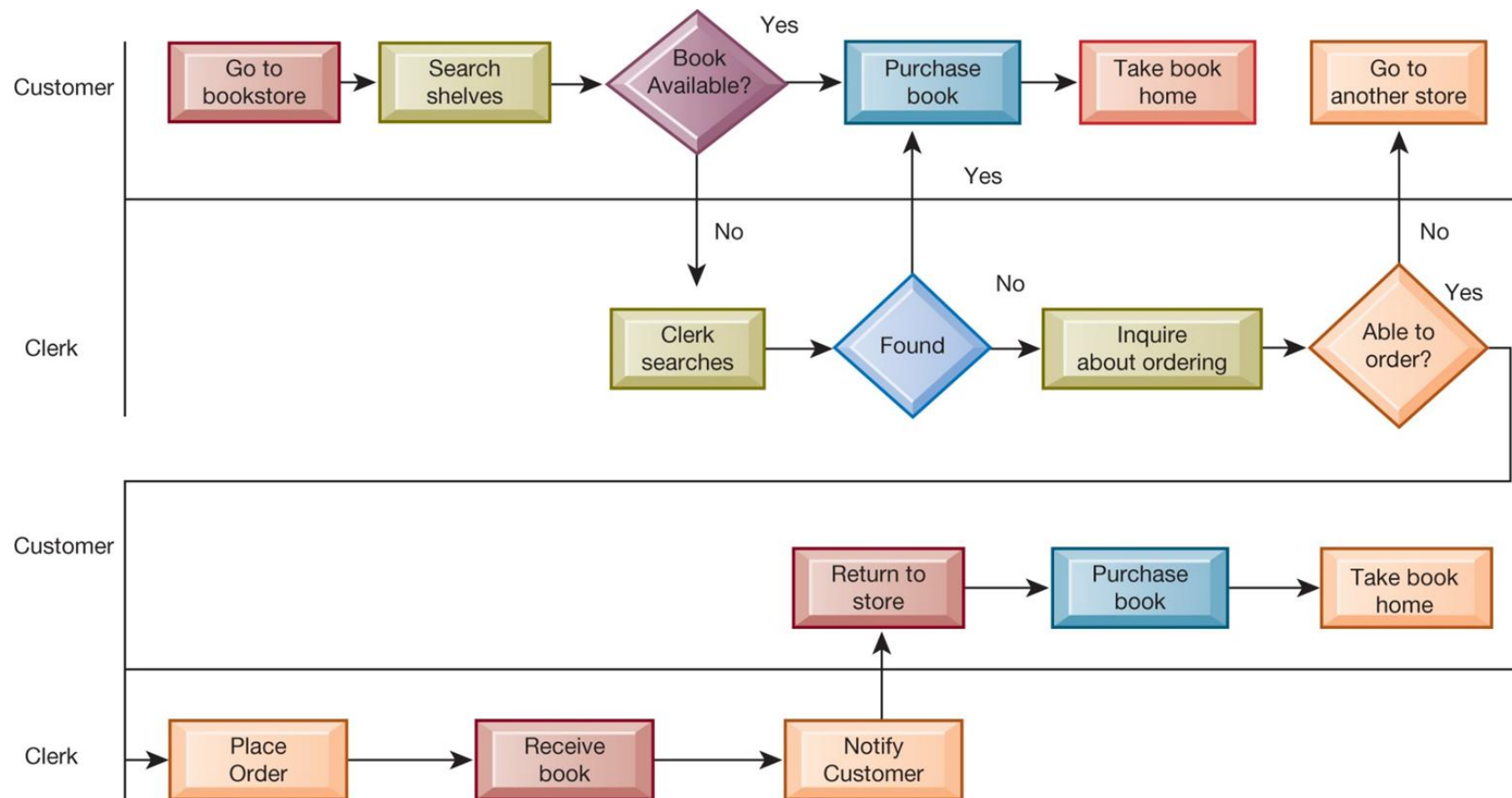
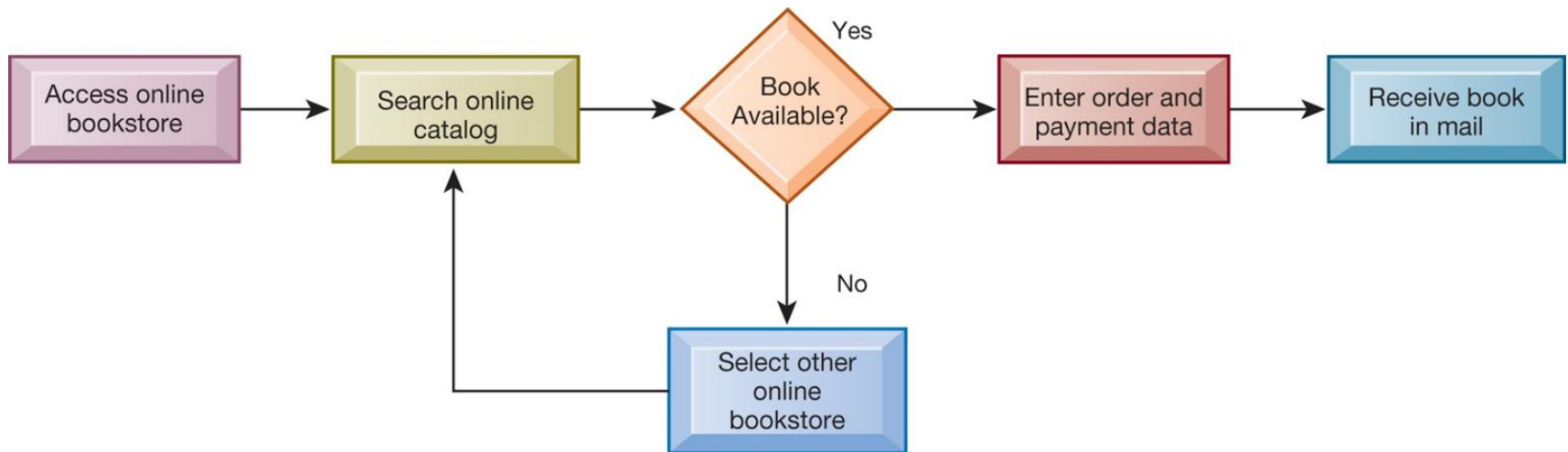


Figure 3.7 Redesigned Process for Purchasing a Book Online



Interactive Session – Organizations: Strategic Information Systems at Hong Kong Disneyland

- Class discussion
 - Discuss the various strategies adopted by Hong Kong Disneyland to attract visitors.
 - What problem did Disneyland face as it began to draw more visitors to the theme park? How was it overcome?
 - How does Hong Kong Disneyland manage its suppliers?
 - How does Hong Kong Disneyland determine which theme or character should be introduced in the park?

Business Process Reengineering

- A radical form of fast change
- Not continuous improvement, but elimination of old processes, replacement with new processes, in a brief time period
- Can produce dramatic gains in productivity
- Can produce more organizational resistance to change