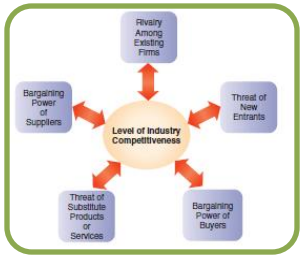
Source: Matthew Jacques/Shutterstock

Chapter 2: Gaining Competitive Advantage Through Information Systems

A firm has competitive advantage over rival firms when it can do something better, faster, more economically, or uniquely

Chapter 2 Learning Objectives

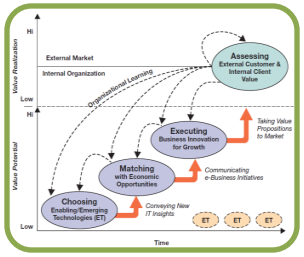


Enabling Organizational Strategy Through Information Systems

- Discuss how information systems can be used for automation, organizational learning, and strategic advantage.

Business Models in the Digital World

- Describe how information systems support business models used by companies operating in the digital world.



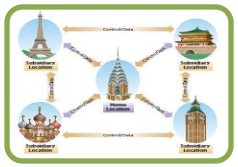
Valuing Innovations

- Explain why and how companies are continually looking for innovative ways to use information systems for competitive advantage.

Enabling Organizational Strategy Through Information Systems

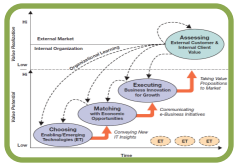
Enabling Organizational Strategy Through Information Systems

Discuss how information systems can be used for automation, organizational learning, and strategic advantage.



Business Models in the Digital World

Describe how information systems support business models used by companies operating in the digital world.



Valuing Innovations

Explain why and how companies are continually looking for innovative ways to use information systems for competitive advantage.

Organizational Decision-Making Levels

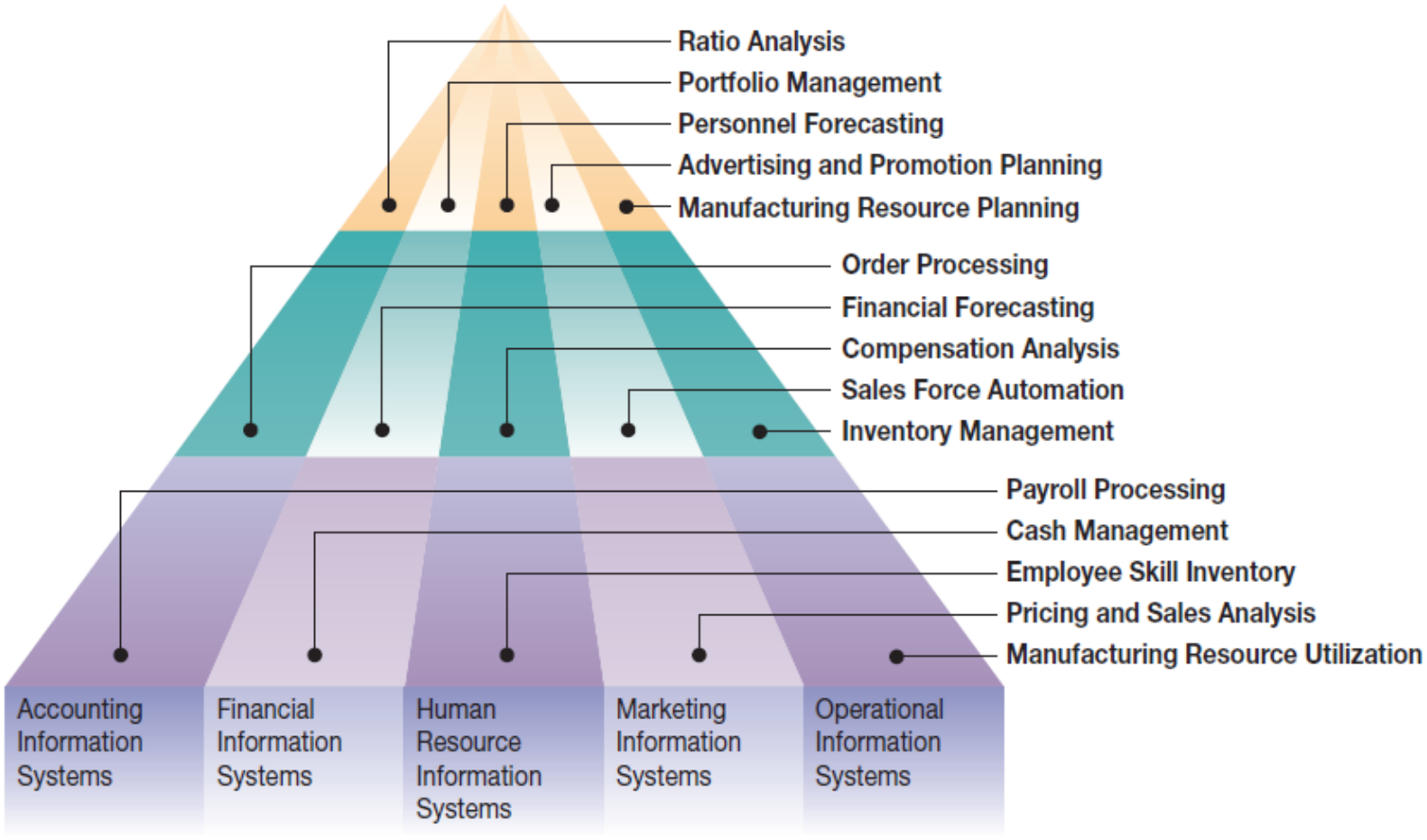
- Executive/Strategic Level
  - Upper Management
- Managerial/Tactical Level
  - Middle Management
- Operational Level
  - Operational Employees, Foremen, Supervisors

Organizational Decision-Making Levels: Operational Level

Organizational Decision-Making Levels: Managerial/Tactical Level

Organizational Decision-Making Levels: Executive/Strategic Level

Organizational Functions and Functional Levels

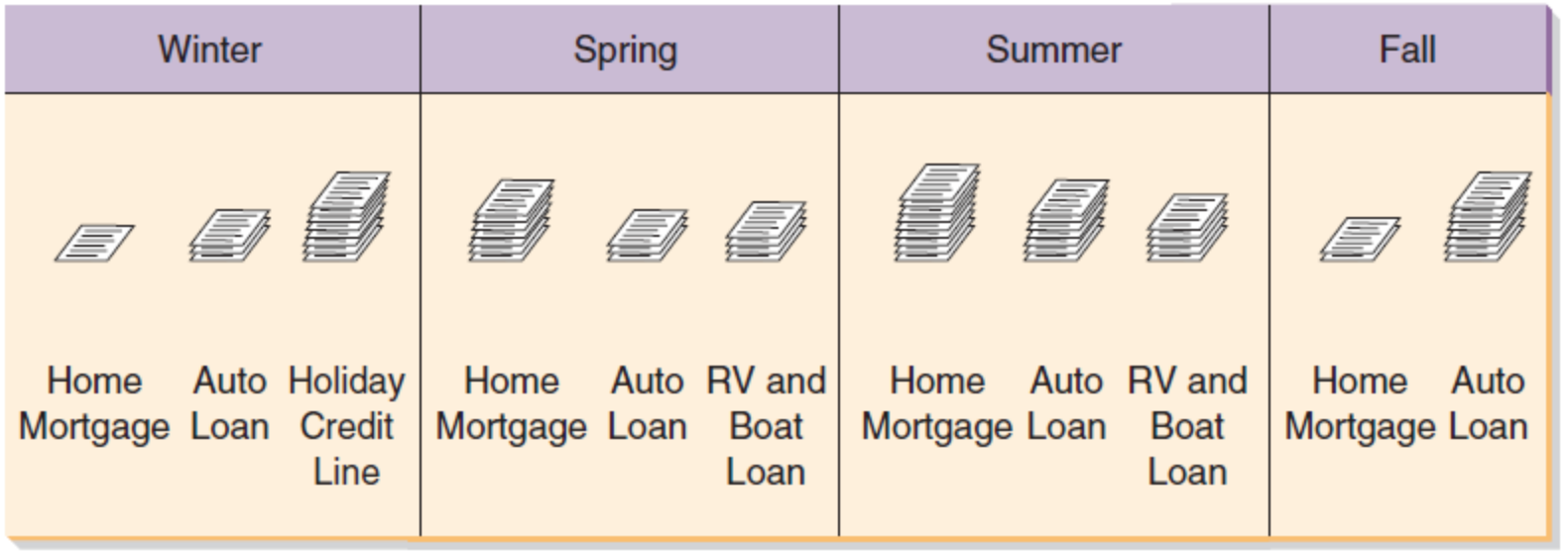


Information Systems for Automating: Doing Things Faster (Table 2.2)

Primary Activities of Loan Processing	Manual Loan Process	**Technology-Supported**	**Fully Automated**
Complete and submit application	Completed at home (1.5 days)	Completed at home (1.5 days)	Completed online (15 minutes)
Check application for errors	Done in batches (2.5 days)	Done in batches (2.5 days)	Computerized (1 sec)
Input data into the information system	NA some paper handling (1 hr)	Done in batches (2.5 days)	NA (already done)
Assess loan apps under $250K	Done by hand (15 days)	Computer assisted (1 hr)	Computer processed (1 sec)
Committee decides if loan over $250K	(15 days)	(15 days)	(15 days)
Applicant notified	Batches (1 week)	(1 day)	E-mail (1 sec)
Total time	25 to 40 days	5 to 20 days	15 min to 15 days

Information Systems for Organizational Learning: Doing Things Better

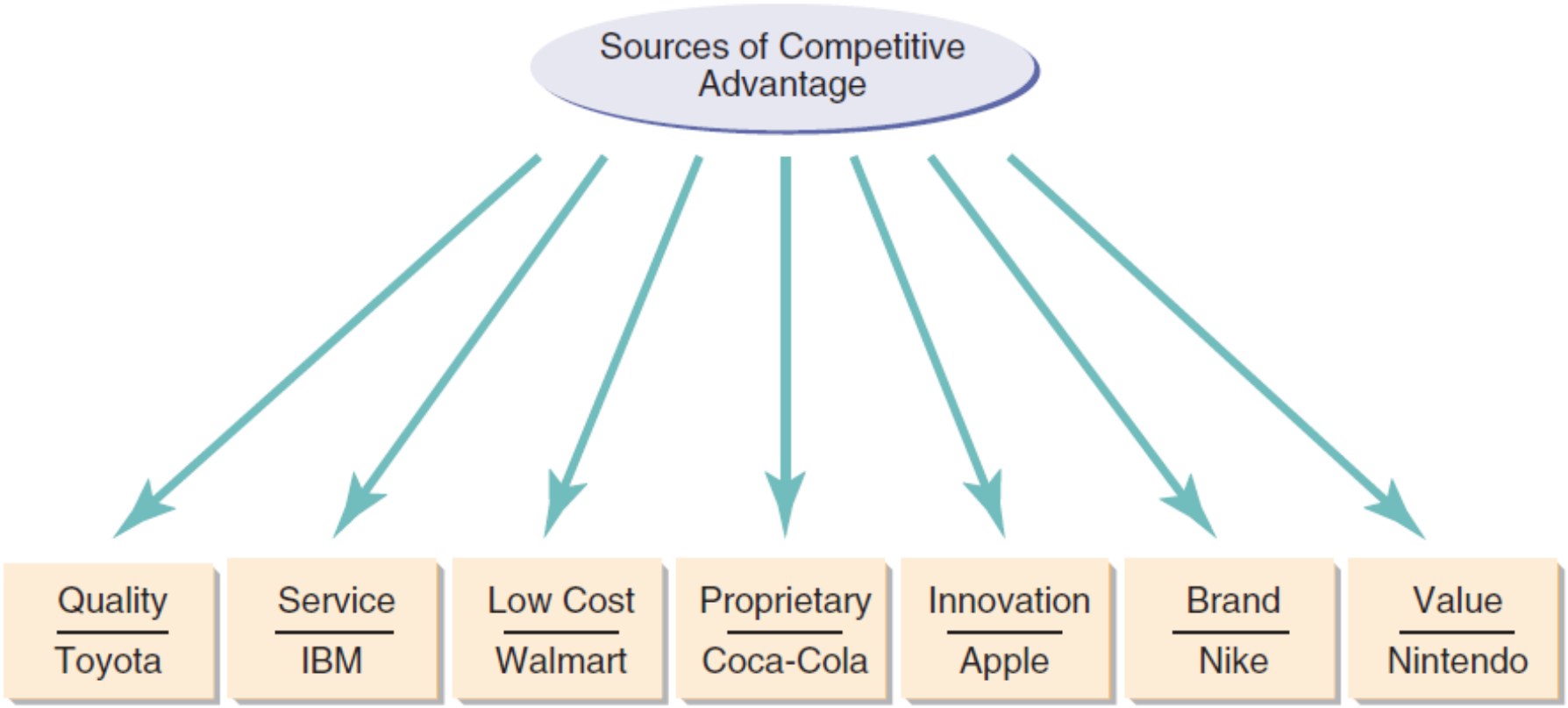
- Information systems can track and identify trends and seasonality
- Managers can use this to plan staffing levels and cross-training



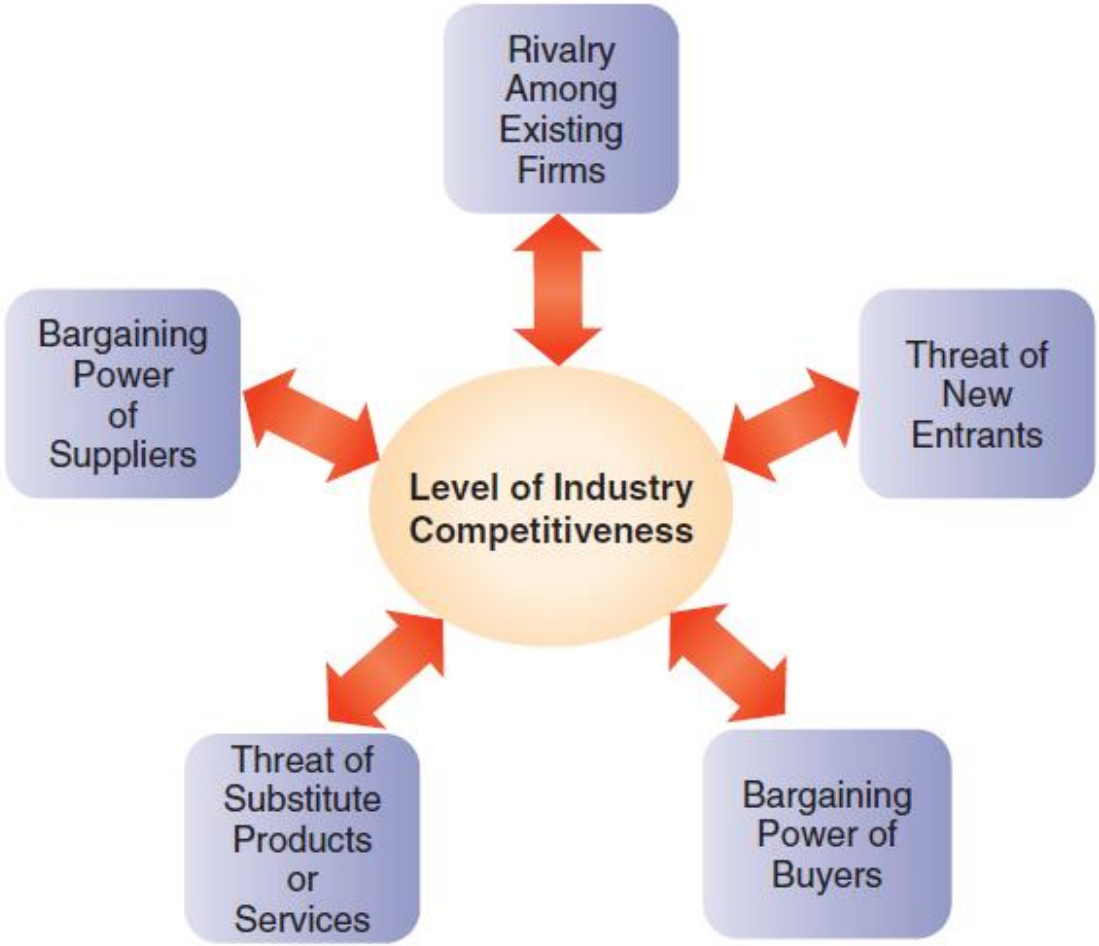
Information Systems for Supporting Strategy: Doing Things Smarter

- Firms have a competitive strategy
- Information systems should be implemented that support that strategy
  - Low-cost strategy implies information systems to minimize expenses
  - High-quality strategy implies information systems to support ensuring excellent quality and minimal defects

Sources of Competitive Advantage



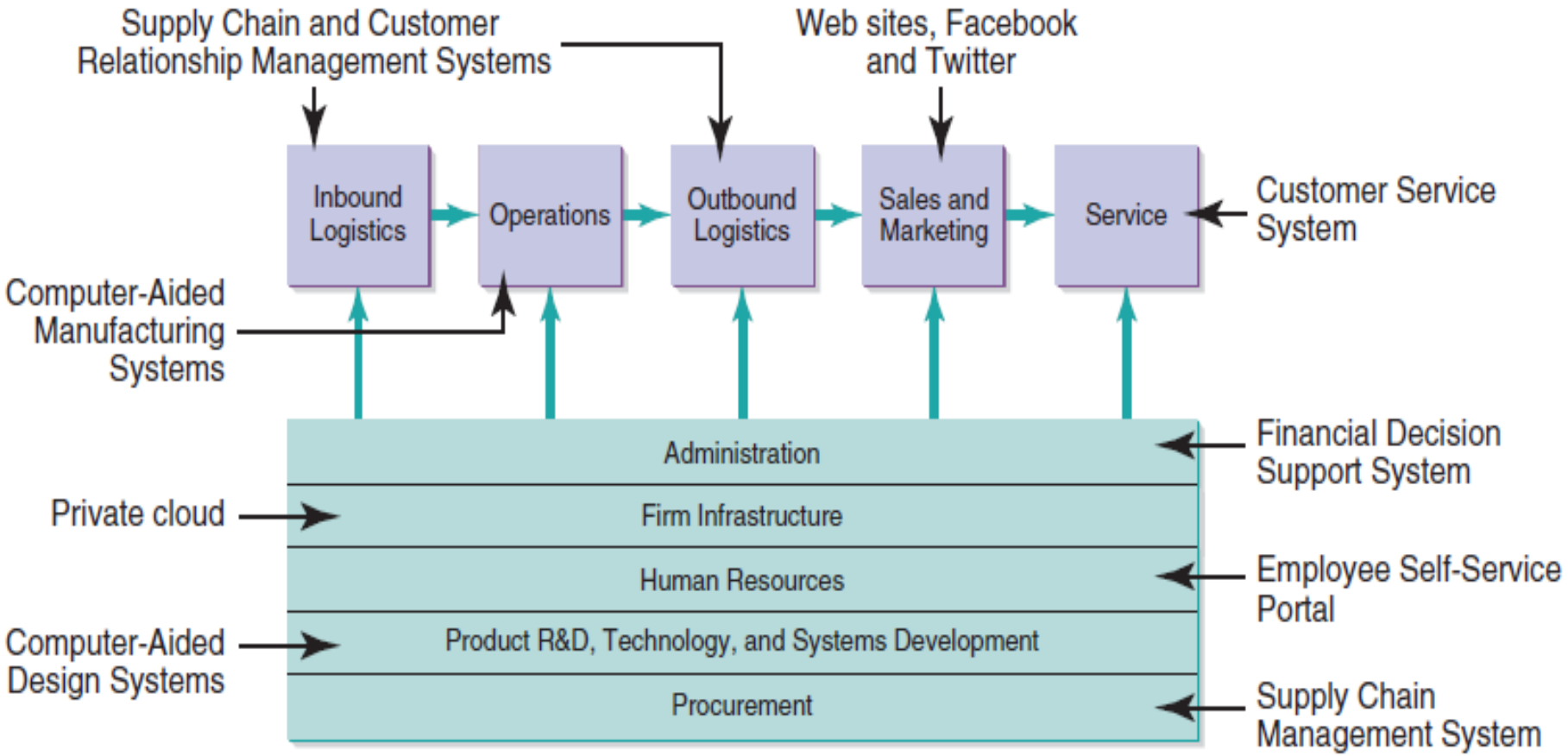
Identifying Where to Compete: Analyzing Competitive Forces



Influence of the Internet on Competitive Forces (Table 2.3)

Competitive Force	Implication for Firm	Internet Influence on Competitive Force
Rivals within your industry	Competition in price, product distribution, and service	Geographic reach, ease of product comparison, price competition
New entrants	Increased capacity in industry, reduced prices and market share	Reduced entry barriers and eased critical resource access
Customers' bargaining power	Reduced prices, demand for better quality and service	Wider customer choices, lower switching costs, higher customer bargaining power
Suppliers' bargaining power	Increased costs and reduced quality	Equalized access to suppliers
Threat of substitute products	Potential returns on product, decreased market share, customer loss	New substitutes created by Internet and IT

Identifying How to Compete: Role of IS in the Value Chain



The Technology/Strategy Fit

- There are never enough resources to implement every possible IS improvement
- Therefore, organizations try to maximize **business/IT alignment**
- This means matching the IT investment to the company's strategy
  - e.g., don't invest in IS that maximizes product differentiation if your company's strategic focus is on being a low-cost leader
- Companies that focus on the improvements and **business process management** that help their value creation strategy the most will see the greatest competitive benefit

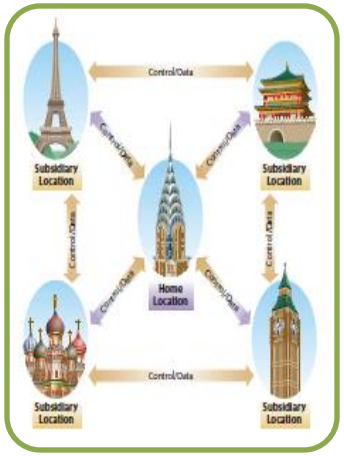
Assessing Value for the IS Infrastructure

- Economic Value
  - Direct financial impact
- Architectural Value
  - Extending business capabilities today and in the future
- Operational Value
  - Enhancing ability to meet business requirements
- Regulatory and Compliance Value
  - Complying with regulatory requirements

Business Models in the Digital World

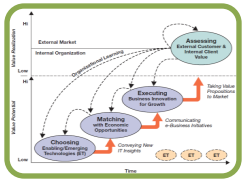
Enabling Organizational Strategy Through Information Systems

Discuss how information systems can be used for automation, organizational learning, and strategic advantage.



Business Models in the Digital World

Describe how information systems support business models used by companies operating in the digital world.



Valuing Innovations

Explain why and how companies are continually looking for innovative ways to use information systems for competitive advantage.

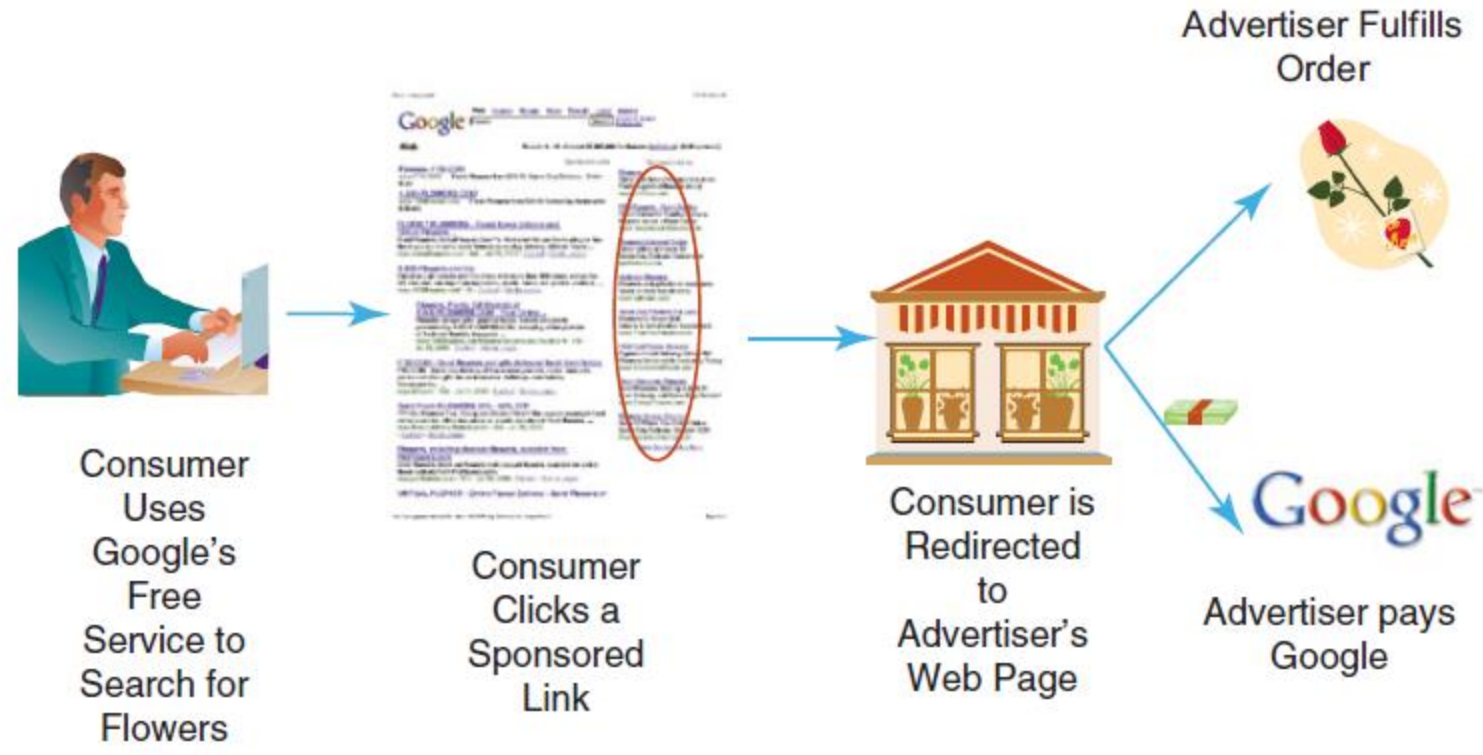
Business Models in the Digital World

- A business model reflects the following:
  1. What does a company do?
  2. How does a company uniquely do it?
  3. In what way (or ways) does the company get paid for doing it?
  4. What are the key resources and activities needed?
  5. What are the costs involved?

Components and E-business Revenue of a Business Model

- Components (Table 2.4)
  - Customer segments
  - Value proposition
  - Channels
  - Customer relationships
  - Revenue streams
  - Key resources
  - Key activities
  - Key partners
  - Cost structure
- Revenue Model (Table 2.5)
  - Affiliate marketing
  - Subscription
  - Licensing
  - Transaction fees and Brokerage
  - Traditional sales
  - Web advertising

Freeconomics: Free Products Are the Future



Yahoo! makes millions from its ***free*** Web-based e-mail service—reduced storage cost ➔ increased revenue per user

The Freeconomics Value Proposition

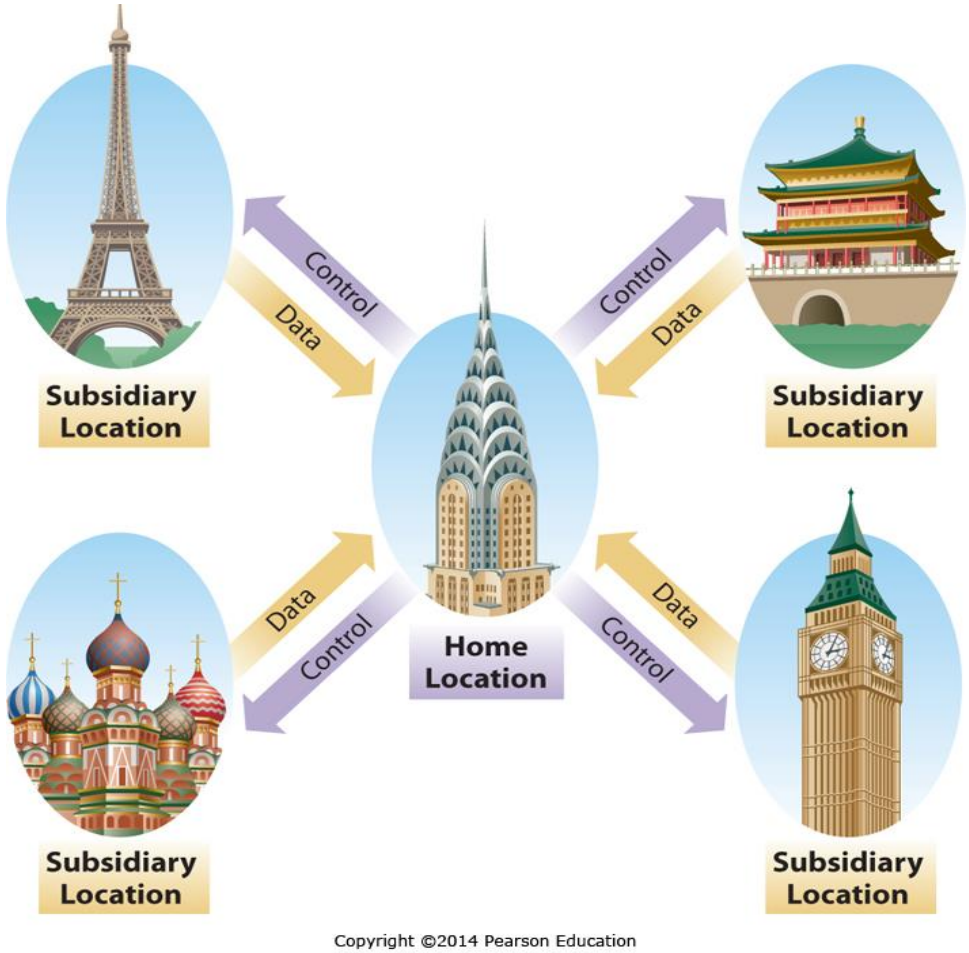
- Free doesn't mean no profit
  - Google gives away search
  - Users give Google search results their attention
    - This can include attention to sponsored links
    - Google sells space for sponsored links
  - Advertisers pay Google for that attention to sponsored links
    - Some users convert into customers
    - Customers pay advertising firms for their products

Applying Freeconomics to Various Industries

Approach	What it Means	Examples
Advertising	Free services are provided to customers and paid for by a third party	▪ Yahoo!'s banner ads ▪ Google's pay-per-click
Freemium	Basic services are free; a premium is charged for special features	▪ Skype ▪ Dropbox.com
Cross subsidies	Sale price of one item is reduced in order to sell something else of value	▪Comcast DVR ▪Free cell phone with two-year contract
Zero Marginal Cost	Products are distributed to customers without an appreciable cost to anyone	▪ iTunes music distribution ▪ Software distribution ▪ YouTube Video content
Labor Exchange	The act of customers using free services creates value	▪ Yahoo! Answers ▪ Answers.com
Gift Economy	People participate and collaborate to create value for everyone	▪ Open source software ▪ Wikipedia

International Business Strategies

- There are four international business strategies
  - Home replication
  - Global
  - Multidomestic
  - Transnational
- Each has pros and cons in terms of complexity, cost benefits, local responsiveness, and control



Copyright ©2014 Pearson Education

Home-Replication Strategy

- Focused domestically, homogenous markets
- International business an extension of home business
- Focus on core home market competencies
- Inability to react to local market conditions
- Domestic systems, limited communication, local databases

Global Business Strategy

- Central organization, standardized offerings across markets, homogenous markets
- Standardized products, economies of scale
- Inability to react to local market conditions
- Centralized systems, networks and data sharing between home office and subsidiaries

Multidomestic Business Strategy

- Decentralized federation, heterogeneous markets
- Quick reaction to changing local market conditions
- Differing products, lack of economies of scale, limited communication and knowledge sharing
- Decentralized systems, bidirectional communications, local databases

Transnational Business Strategy

- Both centralized and decentralized components, integrated network and market
- Benefits of both multi-domestic and global strategies
- Highly complex, difficult to manage
- Distributed/shared systems, enterprise-wide linkages, common global data resources

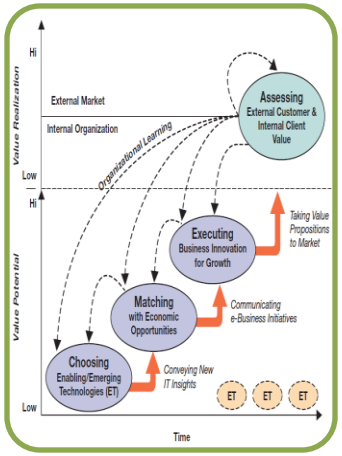
Valuing Innovations

Enabling Organizational Strategy Through Information Systems

Discuss how information systems can be used for automation, organizational learning, and strategic advantage.

Business Models in the Digital World

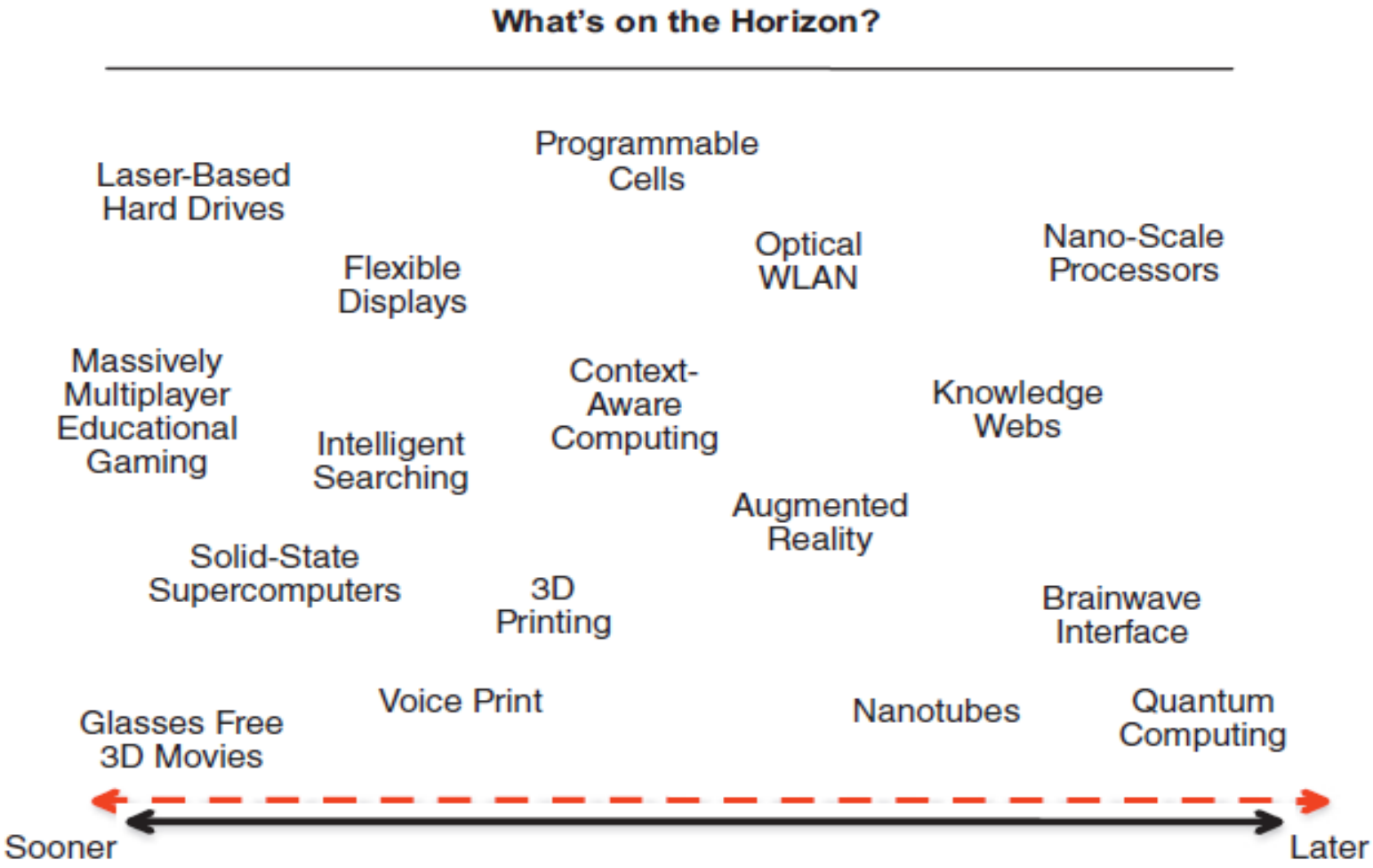
Describe how information systems support business models used by companies operating in the digital world.



Valuing Innovations

Explain why and how companies are continually looking for innovative ways to use information systems for competitive advantage.

Some Enabling Technologies on the Horizon



The Need for Constant IS Innovation

"The most important discoveries of the next 50 years are likely to be ones of which we cannot now even conceive" *John Maddox*

- Transformation technologies are difficult or even impossible to see coming
  - Think of the Internet in 1999
  - Many of the critical discoveries in the next 50 years will be in areas we don't see coming

Successful Innovation Is Difficult

- Innovation Is Often Fleeting
  - The pace of change is fast
  - Smart rivals quickly adopt any advantage
- Innovation Is Often Risky
  - Competing technologies result in a winner and a loser (e.g., Blu-Ray and HD DVD)
- Innovation Choices Are Often Difficult
  - It is impossible to pursue all opportunities
  - It is hard to predict which opportunities will lead to success

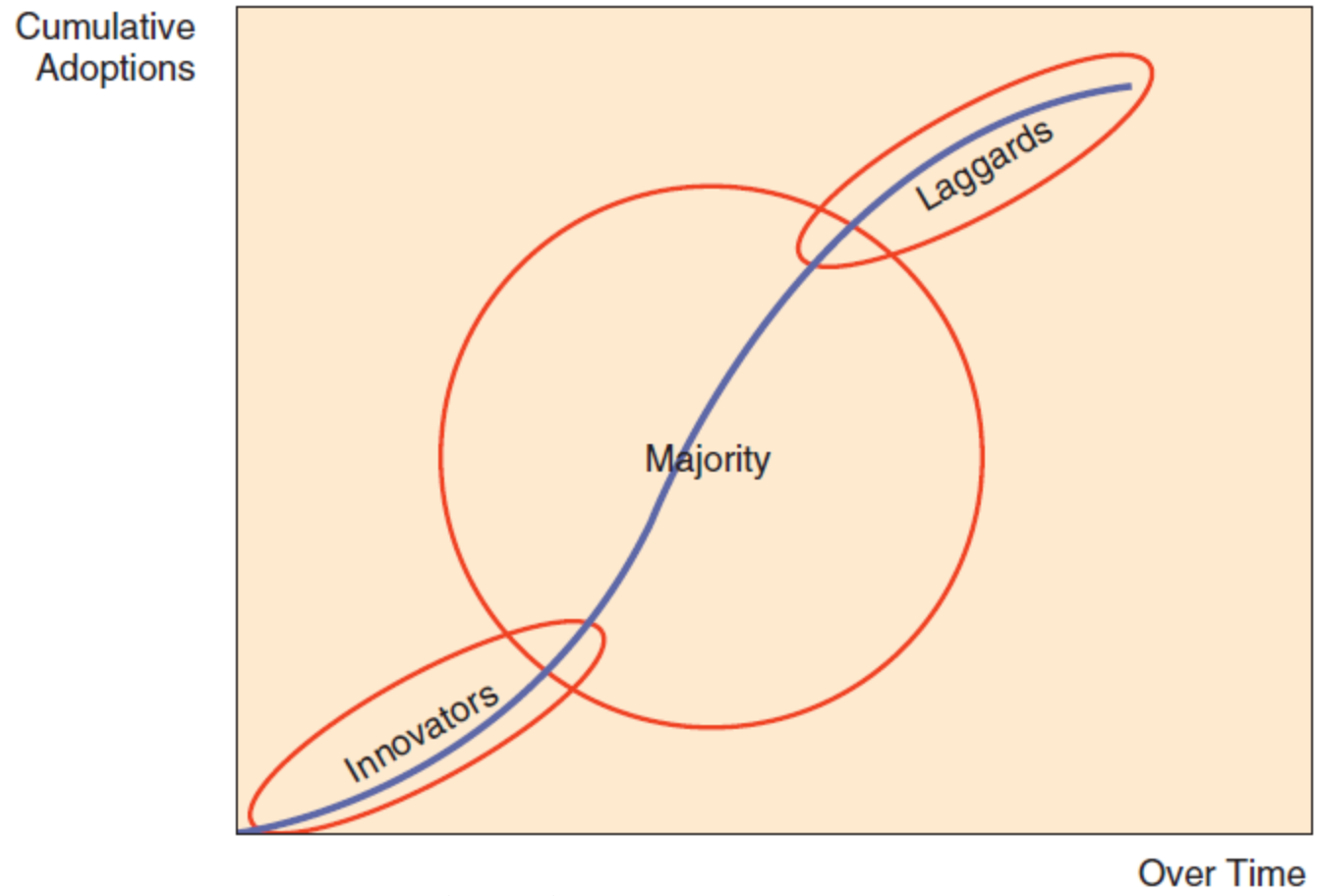
Organizational Requirements for Innovation

- Process Requirements
  - Focus on success over other objectives
- Resource Requirements
  - Employees with knowledge, skill, time, and resources
  - Partner with appropriate requirements
- Risk Tolerance Requirements
  - Tolerance for risk
  - Tolerance for failure

Predicting the Next New Thing

- Many innovations can be copied
  - Limited time span of any advantage
  - May become a requirement for staying competitive
- Some innovations deliver longer advantages
  - Unique customer service based on customer data
  - High levels of customer investment in proprietary systems; high switching costs
  - Technologies that are very difficult to copy

The Diffusion of Innovations

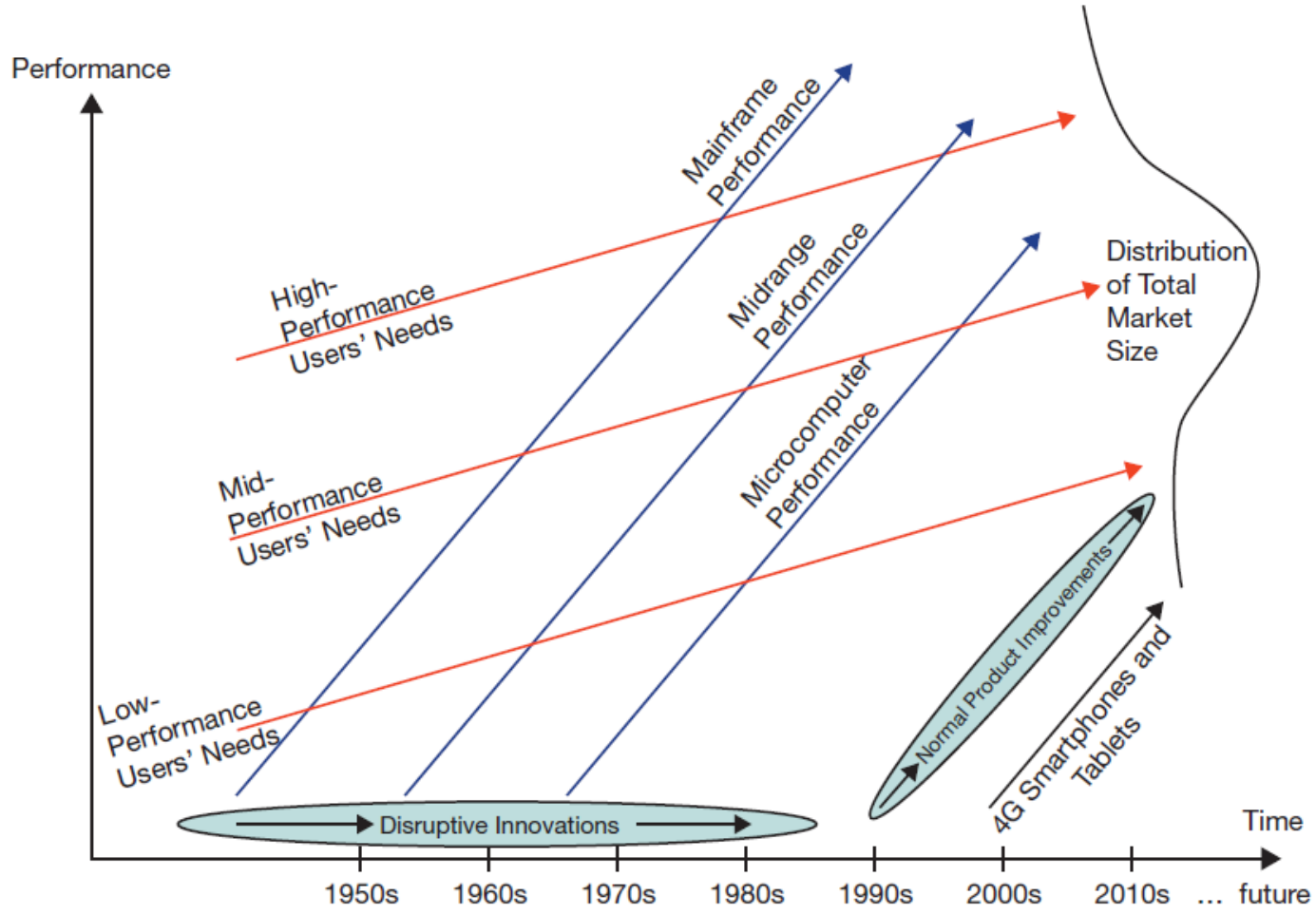


Source: Based on Rogers (2003).

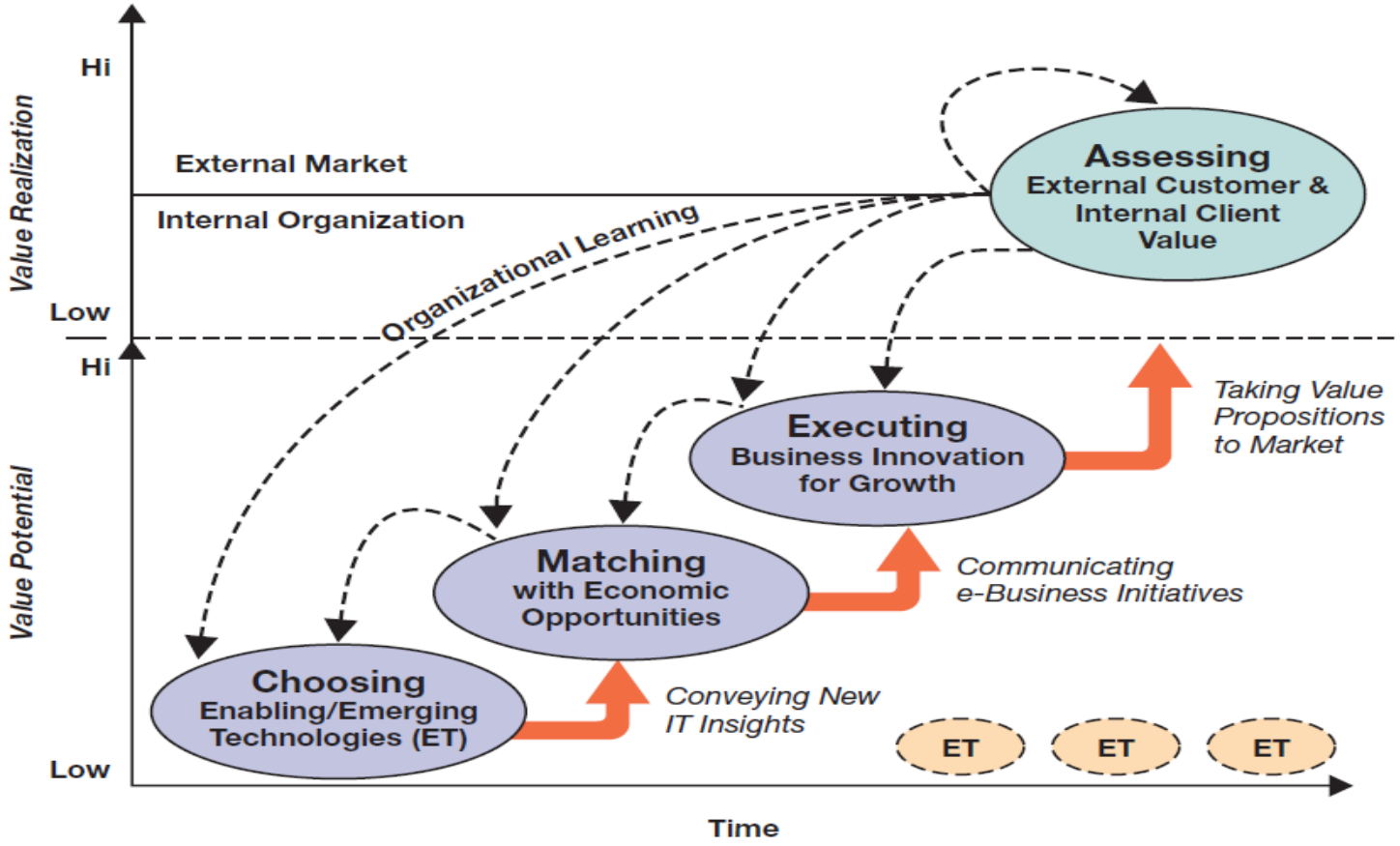
Disruptive Innovations
Examples from Table 2.9

Disruptive Innovation	Displaced or Marginalized Technology
Digital photography	Chemical photography
Online stock brokerage	Full-service stock brokerages
Online retailing	Brick-and-mortar retailing
Distance education	Classroom education
Unmanned aircraft	Manned aircraft
Semiconductors	Vacuum tubes
MP3 players and music downloading	Compact discs and music stores
Smartphones	MP3 players, dedicated GPS navigation
Tablets	Notebook computers
Xbox, PlayStation, Smartphones	Desktop computers

The Innovator's Dilemma



Implementing the Innovation Process



END OF CHAPTER CONTENT

Managing in the Digital World: The Business of Merging "Groups" and "Coupons"

- Groupon created a new business model
  - Heavily discounted deals for grouped buyers
  - Advertising value for sellers
- Groupon's business model is easily duplicated, and has been, repeatedly
  - Groupon does have a first-mover head start
  - Groupon has purchased many competitors
  - However, Groupon has no sustainable competitive advantage as currently positioned

Brief Case: Wi-Fi in the Sky

- Airline passengers don't want to be deprived of Wi-Fi-enabled digital devices
- So, airlines are rushing to comply
  - Aircell's cellular ground-based "GoGo" service has been installed on over 2,000 aircraft
  - Row 44's satellite service is installed in Southwest's entire fleet
- Some airlines offer Internet access for free, others charge customers
- In 2013, the FCC lifted a ban on cell-phone use, allowing Airplane mode throughout the duration of flight
- Voice calls are still banned, due to annoyance, not danger of signal interference

Who's Going Mobile: Mobile Platforms

- Mobile devices are redefining the way we access information and communicate
- Like computers, smartphones run on specific operating systems
  - Apple: iOS
  - Samsung: Android
- People choose smartphones phones based more on manufacturer, OS, and apps than on carrier

When Things Go Wrong: The Pains of Miscalculating Groupon

- Groupon sales are heavily discounted, and can cost companies more then they bring in
  - Groupon takes 40% of the discounted sale
  - Groupon sales are unprofitable unless they grow the repeat business customer base
  - Some sales are one-time (eye laser surgery)
  - Businesses forget to cap the number of sales
  - A large number of unprofitable sales can lead to large losses for small companies

Ethical Dilemma: Underground Gaming Economy

- Massively multiplayer online role-playing games (MMORPGs)
  - Players are now buying and selling virtual goods with real money
  - Some companies hire people to “farm gold,” which they sell
    - Estimated 400,000 gold farmers world wide
    - 90% in China, often work 12 hour days
    - Is this a human rights violation?
  - Buying assets in a game creates advantages over players who can’t or won’t, changing the game
  - Some companies ban gold farmers for life to protect the integrity of the game for other players

Coming Attractions:
Google's Project Glass: A Pair of Glasses

- Project Glass: an embedded display in eyeglasses
- Augments reality
  - Displays information about wearer's environment
  - Take photos, listen to music, play videos
  - GPS
- Went public in May 2014 for $1500
- Leads to privacy concerns, resentment from others (refer to wearers as "glassholes")

Key Players: The Global Elite

- Who are the technology giants in the global marketplace?
  - U.S.-based firms include: Hewlett-Packard, AT&T, Apple, IBM, Verizon, Microsoft, and Dell
  - Non-U.S. firms include: Huawei Technologies, Nokia, Motorola, Siemens, Foxconn, and ZTE

Industry Analysis: Education

- Cost of higher education in the United States has steadily increased (16% every five years)
- Average college graduate owes $30,000 in student loans
- Trend in globalization—increased collaboration in research and curriculum
- Trend in online delivery—leads to cost savings, but may be less engaging to students
- Massively open online courses (MOOCs)—free to students