

Chapter 2 Strategy and Technology: A Manager's Guide to Harnessing Technology
Separates Winners from Losers

John Gallaugh - Information Systems: A Manager's Guide to Harnessing Technology, version 4.0

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Chapter 2

Strategy and Technology: Concepts and Frameworks for Understanding What Separates Winners from Losers

Section 2.1

True/False Questions

1. A firm's financial performance that consistently outperforms its industry's peers is known as operational effectiveness.
False; Easy
2. According to Michael Porter, the reason many firms suffer margin-eroding competition is because they have defined themselves according to strategic positioning rather than operational effectiveness.
False; Moderate
3. When technology can be matched quickly, it is rarely a source of competitive advantage.
True; Easy
4. According to the resource-based view of competitive advantage, if a firm is to maintain sustainable competitive advantage, it must control a set of exploitable resources that are valuable and can be substituted easily.
False; Moderate
5. Fast growing Groupon was able to dissuade rivals from entering its market because the firm's technology was so difficult to replicate.
False; Easy
6. Cisco's acquisition of Pur Digital, makers of the Flip video camera line, was largely considered a flop because comparable technology soon became a feature in other popular consumer electronics products.
True; Easy

Multiple Choice Questions

1. A firm's financial performance that consistently outperforms its industry's peers is known as _____.
 - a. comparative advantage
 - b. absolute advantage
 - c. sustainable competitive advantage
 - d. first mover advantage
 - e. operational efficiency advantage**c; Easy**
2. Which of the following statements about technology is true?
 - a. Technology alone is enough to provide sustainable competitive advantage to a firm.
 - b. Technology plays a marginal role in creating strategic differences.
 - c. Technological improvements are not important in strengthening a firm's strategic advantages.
 - d. Technological improvements can often be copied by rivals, leading to a profit-eroding arms race.
 - e. Technology cannot be used by late entrants to gain a share of the industry.

d; Moderate

3. Operational effectiveness refers to:
- a. the implementation of technology in a business context.
 - b. performing the same tasks better than rivals perform them.
 - c. the number of times inventory is sold or used during the course of a year.
 - d. performing different tasks or the same tasks in different ways.
 - e. matching the benefits of a successful position while maintaining an existing position.

b; Easy

4. The _____ problem exists when rivals watch a pioneer's efforts, learn from their successes and missteps, and then enter the market quickly with a comparable or superior product at a lower cost.
- a. late entrant
 - b. early starter
 - c. first mover
 - d. intellectual property
 - e. fast follower

e; Easy

5. _____ refers to performing different tasks than rivals or the same tasks in a different way.
- a. Straddling
 - b. Operational effectiveness
 - c. Strategic positioning
 - d. Vertical integration
 - e. Scale advantage

c; Easy

6. A firm is said to be _____ when it attempts to match the benefits of a successful position while maintaining its existing position.
- a. switching
 - b. straddling
 - c. dovetailing
 - d. streamlining
 - e. vertically integrating

b; Easy

7. According to Porter, strategy is fundamentally about being _____.
- a. different
 - b. efficient
 - c. superior
 - d. scalable
 - e. profitable

a; Easy

8. The resource-based view of competitive advantage states that for a firm to maintain sustainable competitive advantage it must control a set of exploitable resources that have four critical characteristics. What are these characteristics?
- a. inventory turns, high margins, long account payable periods, brand building relationships
 - b. operational effectiveness, strategic positioning, scale, distribution channels
 - c. rareness, value, imperfect imitability, non substitutability

d. a web site, an app, cloud-based systems, a savvy technology staff

c; Moderate

9. Many telecom firms began digging up the ground and laying webs of fiberglass to meet the growing demand for Internet connectivity. However, rivals and startups began to imitate these firms and soon these new assets were not so rare and each day they seemed to be less valuable. It can be inferred from this example that:
- a. resource-based thinking can help avoid the trap of carelessly entering markets simply because growth is spotted.
 - b. the telecommunications market is only big enough to support one or two major players.
 - c. the immense scale advantages enjoyed by major firms can help them fight off competition from newer entrants.
 - d. technology assets that require high investment and maintenance are liable to becoming obsolete much quicker than others.
 - e. the scale of technology investment required to run a business is not a huge enough factor to act as a barrier to entry for new, smaller competitors.

a; Moderate

10. In _____, the light inside fiber is split into different signal-carrying wavelengths in a way similar to how a prism splits light into different colors.
- a. polarization
 - b. time-division multiplexing
 - c. space-division multiplexing
 - d. frequency hopping spread spectrum
 - e. dense wave division multiplexing

e; Easy

11. Startup firms can struggle to gain lower prices from rivals, but FreshDirect seems to have found several ways to gain lower supplier prices. FreshDirect buys direct from suppliers, eliminating any markup from a middleman. In addition to this, the firm employs other methods to get lower prices from suppliers. Which of the following is not a way FreshDirect helps suppliers in exchange for supplier agreement to offer it better pricing terms?
- a. FreshDirect carries a greater selection of supplier products
 - b. FreshDirect will cobrand products from suppliers
 - c. FreshDirect pays suppliers faster than rivals
 - d. FreshDirect shares warehouse space with farmers and livestock producers
 - e. FreshDirect shares data on customer insights with suppliers

d; Moderate

12. Sometimes technology can sound geeky and so technical that executives might think that it doesn't require managerial or investor attention. However many investing in the telecom sector suffered from a lack of insight on how a key technology was impacting their industry. Telecom firms failed to anticipate the impact of a technology known as _____, which enabled existing fiber to carry more transmissions than ever before.

- a. radio frequency identification (RFID)
- b. dense wave division multiplexing (DWDM)
- c. cloud computing
- d. open source software

d; Moderate

Essay Questions

1. What are Porter's views in relation to operational effectiveness and strategic positioning? Contrast the two concepts.

According to Porter, the reason so many firms suffer aggressive, margin-eroding competition is because they've defined themselves according to operational effectiveness rather than strategic positioning.

Operational effectiveness refers to performing the same tasks better than rivals perform them.

Everyone wants to be better, but the danger in operational effectiveness is "sameness." This risk is particularly acute in firms that rely on technology for competitiveness, as technology can easily be acquired. Because of this, operational effectiveness is usually not sufficient enough to yield sustainable dominance over the competition.

In contrast to operational effectiveness, strategic positioning refers to performing different activities from those of rivals, or the same activities in a different way. According to Porter, strategy is fundamentally about being different. While technology itself is often very easy to replicate, it can also play a critical role in creating and strengthening strategic differences—advantages that rivals will struggle to match.

Moderate

2. One of the key questions posed by 21st century managers is "How can we possibly compete when everyone can copy our technology and the competition is a click away?" One path to take involves creating a resource or set of resources for sustainable competitive advantage. List the four characteristics that such resources must have for the possibility of sustainable competitive advantage to exist. Why is it important to have all four simultaneously?

These resources must be (1) *valuable*, (2) *rare*, (3) *imperfectly imitable* (tough to imitate), and (4) *nonsubstitutable*. Having all four characteristics is key. Miss value and no one cares what you've got. Without rareness, you don't have something unique. If others can copy what you have, or others can replace it with a substitute, then any seemingly advantageous differences will be undercut.

Moderate

3. TiVo was a high-flying firm, whose name was synonymous with digital video recording. Why has the firm struggled to achieve consistent profitability?

Rival devices offered by cable and satellite companies appear the same to consumers and are offered along with pay television subscriptions—a critical distribution channel for reaching customers that TiVo doesn't control.

Moderate

4. Startup firms can struggle to gain lower prices from rivals, but FreshDirect seems to have found several ways to gain lower supplier prices. FreshDirect buys direct from suppliers, eliminating any markup from a middleman. What else did FreshDirect offer suppliers in exchange for better pricing terms?

In exchange for more favorable supplier terms, FreshDirect carries a greater selection of supplier products while eliminating the "slotting fees" (payments by suppliers for prime shelf space) common in traditional retail, cobrands products to help establish and strengthen supplier brand, pays partners in days rather than weeks, and shares data to help improve supplier sales and operations.

Hard

Section 2.2

True/False Questions

1. Firms that build an imitation-resistant value chain develop a way of doing business that others struggle to replicate.
True; Easy
2. A trademark is the symbolic embodiment of all the information connected with a product or service of a firm.
False; Easy
3. A salesperson's ability to effectively bargain with his/her consumers is called viral marketing.
False; Easy
4. Businesses benefit from economies of scale when the cost of an investment can be used in serving a niche customer base.
False; Easy
5. The scale of technology investment required to run a business can act as a barrier to entry by discouraging new, smaller competitors.
True; Easy
6. Commodities are products or services that vary across multiple vendors.
False; Easy
7. Network externalities exist when a product or service becomes less expensive as more people use it.
False; Moderate
8. Metcalfe's Law is used to explain the concept of switching costs.
False; Moderate
9. Many firms choose not to implement operational components of ERP software and instead elect to create their own propriety solutions in part because they see their uniqueness in certain operations areas as key to creating difficult-to-imitate competitive advantages.
True; Moderate
10. A firm can benefit from high switching costs, even when rivals offer free products.
True; Moderate

Multiple Choice Questions

9. The set of activities through which a product or service is created and delivered to customers is known as a(n) _____.
 - a. marketing plan
 - b. value chain
 - c. inventory turnover
 - d. strategic position
 - e. pure play**b; Easy**
10. How did Apple trump Google to become the dominant mapping platform on iOS?

- a. Apple's control of iOS gave it control of the distribution channel to reach its users, kicking Google out as the default mapping app and capturing the majority of user engagement.
- b. Apple sued Google for copyright infringement related to the look and feel of Apple Maps.
- c. Apple sued Google for privacy violations related to the collection of map data.
- d. Apple hasn't trumped Google Maps. Google's Map app is used by the majority of iOS customers, whereas most users ignore Apple Maps.

a; Moderate

11. Which of the following represents one of the primary components of the value chain?

- a. Outbound logistics
- b. Firm infrastructure
- c. Human resource management
- d. Research and development
- e. Procurement

a; Moderate

12. Dell, previously the world's number one PC manufacturer, has seen its market share shrink because of rivals copying its value chain and reducing the price advantage it enjoyed over rivals. Dell's present struggles:

- a. underscore the importance of continually assessing a firm's strategic position among changing market conditions.
- b. are a result of rivals adopting supply chain management of software products that have yielded competitive advantages.
- c. imply that publicly traded firms are at a disadvantage in the technology sector.
- d. highlight the fact that scale advantages of an established firm are a huge factor in discouraging newer entrants to a market.
- e. demonstrate that resource-based thinking can help firms avoid the trap of carelessly entering markets simply because growth is spotted.

a; Moderate

13. A(n) _____ is the symbolic embodiment of all the information connected with a product or service.

- a. trademark
- b. copyright
- c. patent
- d. brand
- e. advertisement

d; Easy

14. A strong brand can be an exceptionally powerful resource for competitive advantage by lowering _____, proxying _____ and inspiring _____.

- a. price; strategy; innovation
- b. switching costs; quantity; performance
- c. expenses; marketing; respect
- d. search costs; quality; trust
- e. customer concern; investment; profits

d; Moderate

15. Leveraging consumers to promote a product or service is known as _____.

- a. straddling
- b. affiliating

- c. long tailing
 - d. crowdsourcing
 - e. viral marketing
- e; Easy**

16. Benefits related to a firm's size are referred to as _____.

- a. network effects
- b. brand recall
- c. scale advantages
- d. vertical integration
- e. disintermediation

c; Easy

17. Businesses benefit from economies of scale when the cost of an investment can be:

- a. spread across increasing units of production.
- b. used in serving a niche and loyal customer base.
- c. used to build a brand image for products through advertising.
- d. leveraged to recruit consumers to promote a product or service.
- e. diverted to implementing technology upgrades in the business model.

a; Moderate

18. _____ exist when consumers incur an expense to move from one product or service to another.

- a. Network effects
- b. Switching costs
- c. Economies of scale
- d. Competitive advantages
- e. Profit margins

b; Easy

19. Apple's dominance of smartphone and tablet markets has allowed the firm to lock up 60 percent of the world's supply of advanced touch-screen displays, and to do so with better pricing than would be available to smaller rivals. This is an example of:

- a. network externalities that make Apple valuable.
- b. high switching costs for suppliers.
- c. a complex tech product establishing itself as a killer brand.
- d. a growing firm gaining bargaining power with its suppliers.
- e. low search costs associated with a famous brand.

d; Easy

20. Netscape, which once controlled more than 80 percent of the market share in Web browsers, lost its dominant position when customers migrated to Internet Explorer, Microsoft's Web browser. Internet Explorer was easy to install and had no significant differences in terms of usability. This example serves to illustrate that:

- a. fast-following smaller firms are always ready with newer and possibly superior products.
- b. customers of technology companies are becoming increasingly savvy and more demanding.
- c. the open source nature of technology ensures that no firm can expect to monopolize a market.
- d. firms need to employ increasingly stringent intellectual property norms to guard against infringements from smaller, competitive rivals.
- e. firms with low switching costs can sometimes be rapidly overtaken by strong rivals with additional competitive advantages.

e; Moderate

21. Which of the following is not highlighted as a source of switching costs?

- a. Learning costs
- b. Information and data
- c. Search costs
- d. Viral marketing
- e. Loyalty programs

d; Moderate

22. If a new entrant hopes to attract customers from an established incumbent, the new entrant must ensure that the value they offer exceeds the incumbents' value in addition to any perceived _____.

- a. switching costs
- b. market depreciation
- c. brand benefits
- d. advertising expenses
- e. scale advantages

a; Easy

23. Consumers buying commodities are highly _____ since they have so many similar choices.

- a. quality-conscious
- b. price-focused
- c. brand-driven
- d. technologically discriminating
- e. loyal

b; Easy

24. _____ Law is said to be at play when the value of a product or service increases as its number of users expands.

- a. Amdahl's
- b. Turing's
- c. Zuckerberg's
- d. Metcalfe's
- e. Moore's

d; Easy

25. The paths through which products or services get to customers are known as _____.

- a. information pathways
- b. vertical markets
- c. distribution channels
- d. proxy networks
- e. horizontal markets

c; Easy

26. The patent system is often considered to be unfairly stacked against start-ups because:

- a. bigger multinational firms enjoy patent protection in all countries as opposed to start-ups, which are domestic firms that do not get such protection for the most part.
- b. the intellectual property laws are not adequate to protect the interests of smaller firms from infringements.

- c. the patent system grants patents for innovations on a differential basis, with bigger firms getting precedence over start-ups.
- d. high litigation costs coupled with a few months of litigation can sink an early stage firm.
- e. patents are granted by the patent system on an ad hoc basis wherein firms that have been in business longer get patent protection for longer periods of time.

d; Moderate

Essay Questions

1. List the various components of a value chain and give a brief description of each of them.
 The value chain is the “set of activities through which a product or service is created and delivered to customers. There are five primary components of the value chain and four supporting components.
 The primary components are as follows:
 Inbound logistics—getting needed materials and other inputs into the firm from suppliers
 Operations—turning inputs into products or services
 Outbound logistics—delivering products or services to consumers, distribution centers, retailers, or other partners
 Marketing and sales—customer engagement, pricing, promotion, transaction
 Support—service, maintenance, and customer support
 The secondary components are:
 Firm infrastructure—functions that support the whole firm, including general management, planning, IS, and finance
 Human resource management—recruiting, hiring, training, and development
 Technology/research and development—new product and process design
 Procurement—sourcing and purchasing functions
Moderate
2. How does FreshDirect leverage an imitation-resistant value chain to repel rivals?
 When we compare FreshDirect’s value chain to traditional rivals, there are differences across every element. But most importantly, the elements in FreshDirect’s value chain work together to create and reinforce competitive advantages that others cannot easily copy. Incumbents trying to copy the firm would be *straddled* across two business models, unable to reap the full advantages of either. And late-moving pure-play rivals will struggle, as FreshDirect’s lead time allows the firm to develop brand, scale, data, and other advantages that newcomers lack
Moderate
3. Diagram and label the value chain, listing all primary and secondary components.



Moderate

Fill in the Blanks

1. The category of enterprise software known as _____ is implemented in modules, offering the potential of automating an organization's entire value chain.
ERP or Enterprise resource planning; Easy
2. _____ are products or services that are nearly identically offered from multiple vendors.
Commodities; Easy
3. _____ exist when a product or service becomes more valuable as more people use it.
Network Effects; Easy
4. _____ hold intellectual property not with the goal of bringing novel innovations to market but instead in hopes that they can sue or extort large settlements from others.
Patent trolls; Easy

Section 2.3

True/False Questions

1. Timing and technology alone will not yield sustainable competitive advantage.
True; Easy
2. Market entry is the same as building a sustainable business.
False; Easy

Multiple Choice Questions

1. Moving first pays off when the time lead is used to create:
 - a. the latest technology at a firm's production plant.
 - b. operational effectiveness to harness maximum profitability.
 - c. critical resources for competitive advantage.
 - d. high stock value to generate funds for expansion.
 - e. market entry to ensure sustainable competitive advantage.**c; Easy**

Essay Questions

1. Time and technology can be enablers for competitive advantage. Explain this statement.
Even though barriers to entry for tech-centric industries are rather low, it's absolutely critical to understand that market entry is not the same as building a sustainable business and just showing up doesn't guarantee survival. Timing and technology alone will not yield sustainable competitive advantage. Yet both of these can be enablers for competitive advantage. Put simply, it's not the time lead or the technology; it's what a firm does with its time lead and technology. True strategic positioning means that a firm has created differences that cannot be easily matched by rivals. Moving first pays off when the time lead is used to create critical resources that are valuable, rare, tough to imitate, and lack substitutes. Anything less risks the arms race of operational effectiveness. Building resources like brand, scale, network effects, switching costs, or other key assets can provide firms

with a shot. But guessing wrong about the market or botching up execution means failure or inviting direct competition. It is true that most technologies can be copied. But the lead that each of the most successful tech-enabled firms had was leveraged to create network effects, switching costs, data assets, and helped build solid and well-respected brands.

Moderate

2. Discuss the roll of timing and technology as it relates to competitive advantage. Timing and technology alone will not yield sustainable competitive advantage. Yet both of these can be *enablers* for competitive advantage. Put simply, it's not the time lead or the technology; it's what a firm *does* with its time lead and technology. True strategic positioning means that a firm has created differences that cannot be easily matched by rivals. Moving first pays off when the time lead is used to create critical resources that are valuable, rare, tough to imitate, and lack substitutes. Anything less risks the arms race of operational effectiveness.

Easy

Section 2.4

True/False Questions

1. If a firm's goods are highly differentiated, the Internet typically lessens the firm's bargaining power as a supplier.

False; Moderate

2. If there is the availability of a wide variety of undifferentiated commodity goods in a given market, and these products are available online, then bargaining power typically shifts to the buyer.

True; Moderate

2. The internet is largely seen as lowering the entry barrier for new entrants, but firms that enter may have little chance of success unless they have a competitive advantage over existing rivals

True: Easy

3. Uber is an example of a business model that has strengthened the bargaining power of suppliers (cab drivers) with respect to middlemen who took a cut of their services (e.g. cab companies).

True: Easy

Multiple Choice Questions

1. Which of the following is one of Porter's five forces?
 - a. Availability of coopetitors in the market
 - b. Total cost of ownership
 - c. Purchasing power parity of consumers
 - d. Threat of new entrants
 - e. Strength of intellectual property laws**d; Moderate**
2. Which of the following is a source of bargaining power of buyers?
 - a. Greater choice of products
 - b. High switching costs
 - c. Loyalty programs
 - d. Network effects

e. Unique and highly differentiated products

a; Moderate

3. The degree to which complete information is available is known as ____.

- a. information assurance
- b. data proximity
- c. operational alertness
- d. price transparency
- e. data consolidation

d; Easy

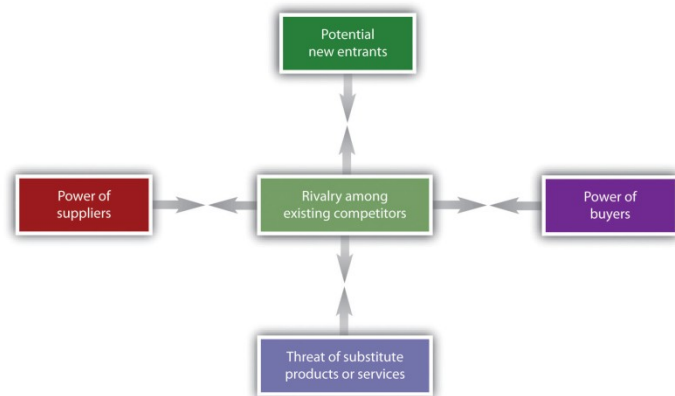
4. How does the Internet typically impact price transparency and information asymmetry?

- a. Both price transparency and information asymmetry increase
- b. Both price transparency and information asymmetry decrease
- c. Price transparency increases while information asymmetry decreases
- d. Price transparency decreases while information asymmetry increases.

c; Easy

Essay Questions

1. Diagram and label all components in the Porter Five Forces model (also known as the Industry and Competitive Analysis model)? **Easy**



2. Relate your understanding of the Porter's Five Forces model to describe how the Internet affects the bargaining power of buyers and sellers according to whether offers commodity or differentiated products.

It is often suggested that the Internet increases bargaining power of buyers and lowers the bargaining power of suppliers. This suggestion is true for some industries like auto sales and jewelry where the products are commodities and the price transparency of the Internet counteracts a previous information asymmetry where customers often didn't know enough information about a product to bargain effectively. But it's not true across the board.

In cases where a seller's goods are highly differentiated, the Internet can strengthen supplier bargaining power. The customer base of an antique dealer used to be limited by how many likely purchasers lived within driving distance of a store. Now with eBay, the dealer can take a rare good to a global audience and have a much larger customer base bid up the price. Switching costs also weaken buyer bargaining power.

Moderate

Fill in the Blanks

1. _____, also known as the Industry and Competitive Analysis, is a popular framework for examining a firm's competitive environment.
Porter's five forces; Easy
2. A decision situation where one party has more or better information than its counterparty is called a(n) _____.
information asymmetry; Easy