

Chapter 5

Timing of Entry

SYNOPSIS OF CHAPTER

This chapter examines the timing factors that influence a technology's likelihood of success. The chapter discusses first mover advantages (e.g. building brand loyalty and technological leadership, preemption of scarce resources, exploiting switching costs) and disadvantages (e.g. higher spending on R&D, supplier development, distribution channels creation, enabling technology development, complementary goods production, and learning customer requirements), along with the corresponding advantages and disadvantages of entering as an early follower or as a late entrant.

Entry timing is a function of many factors including the 1) certainty of customer preferences, 2) the new technology's margin of improvement over the incumbent technology, 3) availability of enabling technologies, 4) availability of complementary products, 5) threat of competitive entry, 6) likelihood that the industry will experience increasing returns to adoption, 7) firms' ability suffer large losses, 8) availability of resources to accelerate consumer adoption of the product and 9) ability of the firm's reputation to decrease consumer, supplier and distributor uncertainty. The chapter concludes by considering whether entry timing is really a choice that a firm makes. It is only a choice if the firm is able to produce a technology at any point in the relevant timeframe and/or the firm has a fast-cycle development process that enables the firm to enter or catch up much more quickly than any of its competitors.

LECTURE OUTLINE

I. Overview

- a. **Early entry** can be crucial to the successful adoption of a new technology. This is especially true when the technology **benefits from increasing returns to adoption**. But the same characteristics that make early entry desirable can often make the technology unattractive. For example, there may only be a few users early on and the firm may have to develop or support the development of needed complementary products if it is a new-to-the-world innovation.
- b. Entrants are often divided into three categories— "**First movers**", "**early followers**" and "**late entrants**." The research studying **when it is best to enter** is **inconclusive**. There are a number of factors that influence how timing of entry affects firm survival and profits including 1) **market related factors** such as availability of complementary goods, development of enabling technologies, degree of customer certainty; and 2) **firm specific factors** such as capital resources, prior experience and reputation.

II. First Mover Advantages

- a. First mover advantages include the ability to build **brand loyalty and technological leadership**, and the ability to **access resources that may become scarce**. If the industry is characterized by increasing returns two more advantages that a firm may benefit from are **learning** about the technology and customer requirements before their competitors do and **network externalities**.

- i. **Brand Loyalty and Technological Leadership** can result from early entry.

Consumers may consider the first firm to enter a new technological domain to be the **technological leader**. This reputation for technological leadership can enhance a company's ability to shape customer expectations (e.g. features, pricing, etc.) and can be sustained if the technology is difficult to imitate or is protected by patent or copyright.

- ii. **Preemption of Scarce Assets** by the first mover can prevent later entrants from accessing key locations and important distribution channels, gaining government permits (e.g. broadcast rights), and can make the development of relationships with suppliers more difficult.

- 1. For example, late entrants that want to provide a wireless communication service face the problem that the government has already auctioned off most of the radio frequencies needed to provide the service. A new firm faces the situation of having to buy or lease (if the government permits these transactions) the needed frequencies from its competitors or not entering.

- iii. **Exploiting Buyer Switching Costs** can enable early movers to keep their customers even if a later entrant offers a superior technology. These switching cost include the **cost of the product** and the **costs associated with learning** how to use the product (Qwerty is the oft used example to demonstrate this point).

- iv. **Increasing Returns Advantages** are **self-reinforcing** and can be gained in an industry that experiences pressure to adopt a dominant design (as discussed in Chapter 4). These advantages often culminate in the technology's **entrenchment**

as a **dominant design** (Intel's invention of the first microprocessor in 1971 and Microsoft's introduction of BASIC in 1975 are good examples of these effects).

III. First Mover Disadvantages

- a. Tellis & Golder contrasted the experience of first movers and early followers and found that **first movers have higher failure rates (47%) and lower market shares than the early followers (10% vs. 30%)**.
- b. First movers earn **greater revenues** but also have **higher costs**, with the result that they earn **significantly lower profits** over time. The costs incurred by first movers that are nonexistent or greatly reduced for followers include expenditures on **R&D, development of supply and distribution channels, development of enabling technologies, development of complementary goods and services** and **product trials** to determine what features consumers actually prefer. Later entrants can also adopt newer and more efficient production processes.
 - i. **Research and Development Expenses** for the first mover are higher than those for later entrants because 1) their **exploration costs are higher** (they have to pay for research that did not result in a commercially viable product) and 2) they bear the cost of **developing production processes and complementary goods** later entrants can leverage without the usually very large upfront investment made by the first mover.
 - ii. **Undeveloped Supply and Distribution Channels** often characterize the situation faced by a first mover. A new-to-the-world technology often doesn't have ready-made suppliers or distributors. The first mover then must either **develop** and

produce its own supplies and distribution service, or **assist in the development** of supplier and developer markets (e.g. DEKA's development of the IBOT wheelchair required the firm to invent new ball bearings and develop a machine to produce the bearings).

iii. **Immature Enabling Technologies and Complements** also often characterize the situation faced by first movers. For example, **PDA** developers were reliant on the development of batteries and modems by other firms. Similarly, when complementary products are not readily available the **adoption rate of a technology is slowed** (see Chapter 4).

1. This effect has occurred in the development of **hydrogen fuel cell** powered vehicles. Development of this alternative technology has been slowed because there is no ready way to refuel cars using the new technology (see the Theory in Action section in this chapter for more details).

iv. **Uncertainty Regarding Customer Requirements** can cause first movers to incur great **expense to learn** what customers want (market research may have little value when customers do not yet know how they will use the product) and are willing to pay for and **refine products** accordingly.

1. For example, **Kodak** was the first to introduce the 8mm video camera in the late eighties but withdrew from the market due to a poor response from customers. As you know the story does not end well for Kodak. By the early 1990's customers became more comfortable with the technology and Sony successfully entered this market leaving Kodak to play catch up or not

reenter at all. This may have been a case where Kodak would have been better off by spending on **customer education efforts**.

- c. **So why does the belief in first mover advantages persist?** First because there have been successful first movers and second because the market has, in many cases, **misidentified** the first mover (e.g. P&G was not the first mover in the disposable diaper market but because they are the market leader many think they were. P&G entered 30 years after Chux).

- d. Figure 5.1 provides a list of first movers and their more successful early followers.

Show Figure 5.1

IV. Factors Influencing Optimal Timing of Entry

- a. **How does a firm decide whether to pioneer a technology category or wait until while others do?** The answer depends on several factors including **customer certainty**, the **margin of improvement** offered by the new technology, the **state of enabling technologies and complementary goods**, the **threat of competitive entry**, the degree to which the industry exhibits **increasing returns**, and the **firm's resources**.

- i. **How certain are customer preferences?** More certain customer preferences favor early entry. Both companies and consumers **learn** which features create the most value as they gain experience with the product (there are exceptions such as drug development targeting certain diseases or symptoms where the customer requirements are clear from the outset). **Features initially thought to be important may not be** (e.g. exciting graphics and sounds were initially thought to be needed to establish an e-commerce presence) and **features initially thought to**

be unnecessary or not as important turn out to be important to customers (e.g. Sony's Playstation2 console included the ability to play music CDs or DVDs that Sony thought was of secondary importance to the functionality supporting game playing. As it turned out some consumers purchased the console for the CD and DVD functions and purchased only a few games. This was bad news for Sony because consoles are sold at or near cost to increase adoption and profits are derived from game sales).

ii. **How much of a margin of improvement does the innovation provide over previous technologies?** The higher the improvement the more likely a firm is going to be successful entering early because the product will more rapidly gain customer acceptance.

iii. **Does the innovation require enabling technologies, and are they sufficiently mature?** Readily available enabling technologies facilitate early entry and vice versa.

iv. **Do complementary goods influence the value of the innovation, and are they sufficiently available?** If the firm's innovation requires complementary goods that are not available on the market and the firm is unable to develop those complements, successful early entry is unlikely.

v. **How high is the threat of competitive entry? Entry barriers and the profit potential** of the technology (i.e. high margins) both play a role in assessing the threat of competitive entry. High entry barriers enable a firm to delay entry. But if a firm delays entry when entry barriers are low and the value of

the technology is high they are likely to face a very competitive situation when they do enter.

- vi. **Is the industry likely to experience increasing returns to adoption?** Early entry is advisable if an industry is likely to experience increasing returns to adoption. If a competitor enters earlier and builds a large installed base it may be very difficult to get consumers to switch products (especially if the competitor's technology has been established as the dominant design).
- vii. **Can the firm withstand early losses?** To avoid the situation Momenta experienced in the PDA industry companies must have deep pockets. Large capital reserves enable a firm to weather long periods of market confusion and low sales. On the other hand these same resources can also enable a firm to enter later because they can more easily catch up (e.g. Nestle was able to leverage its brand name and strong capital position to overtake General Food's Maxim as a late entrant).
- viii. **Does the firm have resources to accelerate market acceptance?** If a firm can invest in market education, supplier and distributor development, and can sponsor the development of complementary goods and services then it is more likely to be successful with early entry than a firm that cannot underwrite these kinds of efforts.
- ix. **Is the firm's reputation likely to reduce the uncertainty of customers, suppliers, and distributors?** The positive effects of a strong reputation can improve the chances of successful early entry by reducing consumer uncertainty with regard to the utility of the new technology and its quality. In

addition, a firm that is thought to be a technological leader is also more able to attract suppliers and distributors (e.g. Microsoft's announcement that it would enter the personal digital assistant market caused many distributors to wait for Microsoft's product).

- b. Will Mitchell asked a slightly different question in his research. He studied when **incumbent firms** in an industry enter an **emerging subfield**. He found that firms with **specialized assets** applicable to the new subfield and firms with products that were threatened by the new products firms were likely to enter early. He also found that incumbents would enter even earlier if core products were threatened and there were several potential rivals that could also enter.

V. Strategies To Improve Timing Options

- a. Up to this point we have assumed that entry timing is a **choice** that a firm makes. This is only true when the firm is **capable of producing the technology at any point** in the relevant timeframe (i.e. the firm has or can quickly acquire the necessary core capabilities) and/or the firm has a **fast-cycle development processes** (e.g. using strategic alliances, cross-functional new product teams, parallel development, etc.).