MGT 610
Management of Innovation and Technology

Timing of Entry

Based on Schilling (2013)
Today We Will

• Discuss why timing of entry is crucial

• Talk about whether it is better to be the first mover or one of the early followers

• Identify the factors that influence the timing of entry
Why timing of entry can be crucial?

• A technology that is adopted earlier than others may reap self-reinforcing advantages
  – greater funds to invest in improving the technology,
  – greater availability of complementary goods, and
  – less customer uncertainty.

• On the other hand, the same factors that cause increasing returns to adoption may make very early technologies unattractive:
  – if there are few users of the technology or availability of complementary goods is poor, the technology may fail to attract customers.
First Movers, Early Followers and Late Entrants

- **First movers** (or pioneers), are the first to sell in a new product or service category; **early followers** (also called early leaders), are early to the market but not first, and **late entrants**, which enter the market when or after the product begins to penetrate the mass market.

- The research on whether it is better to be a first mover, early follower, or late entrant yields conflicting conclusions.
First Movers, Early Followers and Late Entrants

- Some studies that contrast early entrants (lumping first movers and early followers together) with late entrants find that early entrants have higher returns and survival rates, consistent with the notion of first-mover (or at least early-mover) advantage.

- However, other research has suggested the first firm to market is often the first to fail, causing early followers to outperform first movers. Still other research contends the higher returns of being a first mover typically offset the survival risk.
First Movers, Early Followers and Late Entrants

A Timeline of Social Networking Site Growth

- Friendster – 31,000,000
- MySpace+ – 73,000,000
- Facebook – 901,000,000
- Twitter – 140,000,000
- Google G+ – 100,000,000
First Mover Advantages

Brand Loyalty and Technological Leadership

• long-lasting reputation as a leader
• image, brand loyalty, and market share
• Ability to shape customer expectations about the technology’s form, features, pricing, and other characteristics
• if the technology is protected by patent or copyright, or arise from the first mover’s unique capabilities, the first mover can enjoy monopoly rents for long time
First Mover Advantages

Preemption of Scarce Assets

• Firms that enter the market early can preemptively capture scarce resources such as key locations, government permits, access to distribution channels, and relationships with suppliers

• Example of allocation of wireless spectrum
First Mover Advantages

Exploiting Buyer Switching Costs

• the initial cost of the good is itself a switching cost, as is the cost of complements purchased for the good.

• Additionally, if a product is complex, buyers must spend time becoming familiar with its operation; this time investment becomes a switching cost.

• If buyers face switching costs, the firm that captures customers early may be able to keep those customers even if technologies with a superior value proposition are introduced later.

• QWERTY keyboard
First Mover Advantages

Reaping Increasing Returns Advantages

• In an industry with pressures encouraging adoption of a dominant design, the timing of a firm’s investment in new technology development may be particularly critical to its likelihood of success.

• For example, in an industry characterized by increasing returns to adoption, there can be powerful advantages to being an early provider; a technology that is adopted early may rise in market power through self-reinforcing positive feedback mechanisms, culminating in its entrenchment as a dominant design.

• Intel is an apt example of this.
Intel’s Ted Hoff invented the first microprocessor in 1971, and in 1975, Bill Gates and Paul Allen showed that it could run a version of BASIC that Gates had written.

Gates’s BASIC became widely circulated among computer enthusiasts, and as BASIC was adopted and applications developed for it, the applications were simultaneously optimized for Intel’s architecture.

IBM’s adoption of Intel’s 8088 microprocessor in its PC introduction secured Intel’s dominant position, and each of Intel’s subsequent generations of products has set the market standard.
First Mover Disadvantages

• In a historical study of 50 product categories, Gerard Tellis and Peter Golder found that market pioneers have a high failure rate—roughly 47 percent—and that the mean market share of market pioneers is 10 percent.

• By contrast, early leaders (firms that enter after market pioneers but assume market leadership during the early growth phase of the product life cycle) averaged almost three times the market share of market pioneers.
First Mover Disadvantages

• Tellis and Golder point out that the market may often perceive first movers to have advantages because it has misperceived who the first mover really was. For example, while today few people would dispute Procter & Gamble’s claim that it “created the disposable diaper market,”

• In actuality, Procter & Gamble entered the disposable market almost 30 years after Chux, a brand owned by a subsidiary of Johnson & Johnson. In the mid-1960s, Consumer Reports ranked both products as best buys. However, over time Pampers became very successful and Chux disappeared, and eventually people began to reinterpret history.
First Mover Disadvantages

Incumbent inertia

• The tendency for incumbents to be slow to respond to changes in the industry environment due to their large size, established routines, or prior strategic commitments to existing suppliers and customers.

• Later entrants can adopt newer and more efficient production processes while early movers are either stuck with earlier technologies or must pay to rebuild their production systems.
First Mover Disadvantages

Research and Development Expenses

- Cost of exploring technology paths that were not successful / commercially viable
  - Cost of developing necessary production processes and complementary goods that are not available on the market
  - By contrast, later entrants often do not have to invest in exploratory research and can also observe the market’s response to particular features of the technology and decide how to focus its development efforts.
  - Thus, the later entrant can both save development expense and produce a product that achieves a closer fit with market preferences.
First Mover Disadvantages

Undeveloped Supply and Distribution Channels

• When a firm introduces a new-to-the-world technology, often no appropriate suppliers or distributors exist.

• For example, when DEKA Research began developing its self-balancing IBOT wheelchair, it needed a type of ball bearing for which there were no suppliers.
First Mover Disadvantages

Immature Enabling Technologies and Complements

- When firms develop technologies, they often rely on other producers of enabling technologies.

- For instance, even though producers of personal digital assistants (PDAs) had created palm-size devices with significant computing power, the potential of these devices would be delivered only if battery and modem technologies were further developed.

- Since few PDA manufacturers were actually involved in the development of batteries or modems, they were reliant on the development efforts of other firms.
First Mover Disadvantages

Uncertainty of Customer Requirements

• A first mover to the market may face considerable uncertainty about what product features customers will ultimately desire and how much they will be willing to pay for them.

• For a very new product technology, market research may be of little help. Customers may have little idea of the value of the technology or the role it would play in their lives.
First Mover Disadvantages

Uncertainty of Customer Requirements (Continues)

• For instance, when Kodak introduced the 8-mm video camera in the late 1980s, it expected that customers would flock to the design’s smaller size and superior recording ability.

• Instead, consumers rejected the product. The 8-mm video cameras were more expensive, and consumers had not yet recognized a need for this product and were unsure of what value it could provide.

• Kodak decided to withdraw from the market. However, by the early 1990s, consumers had become more comfortable with the concept of 8-mm video camera technology, and several competitors (most notably Sony) successfully entered this market.
# First Movers or Followers – Who Wins?

<table>
<thead>
<tr>
<th>Product</th>
<th>First Mover</th>
<th>Notable Follower(s)</th>
<th>The Winner</th>
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<tbody>
<tr>
<td>8-mm video camera</td>
<td>Kodak</td>
<td>Sony</td>
<td>Follower</td>
</tr>
<tr>
<td>Disposable diaper</td>
<td>Chux</td>
<td>Pampers</td>
<td>Followers</td>
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<tr>
<td>Float glass</td>
<td>Pilkington</td>
<td>Corning</td>
<td>First mover</td>
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<td>Groupware</td>
<td>Lotus</td>
<td>AT&amp;T</td>
<td>First mover</td>
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<td>Instant camera</td>
<td>Polaroid</td>
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<tr>
<td>Microprocessors</td>
<td>Intel</td>
<td>AMD</td>
<td>First mover</td>
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<tr>
<td>Microwave</td>
<td>Raytheon</td>
<td>Samsung</td>
<td>Follower</td>
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<tr>
<td>Personal computer</td>
<td>MITS (Altair)</td>
<td>Apple</td>
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<tr>
<td>Personal computer operating system</td>
<td>Digital Research</td>
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<td>Follower</td>
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<td>Social networking sites</td>
<td>SixDegrees.com</td>
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<td>Spreadsheet software</td>
<td>VisiCalc</td>
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<tr>
<td>Video game console</td>
<td>Magnavox</td>
<td>Atari, Nintendo</td>
<td>Followers</td>
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<tr>
<td>Web browser</td>
<td>NCSA Mosaic</td>
<td>Netscape</td>
<td>Followers</td>
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<tr>
<td>Word processing software</td>
<td>MicroPro (WordStar)</td>
<td>Microsoft (MS Word)</td>
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<td>Workstation</td>
<td>Xerox Alto</td>
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<td>Hewlett-Packard</td>
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Factors Influencing Timing of Entry

• How certain are customer preferences?

• How much improvement does the innovation provide over previous solutions?

• Does the innovation require enabling technologies, and are these technologies sufficiently mature?

• Do complementary goods influence the value of the innovation, and are they sufficiently available?
Factors Influencing Timing of Entry

• How high is the threat of competitive entry?

• Is the industry likely to experience increasing returns to adoption?

• Can the firm withstand early losses?

• Does the firm have resources to accelerate market acceptance?

• Is the firm’s reputation likely to reduce the uncertainty of customers, suppliers, and distributors?