MANAGERIAL ECONOMICS

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Prices, Output and Strategy: Pure and Monopolistic Competition

The road ahead

Stockholder wealth-maximizing managers seek a pricing and output strategy that will maximize the present value of the future profit stream to the firm.

The determination of the wealth-maximizing strategy depends on the production capacity, cost levels, demand characteristics, and the potential for immediate and longer-term competition.

Introduction

To remain competitive, many companies today commit themselves to continuous improvement processes and episodes of strategic planning.

Competitive strategic analysis provides a framework for thinking proactively about threats to a firm's business model, about new business opportunities, and about the future reconfigurations of the firm's resources, capabilities, and core competencies.

Introduction

All successful business models begin by identifying target markets—that is, what businesses one wants to enter and stay in.

Next, all successful business models lay out a value proposition grounded in customer expectations of perceived value and then identify what part of the value chain leading to end products the firm plans to create.

Business models always must clarify how and when revenue will be realized and analyze the sensitivity of gross and net margins to various possible changes in the firm's cost structure.

Finally, all successful business models develop a competitive strategy.

Definition: value proposition

A value proposition is a clear statement that explains why a customer should choose your product or service instead of another. It summarizes the unique value you offer and how you solve a customer's problem or improve their situation.

EXAMPLES:

Spotify: "Music for everyone — unlimited listening, anytime, anywhere."

Uber: "Tap the app, get a ride."

Apple iPhone: "The best iPhone experience — simple, powerful, and secure."

Competitive strategy

Competitive strategy

The essence of competitive strategy is threefold:

1. resource-based capabilities: how the firm can secure differential access to key resources like patents or distribution channels.
2. business processes: competitive strategy designs business processes that are difficult to imitate and capable of creating unique value for the target customers.
3. adaptive innovation: a road map for sustaining a firm's profitability, principally through innovation.

Competitive strategy

Resource-based capabilities: Amazon

From humble beginnings as an Internet bookseller that contracted out its warehousing and book delivery service, Amazon managed to become the preferred fulfillment agent for web-based sales in general.

That is, the bookseller Amazon acquired enough regular customers searching for CDs, office products, tools, and toys that companies like Toys R Us adopted Amazon as their channel partner.

In Japan, 7-Eleven stores won that same role for neighborhood pick-up and delivery of web-based purchases. (More on this later).

Competitive Strategy

Business Processes

The high-frequency point- to-point streamlined operations processes of Southwest Airlines prove very difficult for hub-and-spoke airlines to imitate, and, as a result, the market capitalization of Southwest often exceeds that of all the other major U.S. carriers combined.

Competitive Strategy

Business Processes

Dell and Compaq at one point in their respective corporate histories, had $12 billion in net sales and approximately $1 billion in net income in 1998.

But Compaq's business model required $6 billion in net operating assets (i.e. inventories plus net plant and equipment plus working capital) to earn $1 billion, while Dell's required only $2 billion.

Competitive Strategy

Business Processes

How could Dell produce the same net income with one-third as much plant and equipment, inventories, and working capital as Compaq?

The answer is that Dell created a direct-to-the-customer sales process; Dell builds to order, with sub- assembly components bought just in time from outside contractors, and it realizes cash from a sale within 48 hours. These value-creating business processes generated 50 per- cent ($1B/$2B) return on investment (ROI) at Dell, whereas the comparable ROI at Compaq was just 16 percent ($1B/$6B).°

Competitive Strategy

Adaptive innovation

Competitive strategy provides a road map for sustaining a firm's profitability, principally through innovation.

We will not expand on this: refer to any Growth Theory or Economics of Innovation classes.

Generic types of strategy

Strategic thinking initially focuses on industry analysis—that is, identifying industries in which it would be attractive to do business.

Soon thereafter business strategists want to conduct competitor analysis to learn more about how firms can sustain their relative profitability in a strategic group of related firms.

Efforts to answer these questions are often described as strategic positioning.

Finally, strategists try to isolate what core competencies any particular firm possesses as a result of its resource-based capabilities in order to identify sustainable competitive advantages vis-a-vis their competitors in a relevant market.
Sustainable competitive advantages: Difficult- to-imitate features of a company's processes or products.

Generic Types of Strategy

Any one of three generic types of strategies may suffice. A firm may establish:

1. a product differentiation strategy
2. a lowest-delivered-cost strategy
3. an information technology (IT) strategy

Generic types of strategy

Product differentiation strategy

Product differentiation strategy usually involves competing on capabilities, brand names, or product endorsements.

Boeing competes on product capabilities.

Coca-Cola is by far the world's most widely recognized brand.

Gillette, P&G's Pampers, Nestlé, Nescafé, and Kellogg's each has nearly 50 percent market shares.

All of these branded products command a price premium worldwide simply because of the product image and lifestyle associated with their successful branding.

Generic types of strategy

Cost based strategy

Competitive scope decisions are especially pivotal for cost-based strategy.

For example, a firm like Southwest Airlines with a focused cost strategy must limit its business plan to focus narrowly on point-to-point, medium-distance, nonstop routes.

More on this follows.

Think Small to Grow Big: Southwest Airlines

Southwest adopted operations processes for ticket sales, boarding procedures, plane turnarounds, crew scheduling, flight frequency, maintenance, and jet fuel hedging that deliver exceptionally reduced operating costs to target customers in a price-sensitive market niche.

Southwest can cover all of its costs at 64 percent load factor whereas American Airlines, United, Delta, and US Airways often operate well below their break-even points of 75 to 84 percent.

Load factor: percentage of available seats that have actually been sold

Break-even point: level of sales at which a company's total revenues equal its total costs (i.e. no profits, no losses).

We'll get back to "load factor" in a while.

Think Small to Grow Big: Southwest Airlines

Much has been made of the fact that Southwest has labor costs covered by 36 per- cent of sales dollars, while United, American, and US Airways have labor costs covered by 48 percent of sales dollars.

However, the $0.07 gap between United's $0.12 cost per revenue passenger mile and Southwest's $0.05 cost per rpm reflects not just labor costs but hard-to-imitate process differences.

Revenue passenger mile: a metric that measures one paying passenger transported one mile. In other words, each paying passenger contributes to RPM for every mile the plane flies.

Think Small to Grow Big: Southwest Airlines

It has been established that only 15 percent of the operating cost difference between full-service and low-cost carriers was labor cost.

The largest source of cost difference between Southwest's \$0.05 cost per revenue passenger mile and United's \$0.12 is process differences in check-in, boarding, reservations, crew scheduling, and maintenance. These processes make possible the famed 15-minute turnaround time at Southwest.

Turn around time: time between landing and next take-off for a plane.

Load factor

Load factor: the percentage of available seats that are actually occupied by passengers. t indicates how efficiently an airline is using its capacity.

A high value means the aircraft is flying "full" or nearly full, improving efficiency and profitability.

A low value indicates empty seats, and therefore lost revenue, since most flight costs are largely fixed.

The higher it is the more fixed costs are "spread" on each passenger.

Load factor

Each airline has a minimum load factor above which it begins to make a profit (the break-even point).

In our example:

- Southwest: breaks even at 64%
- Other traditional carriers: between 75% and 84%

This means that Southwest has lower unit costs and can therefore be profitable even with less full aircraft.

Load Factor

Does all this have an impact on competitive strategy?

If you adopt a cost-leadership strategy, you must:

1. maintain high load factors
2. reduce the cost per available seat
3. ensure highly efficient operations

Load factor

Southwest, Ryanair, and easyJet succeed because they have:

- homogeneous fleets (a single aircraft type $\rightarrow$ lower costs)
- quick turnarounds
- cheaper secondary airports
- essential, no-frills services

Load factor

This allows them to achieve high load factors at lower prices without sacrificing margins.

Does this have an effect on competitive positioning?

- A lower break-even load factor provides greater:
- price flexibility
- resilience during demand downturns
- ability to attack competitors with aggressive fares

How come did we spend five slides on load factor?

Generic types of strategy

Information technology strategy strategy

Firms can seek their sustainable competitive advantage among relevant market rivals by pursuing an information technology strategy.

Simple example: satellite-based GPS has allowed e.g. Allstate Insurance to confirm that certain cars on a family policy are not being driven to work, while other less expensive cars are being exposed to the driving hazards of commuting.

This allows Allstate to cut some insurance rates and win more business from their competitors.

Does this ring a bell?

Case study: 7-eleven Japan

Japanese office workers put in very long hours, often arriving at 8:00 a.m. and staying well into the evening.

In the midst of this long day, most take an hour and a quarter break to go out on the street and pick up lunch.

This situation makes an excellent opportunity for Southland Corporation's 7-Eleven stores, which is the biggest retailer in Japan and twice as profitable as the country's second-largest retailer, the clothing outlet Fast Retailing.

Case study: 7-eleven Japan

7-Eleven Japan collects sales information by proprietary satellite communication networks from its 8,500 locations three times a day. The data are used to improve product packaging and shelf placements.

7-Eleven Japan has built systems to analyze the entire data inflow in just 20 min- utes.

Specifically, 7-Eleven forecasts what to prepare for the lunch crowd downtown today based on what sells this morning and what sold yesterday evening in suburban locations.

As customers become more fickle, product fashion cycles in sandwiches are shortening from seven weeks to, in some cases, as little time as 10 days.

7-Eleven Japan forecasts the demand daily on an item-by-item, store-by-store basis.

Case study: 7-eleven Japan

Supply chain management practices are closely monitored and adapted continuously with electronic commerce tools.

Delivery trucks carry bar code readers that upload instantaneously to headquarters databases. Orders for a particular sandwich at a particular store are placed before 10:00 a.m., processed through the supply chain to all component input companies in less than 7 minutes, and delivered by 4:00 p.m. for the next day's sales.

Most customers praise the extraordinary freshness, quality ingredients, and minimal incidence of out-of-stock items.

First wrap-up

A company's strategy can result in higher profits if the company configures its resource-based capabilities, business processes, and adaptive innovations in such a way as to obtain a sustainable competitive advantage.

Whether cost-based strategy, product differentiation strategy, or IT strategy provides the most effective route to competitive advantage depends in large part on the firm's strategic focus.

Porter's five

Porter's five forces

Strategic thinking initially focuses on industry analysis—that is, identifying industries in which it would be attractive to do business.

Michael Porter's Five Forces model illustrates this approach.

Porter's five forces

Michael Porter developed a conceptual framework for industry analysis, identifying the threats to profitability from five forces of competition in a relevant market.

1. the threat of substitutes
2. the threat of entry
3. the power of buyers
4. the power of suppliers
5. the intensity of rivalry

Today, a sixth force is often added—the threat of a disruptive technology—such as digital file sharing for the recorded music industry, streaming video on demand for the video rental industry, or digital photography for the film industry.

Porter's five forces

The threat of substitutes

Netflix, Disney+, and Amazon Prime offer cheap, convenient entertainment at home.

Impact: these services are strong substitutes for going to movie theaters.

High threat of substitutes reduces industry profitability for cinemas.

Porter's five forces

The threat of entry

A second force determining the likely profitability of an industry or product line is the threat of potential entrants.

The higher the barriers to entry, the more profitable an incumbent will be.

Barriers to entry can arise from several factors.

Porter's five forces

The threat of entry: capital costs

Fewer potential entrants with the necessary capital imply a lesser threat of entry and higher incumbent profitability.

Porter's five forces

The threat of entry: economies of scale

Economies of scale and absolute cost advantages can provide another barrier to entry.

In the traditional cable TV industry, the huge infrastructure cost of laying wire throughout the community deterred multiple entrants.

The first mover had a tremendous scale economy in spreading fixed cost across a large customer base.

Wireless technology for satellite-based TV may soon lower this barrier, and then numerous suppliers of TV content will exhibit similar unit cost.

These new threats of entry imply lower industry profitability in cable TV.

Porter's five forces

The power of suppliers

The airline industry depends heavily on just two major suppliers of large aircraft: Boeing and Airbus.

Switching suppliers is extremely costly and slow.

Because suppliers are few and powerful, they can:

1. set higher prices
2. set higher prices
3. enforce strict purchasing contracts

Porter's five forces

Bargaining Power of Buyers

Large rental car companies like Hertz and Enterprise buy thousands of cars at once.

Impact:

Because they buy in huge volumes, they can:

1. demand major discounts
2. pressure manufacturers for special deals
3. switch to other brands easily

These buyers have strong bargaining power, reducing margins for carmakers on fleet sales.

Porter's five forces

Intensity of rivalry

Apple, Samsung, Huawei compete in a saturated market.

Features of high rivalry:

1. products are similar
2. innovation cycles are fast
3. competitors constantly undercut prices
4. high marketing spending

Intense rivalry forces:

1. rapid updates
2. aggressive advertising
3. thinner margins (especially for low-cost brands)

High rivalry drives down profitability for many competitors.

Barriers to entry

Barriers to entry

We now turn to an in-depth analysis of barriers to entry (which - to me at least - is the most relevant force among Porter's).

Barriers to entry are defined by Bain (1956) as conditions that allow established firms or incumbents to earn abnormal profits without attracting entry.

Stigler (1968) defines entry barriers as a cost of producing (at some or every rate of output) which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry.

Spulber (2003) defines an entry barrier as 'any competitive advantage that established firms have over potential entrants'.

Barriers to entry

The principal types of barrier to entry.

- economies of scale, or from an absolute cost advantage held by an incumbent over an entrant, or from product differentiation
- legal barriers and geographic barriers, which create difficulties for foreign firms attempting to trade in the domestic market.
- Many of the factors that give rise to the barriers to entry may be beyond the direct control of the incumbent firms.
- However, sometimes incumbents are able to take steps that increase the difficulties that new entrants will have to overcome if they are to establish themselves on a profitable basis. In other words, incumbents can implement entry-deterring strategies in an attempt to increase the size or height of barriers to entry.
- The entry-deterring strategies include limit pricing, predatory pricing, and brand proliferation.

Barriers to entry

We will examine:

1. economies of scale
2. absolute cost advantage
3. product differentiation
4. switching costs
5. network externalities
6. legal and geographic barriers to entry

Barriers to entry

1. Economies of scale

Economies of scale: Economies of scale are the cost advantages a firm experiences as it increases the scale of its production. In simple terms: the more you produce, the cheaper it becomes (on average) to produce each unit.

This happens because fixed costs are spread over more units, and because larger-scale operations can use more efficient technology, negotiate better input prices, or specialize labor more effectively.

Barriers to entry

1. Economies of scale

The first way that economies of scale is when there is an entry barrier if the minimum efficient scale of production (MES) is large relative to the total size of the market.

MES is the output level at which all potential economies of scale have been exploited, and the firm is operating at the lowest point on the long run average cost function (LRAC).

The nature of the technology may be such that firms must claim a large market share in order to produce at the MES.

Let us see what this means.

Barriers to entry

1. Economies of scale

Question is: Why must firms sometimes claim a large market share to reach the MES?

Sometimes, the technology of production requires a very large plant size, high fixed costs, or massive capacity in order for average costs to fall to their minimum.

When this happens: (continued)

Barriers to entry

1. Economies of scale

When this happens:

First: the efficient level of output is very large.

If a technology has:

1. very high fixed costs (e.g., big factories, advanced machinery),
2. very low marginal costs (cheap to produce each additional unit),

then the cost per unit only becomes low when the firm produces a lot. But producing "a lot" means serving a large portion of the market.

Barriers to entry

1. Economies of scale

Second:The market itself may not be big enough for many firms

If MES is large relative to the total market demand, then:

1. only one or a few firms can produce at the MES
2. any additional firm would have too little market share to reach the efficient scale, ending up with higher costs.

This is why industries with large MES are often concentrated or even natural monopolies.

Barriers to entry

1. Economies of scale

Third: Some types of technology force firms to operate at huge scale

1. Electricity generation (power plants)
2. Railways
3. Telecommunications networks
4. Aircraft manufacturing
5. Platform-based tech firms (high development cost, near-zero marginal cost).

In these industries:

- To exploit the technology's cost advantage, a firm must operate at very large output.
- Large output requires a large share of the market.

Barriers to entry

1. Economies of scale

An example:

Building a power plant and a transmission network requires huge fixed costs—billions in infrastructure, regulation, and grid equipment.

1. Once the infrastructure is built, the marginal cost of producing an extra unit of electricity is very low.
2. To get the average cost down to its minimum, the producer must generate and sell a massive quantity of electricity.

But a city or region only needs so much electricity.

So only one or a very small number of firms can reach MES.

That's why electricity supply is often a natural monopoly or a highly regulated duopoly.

Barriers to entry

1. Economies of scale

Another example: Search Engines

Search technology has extremely high fixed costs:

1. Building the indexing infrastructure
2. Crawling the entire web
3. Developing the ranking algorithms
4. Running global data centers
5. Massive R&D and engineering teams

Search technology has: near to zero marginal costs:

1. Once a data center is operating, serving one more search is almost free.

To get average costs down to their minimum, a search engine must process billions of searches. But the global "market" for search queries is finite. So only a few firms can reach that scale.

Barriers to entry

1. Economies of scale

So: why is a large market share necessary?

The more users a search engine has:

1. The more data it collects
2. The better it trains ranking and quality algorithms
3. The more attractive it becomes to advertisers
4. The more revenue it earns
5. The more it can reinvest in infrastructure

This creates a positive feedback loop (economies of scale + learning effects). If a firm only had a small share of the search market, it would have:

1. Higher costs per search
2. Worse data
3. Lower revenue
4. Less investment capability

Barriers to entry

1.Economies of scale

Result:

Only a few players can survive at the efficient scale.

This is why:

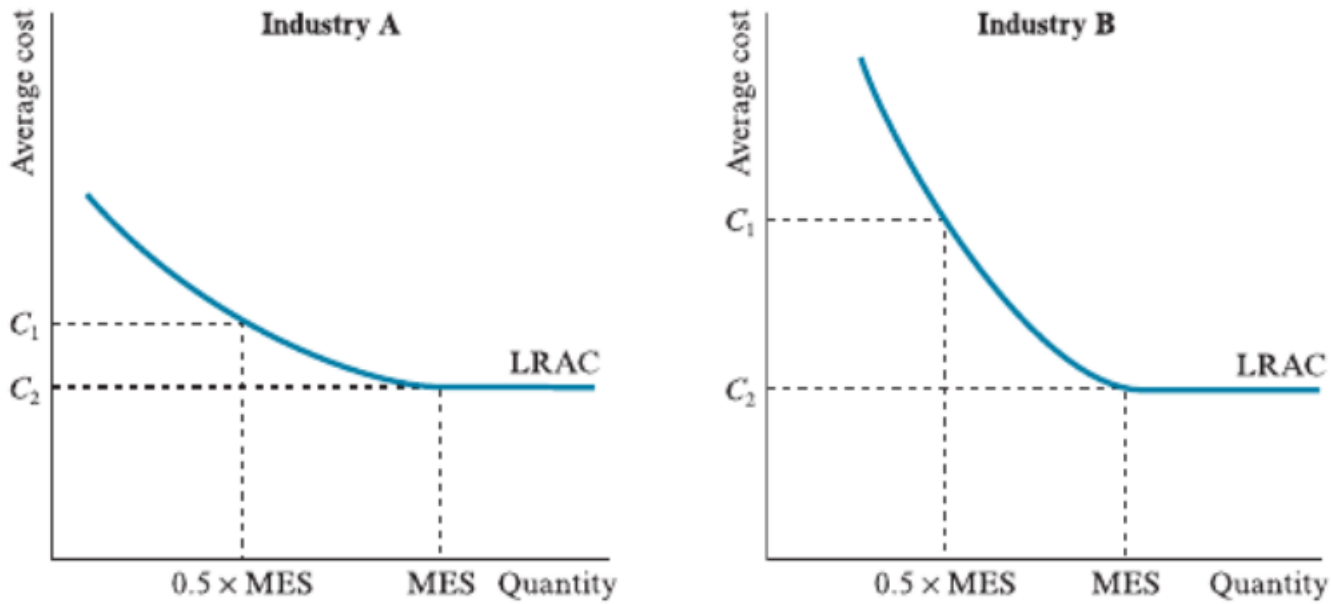
1. Google holds a dominant share
2. Bing is the primary alternative (supported by Microsoft's deep pockets)
3. Most smaller search engines either remain niche or exit the market

The technology itself—massive fixed infrastructure, tiny marginal cost, and learning effects—forces concentration.

Barriers to entry

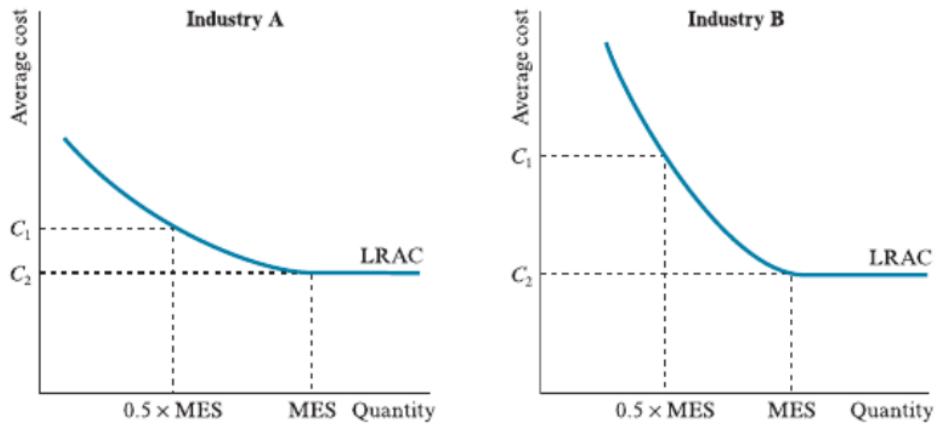
2. Average costs

The second way in which economies of scale can act as an entry barrier is when average costs associated with a production level below the MES are substantially greater than average costs at the MES.



Barriers to entry

2. Average costs



Here, in both industry A and industry B, the penalty for producing at 50 per cent of the MES is $C_1 - C_2$.

This penalty is much greater in industry B than in in- dustry A, due to the difference in slope between the two LRAC functions.

Barriers to entry

Economies of scale: average costs

Economies of scale present the potential entrant with a dilemma:

- Either the entrant accepts the risk associated with large-scale entry in order to avoid the average cost penalty
- or the entrant enters at a smaller scale and absorbs the average cost penalty.

Barriers to entry

2. Average costs

Large-scale entry is risky because the expansion in industry capacity might disrupt an established industry equilibrium, depressing prices and inviting retaliatory action from incumbents.

On the other hand, small-scale entry may not be viable, because the average cost penalty may make it impossible for the entrant to operate profitably alongside incumbents already producing at (or beyond) the MES.

Barriers to entry

2. Average costs

Pratten (1988) provides some empirical estimates of the extent to which economies of scale acted as a barrier to entry for a number of European industries in 1986.

The table in the next slide shows estimates of the additional average cost that would be incurred by operating at 50 per cent of the MES (data on next slide).

Barriers to entry

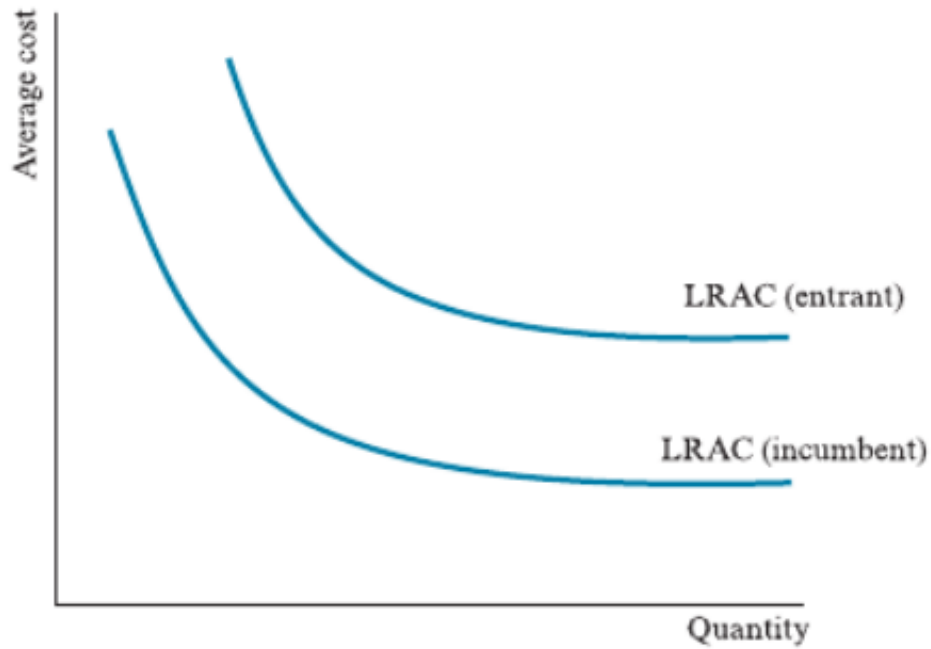
2. Average costs

Industry	Increase in average cost if operating at 50% of MES
Motor vehicles	6–9%
Chemicals	2.5–15%
Metals	>6%
Office machinery	3–6%
Mechanical engineering	3–10%
Electrical engineering	5–15%
Instrument engineering	5–15%
Paper, printing and publishing	8–36%
Rubber and plastics	3–6%
Drink and tobacco	1–6%
Food	3.5–21%
Footwear and clothing	1%

Barriers to entry

3. Absolute cost advantage

An incumbent has an absolute cost advantage entry barrier over an entrant if the LRAC function of the entrant lies above that of the incumbent, and the entrant therefore faces a higher average cost at every level of output.



Barriers to entry

3. Absolute cost advantage

There are several reasons why an entrant may operate on a higher LRAC function.

First, an incumbent may have access to a superior production process, hold patents, or be party to trade secrets.

For example, the Monopolies and Mergers Commission (1968) estimated that it would take an entrant to the cellulose fibre industry between five and seven years to catch up with state-of-the-art production technology.

Big role for strategic patenting here! . . . more on this in a bit.

Barriers to entry

3. Absolute cost advantage

Second, incumbent firms may have exclusive ownership of factor inputs.

They may control the best raw materials, or have recruited the most qualified or experienced labour or management personnel.

Consequently, entrants are forced to rely on more expensive, less-efficient or lower-quality alternatives.

Barriers to entry

3. Absolute cost advantage

Third, incumbents may have access to cheaper sources of finance, if they are viewed by capital markets as less risky than new firms.

For example, in pharmaceuticals, large incumbents with well-established research and development programmes are deemed less likely than their smaller counterparts to develop products that subsequently go on to fail drug trials.

Lower risk means that preferential financial backing is easier to attain. If the new firm's management is previously unknown, any funds loaned are likely to carry a risk premium.

Barriers to entry

4. Product differentiation

A barrier to entry exists if customers are loyal to the established brands and reputations of incumbents.

A successful entrant will need to persuade customers to switch from their existing suppliers. This might be achieved either by selling the same product at a lower price, or launching advertising, marketing or other promotional campaigns.

Due to price-cutting or increased costs (or both) the entrant is faced with a squeeze on profit, at least during the initial start-up phase.

Barriers to entry

4. Product differentiation

Product differentiation entry barriers include the following:

1. High advertising imposes additional costs upon entrants.

To overcome existing brand loyalties or customer inertia, the entrant must spend proportionately more on advertising for each prospective customer. This is an absolute cost advantage barrier. For example, in the brewing industry it is estimated that the establishment of a leading European brand through advertising takes around 20 years.

Barriers to entry

4. Product differentiation

2. If entry takes place on a small scale, the entrant will not benefit from economies of scale in advertising.

Large-scale advertisers may benefit from an increasingly effective message, and decreasing average advertising costs.

Barriers to entry

4. Product differentiation

3. The funds needed to finance an advertising campaign may incur a risk premium, as this type of investment is high risk.

Furthermore, it creates no tangible assets that can be sold in the event of failure.

Barriers to entry

5. Switching costs

Switching costs are incurred when customers face additional costs if they decide to change the supplier of a product or service.

Switching costs may include: search costs incurred in acquiring information about alternative products or services; the costs of learning how to use a different product or service; and installation or disconnection charges.

Switching costs raise barriers to entry into markets for a wide range of products such as credit cards, computer software, utilities (supplies of gas, electricity and water), telephones and banking services.

Barriers to entry

5. Switching costs

Further switching costs may be incurred when a good or service is tied to an aftermarket, through servicing or the need to purchase refills or replacement components.

Tying makes it difficult for users to switch to alternative suppliers. Users become locked in to an existing supplier, which acquires ex post market power.

Barriers to entry

5. Switching costs

To what extent do switching costs distort competition?

Barriers to entry arising from switching costs due to incompatibility of technological standards can result in the segmentation of a market into submarkets or segments, such that an incumbent within a particular segment concentrates on charging high prices to its existing customers, and does not even attempt to attract customers from rival producers.

Barriers to entry

6. Network externalities

Network externalities arise when the value of a product or service to a consumer depends upon the number of other consumers using the same product or service.

Each consumer purchases the product or service for their own benefit, but by doing so they (unintentionally) create a benefit for other users who gain extra value as the size or coverage of the network of users increases.

Barriers to entry

6. Network externalities

Network externalities make it difficult for new firms to enter when an incumbent has already established a large or comprehensive user network.

As more users buy into the network, an effective monopoly might be created, raising formidable barriers to entry for any entrant wishing to challenge the dominance of the established product, service or technological standard.

Think about Ms-Windows or Ms-Office

Barriers to entry

6. Network externalities

With compatible technological standards, consumers may be able to enjoy full network benefits without having to buy from a single producer.

If consumers are willing to pay a higher price for this benefit, then firms might be encouraged to supply compatible products.

However, an incumbent might still prefer incompatibility, because this serves as a barrier to entry.

Barriers to entry

7. Legal barriers to entry

Legal barriers to entry are erected by governments and enforced by law.

Examples of legal barriers include the following:

- Registration, certification and licensing of businesses and products: some industries are characterized by the need to seek official permission to trade, for example pubs, taxis, airlines
- Monopoly rights: monopoly rights may be granted by legislation. An example is franchised monopolies in industries such as the railways or mobile telephones. Franchised monopolies are often awarded in situations of natural monopoly, where average costs are minimised when one firm occupies the entire market, or in cases where firms require the guarantee of a relatively large market share in order to invest in technology and product development.

Continues . . .

Barriers to entry

7. Legal barriers to entry

- Patents: as we noted, patenting involves the deliberate creation of a property right, enforced by law. Ownership of a patent confers monopoly rights and the potential to earn an abnormal profit, usually for a fixed period.
- Government policies: tariffs, tax policies and employment laws may all impede entry, either directly or indirectly. For example, in several European countries car tax is related to engine capacity. This has the effect of increasing the price of cars imported from the US, which have greater engine capacity on average.

Entry deterring strategies

The barriers to entry we examined so far stem from underlying product or technological characteristics, and cannot be changed easily by incumbent firms.

In contrast, entry-deterring strategies are barriers to entry that are created or raised deliberately by incumbents through their own actions.

We now examine three types of entry-deterring strategy.

The first two are pricing strategies: limit pricing and predatory pricing.

The third is strategic product differentiation or brand proliferation, whereby incumbents employ advertising or other forms of marketing activity to strengthen brand loyalties.

Entry deterring strategies

1. Limit pricing

Limit pricing is a strategic choice by an incumbent firm to set its price low enough to discourage new competitors from entering the market, even if that price is lower than the short-run profit-maximizing level.

An incumbent chooses a price just low enough that a potential entrant would not believe any profit could be made by entering and thus prefers not entering.

Thus, the incumbent sacrifices some short-run profits to maintain long-run market power.

Entry deterring strategies

1. Limit pricing

The limit price is below the monopoly price, but above the incumbent's average cost. Therefore the incumbent earns an abnormal profit, but this abnormal profit is lower than the monopoly profit.

To pursue a limit-pricing strategy, the incumbent must enjoy some form of cost advantage over the potential entrants. These can take the form of either an absolute cost advantage or an economies of scale entry barrier.

It is therefore assumed that a structural barrier to entry exists, but this barrier may be surmountable unless the incumbent adopts a pricing strategy that makes it unattractive for entrants to proceed.

Entry deterring strategies

2. Predatory pricing

A strategy of predatory pricing on the part of an incumbent firm involves cutting price in an attempt to force a rival firm out of business.

When the rival has withdrawn, the incumbent raises its price. The incumbent adopts the role of predator, sacrificing profit and perhaps sustaining losses in the short run, in order to protect its market power and maintain its ability to earn abnormal profit in the long run.

Entry deterring strategies

3. Brand proliferation

Brand proliferation refers to efforts by an incumbent firm to crowd the market with similar brands, denying an entrant the opportunity to establish a distinctive identity for its own brand.

Advertising can help raise barriers to entry. An incumbent firm may benefit from an absolute cost advantage in advertising if its past advertising investment has helped establish name recognition or brand loyalty among consumers. Consumer familiarity makes current advertising more effective than it is for an entrant attempting to establish a presence in the market for the first time.

Economies of scale in advertising may also make it difficult for small-scale entrants to compete effectively with incumbents who are already producing and advertising on a large scale.

Entry deterring strategies

3. Brand proliferation

Using a sample of 800 advertising managers, Paton (2008) investigates the extent to which managers perceive actual or potential entry in determining the level of advertising.

Nearly 25 per cent of the firms in the sample stated that they attributed importance to entry deterrence as an aim of their advertising. In addition, over 20 per cent of firms responded that they would increase advertising expenditure in response to the entry of a rival product or service.

Entry deterring strategies

Signalling commitment

Dixit (1982) uses a game-theoretic model to describe a situation in which an incumbent firm attempts to deter entry by deliberately increasing its sunk cost expenditure before entry takes place.

The incumbent creates and signals a commitment to fight entry by engaging the entrant in a price war, in the event that entry subsequently occurs.

It is a formal model showing how an incumbent firm can use strategic investments to credibly signal commitment to aggressive behavior and deter entry.

The central idea is: actions that are costly to reverse can serve as signals of future behavior.

Entry deterring strategies

Signalling commitment

In short, we have:

- Incumbent firm
- Potential entrant

They engage in a two stage game:

Stage 1: The incumbent chooses its capacity:

- The incumbent invests in production capacity
- This investment: a) is costly, b) cannot be recovered (sunk cost), c) constrains future behavior (a higher capacity makes aggressive pricing more credible).

Entry deterring strategies

Signalling commitment

Stage 2 — The entrant observes the capacity and decides whether to enter

After seeing the capacity installed by the incumbent, the entrant chooses:

1. enter
2. stay out

If the entrant enters, both firms compete (typically in quantities à la Cournot).

Entry deterring strategies

Signalling commitment

Main insight:

1. If the incumbent chooses low capacity, it signals accommodating behavior thus: entrant enters.
2. If the incumbent chooses high capacity, this signals readiness for tough competition thus: entrant stays out.

Reasons for this to be a credible threat:

1. With high installed capacity, the incumbent's marginal cost of producing more is low,
2. So the incumbent would rationally fight entry (by producing a large quantity and lowering price).
3. The entrant, anticipating this, stays out.

A separating equilibrium: different capacity choices reveal different types/intentions.

Entry deterring strategies

Signalling commitment

Main results: capacity is a commitment device.

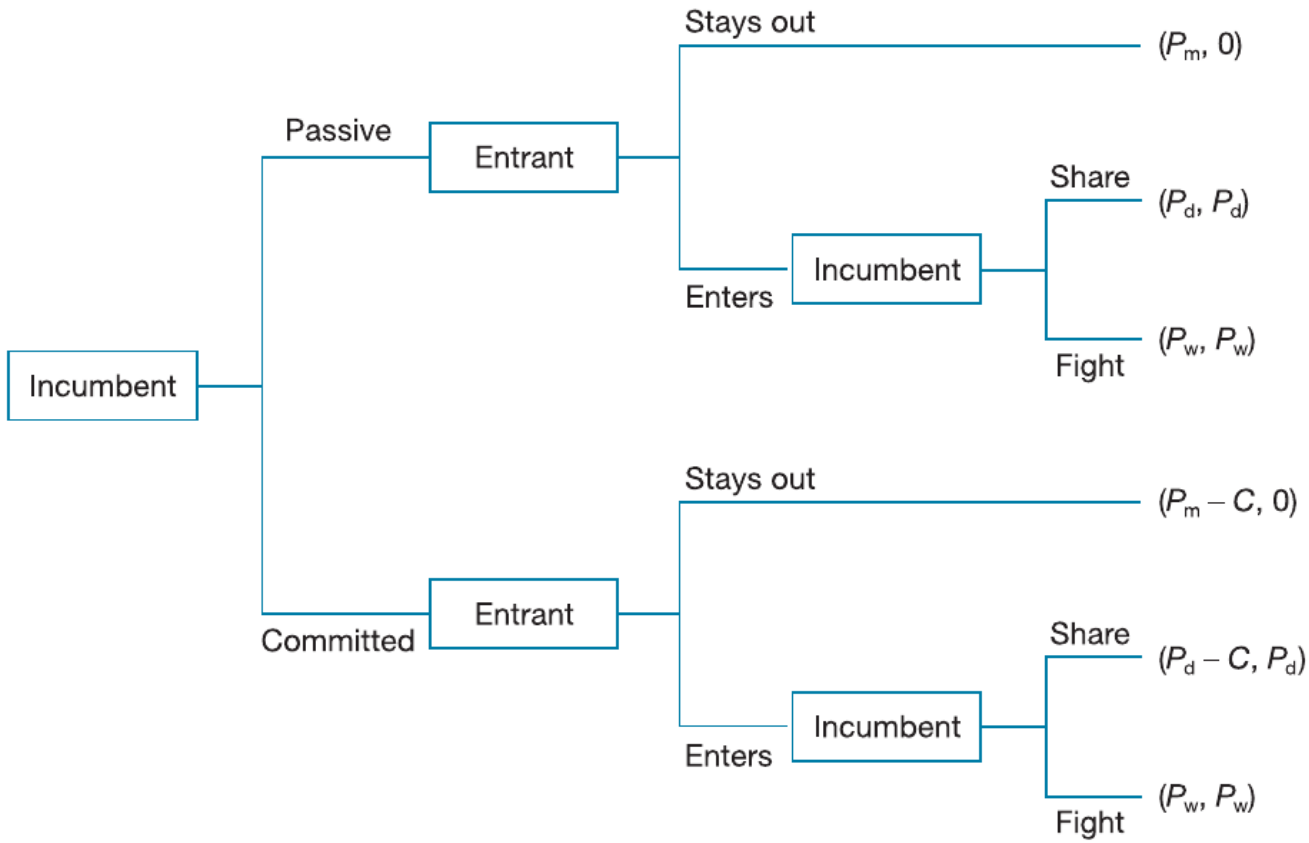
Capacity investment must be:

1. Sunk (cannot be undone),
2. Observable by the entrant,
3. Influential on future competition (i.e., affects marginal cost).

If these conditions hold, it serves as a credible threat.

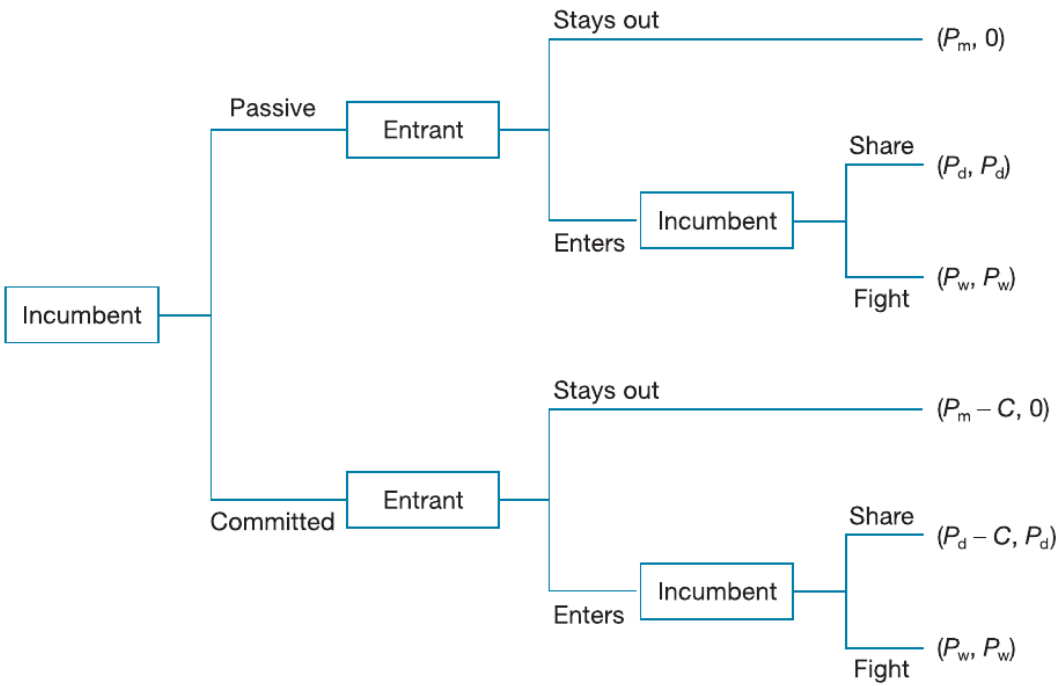
Entry deterring strategies

Signalling commitment: the game



Entry deterring strategies

Signalling commitment: the game



P_m = monopoly profit
P_w= war profit (i.e. a loss);
P_d = duopoly profit;
$P_d > 0$;
$P_d = 1/2\ P_m$
P_w ¡ 0

Entry deterring strategies

Signalling commitment

A passive incumbent does not pre-commit to fighting the entrant, in the event that entry subsequently takes place.

In other words, a passive incumbent waits to see if entry occurs, before investing in the additional productive capacity or the aggressive marketing campaign that will be required to fight a price war.

A committed incumbent does pre-commit, by incurring the sunk cost expenditure that will be required to fight in advance, before it knows whether or not entry will actually take place.

Entry deterring strategies

Signalling commitment

Are there any circumstances in which the incumbent could remain passive (avoiding incurring the sunk cost expenditure), but still be successful in deterring entry?

Suppose the game is repeated an infinite number of times: in this case, it might be in the interests of an incumbent who is passive in each period (as defined above) to fight whenever entry actually occurs, in order to establish a reputation for fighting.

Observing that the incumbent always reacts by fighting, the entrant learns from experience that there is nothing to be gained by entering, and abstains from doing so.

Entry deterring strategies

Signalling commitment

In the setting of a repeated entry game, another case in which a passive incumbent might succeed in deterring entry (without incurring sunk cost expenditure) occurs if there is imperfect knowledge, and the entrant does not know whether the incumbent is passive or committed.

An incumbent who is actually passive might attempt to deceive the entrant into believing the incumbent is committed, by launching a price war in the event that entry takes place.

After observing a fighting response in one period, and knowing that a committed incumbent always fights, the entrant's subjective probability that the incumbent is committed increases, making it less likely that the entrant will decide to proceed in subsequent periods.

Entry deterring strategies

Signalling commitment

Alternatively, incumbent firms can attempt to deter potential entrants by announcing new versions of existing products well in advance of their actual launch.

This deters potential entrants from developing similar products, as they may anticipate it will be unprofitable to do so. Haan (2003) cites a number of instances of so-called vaporware (excessively early announcement of a new version of a product) in the information technology industry.

These include Microsoft's Windows 2000 (promised in 1997 but not launched until 2000) and Intel's 64-bit Itanium chip (promised in early 2000 but not launched until 2001).

Entry deterring strategies

Some empirical evidence

There is a substantial empirical literature on the determinants of entry in manufacturing . Typical findings are that rates of entry are relatively high in profitable industries and fast-growing industries.

Rates of entry are relatively low in industries where incumbents have absolute cost advantages over potential entrants, or where entrants' capital requirements are substantial.

Entry deterring strategies

Some empirical evidence

A wide literature examines entry-deterring strategies adopted by incumbents in new and established product markets.

In a (very old...) study by Smiley A total of 293 completed questionnaires were obtained from product managers, brand managers, directors of product management, division managers and marketing managers.

Respondents were asked to identify the types of entry-deterring strategy they employed, and how frequently. In new product markets, entry-deterring strategies include: (. . . next slide)

Entry deterring strategies

Some empirical evidence

1. Charging low prices and spending heavily on advertising and promotion.
2. Building excess capacity as a signal that incumbents are able to meet future demand.
3. Pre-emptive patenting to prevent entrants from producing identical or similar products.
4. Using the media to signal that entry would provoke retaliation.
5. Engaging in limit pricing to make entry unprofitable.
6. Masking the profitability of any single product line through the use of appropriate reporting practices in company accounts (this would make a great thesis, ask Prof. Mancini)

Entry deterring strategies

Some empirical evidence

Geroski (1995) (old study!) presents a series of stylized facts on entry, based on accumulated past theoretical and empirical research:

1. Rates of entry by new firms are often high (relative to the numbers of incumbents), but new entrants rarely capture large market shares.
2. Entry by new firms is more common than entry by existing firms by means of diversification.
3. Entry rates tend to be high during the early stages of an industry's development, when consumer preferences are unsettled, and core brands, products and processes are not yet established.
4. Entry by new firms leads to increased competition, stimulates innovation and encourages incumbents to make efficiency savings.
5. Incumbents tend to prefer non-price strategies to price strategies in order to deter entry.

Entry deterring strategies

Some empirical evidence

The union representing professional footballers (FIFPro) turned to Brussels to overhaul the way the sport is run, arguing that the transfer window system hinders competition and cements the dominance of the game's richest clubs.

The union's complaint argued that only the wealthiest clubs have the financial firepower to pay the huge transfer fees required to sign the best players and to prevail in often frenzied negotiations within restricted transfer windows.

By lodging the complaint, FIFPro accusedthe national governing bodies that operate through Fifa of being anticompetitive.

Entry deterring strategies

Some empirical evidence

Jonas Baer-Hoffman, FIFPro policy director, said that by keeping some teams weak, the transfer system affected 'clubs' ability to be successful in other markets including broadcasting rights, merchandise and sponsorship'. He added that 'transfer fees represent a very, very high barrier to entry for clubs who are outside the dominant groupings'.

A study for the commission in 2013 found the total value of transfers in the EU swelled to €3bn in the 2010–2011 season from €403m in 1994–1995. Transfer fees represent a very, very high barrier to entry for clubs who are outside the dominant groupings.

NOTE: this is from FT sept.2015. Author Christian Oliver.