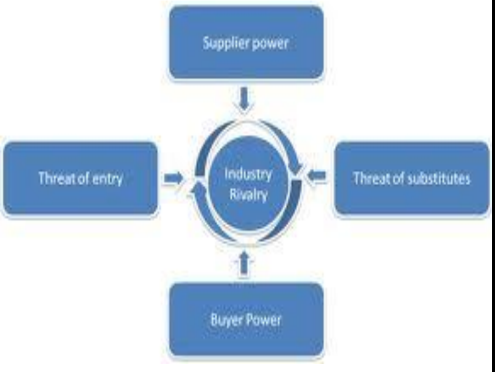
INDUSTRY & COMPETITION ANALYSIS



TOPICS:

1. Basic concepts and the SCP paradigm;

1. Relevant Factors in Industry Structure Analysis

1. Industry & Environment Analysis - Opportunities & Threats of competition:
   a) Porter’s model,
   b) Industry Life Cycle model
   c) PESTLE analysis

INDUSTRY (1)

Based on firms, the market is divided in **SECTORS (INDUSTRIES)**

Industries are characterized by product category and/or technological homogeneity.

It is not necessarily a physical place, but it is a virtual arena to define boundaries of competition.

Different groups can be obtained based on the level of homogeneity.

INDUSTRY (2)

- **BASED ON PRODUCT CATEGORY & TECHNOLOGY**

Industries are characterized by product category and/or technological homogeneity. (Example: Beer producers)
Please see ISTAT classification.

- **BASED ON DEMAND (NEEDS/WANTS)**

However, the above definition can be misleading if we want to determine the boundaries of the competitive arena. So we should look at the demand as two firms marketing two products/services that satisfy the same need/want should be considered as belonging to the same competitive arena. For this reason, we should enlarge the sector to include firms of substitute product. (Example: Alcoholic beverage producers)

THE CONCEPT OF COMPETITION

- In microeconomics, perfect competition describes markets where no participants are large enough to have the market power to set the price of a homogeneous product. This kind of markets is characterized by a high number of identical firms.

- Firms in perfect competition makes zero economic profit*. Any deviation from this market makes the market "less perfect", thus reducing the level of competition.

* Remember the difference between normal profit and economic profit in neoclassical economics.

COMPETITION AND COMPETITIVE ADVANTAGE

- The concept of competition is intuitively related to the concept of rivalry among firms to make higher economic profit.

- Competing firms needs to acquire a competitive advantage in order to make sustainable profits in the long-term.
- To acquire a competitive advantage firms have to differentiate from competitors.

What's competitive advantage?

An advantage over competitors gained by offering customers greater value than competitors offer.

Value for customers =
Perceived Benefits – Overall Costs

Note that this implies that firms are able to produce and market either at lower costs or at higher quality (or possibly both) than competitors in a more profitable way.

PORTER'S GENERIC STRATEGIES FOR COMPETITIVE ADVANTAGE

COST LEADERSHIP

Price lower than competitors as a result of lower production and marketing costs, everything else being equal.

DIFFERENTIATION

Deliver products/services whose quality and benefits are perceived as significantly superior by customers compared to those of competitors such that they are willing to pay a price premium for these products/services

Porter's approach has been criticized by numerous researchers (e.g., Miller or W. Chan Kim and Renée Mauborgne) as, in reality, both strategies could co-exist: successful firms might be those who solve such a dichotomy.

HOW TO DIFFERENTIATE? *(some anticipations)*

There are several modes to differentiate a firm's offering:

- Differentiation of product's technical features;
- Differentiation of the quality level of the product;
- Differentiation of product access/usage/disposal costs;
- Differentation of brand and/or product image.

We can distinguish between:

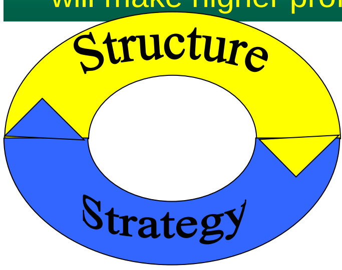
Vertical differentiation: Vertical differentiation occurs in a market where the several goods that are present can be ordered according to their objective quality from the highest to the lowest. It's possible to say in this case that one good is "better" than another. Ex: fine restaurant vs fast-food chain; cashmere vs. acrylic, motel vs. 5-stars hotel.

Horizontal Differentiation: When products are different according to features that can't be ordered in an objective way, a horizontal differentiation emerges in the market. Horizontal differentiation can be linked to differentiation in colors, styles, tastes, etc…Ex.: ice-cream tastes, beverages (coke vs. fanta).

STRATEGY AND PROFITABILITY

Business profitability depends on two main factors:

- ❑ The industry structure (operating costs and investments, demand, competition, barriers, environment) of the industry;
- ❑ Competitive strategy which determines whether the firm will make higher profit than average competitors.

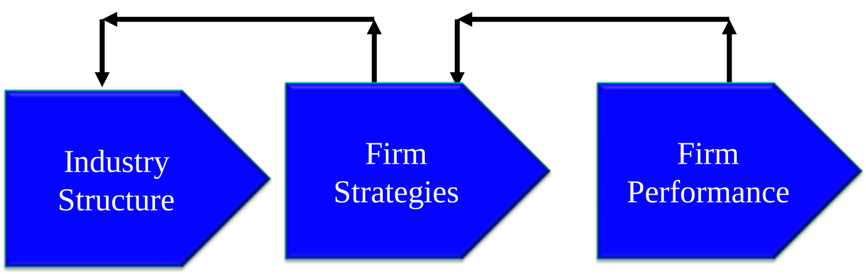


Strategies can change the industry structure (e.g., innovation).

On the other hand, knowledge of the industry structure and competitors' strategies is needed to define and carry out a competitive strategy.

THE SCP PARADIGM

The paradigm Structure – Conduct – Performance suggests that firm performance is the outcome of the industry structure and the strategies adopted by firms to achieve a competitive advantage.



RELEVANT FACTORS FOR INDUSTRY STRUCTURE ANALYSIS

MARKET FORMS

As under the SCP paradigm the conduct and performance depend on industry structure, we can start with the industry structure analysis. Specifically, we need to look at the different market forms, which are identified by the number of firms competing in the market and the degree of product differentiation.

	ONE FIRM	A FEW FIRMS	MANY FIRMS
HOMOGENEOUS PRODUCT	MONOPOLY	PURE OLIGOPOLY	PERFECT COMPETITION
DIFFERENTIATED PRODUCT		DIFFERENTIATED OLIGOPOLY	MONOPOLISTIC COMPETITION

FIRM MARKET POWER

- A firm is said to have market power if it can influence prices in the market, i.e., firm is *price maker*.
- The market power of a firm depends on the market form and, specifically, on:
  - ❖ Price elasticity of residual demand;
  - ❖ Level of product/service substitutability;
  - ❖ Size of the firms and market concentration;
  - ❖ Entry and exit barriers;
  - ❖ Collusion.

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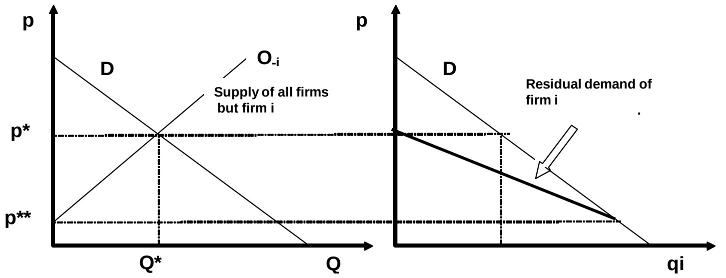
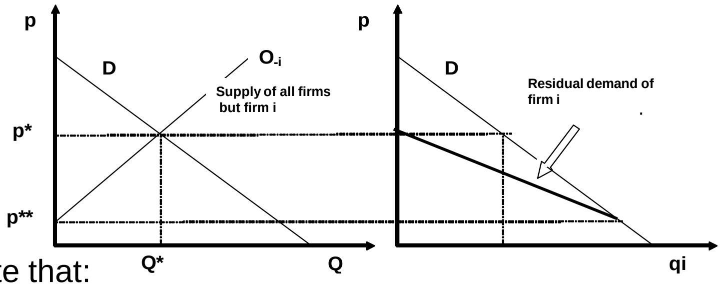
RESIDUAL DEMAND (1)

Maximum quantity a given firm sells at a given price.



At price p* the entire demand is satisfied by the other firms (firm i makes no sales); at price p** the entire demand is satisfied by firm i.

RESIDUAL DEMAND (2)



Note that:

- The residual demand curve has a lower slope than the global demand (more sensitive to price variations).
- It depends on the number of competitors: the higher the number of competitors, the flatter the residual demand;
- Perfect competition: horizontal DR; Monopoly DR=D.

LERNER INDEX

- A measure of the market power is the Lerner index (although there are other measures).
- The Lerner index is:

$$L = \frac{p - MC}{p}$$

where *p* is the price and *MC* is the marginal cost (i.e., the incremental cost of producing a new product unit.

LERNER INDEX

In the course "Industrial Organization and Strategy" held by Prof. Perrone it will be shown that:

$$L = \frac{p - MC}{p} = \frac{H}{\varepsilon}$$

where ε is the price elasticity of the residual demand.

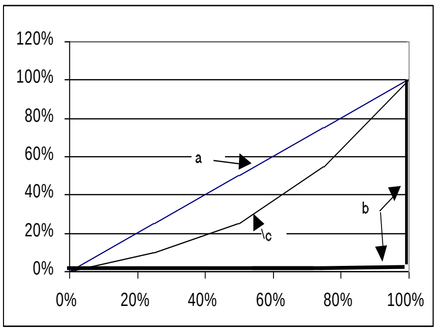
- **Monopoly**: DR=D, i.e., the **highest market power**.
- **Perfect competition**: flat DR, infinitive price elasticity of demand, zero market power; firms are *price taker*;
- **Oligopoly**: intermediate market power depending on the market concentration.

MARKET CONCENTRATION (1)

- The more homogeneous the market shares of the firms in the market, the lower their market power.
- The competition decreases with the increase of market share heterogeneity, i.e., the increase of market concentration.
- Market concentration can be measured by the Lorenz curve, in a plot where the number of firms (economic concentration) or the number of production units (technical concentration) are reported on the x-axis and the market shares on the y-axis.

MARKET CONCENTRATION (2)
Lorenz Curve

Firms	Q.M.(a)	Q.M.(b)	Q.M.(c)
1	25%	0%	10%
2	25%	0%	15%
3	25%	0%	30%
4	25%	100%	45%



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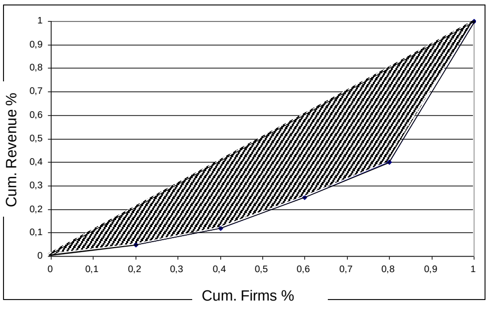
MARKET CONCENTRATION (3)

Firms	Revenue	Revenue %	Firm %	Qi Cum. Revenue	Pi Cum. Firms	Pi-Qi
A	250	0.05	0.2	0.05	0.2	0.15
E	350	0.07	0.2	0.12	0.4	0.28
B	650	0.13	0.2	0.25	0.6	0.35
D	750	0.15	0.2	0.4	0.8	0.4
C	3000	0.6	0.2	1	1	0
Total	**5000**	**1**	**1**			



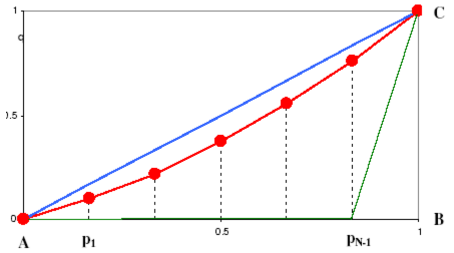
Concentration area =

$$= \frac{1}{2} - \frac{1}{2}\sum_{i=0}^{n-1}(q_i + q_{i+1})(p_{i+1} - p_i)$$

A measure of concentration is:

$$R = \frac{\text{Concentration area}}{\text{Maximum Concentration area}} = \frac{\frac{1}{2} - \frac{1}{2}\sum_{i=0}^{n-1}(q_i + q_{i+1})(p_{i+1} - p_i)}{\frac{1}{2}}$$

MARKET CONCENTRATION (4): some clarifications



In the Lorenz curve the maximum concentration area is not equal to ½, thus:

$$A(C) = 1/2\left[1-\sum_{i=0}^{N-1}(p_{i+1}-p_i)(q_{i+1}+q_i)\right].$$

$$\begin{aligned} A(ABC) &= 1/2 \\ A(p_{N-1}BC) &= \frac{1}{2}(1-p_{N-1}) = \frac{1}{2}(1-\frac{N-1}{N}) \\ A(max) &= \frac{1}{2}-\frac{1}{2}(1-\frac{N-1}{N}) = \frac{1}{2}(1-1-\frac{N-1}{N}) = \frac{N-1}{2N} \end{aligned}$$

Therefore, the concentration index based on the Lorenz curve is:

$$R^* = \frac{A(C)}{A(max)} = \frac{2N}{N-1}\times\frac{1}{2}\left[1-\sum_{i=0}^{N-1}(p_{i+1}-p_i)(q_{i+1}+q_i)\right]$$

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MARKET CONCENTRATION (5) GINI INDEX

- *For any distribution, we have:* $P_i \geq Q_i, \forall i$, e $P_N = Q_N = 1$
- *The higher the concentration, the higher the following differences:* $P_i - Q_i$
- *In case of maximum concentration, we have:* $Q_1 = \cdots = Q_{N-1} = 0$
- *To have a summarizing index we can compute the Gini Index obtained by computing the following formula:*

$$G = \frac{\sum_{i=1}^{N-1}(P_i - Q_i)}{\sum_{i=1}^{N-1} P_i} = 1 - \frac{\sum_{i=1}^{N-1} Q_i}{\sum_{i=1}^{N-1} P_i}$$

It can be shown that the Gini index is equivalent to Lorenz's measure R*, thus the relationship with Lorenz's concentration area is:

$$G = R^* = \frac{2\cdot N}{(N-1)}\cdot A(C) \qquad A(C) = 1/2\left[1-\sum_{i=0}^{N-1}(p_{i+1}-p_i)(q_{i+1}+q_i)\right].$$

MARKET CONCENTRATION (6)
FURTHER INDICES

In addition to Gini index, which, as discussed, is obtainable from the Lorenz curve, we can use other indices: Herfindahl-Hirschmann index and Concentration Ratios.

Concentration Ratio:

A concentration ration is the sum of the market share of the n firms with the highest sales (usually in value).

$$CR_n = \sum_{i=1}^{n} s_i \quad \text{where } n < N$$

N Number of firms in the industry

s_i Market share of firm i

MARKET CONCENTRATION (6)
FURTHER INDICES

Indice di Herfindahl-Hirschmann (HII).

$$H = \sum_{i=1}^{N} s_i^2$$

It is equal to the sum of square powered market share of the N firms in the industry.

Lowest value: H=1/N (Perfect competition)

Highest value: H=1 (monopoly)

The index increases with the number of firms and the heterogeneity among firms' market shares. Usually is multiplied by 10000 and values above 2500 means a high concentration to Antitrust.

MARKET CONCENTRATION (7)

In the course "Industrial Organization and Strategy" will be proved that the Lerner index the depends on HII, as follows:

$$L = \frac{H}{\varepsilon}$$

Therefore, the market power depends on:

- ❑ **Industry concentration;**
- ❑ **Price elasticity of residual demand.**

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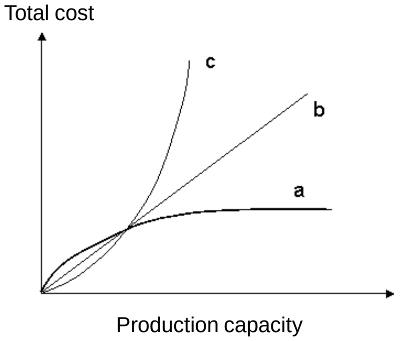
ENTRY BARRIERS DEPENDING ON FIRM SIZE ECONOMIES

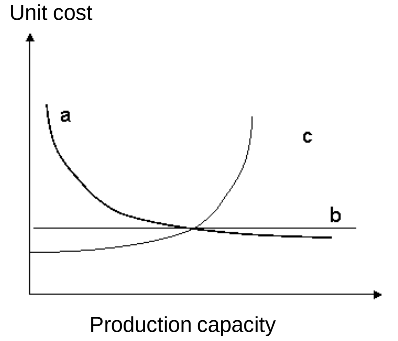
A firm able to produce a lower unit operating cost compared to rivals obtains a competitive advantage as has a wider range of price strategies and, thus, can make higher profit. Firms can enjoy a lower unit cost because of:

- ❑ Economies of scale: unit average operating cost reduction as a function of the production capacity;
- ❑ Economies of experience: unit average operating cost reduction as a function of the cumulated production quantity;
- ❑ Economies of scope;
- ❑ External economies.

ECONOMIES OF SCALE (1)

The curves below indicate the cases of presence of economies of scale, absence of economies of scale, presence of diseconomies of scale, respectively.



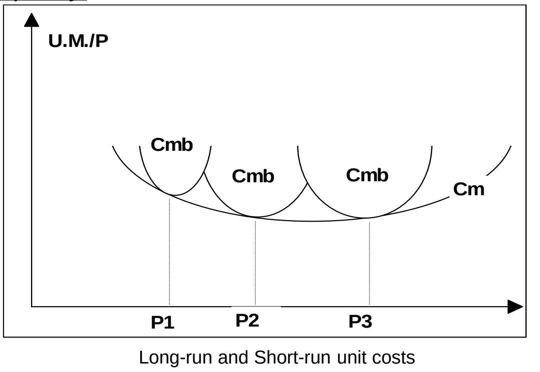


a: economies of scale; **b** absence of economies of scale; **c**: diseconomies of scales.

ECONOMIES OF SCALE (2)

Reasons behind economies of scale are:

1. <u>Increasing returns of the production function with the increase of the production capacity.</u>



Long-run and Short-run unit costs

ECONOMIES OF SCALE (3)

2. Other reasons:

- Minimum threshold for resource usage: the use of some resources becomes suitable if their cost is allocated to a large quantity of product. Example: TV commercials.
- The opportunity to use a resource several times with no additional costs. Example: trademarks, patents.
- Increasing returns of combining not perfectly divisible resources, e.g., firm departments.
- Cube-square cases. Example: container production.
- Auto-insurance modes. Example: Repair management costs with the increase of number of machines.

ECONOMIES OF EXPERIENCE (1)

- 1936 – The origins of the experience curve go back to the US Wright-Patterson Air Force Base where it was observed that number of working hours needed to assembly aircrafts decreased with the number of assemled aircrafts.
- 1972 – The company Boston Consulting Group, after extensive studies, demonstrated that such a phenomenon was observable also in other firm areas (e.g., distribution and selling) and other industries.
- The model suggested by the BCG company is:

  ”Each time cumulative volume doubles, value added costs, in real values, fall by a constant and predictable percentage.“

ECONOMIES OF EXPERIENCE (2)

- The curve of the unit production cost as a function of the cumulative production volume, called experience curve, is:

$$C_t = C_{t-1} \cdot \left(\frac{V_t}{V_{t-1}}\right)^{-\lambda}$$

- C_t and C_{t-1} unit production costs with no inflation at t and t-1, respectively.
- V_t and V_{t-1} cumulative production volumes;
- λ parameters measuring the learning rate as a function of the level of initial experience in production.

ECONOMIES OF EXPERIENCE (3)

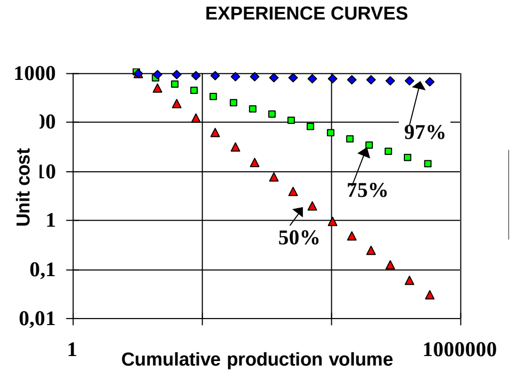
$$p = 1 - \frac{E_i\%}{100}$$

The learning rate (equivalent to c_t / c_{t-1} when the cumulative production volume doubles) is linear decreasing function of initial experience.

$$\lambda = -\frac{\text{Log p}}{\text{Log2}}$$

ECONOMIES OF EXPERIENCE (4)

$$LogC_t - LogC_{t-1} = -\lambda \cdot (LogV_t - LogV_{t-1})$$



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ECONOMIES OF EXPERIENCE (4)

- As said, the experience curves show how unit production cost varies with cumulative production volume, *ceteris paribus*.
- If we change something, curves will change. For instance, the following factors can affect the experience curves:
  - Economies of scale;
  - Technological changes;
  - New product design & development;
  - Production process improvement;
  - Product standardization and change in product quality.

ECONOMIES OF EXPERIENCE (5)

Strategic implications

- The expected cost decrement with the cumulative production volume leads some strategic implications considerations related to the variation of the demand growth rate and the variation of the firm market share.

- Let consider for sake of simplicity a market segment with two firms A and B with initial market shares equal to α and β. D_t is the market demand at year t and r is the constant yearly growth rate.

ECONOMIES OF EXPERIENCE (6)

Strategic implications

- Let us indicate:
- X_{at} ed X_{bt} as the production volumes of the firms A and B at year t;
- r_a ed r_b as they yearly growth rate of production volumes;
- V_{at} e V_{bt} as the cumulative production volumes till year t.
- We obtain

$$X_{at} = X_{ao} \cdot (1 + r_a)^t; \qquad V_{at} = X_{ao} \cdot \frac{(1 + r_a)^t - 1}{r_a}$$

$$X_{bt} = X_{bo} \cdot (1 + r_b)^t; \qquad V_{bt} = X_{bo} \cdot \frac{(1 + r_b)^t - 1}{r_b}$$

$$D_t = D_o \cdot (1 + r)^t; \qquad X_{ao} = \alpha \cdot D_o; \; X_{bo} = \beta \cdot D_o$$

ECONOMIES OF EXPERIENCE (7)

Strategic implications

- The ratio between the cumulative volumes V_t/V_{t-1} of the two firms tends to $(1+r_a)$ ed $(1+r_b)$ respectively when t tends to ∞;

$$X_{at} = X_{ao} \cdot (1+r_a)^t; \qquad V_{at} = X_{ao} \cdot \frac{(1+r_a)^t - 1}{r_a}$$

$$X_{bt} = X_{bo} \cdot (1+r_b)^t; \qquad V_{bt} = X_{bo} \cdot \frac{(1+r_b)^t - 1}{r_b}$$

$$D_t = D_o \cdot (1+r)^t; \qquad X_{ao} = \alpha \cdot D_o;\ X_{bo} = \beta \cdot D_o$$

- Regarding the market share the following the relationships hold:

$$\alpha \cdot D_o \cdot (1+r_a)^t + \beta \cdot D_o \cdot (1+r_b)^t = D_o \cdot (1+r)^t$$

$$\frac{X_{a\,t}}{X_{b\,t}} = \frac{\alpha(t)}{\beta(t)} = \frac{X_{a\,o}(1+r_a)^t}{X_{b\,o}(1+r_b)^t} = \frac{\alpha}{\beta} \cdot \frac{(1+r_a)^t}{(1+r_b)^t}$$

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ECONOMIES OF EXPERIENCE (8)

Strategic implications

- We have the following cases:

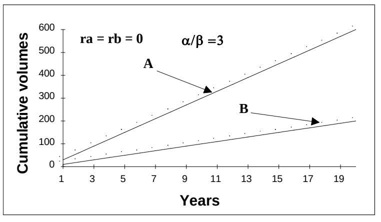
a) Firms A e B move on the same experience curve and their yearly volumes do not change ($r_a = r_b = 0$).

In such conditions, cumulative volumes increase linearly for both firms with slopes proportional to initial yearly volumes (fig. 1), whereas ratios V_t/V_{t-1} and C_t/C_{t-1} tend to 1 for t tending to ∝ (fig. 2).

It follows that the firms moves on the same experience curve with different speed (fig. 3) and the unit costs difference decreases with time (fig.4).

ECONOMIES OF EXPERIENCE (9)

Strategic implications



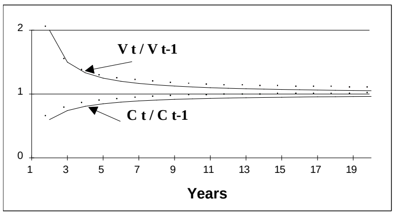
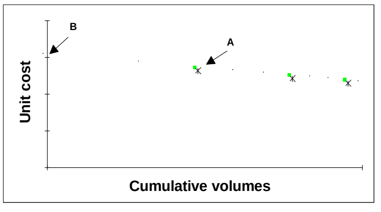


Fig. 1 and 2



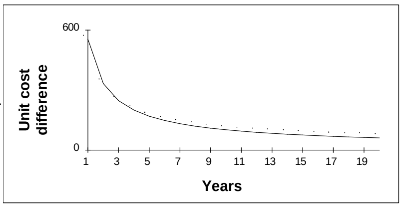


Fig. 3 and 4

ECONOMIES OF EXPERIENCE (10)

Strategic implications

b) Firms A and B move along the same experience curve and their production volumes increase with the same growth rate as the market growth rate.

The considerations on case a) are still valid.

Specifically, the figures show nonlinear cumulative volumes growth; the different speed along the same experience curve and finally the unit cost difference between the leader and the follower which decreases with the increase of experience. The last figure shows the comparison of constant yearly production volumes and the case of volumes increasing with the same growth rate as the market growth rate. It is possible to see that the higher the market growth rate, market shares being equal, the more rapidly the two unit costs will become equal.

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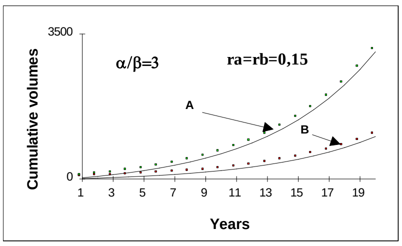
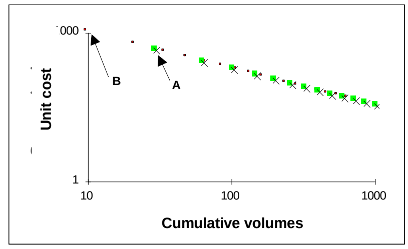
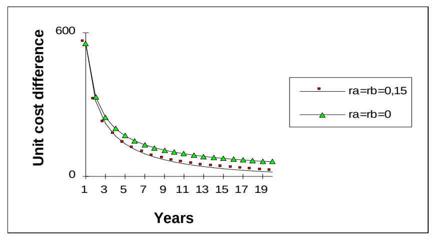
ECONOMIES OF EXPERIENCE (11)

Strategic implications







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ECONOMIES OF EXPERIENCE (12)

Strategic implications

c) Firms A and B moves along the same experience curve but their yearly volumes increase with a different growth rate. In this case, the firm with higher growth rate moves more rapidly along the curve and will increase its own competitive advantage.

d) Firms A and B moves on two different experience curves with a growth rate equal the market growth rate. Suppose that the leader firm A moves on a curve at 90% (λ= 0,1522), for instance by differentiating a known product and firm B has lower initial experience equal to 50% (λ = 1); the unit initial cost is inferior for firm A.

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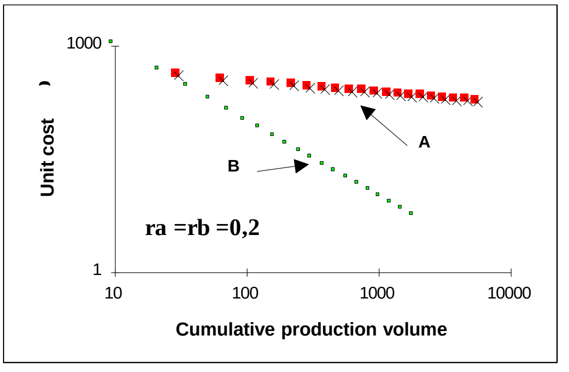
ECONOMIES OF EXPERIENCE (13)

Strategic implications

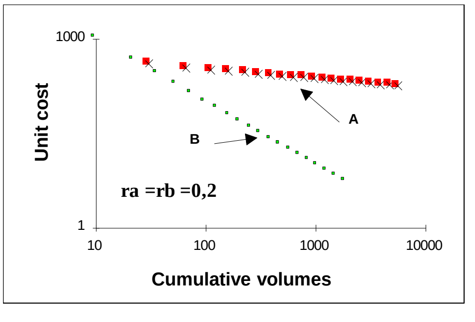
The figures shows how with a constant yearly volume growth rate, equal to 0.2, the follower could reach unit costs lower than those of the leading firm very soon.



ECONOMIES OF EXPERIENCE (13)

Strategic implications

La figura mostra come con un tasso di crescita costante del volume annuo, pari a 0,2 , ben presto l'azienda inseguitrice potrebbe ottenere costi unitari di produzione inferiori a quelli dell'azienda leader.



ECONOMIES OF SCOPE

- This type of economies are related to the joint production and/or distribution of more than one good.
- Example in production: two machineries, one producing product A and the other one producing product B or one flexible production system producing both A and B. We observe economies of scope if the following relationships between unit production costs hold:

$$C_{AB} > C_A; \; C_{AB} > C_B; \;\; C_{AB} < C_A + C_B$$

- Example in marketing: cost reduction if two or more products are distributed and/or promoted jointly.

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EXTERNAL ECONOMIES

- Absolute cost advantages of big firms in acquiring production inputs, for instance due to higher bargaining power or due to higher and global the number of suppliers from which the big firm can purchase.

OTHER FACTORS

- **VERTICAL INTEGRATION**

  A vertical integration happens when firm expands its own activity upstream or downstream in the supply chain either by new business establishment or, more frequently, by M&A . Example: multinational oil companies.

- **COST STRUCTURE**

  Different industries have different cost structure, meaning different ratio between variable and fixed costs, which in turn determines firms flexibility and responsiveness to market changes.

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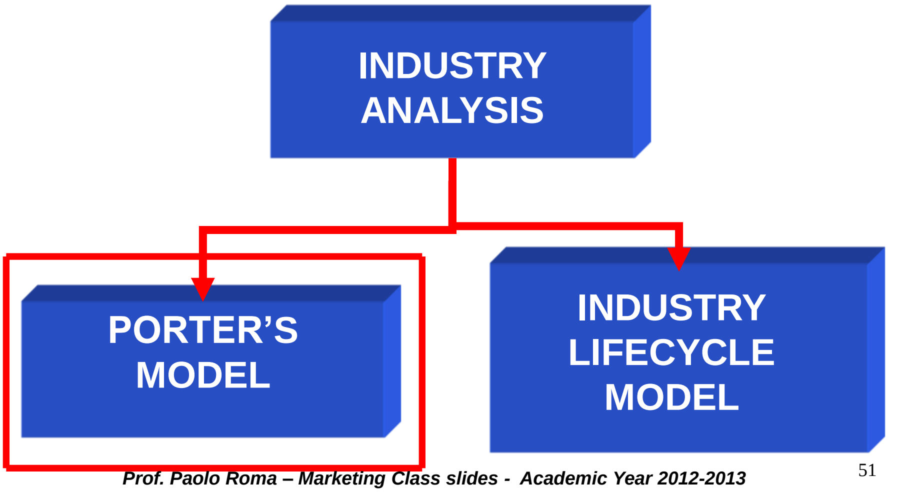
INDUSTRY ANALYSIS: OPPORTUNITIES & THREATS OF COMPETITION

INDUSTRY ATTRACTIVENESS

THE MOST COMMON SCP MODELS



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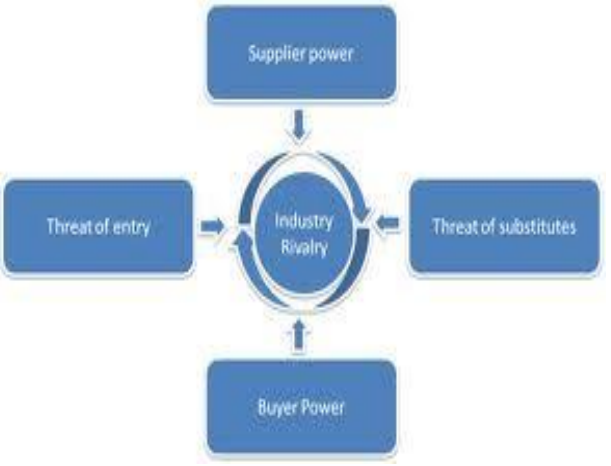
PORTER'S MODEL

It can be used at different market levels:

- ❖ Targeted Market;
- ❖ Macro-segmentation;
- ❖ Micro-segmentation.

A change in the market level requires a change in the detail level of information needed to analyze it and, of course, the level of aggregation of such information.

THE 5 FORCES OF THE PORTER'S MODEL



PORTER'S MODEL: THREATS OF ENTRY (1)

Threats of entry depend on:

- Barriers to entry;
- Incumbent reactions (e.g., dumping, lobby, cartels).

If either one or both are high, the threats of entry are low because:

A new entrant will have to face high cost to overcome barriers and/or, expect a fierce (and perhaps not that fair) competition from incumbents.

PORTER'S MODEL: THREATS OF ENTRY (2)

If threats of entry are high:

- *Low prices are set;*
- *Industry profitability is low;*
- *Industry attractiveness is low.*

If threats of entry are low:

- *Incumbents can sustain their competitive advantage;*
- *Industry profitability is high;*
- *Industry attractiveness is high.*

PORTER'S MODEL: THREATS OF ENTRY (3)

BARRIERS TO ENTRY

- Economies related to firm size
- High product differentiation
- High need of working capital
- High switching costs
- Privileged access to distribution channels
- Other barriers that do not depend on production volume:
  - Patents
  - Privileged access to production inputs
  - Advantageous facility location
  - Laws and public policies for incumbents

PORTER'S MODEL: THREATS OF ENTRY (2)

EXAMPLES OF BARRIERS IN DIFFERENT BUSINESS AREAS

- *Production*
  - ✓ Reduction of the incidence of fixed costs by increasing production capacity;
  - ✓ Increase in the plant utilization rate by increasing production capacity;
  - ✓ special production technologies;
  - ✓ Reduction of the labor cost incidence;
- *Marketing*:
  - ➢ Activity integration;
  - ➢ Advertising effectiveness;
  - ➢ Bargaining power.
- *R&D*

PORTER'S MODEL: INDUSTRY RIVALRY (1)

It depends on:

- ❑ Price elasticity of demand and cost structure;
- ❑ Industry concentration;
- ❑ Industry growth rate;
- ❑ Product added value & inventory costs;
- ❑ Strategic priorities;
- ❑ Barriers to exit.

PORTER'S MODEL: INDUSTRY RIVALRY (2)

Price elasticity of demand and cost structure

The effect of strategy, e.g., a particular pricing strategy, adopted by a firm reflects not only on the given firm's outcomes but also on the rivals' performances.

In some situations a fierce price competition can lead to a price war and, as a result, losses for all the firms.

$$e_d = \frac{\Delta Q}{Q} \cdot \frac{p}{\Delta p}$$

If price elasticity of demand is low (inelastic) a price reduction leads to a demand increase that is not sufficient to generate an industry revenue equal to that obtained before the price reduction.

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PORTER'S MODEL: INDUSTRY RIVALRY (3)

Price elasticity of demand and cost structure

- The effect of price changes on demand, price elasticity of demand being equal, can be computed using the Marginal Income Ratio (MIR):

$$MIR = \frac{price - \text{variable cost}}{price}$$

- Let X and Y be the demand before and after price increase respectively, and α the percentage of price increase.

PORTER'S MODEL: INDUSTRY RIVALRY (4)

Price elasticity of demand and cost structure

The contribution margin increases if and only if:

$$(p - vc) \cdot X \leq ((1+\alpha) \cdot p - vc) \cdot Y$$

from which:

$$\frac{MIR}{MIR + \alpha} \leq \frac{Y}{X}$$

Therefore, for a given price increase, the demand Y cannot be lower than the threshold above, otherwise the new profit will be lower. Similarly, for a given price decrease, the demand Y cannot be lower than the threshold above, otherwise the new profit will be lower

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PORTER'S MODEL: INDUSTRY RIVALRY (5)

Price elasticity of demand and cost structure

$$\frac{MIR}{MIR + \alpha} \leq \frac{Y}{X}$$

Examples: price increase of 10% (α=0,1)

Airline company: high fixed costs and low variable costs (ticket price 300€; variable cost per passenger 15€; MIR =95%; Y/X= 90,5%).

Manufacturing company: high variable costs: price 100€; unit variable cost 50€; MIR= 50%; Y/X= 83,3%).

Firms have to pay a lot of attention to price changes when MIR is high as the higher the MIR the higher industry rivalry.

PORTER'S MODEL: INDUSTRY RIVALRY (6)

Industry growth rate

- All products and businesses have a lifecycle, i.e., they are not for good.
- Each phase of a product lifecycle is characterize by a growth rate computed as:

$$\boxed{\frac{Sales_n - Sales_{n-1}}{Sales_{n-1}} \cdot 100}$$

- The lower the growth rate the higher industry rivalry.

PORTER'S MODEL: INDUSTRY RIVALRY (7)

Industry growth rate

The lower the industry growth rate the higher industry rivalry.

THIS IS BECAUSE:

A firm gains market shares when its own sales growth rate is higher than the market growth rate. When the market growth rate is high, firms are happy because their sales naturally would increase and there is no need to capture slices from competitors.

PORTER'S MODEL: INDUSTRY RIVALRY (7)

Product added value & inventory costs

- When the product added value is low competition tends to be fierce as firms need to sell high volumes to reach the break-even point.
- Similarly the higher the inventory costs the higher the competition as firms have to sell a lot not to incur in such costs.

PORTER'S MODEL: INDUSTRY RIVALRY (8)

Strategic priorities

- Sometimes firms may be present in a market just because of some strategic decisions. For instance, a firm may be in a foreign market due to image returns in the major market. Such strategic decisions may be detrimental to competitors because the firm may not be interested in profiting from the foreign market and can strategically lower the price to damage competitors.

PORTER'S MODEL: INDUSTRY RIVALRY (9)

Barriers to exit

- **SPECIALIZED PLANTS & MACHINERIES:** High switching costs.
- **FIXED COSTS TO EXIT:** Costs related to contract penalties.
- **STRATEGIC INTERCONNECTIONS:** Interconnections among different business areas may lead the firms to be present in a specific business because it impacts on the corporate strategy.
- **EMOTIONAL BARRIERS:** Devotion and attachment of founder(s) to the firm and its mission; loyalty toward employees, etc.
- **SOCIO-POLITICAL BARRIERS:** Politics may affects decision to exit.

PORTER'S MODEL: INDUSTRY RIVALRY (10)

Barriers to exit

		BARRIERS TO EXIT: LOW	BARRIERS TO EXIT: HIGH
BARRIERS TO ENTRY	LOW	Low and stable profitability	Low and risky profitability
BARRIERS TO ENTRY	HIGH	High and stable profitability	High and risky profitability

PORTER'S MODEL: THREATS OF SUBSTITUTES

- Substitutes are those products possibly made with different technology but still satisfy the same needs/wants of customers.
- The higher the value for money of substitutes the higher their competitive power;
- To contrast substitutes firms in the industry can adopt:
  - Joint marketing campaigns;
  - Value for money increase;
  - Integration of substitutes.

PORTER'S MODEL: BUYER POWER (1)

- ❑ Buyer concentration with respect to firm concentration in the given industry. A higher buyer concentration increases buyer bargaining power.
- ❑ Buyer volume and frequency: a high purchase volume/frequency means a high cost for buyers, who will be more careful and pay more attention to reduce this cost when negotiating.
- ❑ Product differentiation: if product is undifferentiated, buyers will be more able to switch to other suppliers.
- ❑ Switching costs: if switching costs are low, buyers can change easily and therefore their bargaining power increases.
- ❑ Possibility of upstream integration of the buyer.
- ❑ Buyer financial situation: if buyers are financially weak, they will try to negotiate more advantageous conditions.
- ❑ If the acquired product affects the quality of the buyer product significantly, buyer's bargaining power decreases.
- ❑ Level of information asymmetry.

PORTER'S MODEL: BUYER POWER (2)

Relative Concentration	The higher buyer size and relative concentration with respect to suppliers, the higher their bargaining power. The buyer size can increase for instance by establishing consortia, cooperatives and buying groups.
Product Characteristics	Buyer bargaining power increases if: ✓ Products are **lowly differentiated;** ✓ **Switching costs** are **low;** ✓ Supplier' product has a **low influence** on buyer' final product performance.
Buyer characteristics	• Size and frequency of purchases; • Information availability; • Possibility of upstream integration.

PORTER'S MODEL: SUPPLIER POWER (1)

Suppliers can threat by increasing prices and/or reducing supply quantity/quality. Their power depends on:

- ❑ Supplier concentration with respect to firm concentration in the given industry. A higher supplier concentration increases supplier bargaining power.
- ❑ The market segment or the industry is not that important for the supplier.
- ❑ Supplier product differentiation: if the product is differentiated, firms in the industry have not easy way to find valid alternatives.
- ❑ Switching costs: if switching costs are low, firms in the industry can change easily supplier and therefore supplier bargaining power decreases.
- ❑ Possibility of downstream integration of the supplier.
- ❑ If the acquired product affects the quality of the firm product significantly, supplier's bargaining power increases.
- ❑ Level of information asymmetry.

PORTER'S MODEL: SUPPLIER POWER (2)

Relative Concentration	The higher supplier size and relative concentration with respect to buyers, the higher their bargaining power. The suppliers size can increase for instance by establishing consortia, cooperatives, selling groups and cartels.
Product Characteristics	Supplier bargaining power increases if: ✓ Supplier products are **highly differentiated;** ✓ Buyer **switching costs** are **high;** ✓ Supplier' product has a high **influence** on buyer' final product performance.
Supplier characteristics	• Importance of the buyer for the supplier ; • Information availability; • Possibility of downstream integration.

PORTER'S MODEL: GENERIC STRATEGIES (1)

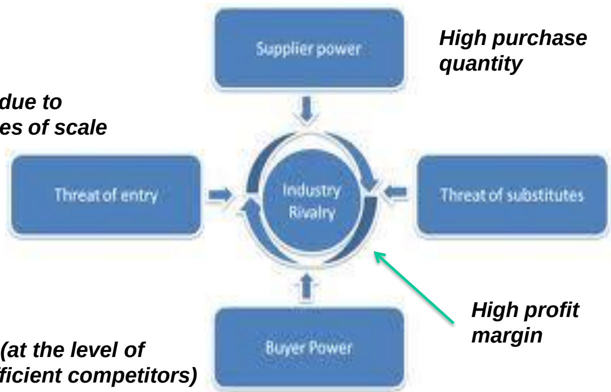
Target Scope	*Advantage*	
	Low cost	Product uniqueness
Broad (Industry Wide)	**Cost Leadership Strategy**	**Differentiation Strategy**
Narrow (Market Segment)	**Focus Strategy** (low cost)	**Focus Strategy** (differentiation)

PORTER'S MODEL: GENERIC STRATEGIES (2)

Cost leadership Strategy

High purchase quantity

Barriers due to economies of scale



Low price

High profit margin

Low price (at the level of the less efficient competitors)

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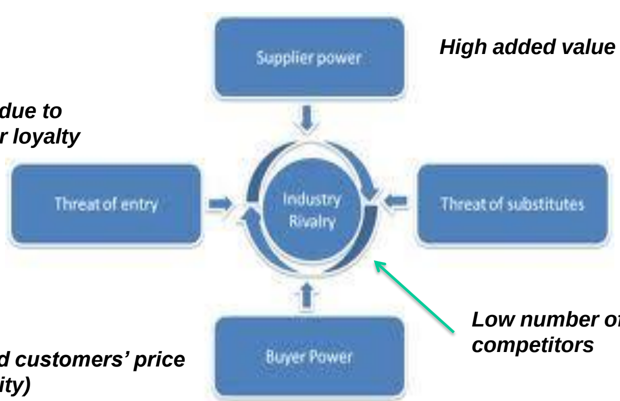
PORTER'S MODEL: GENERIC STRATEGIES (2)

Differentiation Strategy

High added value

Barriers due to customer loyalty



Low number of substitutes

Low number of competitors

Reduced customers' price sensitivity)

PORTER'S MODEL: EXAMPLES (1)

DRUG INDUSTRY (ROE=28%)

SUPPLIER POWER
LOW

THREAT OF ENTRY
LOW

- economies of scale
- capital requirements for R&D and clinical trials
- product differentiation
- control of distribution channels
- patent protection

INDUSTRY COMPETITIVENESS
LOW

- high concentration
- product differentiation
- patent protection
- steady demand growth
- no cyclical fluctuations of demand

THREAT OF SUBSTITUTES
LOW

No substitutes.
(Changing as managed care encourages generics.)

BUYER POWER
LOW

Physician as buyer:
Not price sensitive
No bargaining power.
(Changing with managed care.)

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PORTER'S MODEL: EXAMPLES (2)

Airline Industry (ROE=-1%)

SUPPLIER POWER
HIGH

- strong labor unions
- concentrated aircraft makers

THREAT OF ENTRY
HIGH

- little product differentiation
- deregulation of governmental barriers

INDUSTRY COMPETITIVENESS
HIGH

- many companies
- little product differentiation
- excess capacity
- high fixed/variable costs

THREAT OF SUBSTITUTES
MEDIUM

- autos for short distance travel

BUYER POWER
MEDIUM/HIGH

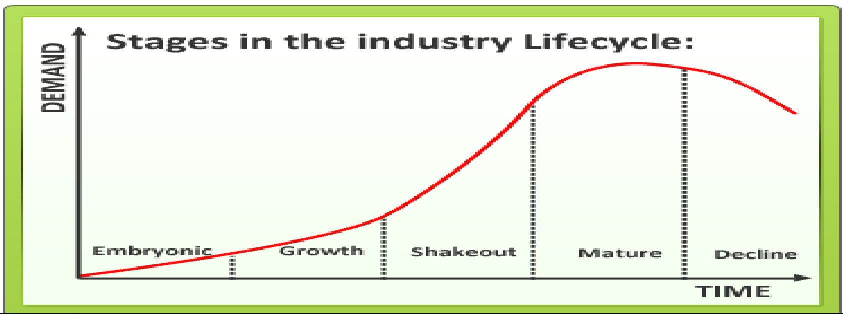
Buyers extremely price sensitive
Good access to information
Low switching costs

PORTER'S MODEL: EXAMPLES (3)

INDUSTRY LIFE CYCLE MODEL (1)

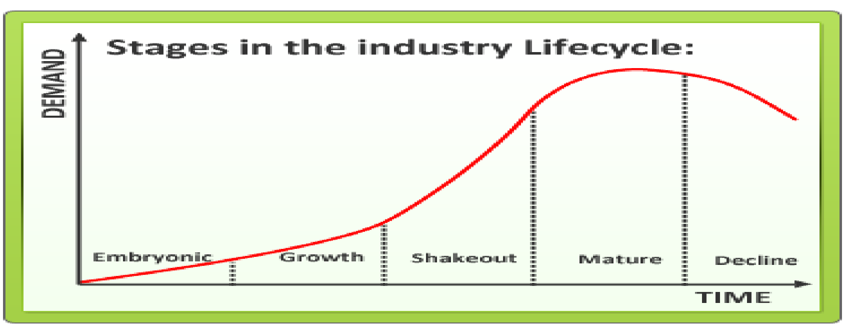
The industry life cycle model is based on the fact that an industry/market will go through different phases over time. Each of them has different implications on firms strategies. (We will see this last point more carefully later on).

INDUSTRY LIFE CYCLE MODEL (2)



Customers	**A few initial adopters**	**Rapid growth**	**Become more sophisticated**	**Demand is saturated**	**Demand decreases**
Competitors	**Very low number**	**New entries and attempts to differentiate**	**Many competitors and fierce competition that pushes weak firms of the market**	**High competition to capture higher market share. Low production cost.**	**Some competitors leave the market**

INDUSTRY LIFE CYCLE MODEL (3)



Factors to consider in the industry life cycle model: demand, price, barriers to entry, industry competition, products & technology, distribution channels

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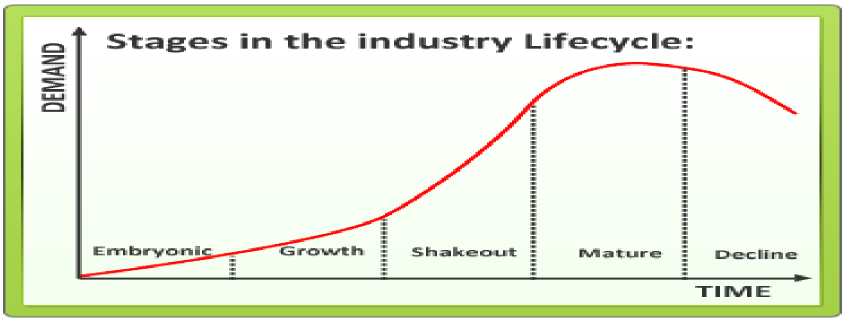
INDUSTRY LIFE CYCLE MODEL (4)



Model limitations:

- ❑ **Difficulty in stage boundaries identification;**
- ❑ **Difficulty in future forecasting;**
- ❑ **Differences among different markets, e.g. countries.**

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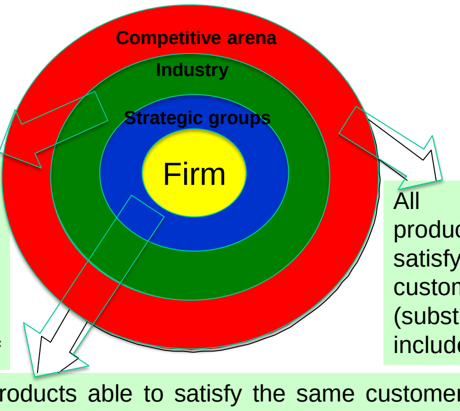
STRATEGIC GROUPS (1)



All firms offering products able to satisfy the same customer needs/wants with the same base technology (Ansoff matrix)

All firms offering products able to satisfy the same customer needs/wants (substitutes are included)

All firms offering products able to satisfy the same customer needs/wants with the same base technology (Ansoff matrix) and adopt the same strategies

STRATEGIC GROUPS (2)

- A set of firms within the industry that adopt similar, well-defined and relevant strategies, e.g.:
  - specialization;
  - brand awareness;
  - same distribution channels;
  - product quality;
  - assortment;
  - similar market size and geographical markets;
  - vertical integration.
- Strategic maps (diameter = cumulative market share)

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STRATEGIC GROUPS (3)

Competitors belonging to the same strategic group have to be carefully monitored by the firm and their strength and weaknesses have to be analyzed in depth.

Some criteria for competitors assessment	
Production/R&D	**Marketing**
Economies of scale	Market share
Production costs	Perceived quality
Technical competences	Brand image
Throughput	Distribution costs
R&D intensity	Promotion effectiveness
Finance	**Organization**
Profitability	Entrepreneurship
Alliances	Flexibility
Liquid assets	Risk attitude
	Culture

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STRATEGIC GROUPS (4)

Competitors belonging to the same strategic group have to be assessed and classified with regard to their potential reactions to marketing strategies adopted by the firm.

- ***Lowly reactive***: react rarely and weakly;
- ***Selective***: react only to specific attacks;
- ***Reactive***: react strongly to all the attacks;
- ***Unpredictable***: no regularity in their responses.

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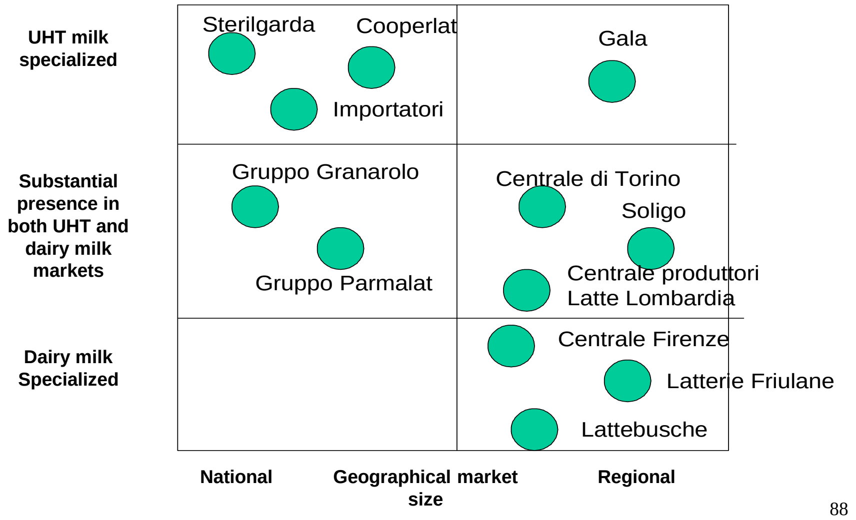
STRATEGIC GROUPS: AN EXAMPLE



LEVELS OF COMPETITION

Competition among needs: consumers allocate their income in different ways to satisfy their needs.

Product category competition: the same need/want can be satisfied with products manufactured with different base technologies.

Product competition: the same need/want can be satisfied with products manufactured with the same base technology.

Brand competition: different versions (different producers) of the same product.

PESTLE ANALYSIS (1)*

Is a useful tool for understanding the environment at a higher level compared to the SWOT analysis in which you are operating

By understanding your environment, you can take advantage of the opportunities and minimize the threats.

It can be used in combination with the Porter's model, which looks at a level closer to the firms, i.e., those who have close interactions with the firm in the given industry. On the other hand, PESTLE supports the analysis of more general interactions, which concern the environment in which the firm operates.

The result of a PESTLE analysis is usually a list of positive and negative factors that affect the business.

The main problem regards the difficulty of monitoring numerous continuously changing factors.

•This and the following 4 slides are based on A short training course in project cycle management for subdivisions of MFAR in Sri Lanka MFAR, ICEIDA and UNU-FTP

PESTLE ANALYSIS (2)

- **P – Political** : The current and potential influences from political pressures.
- **E – Economic**: The local, national and world economic impact.
- **S – Sociological** : The ways in which changes in society affect the project.
- **T – Technological**: How new and emerging technology affects our project / organization.
- **L – Legal**: How local, national and global legislation affects the project.
- **E – Environmental**: Local, national and global environmental issues.

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PESTLE ANALYSIS (3)

- **Political:**
  - Government type and stability
  - Freedom of the press, rule of law and levels of bureaucracy and corruption
  - Regulation and de-regulation trends
  - Social and employment legislation
  - Tax policy, and trade and tariff controls
  - Environmental and consumer-protection legislation
  - Likely changes in the political environment
- **Economic:**
  - Stage of a business cycle
  - Current and projected economic growth, inflation and interest rates
  - Unemployment and supply of labor
  - Labor costs
  - Levels of disposable income and income distribution
  - Impact of globalization
  - Likely impact of technological or other changes on the economy
  - Likely changes in the economic environment

PESTLE ANALYSIS (4)

- **Sociological:**
  - Cultural aspects, health consciousness, population growth rate, age distribution,
  - Organizational culture, attitudes to work, management style, staff attitudes
  - Education, occupations, earning capacity, living standards
  - Ethical issues, diversity, immigration/emigration, ethnic/religious factors
  - Media views, law changes affecting social factors, trends, advertisements, publicity
  - Demographics: age, gender, race, family size
- **Technological:**
  - Maturity of technology, competing technological developments, research funding, technology legislation, new discoveries
  - Information technology, internet, global and local communications
  - Technology access, licensing, patents, potential innovation, replacement technology/solutions, inventions, research, intellectual property issues, advances in manufacturing
  - Transportation, energy uses/sources/fuels, associated/dependent technologies, rates of obsolescence, waste removal/recycling

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PESTLE ANALYSIS (5)

- **Legal:**
  - current home market legislation, future legislation
  - European/international legislation
  - regulatory bodies and processes
  - environmental regulations, employment law, consumer protection
  - industry-specific regulations, competitive regulations
- **Environmental:**
  - Ecological
  - environmental issues, environmental regulations
  - customer values, market values, stakeholder/ investor values
  - management style, staff attitudes, organizational culture, staff engagement

PESTLE ANALYSIS (6)

I invite you to look at this website for a BASIC example on PESTLE analysis, but also on Porter's model. It might turn out to be useful for your project.

http://www.ivoryresearch.com/sample36.php

QUESTIONS & ANSWERS

Why do we need models like Porter's or Industry Life cycle ones?: Although they are simple models, they provide an approach to analyze the industry and competition and can help to make marketing decisions.

What's the logic of SCP?: Every industry has its own structure, which influences firms' strategies and, thus, their profitability.

What if one of the five Porter's forces is weak?: If so, firms in the market have an opportunity to catch to make higher profit, otherwise it is a threat that may reduce profits.

QUESTIONS & ANSWERS

What do the Porter's 5 forces explain?

Threats of entry: **The level of competition does not only depend on incumbents but also potential new entrants.**
Buyer power: **The level of competition does not only depend on demand but also by numerous characteristics of the buyers.**
Supplier power: The level of competition does not only depend on supply but also by numerous characteristics of the suppliers.
Threats of substitutes: The level of competition does not only depend on the type of product but also potential substitutes;
Industry rivalry: The level of competition does only depend on industry structure but also on concentration, economic outlook, characteristics of products.