

Chapter 3

The Strategic Management of the Company: Industrial Aspects

The company must constantly review the suitability of its products to be marketed, in terms of volume, quality, and value of use in the medium- and long-term. It must ensure the compliance of the products and its production facilities with regulatory requirements, compliance with its ethics, which includes more and more components of sustainable development.

These considerations lead to reflections and studies that will involve both its organization and production facilities. They are at the origin of the strategic plan.

The finalized strategic plan consists of projects or more precisely, studies, preliminary projects, which will have to be evaluated over time, in terms of opportunity, investment, and feasibility.

For 30 years, companies have had to deal with economic globalization and increasing competition; and there are practically no more barriers to trade and communication. In this context, they are obliged to define their strategies at the global “village” scale, which is still suffering from the repercussions of the financial crisis generated in the United States in September 2008.

The production economy that prevailed in France during the “Glorious 30 Years”, which followed World War II, paved the way to a free market economy. In the good old days, one had to only produce: the customer had to take only what he was offered. It didn’t take more than two decades for the free market economy to become predominant!

The customer is king again! He is the focus of all concerns; his satisfaction is the major challenge of the supplier. He has too much to choose from for mass consumption products. He wants to be served better and faster. This requires increased flexibility on the part of the company and higher quality products, therefore it requires its operating mode to be reconsidered constantly. The survival of the company lies in its economic performance.

3.1. Systemic view of the industrial company

Let us look at Figure 3.1.

The vertical part of the figure shows the process of industrialization, starting from the result of studies and research, which further leads to a production facility. This approach is described in Chapter 6 (“The industrialization process: preliminary projects”).

The concept of the *supply chain*, particularly introduced by Christopher [CHR 92] in 1976 covers the processes included from customer orders up to the distribution of finished products. It requires the mastery of material, financial, and information flows, which is illustrated in the horizontal part of the figure.

The production facility requires an initial investment. Its operation involves expenditures concerning:

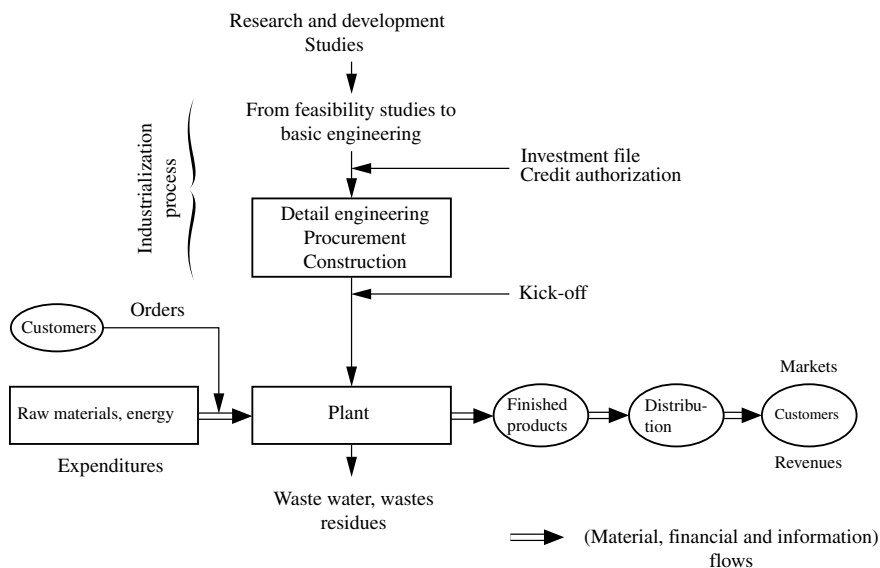


Figure 3.1. Systemic vision of the industrial company

- the purchase of raw materials and energy;
- operating costs, manpower, maintenance, charges related to long-term assets, human welfare, property and environmental costs;
- storage costs and costs related to distribution of finished products.

For there to be a profit, the sales proceeds should cover the charges of invested capital, the direct and indirect costs of the plant, not to mention the management, research, and marketing costs.

3.2. Strategy and strategic analysis of the company

Strategy is a long-term vision: a vision of what the company would like to do and how it wants to do it, which markets it wants to be present in, with how much penetration, what products it wants to market, and in which countries [DEC 80, QUI 95, THI 84].

With the subjects to competition, market trends, and aging of its products and processes, the company has to think about its future and define the elements that are necessary to ensure its continuity.

It must do so in time; *managing means foresight!*

In addition to the profit, its continuity depends on *the control* of all its processes that guarantee an operation without adverse events. The adverse events include technological disasters; the Bhopal disaster led to the disappearance of the Union Carbide Corporation, a company that was 100 years old. In France, the AZF disaster led to the disappearance of part of the industrial base in Toulouse.

The company's strategic vision consists of developing so-called strategic objectives that are formalized into operating plans which include human and financial resources and planning required for their completion.

In what follows, we will focus specifically on the technical aspects involving research, process research methods, and their relationship with the business.

Strategic analysis rests on two pillars:

- the markets/products relationship and industrial analysis.

The markets/products relationship is denoted by business analysis in Figure 3.2.

NOTE.– The word *business* merges the terms of business affairs, operations, and markets.

Markets are numerous, of varied sizes and are very diverse: automotive, pharmaceuticals, construction, cosmetics etc.

The industrial analysis in Figure 3.2 focuses on all the technical facilities (laboratories, engineering), plants, workshops, distribution facilities (stores) as well as the subcontracting tools, the various industrial holdings including those in *joint ventures*, commonly referred to as JVs.

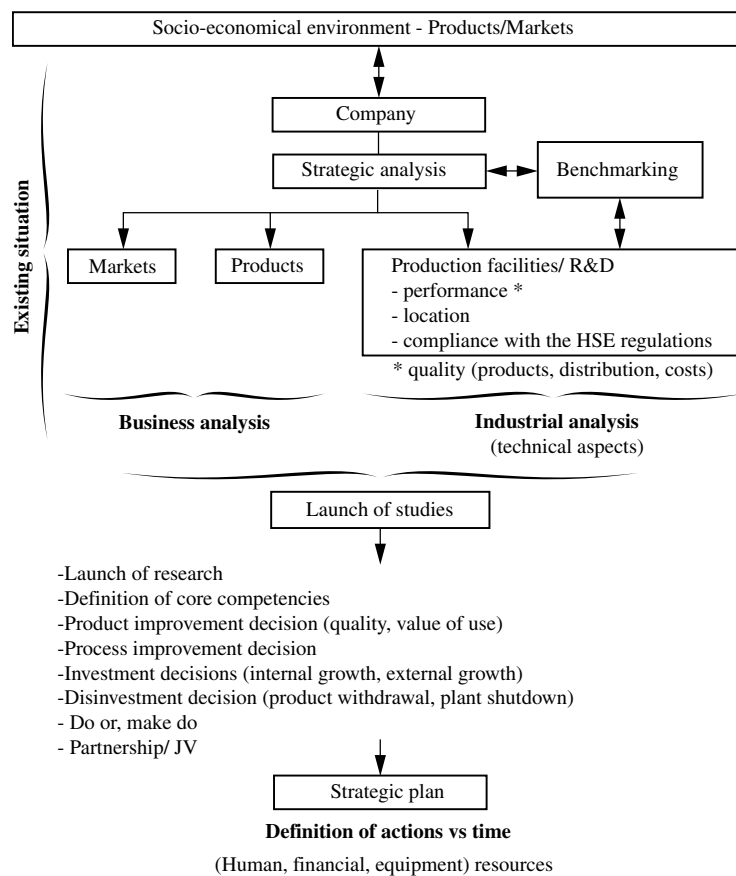


Figure 3.2. Principle of the strategic analysis of the company (technical aspects).
Establishment of the strategic plan

Definition of JV: *strictly speaking*, JV refers to a joint venture made by two or more entities who combine for the better hopefully, although sometimes for the worse. A key characteristic of a JV is the percentage of partner ownership. If there are two partners, the one who holds at least 51% has the control ... in principle.

The markets/products analysis may show extreme cases:

- in a given country, the company has a leading position with significant market shares (penetration), products that respond best to the customer's needs, in accordance with the operative as well as foreseen regulations, products considered "greener" than those manufactured locally by competitors, a first-class *supply chain*;
- in another country, the situation is absolutely different: low penetration, products surpassed by those of competitors, products to conform with the regulatory perspective. Products are imported whereas the competitors manufacture locally, which gives them a significant advantage.

The analysis of the production facility can reveal:

- a first class facility, implementing the best process to date, which results in comfortable marginal incomes reflecting a choice of appropriate raw materials, good yields, and controlled energy consumptions.

Satisfactory gross margins show a suitable production capacity, a workshop design that provides optimized operating costs for manpower and maintenance.

The concepts of cost and profitability are discussed in more detail in Chapters 2 and 9, which are dedicated to "The two modes of operation of the company: Operational and Entrepreneurial" and "Project management techniques: Engineering", respectively.

The analysis of the facility can reveal that a process is outdated, when the operating costs are too high, when the plant requires major parts to be upgraded, and when the production capacity is too low and does not meet the market demands. Against the backdrop of the given country, growth can be very high, very low, or moderate. The political situation can be either stable or unstable and the economy can be either thriving or ailing. The latter considerations require a *benchmarking* approach and risk analysis.

3.2.1. Strategic analysis tools

Consulting firms use their own tools; we will mention three of the most commonly known tools.

External benchmarking aims to compare itself with competitors. The comparison relates to the respective market shares, product quality, and their functionality and selling prices and, in general, the strengths and weaknesses of each of them. It is essential to try to predict what competitors are going to do. In large groups, *benchmarking* can be *internal*: comparison of industrial sites, processes, and so on.

The *BCG analysis* of the Boston Consulting Group consists of positioning a product and a company on a graph that has the market share taken by the analyzed entity on the abscissa and the ordinate the growth rate of the market where it operates.

The BCG matrix has four areas. On the basis of its position, the entity may be called a Star, Question mark, Dog, or Cash cow (see Figure 3.3).

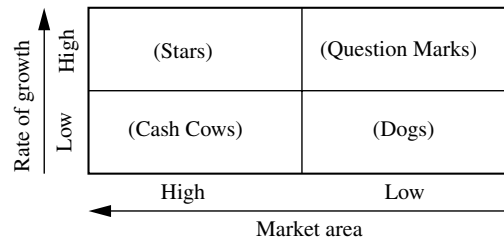


Figure 3.3. *BCG matrix (Boston Consulting Group)*

The terms used are self-explanatory.

Being in a fast-growing market where one's market share is significant (Star area) is better than being in a market that has no hope and where one has no significance (Dog area).

The *SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis* considers all the criteria denoted by each letter of the acronym.

It is a method of analyzing the organizational, business, and competitive environment of the company in order to define the strategic as well as tactical and operational action plans. It is a handy diagnostic tool that favors rational decision-making in key areas. It can be applied either to a product in a project or to an idea within a company.

The SWOT analysis examines the four key factors of strengths, weaknesses, opportunities, and threats of every sector of the company. The analysis can be carried out on the business plan, marketing, competitor analysis, process development, research, and so on.

It is performed as a team, similar to *brainstorming*. But contrary to this very open technique, the SWOT analysis is controlled, as it is based on the setting up of questionnaires (one for each factor) for which the team tries to provide answers. Each questionnaire can include up to 15 selected questions.

The methodology consists of grouping these key factors (strengths/weaknesses and opportunities/threats) into pairs and making two diagnoses, one in the internal

environment (the organization) and the other in the external environment (the market).

The strengths may result from a solid patent portfolio, recognized brands, integration of raw materials, loyal customers, and so on.

It is the opposite in the case of weaknesses.

	Positive	Negative
Internal	S STRENGTHS	W WEAKNESSES
External	O OPPORTUNITIES	T THREATS

Table 3.1. *SWOT matrix*

The relevance of the SWOT analysis is based on the creativity of the work group and its richness in ideas. The selection of questions is a crucial element: so is the quality of the conclusions.

3.3. Development of the strategic plan: its deliverables

As a rule, strategic analysis is conducted by sales offices, marketing, research, industrial management, and often with the help of outside companies: it is a collective effort. The company may manage the plan that coordinates all the studies. Major decisions can be examined by all the functions of the company as described in Chapter 2.

Projection into the future, with all the difficulties that can be guessed, is clearly essential.

The top management is responsible for the strategy of the company. It is important for them to define the main orientations and axes. Mergers, cessions, partnerships, and major projects reflect these types of actions from the public and shareholders.

The development of the strategic plan requires the most diverse studies encompassing the commercial and technological aspects.

These studies, which require time, expertise, and financial resources, must follow the PARETO analysis (see Chapter 13 which is dedicated to the management of change), which is the effort spent should be proportional to their importance.

These preliminary studies normally lead to:

- the launch of new research to find new products, new markets for new applications, new chemical routes, and new processes;
- the abandonment of research in unfavored sectors;
- highlighting of the need to improve certain products and processes, to find commercial advantages, and to satisfy new customers and new regulations;
- the withdrawal of products that are unprofitable or detrimental to the image of the company;
- the study of physical investments in relation to the creation of new plants and manufacturing sites. This is called *internal growth*;
- company buyouts, the formation of partnerships and subcontracts; this is called *external growth*;
- the abandonment of products and markets;
- the sale of assets. This is called *disinvestment*;
- the closure of sites;
- the reconsideration of the mode of organization of the company; this is called *re-engineering*.

This diagnosis, if pursued seriously and without complacency, will highlight the strengths and weaknesses. The strengths of today can become the weaknesses of tomorrow: products can turn out to be very profitable today, but are at the early stage of a downward phase without having replacements, because research has not been launched on time. There are many examples. The concept of time is a key concept.

The development of the strategic plan leads to a set of preliminary projects whose study methodology is the subject of Chapter 6.

An important result of the strategic analysis is the study of the technologies used and the resulting vocations.

3.4. Technological choices and vocations

Technolog(y)/(ies) form(s) the very basis of the company's know-how.

We can define technology as the set of means of studies, application, engineering, process, and all that makes up the know-how necessary for the design and implementation of industrial facilities.

Technology originally meant the rational study of techniques that were synonymous with the know-how of manual jobs; the know-how of the carpenter, the mason, and the glass maker. Much later, it meant the knowledge required to manufacture a product; iron techniques, ceramic techniques, and so on.

In modern parlance, one speaks of new, state-of-the-art and high technologies. They are the object of desire, trade, and espionage. This is the knowledge asset of the company that it strives to safeguard and develop.

A technological breakthrough happens when a technology surpasses an existing technology by making significant, indisputable progress; for example, the jet airplane replaced the propeller airplane.

A technological breakthrough also refers to the emergence of a new domain. This holds true for information technology, biotechnology, as well as an artifact as modest as the “post-it” note of the 3M Company, which took 10 years of effort for the industrial development and marketing [NAY 93]. Who can do without the “post-it” note nowadays?

The implementation of a technology as defined above uses expertise which is now known as “competencies” that implicitly include the know-how of employees.

The field of biotechnology involves biologists, chemists, process engineers, and project engineers, who know for instance how to define a specific piece of equipment that can be easily sterilized.

The term *core-competencies* is used to define the skills that the company cannot do without if it wants to excel in the field of activity specific to it. This term therefore implies the know-how and men who vouch for it.

Defining the *core-competencies* is a difficult task; which technician should be hired, what training should be given to existing employees, how can they be made to develop so that they become suitable for the company?

This is one of the first responsibilities of the human resources department, which is in charge of selection, training, staff development, and defining the company’s “core competencies”.

Case study

Two companies, one dealing with basic chemicals (Company A) and the other with specialty chemicals (Company B), have the characteristics listed in Table 3.2.

The corresponding *core-competencies* are tentatively given in Table 3.3.

Company	A	B
Field of activity	Basic chemicals	Specialty chemicals
Number of raw materials	A few	Several hundreds
Number of products	4	600
Tonnage/products	>10,000 tonnes/year	10–1,000 tonnes max/year
Flows	Continuous	Discontinuous/batch
Number of plants	Four specific plants	Six polyvalent/multiproduct plants
Investment	Heavy	Low
Type of sale	Catalog	Value in use
Application laboratory	No	Yes, very near to customers
Customer support	No	Yes
Distribution mode	Bulk and over the fence	Drums

Table 3.2. Characteristics of two companies: company A with basic chemicals – company B with specialty chemicals

Company	A	B
Operations Manager profile	Mechanical/chemical engineering	Customer oriented chemist
Customer orientation	Low (Sales on catalog)	Strong (customer support)
R&D	Low (technological watch)	High (several small pilots)

Table 3.3. The core competencies of companies A and B of Table 3.2

The company faced with technological choices must select technologies where it already has assets and the technical advantages it wants to develop. It must decide the technology that it wants to abandon, either because the upgrading effort would require excessive means of available resources, or simply because they concern low priority markets that will be abandoned in the medium or long-term. The company is forced to make choices and take risks that are sometimes painful with serious human consequences. This is a difficult and courageous task. It is very difficult to recognize that the company is not doing well in some domains because it did not know how to handle the necessary changes! Time is a formidable judge.

Strategic management requires planning, i.e. a clear formulation of objectives over time implied by the concept of multiannual budgeting and a multiyear plan (usually 3–5 years). The objectives should be *measurable* in terms of sales volumes, amount of investment, and human resource requirements.

The questions that will be raised by strategic analysis proposals constitute many preliminary projects, studies that have to go through a selection process. These preliminary projects or studies will be evaluated in terms of cost, risk, and opportunity. This is the theme of Chapter 6.

3.5. Bibliography

- [CHR 92] CHRISTOPHER M., *Logistics and Supply Chain Management Strategies for Reducing Costs and Improving Services*, Pitman Publishing, London, 1992.
- [DEC 80] DECLERCK R.P., *et al.*, *Le management stratégique des projets*, Hommes et Techniques, Paris, 1980.
- [NAY 93] NAYAK P.R., *et al.*, *Breakthroughs!*, Mercury Business Book, Oxon, 1993.
- [QUI 95] QUIBEL J., *Les stratégies de l'entreprise et le management stratégique*, Techniques de l'ingénieur, Traité Génie Industriel, A 4150, Paris, 1995.
- [THI 84] THIETART R.A., *Stratégie d'Entreprise*, McGraw-Hill, Columbus, 1984.