

# 2

## **“RESOURCES” IN THEIR TERRITORY**

### **“INSIDE-OUT” MEETING “OUTSIDE-IN”**

“THE big integrated US steel companies and their unions were accused yesterday of being resistant to change, and told that protectionism was not a solution to their problems. Mr Brian Moffat, chairman and chief executive of British Steel, speaking at a steel conference in New York, said the US integrated steel industry ‘puts me in mind not of the dinosaur, to which it is often compared, but rather the ostrich’.” Financial Times 23 June 1993

### **1. INTRODUCTION**

Traditionally, the strategic management field of study - or what used to be called “business policy” - has focused on the company as the bearer of performance (Andrews, 1971; Ansoff, 1965; Chandler, 1962). During the 1970s and early 1980s strategic management also investigated the industry for explanations of performance (Porter, 1981). However, since the 1990s most have returned to their original focus. Consequently, concepts of strategic management can be divided into two general categories: those focused on the firm and those focused on industry. The question that arises is why do we have this synthetic separation?

Explaining business performance has been central to the field of economics. Performance has been connected to certain characteristics of an industry, such as market conduct and market structure. Industrial organisation economists (e.g. Bain, 1959), for example, have been emphasising the structure and consequent conduct of an industry as the prime explanation of a firm’s performance operating within that industry. Firms are assumed to be alike except for their size and, as such, the source or the logic of their performance is located outside the firm.

There is also an inside logic of a firm’s performance as has been emphasised by the “resource-based view” of the firm. Especially in the late eighties and early nineties this has been an expanding body of management research. However, as Penrose (1959) and Learned, Christensen, Andrews & Guth (1965) make clear, the resource-based view finds its roots in earlier times. One can go back in history as far as the 1920s when the economist Knight

(1921) already emphasised the inside explanation of the performance of a firm (Hodgson, 1994).

Economists have been challenged as to why firms differ (Nelson, 1991). The external explanation points to the structure of the industry and the fixed choice sets of management (firms differ because they are "forced" to) and the internal explanation points to the difference in resources within the firm based on choices in history (firms differ because they "choose" to). These two approaches - outside-in and inside-out - have been applied by both practitioners and researchers of management in the quest to explain the logic of success.

Typically, success - or failure - of a firm is presented by the bottom-line result, the outcome, of a company, such as net profit or return on equity. Although there is nothing wrong with measuring bottom-line results of a firm - quite to the contrary - it does focus on the here and now situation of the firm at the expense of qualifying the future means for success of a company. The resources of a firm in its sector are *both* medium and outcome of a firm's activities. As such, resources of a firm form a more subtle definition of performance since it highlights the process of performance as well as the means of continuing this process. A clear disadvantage of resources as a performance indicator, however, is that it is more difficult to measure and to compare with other firms. In this light the distinction between the lesser hunger and the greater hunger, as Handy (1997) referred to, is fitting. Although the lesser hunger - in the case of performance of a firm, the bottom-line - does not include the medium of success, a sole focus on resources - the greater hunger - alone is not adequate either. This dissertation will focus on resources as the medium and outcome of a firm's performance and success to highlight the "greater hunger" of the firm. The question that comes forward is "How does management go about creating, developing and defending *resources* in order to outperform other firms in the industry?"<sup>i</sup> The answers to this line of questioning have been based on two more or less distinct processes influencing the firm: the inside-out process of "resources" and the outside-in process of "environmental influences" (Baden-Fuller, 1995). However, it is posited here that better answers to this question can be provided by addressing a single *interacting* process of the coming into being of a firm's resources within their territory, instead of two more or less distinct processes.

To this end, two promising streams of publications will be discussed in this chapter and reconstructed in order to provide concepts capable of dealing with both time (process) and interaction.

The first stream of literature to be discussed and reconstructed is the resource-based view. Its contribution, however, seems to be both threatening and promising. It is threatening for two reasons. First, the concepts have been

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<sup>i</sup> Working with business managers the most familiar reaction to the question: Why do firms differ? has been: "We know firms differ; what we need to know is: What initiates these differences and how do we go about influencing these differences in order to outwit competition in future."

exposed to popular hype resulting in rhetorical language. Secondly, the resource-based view is sometimes overly rational in terms of management as “choice” and subsequent “design” of resources. This is especially the case within the “structural school” of the resource-based view emphasising equilibrium and sustainability. However, the resource-based view’s contribution is also promising because the basic concepts have a dynamic “evolutionary” and “institutionalising” character suitable for process concepts, which in turn will be needed to describe the development of resources. Based on the dynamic school within the resource-based view the concept of time will be introduced.

The second stream of literature to be assessed and reconstructed in this text is the so-called firm-in-sector literature with its main proponents Smith, Child & Rowlinson (1990). Here, the broader concept of “sector” is used in favour of “industry” because it highlights a complex result of the past. As Räsänen and Whipp (1992: 47) have described it:

“... an historical formation of complementary, interlinked and co-evolving business activities. It is often, though not uniformly, linked to certain geographic locations and it appears in a certain period of time. A sector contains organisations which provide similar goods or services, together with those who regularly transact with them in supplying, servicing, regulatory or customer roles.”

Applying the firm-in-sector perspective, the concept of “path dependence” of the resource-based view will be joined up with the concept of “sector survival path” for reasons of interaction. Both these concepts highlight the difficulty of changing commitments made in the past in terms of, for example, economics (sunk cost) or psychology (cognitive blinders). The implications of focusing ultimately on the process of the coming into being of a firm’s resources within a sector as the unit of analysis are not clear because interaction between a firm’s resources and the sector needs to be introduced.

Consequently, a view on interaction that draws on Sztompka’s theory of social becoming will be introduced. The sociologist Piotr Sztompka (1991) has constructed, in a superb and systematic way, a theory of *social becoming*. The quintessence of social becoming is the fusion of structure (cf. sector) and agents (cf. firms) to produce a joint effect through time.

However, before dealing with interaction the *first* step in answering the question of the coming into being of a firm’s resources in their territory lies in understanding the make-up of these resources of a firm. In what way do a firm’s resources - as both the medium and outcome - *emanate from* the firm’s actions and activities? (see §2)

A *second* step in answering this question lies in understanding the make-up of a firm’s territory, its sector: In what way are a firm’s resources *enforced by* actions and activities in the sector? (see §3)

And a *third* step in answering this question lies in understanding the *interaction* between a firm and its sector: In what way are a firm and a sector interacting through time? (see §4).

The title of this chapter - "resources" in their territory - represents the overriding concern with "contextualist" analysis. Starting from the field of economics (explanation of performance), there will be a move towards other - behavioural - disciplines. The quest for explaining the processual development of firm resources within their context will need contributions ranging from sociology and cognitive psychology through organisational behaviour and anthropology and even to linguistics. As Levinthal (1995: 22) notes:

"... traditional economic tools, which form the basis of much content research, do not readily lend themselves to an understanding of how these distinct positions emerge. [...] Thus, the emergence of diversity and, to some extent, the sustainability of diversity over time are not adequately handled by traditional 'content' variables. [...] In order to understand the emergence of diversity and, over long periods, its sustainability, one is virtually forced to consider more process-like variables."

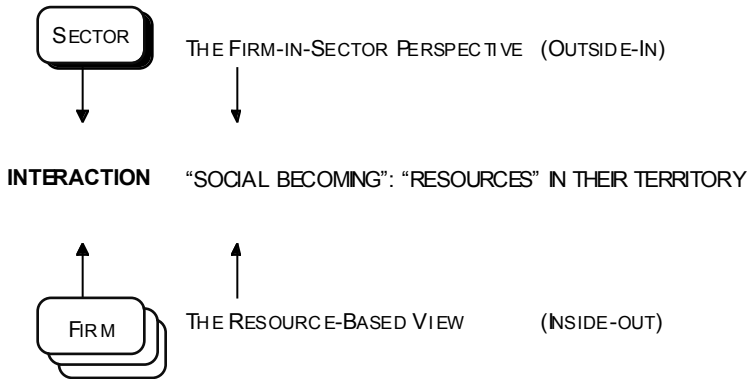
Especially for many of the so-called content camp of economics, these process-like variables are "murky waters" (Levinthal, 1995). "Murky" or not, several papers within the resource-based view and the "firm-in-sector perspective" (Smith, Child & Rowlinson, 1990) have started to deal with these process-like variables. The interaction, however, between a firm and the sector remain obscure: this will be the focus of this dissertation.

Many of the concepts such as assets and capabilities - together called "resources" - have yet to be defined in such a way that they can be "seen" in the activities of a company. However, a prerequisite for defining these concepts would appear the ability to make sense of the activities of a company. This chapter has resulted from an interaction with business managers trying to use concepts in their quest of creating, enhancing and defending firm resources in relation to competition. To gain more insights into the principal activities of a company for the purposes of this research project, 20 months of participatory observation have been spent in a Dutch steel and aluminium company (Koninklijke Hoogovens plc). As an academic relatively inexperienced in business life, I had first to discover the ways of business. Consequently, most of this time was used to draw on - and learn from - managers' understanding of the steel and aluminium sector and to explore the developmental trajectory of the company within its sectors through time and to translate and analyse this experience in terms of theoretical concepts.

This chapter will introduce the resource-based view of the firm and the firm-in-sector perspective together with derived concepts. Consequently, these two levels of analysis will be linked together in order to provide conceptual language for the analysis of the so-called *social becoming* of a firm's resources

in their territory. The *interaction* between a firm and its sector will prove to be key in this process.

**FIGURE 2-1 “RESOURCES” IN THEIR TERRITORY**



## 2. THE RESOURCE-BASED VIEW

The resource-based view represents the banner under which much research has recently been conducted. The basic thinking of the resource-based view is that firms tend to be distinct because of unique resource accumulation in the past. Typically, management research findings suggest that firms should focus on their “core competencies” (the ability to develop firm-specific, i.e. unique, resources) which consequently will provide the firm with a long-lasting competitive advantage and above-normal returns. Sony and Novotel (e.g. Segal-Horn & McGee, 1996) are examples of firms’ success in this competence race. But what about other firms which are not particularly unique in terms of long-lasting competitive advantage? What about firms in the “pack”? Or, as a manager of Hoogovens said: “I am sorry, we don’t seem to have totally unique resources, but what is wrong with just being excellent in our range of work as much as some other firms in our sector are? This is a very transparent, leapfrog business!”<sup>ii</sup>

How do you manage your resources when you are in the pack of integrated steel firms all struggling to achieve capacity utilisation? Are there any other insights to be gained from the resource-based view besides the possession of unique resources, leading to competitive advantage? Is there some middle ground between total uniqueness and dull mediocrity? Indeed, this research seeks to reveal those insights by exploring the developmental trajectory of Hoogovens *interacting* within its sectors through time.

As mentioned before, a first step in answering the question of the coming into being of resources lies in understanding the make-up of those resources and in what way these *emanate from* the firm’s actions and activities.

<sup>ii</sup> Mr. Bim Bendsdorp, Senior Director of Koninklijke Hoogovens plc.

This section will outline elements of the origins and further developments of the resource-based view in order to gain insights into - and supply language for - these resources. In this respect it is appropriate that, according to the resource-based view, firms are idiosyncratic (i.e. differ) because they accumulate different resources throughout their entire history (Collis, 1991). This has led the resource-based view - in some of its branches - to focus on the trajectory or path of a firm's resource development.

After having discussed the origins of the resource-based view, two "management application schools" of the resource-based view will be presented: the "structural school" and the "dynamic school". The first remains heavily conservative in respect to economic mainstream assumptions while the latter is less orthodox, more theoretically plural and therefore more applicable to strategic management theory. Thereafter, the argument reverts to satisfying the previously mentioned research need for insight and language for a company's resource make-up. A resource-based vocabulary will be presented in order to be able to describe a firm's trajectory *through time*.

## **2.1 ORIGINS OF THE RESOURCE-BASED VIEW**

The resource-based view of the firm draws most of its rich intellectual heritage from the field of economics. Conner (1991) makes this quite clear in her excellent paper: "A historical comparison of resource-based theory and five schools of thought within industrial organization economics: do we have a new theory of the firm?" The resource-based view has a broad palette of different assumptions normally associated with economic theories such as neo-classical economics and transaction-cost economics. While having close connections with these economic theories, the resource-based view simultaneously remains highly distinctive. Although it is a neo-classical input-combiner, it does not follow the neo-classical assumptions of perfect information and resource mobility. The firm as an input-combiner highlights the firm's characteristic task of dealing with limited resources, a specific combination of which can make a difference. However, perfect information - all firms have or have access to identical information - and resource mobility - resources move "freely" across the market - represents the opposite of what the resource-based view stands for. From the perspective that sustainable above-normal profits are possible, and following Bain-type industrial organisation theorists, the resource-based view does not, however, relate this to monopoly output constraints but to costly-to-copy attributes of the firm. Consequently, performance is not related to market factors but to the fact that the firm possesses special features which other firms do not have. Finally, the resource-based view does not relate performance to opportunism control in the same way as transaction-cost theory. It does, however, acknowledge the transaction-cost assumptions of asset specificity and small numbers. Or, in other words, the resource-based view does not relate performance to the control of people, but to the special characteristics and limited availability of assets (Conner, 1991).

There are two fundamental assumptions of the resource-based view that provide a basic picture of a firm:

1. Interfirm Heterogeneity; and
2. Imperfectly Mobile Resources.

The first assumption of the resource-based view is called *interfirm heterogeneity* (Lippman & Rumelt, 1982). Firms within the same industry will differ because they are apt to have different strategic resources due to initial superior resources, luck or better insights into the future (Barney, 1986a). Identification of these resources by competitors has been problematical because the resources lack a given production algorithm (Conner, 1991). In other words, the “recipe” of these resources is not clear or there are non-imitable “sub-ingredients.”

The assumption of interfirm heterogeneity implies another more obscure assumption, namely that the management of a firm can act with discretion within the context it operates in (Nelson, 1991). So, firms differ not only because of the commonly held belief in market forces (emphasised in the outside-in approach), but also because of the distinctive strategies of these individual firms. The resource-based view seeks to provide some insights into the latter, i.e. differences due to the distinctive strategies of a particular firm. If firms have possibilities for discretionary distinctiveness, this means that management theory has to break away from the “one best way” it has been trying to prescribe for quite some time (Rumelt, Schendel & Teece, 1994:3).

Closely related to interfirm heterogeneity is the second assumption of the resource-based view, called *imperfectly mobile resources* (Barney, 1991). Resources are not perfectly mobile in the sense that they move freely across firms and, as such, are possible sources for longer lasting profits. After all, when a company is able to keep important resources to itself, it can make profits out of them. The so-called mobility barriers of resources are often regarded as synonymous with entry barriers in the industrial organisation approach. However, mobility barriers exist between competitors that are already in the market place (McGee et al. 1995) and result from management activities. How long these mobility barriers will last is difficult to say and is a point of debate within the resource-based view (Schulze, 1994).

Imperfectly mobile resources or sustainable resources have an - often forgotten - dark side very well articulated by Leonard-Barton (1992, 1995). Sustainable resources are known to be “sticky”. This “stickiness” has been identified as something to be welcomed by the majority of the resource-based view proponents. However, eventually these sticky resources can become a burden because of a so-called institutionalisation process. Leonard-Barton has identified these resources as a “rigidity.” When focused purely on sustainability, as the structurally-oriented theorists do, there is the danger that a firm “will have on blinkers,” ultimately forgetting the changing outside world.

To summarise, the basic picture of context within the resource-based view is that of interfirm heterogeneity and imperfectly mobile resources. In other words, *firms tend to be different because of market forces but particularly because of discretionary management decisions in the past and tend stay that way, because the past lives on in the present and future.*

**TABLE 2-1 OVERVIEW OF RESOURCE-BASED VIEW**

General problem domain	Why do firms differ?
Answer	Because of idiosyncratic resources accumulated since the firm's foundation
Key idea	Performance differences between firms are better explained by their long-lived resources and the mechanisms by which firms accumulate these resources than by differences in industry conditions
Core assumptions	Resources are heterogeneously distributed across firms Differences in resource endowments are causally related to differences in product attributes (Conner, 1991) Firms are profit-seekers (Rumelt, 1987)
Assumptions about the firm	The firm is a combiner of inputs The firm is an output-restrainer The firm is a seeker of new ways of competing The firm is a seeker of production and distribution efficiencies The firm is an avoider of cost of market exchange (Conner, 1991)
Human assumption	Rational choice or bounded rationality depending on scholar's "scientific heritage"
Information assumption	Some information is purchasable at factor markets. This information cannot be a basis for competitive advantage. Other information will not be accessible because of complexity or imitability (Lippman & Rumelt, 1982)

Typically, the basic context picture of the resource-based view explores multiple levels of analysis. In over 60 analysed publications on the resource-based view I found six different levels of context, namely: industry, strategic group, firm, department, routines (group-level) and skill (individual). Usually, but not always, these publications consider only one level of analysis at the time. Exceptions include Amit & Schoemaker, 1993, 1994 (Assets, Firm & Industry); Teece, Rumelt, Dosi & Winter, 1994 (Assets, Firm & Industry); and Von Krogh & Roos, 1995 (Individual, Group & Firm).

Following Pettigrew's process research (e.g. Pettigrew, 1985b; 1990, 1992, 1997), I argue for "an approach that offers both multilevel, or vertical, analysis and processual, or horizontal, analysis" (1985b:238) within the resource-based view. What remains unclear is the *interaction* between the levels of context. The explanation of the performance of the firm is mostly found at the firm-level. However, several developments within the resource-based view (e.g. the increasing influence of the evolutionary approach) also promise a move towards a multi-level approach. As soon as we start thinking about horizontal processual and vertical analysis through time, the focus will turn to interaction between the different levels of context because the firm may be changing more quickly or more slowly than, for example, the sector or the strategic group it is in (Pettigrew, 1990) (see section 4 for more on interaction of levels of analysis).

## **2.2 TWO SCHOOLS WITHIN THE RESOURCE-BASED VIEW**

The resource-based view explains the performance of the firm primarily in terms of a firm's long-lived resources and the mechanisms by which the firm accumulates those resources. As such the resource-based view is an economic theory of the firm. Management researchers have applied the resource-based view to their field of interest in order to prescribe ways of dealing with the resources of a firm. Within this management application of the resource-based view, two schools of thought have become prominent (e.g. Schulze, 1994): the structural school and the process school. For vocabulary reasons, I have re-labelled the process school as the dynamic school, because I have reserved the term "process" for actual actions as these unfold over time (Pettigrew, 1992) and not the *choice* in favour of different strategies in order to create resources. In the face of the different assumptions, the two schools of (management) thought within the resource-based view will be described. I will take the view that the dynamic school in particular will be able to provide the basic vocabulary and concepts necessary in a more integrated processual view to be presented later.

### **2.2.1 The Structural School**

In their explanation of the performance of the firm, the structural school of the resource-based view develops its argument by way of equilibrium concepts, which are the cornerstones of economics. Central to this school's

problem domain is the *identification* of resources as occurring in efficient market structures (Schulze, 1994). Its basic question is: "Which of the resources of the firm need to be focused on?" This question is answered as: "Those resources which are valuable, rare and imperfectly imitable" (Barney, 1986b). It is these defensible kind of resources, after all, that make sustainable competitive advantage possible. The concept of sustainable competitive advantage is clearly an equilibrium concept, because as firms focus on sustainability they will eventually reach a situation in which there is an equilibrium (i.e. firms will reach sustainable positions). The problem domain and the structural school's answer to it have been summarised in Table 2-2 (page 20). A general overview of the resource-based view's assumptions, accepted by both schools, can be found in Table 2-1 on page 18.

**TABLE 2-2 OVERVIEW OF STRUCTURAL SCHOOL**

Specific problem domain	What are the sources of sustainable competitive advantage?
Answer	Focus on those resources which are valuable, rare and imperfectly imitable (Barney, 1986b; 1991); the role of management is to discover, exploit and protect these resources (Schulze, 1994).

An important publication within the structural school is Wernerfelt's (1984) "A Resource-Based View of the Firm" published in the Strategic Management Journal. For this publication he received the SMJ 1994(!) best paper prize because of the large, yet delayed impact of the paper, labelled as "the first integrative statement together with the label, of what has since emerged as an important new conceptualisation in the field of strategic management" (Zajac, 1995). Wernerfelt (1984) explored the usefulness of analysing firms from the resource side, mostly consistent with neo-classical economics. Jay Barney (1986a, 1986b), one of the most influential scholars of the structural school, deals on the one hand with strategy issues like a "genuine" economist (equilibrium, factor markets, etc.), while on the other the kind of issues he has discussed are very much organisation-behaviour-oriented (culture, expectations, etc.). This makes him quite remarkable and intellectual contributing as a researcher. To Barney the culture of a firm is a "process variable", meaning that it influences the "process of implementation". Barney admits that issues like culture are important but he deals with them like a content variable within a purposeful *choice* process - namely that a "worthwhile" culture needs to be valuable, rare and imperfectly imitable, etc. to be a source of competitive advantage. As such, culture is one more "content" element in the decision-mix of management's choice-process which needs to be

decided upon. Some organisational behaviour researchers, however, consider the process of implementation as a “process” instead of a “process variable”. To Pettigrew (an organisational behaviour researcher), culture influences the process of change because it concerns

“the past alive in the present and may shape the emerging future” (Pettigrew, 1992:10).

In this way, process is conceptualised as a trajectory through time rather than a decision-moment in time.

In his article called “Strategic Factor Markets: Expectations, Luck and Business Strategy,” Barney (1986a) states that the source of competitive advantage in strategy is either a firm’s better insights into the future or its good fortune and luck. The better insights cannot come from unique environmental insights (i.e. methodologies for collecting this information are in the public domain) but from analysis of the firm’s unique skills and capabilities (Barney, 1986a). However, taking into account publications from outside the realm of economics (e.g. organisational behaviour, sociology), this is a rather astonishing line of reasoning, especially in the light of another Barney paper (1986b) on organisational culture. Insights into the future, according to many authors (e.g. Giddens, 1984; Pettigrew, 1985, etc.), are very much culture-dependent and therefore possibly unique to a firm. What we have seen and experienced in the past partly determines, or at least influences, what we see in the present as well as what we will see in the future. As Barney (1986b:657, *my italics*) argues himself:

“... Culture has pervasive effects on a firm because a firm’s culture not only defines who its relevant *employees, customers, suppliers, and competitors* are, but it also defines how a firm will interact with these key actors”.

Barney concludes that studies of cultures cannot be used to help a less successful firm to modify its culture to become a better performer. This is not surprising due to the difficulty of changing or purposely designing a firm’s culture. A firm does not have a culture which can be chosen at will, but one which has been developed since its foundation. The culture in this case, the firm, serves as the background, or context of continuity, of the actions of a firm’s individuals. When Barney (1986b, see also Barney, 1991) describes three conditions of a culture if it is to be a source of sustainable performance (valuable, rare and imperfectly imitable) he describes the preferable context of the firm and to a much lesser extent the firm’s strategy content (which is only partly the result and the cause (!) of culture). Later (Barney, 1991:56), it becomes clear that Barney does not distinguish between process and content *per se* but between content decisions and process decisions, which in the end still confine him to the content camp. However, this critique leaves untouched Barney’s indefatigable efforts on the integration of organisational economics and organisational behaviour.

### 2.2.2 *The Dynamic School*

The proponents of the dynamic school of the resource-based view have been influenced by the "rebels" in the field of economics. The most famous of these being, among others, Nelson & Winter (1982) with their influential book "An Evolutionary Theory of Economic Change." In this book they question "text book orthodoxies" such as maximising behaviour on part of the firms (profit maximising, specific choice set, a firm's action is the result of choice) and the concept of equilibrium.

The dynamic school does not rely on protective measures to protect a firm's resources because competitive advantage is considered, by definition, to be temporary. There is significant uncertainty about the future and the only certainty a firm has is that the future will be different. That is why the dynamic school focuses on *creating* and *developing* new resources as a long-term commitment in which development trajectories (internal as well as external forces) and change are central (e.g. Teece, Pisano & Shuen, 1997). The notion of technological paths, or trajectories, is widely used in evolutionary theory of economic and technological change (Nelson & Winter, 1982; Dosi et al., 1992).

Nelson (1991:66) is citing Schumpeter when he argues that in "dealing with Capitalism, you are dealing with an evolutionary process." A Schumpeterian context is characterised by people and organisations with different views about successful innovations. Which of these innovations will be successful is "not determined mainly in ex-ante calculation, but largely in ex-post actual contest." We now arrive at an important point which is the *interaction between firms* (with their resources) in the sector.

As mentioned above, Teece, Pisano & Shuen (1992/7), Winter (1987; 1995) and Levinthal (1995) are adherents of an evolutionary approach within the dynamic school (Nelson & Winter, 1982). The evolutionary approach, like part of the Resource-Based view, operates on the assumption of bounded rationality. It also considers history and path dependencies as important. But as Levinthal (1995) notes, the evolutionary approach also focuses at sector level on the impact of competitive market selection forces. Analysing firms in their particular sector in terms of a process of variation, selection and retention, Levinthal (1995:26-27) argues that

"observed differences in organisational form may in large part reflect variation in founding conditions (Stinchcombe, 1965) in conjunction with local search on a rugged landscape."

One might wonder what an evolutionary approach can contribute to the *management* of change, since "mutations" are considered within their biological heritage to be a random event, not something that is induced by a creator or manager. Strategy researchers and organisational theorists focus on "variation-inducing mechanisms" and the role of management (Levinthal, 1995). Basically, an evolutionary process as a long-term stream of events contributing bits and pieces to a hopefully - but not definitely - better future, is

much of what we see at a company. However, there is still room for the role of “special creators” who influence the process of change.

With the concept of “strategy path,” as introduced in the next section, the focus will be on the role of these special creators: the firm. Trajectories and paths, particularly in combination with the word “natural” (Nelson & Winter, 1977), however, have a “determinist tendency,” as if it is according to nature; not the work of humans (MacKenzie, 1992) (See Table 2-3, page 23). This will be discussed more extensively in §2.3.4.

**TABLE 2-3 OVERVIEW OF DYNAMIC SCHOOL**

Specific problem domain	What are the sources and mechanisms of distinctive competence (Teece, Pisano & Shuen, 1997) and why is change so difficult?
Answer	Focus on organisational capabilities based on a collection of routines, skills and complementary assets. The role of management is to create, upgrade and replace these resources (Schulze, 1994).

Closely in line with the path-dimension of resources is the fact that long-term resources are also known to be rigidities. Describing the cause of rigidities, Leonard-Barton (1992) refers to the structuration theory of the sociologist Giddens (1984). This is also an indication of the more plural nature of this dynamic school within the resource-based view. In the language of the resource-based view, this phenomenon has been referred to as path dependencies, or “history matters” (Teece, Rumelt, Dosi & Winter, 1994). If history matters, the activities and strategies of yesterday become the context of today and tomorrow, influencing the activities of today and tomorrow.

### 2.2.3 Conclusions

This section introduced two schools of thought of the resource-based view of the firm. The structural school - loyal to the cornerstones of economics - emphasising the *identification* of sources of sustainable competitive advantage and the dynamic school of a more plural nature emphasising the continued *creation* and *development* of resources.

Because the dynamic school within the resource-based view has been more integrative and processual than the structural school, and also includes the latter’s basic characteristics (cf. Schulze, 1994), I will move on with the dynamic school, to describe a resource-based vocabulary. A genuine process view, in which actions unfold over time, will I believe be a key to explaining how a firm develops resources. The resource-based view of both schools does not include such a process conceptualisation. However, it does supply a basic vocabulary

needed to address a process conceptualisation. The resource-based vocabulary will be described and discussed in the next section. The process conceptualisation will be dealt with in section 4.

### **2.3 A RESOURCE-BASED VOCABULARY**

Perhaps because of the rapid escalation of publications within the resource-based view, the vocabulary and terminology used have been quite inconsistent. Recently, several authors have tried to overcome this inconsistency (Teece, Pisano & Shuen, 1992/7; Bogaert, Martens & Van Cauwenbergh, 1994; Sanchez, Heene & Thomas, 1996; Bogner, Thomas & McGee, 1996). Within this text I have followed these publications in order to establish some consistency of terminology, but I will also use other publications.

Grant (1991) distinguishes between the "availability" of certain assets and the "ability" to do something with these assets as sources which explain the differences between firms. The ability of a firm is closely connected to the development of skills, organisational routines, and cognitions (cf. Bogner, Thomas & McGee, 1996). The "switch", however, originating from the available assets to the ability to do something with these assets, has been largely neglected in the resource-based literature. The field of economics is known for its focus on content - that is decision - issues. It is taken for granted that decisions - once rationally made - will be implemented. In the same way this implementation issue has to do with both capability and ability, which are about the action following decisions (see also Pettigrew & Whipp, 1991:26). I believe that there is therefore a need for a genuine process model of becoming, within the resource-based view, where availability and ability are brought together (e.g. Sztompka, 1991). Or, to put it in the words of De Gregori (1987):

"Resources are not, they become"

Within the resource-based literature a number of concepts are static in nature. The word "static" sometimes has a negative connotation. Here, it is used in a neutral sense, because static concepts are necessary to describe and/or qualify a situation. As mentioned earlier, the vocabulary within the resource-based view has not been standardised, so it is always necessary to describe which concepts will be used, together with what is meant by these concepts. Sometimes concepts have a high face-value validity but are not easily operationalised in terms of empirically observable behaviour and data.

The following subsections outline elements of the resource-based vocabulary to be used within this research (see Figure 2-2 on page 26). Business examples of the vocabulary will be provided from the context of the case study company Koninklijke Hoogovens plc.

#### **2.3.1 Organisational Assets**

Assets or factors of production are what a firm has available to compete with in the market (Teece et al. 1997). Within the resource-based view, the "undifferentiated" assets are considered the least important, especially within

the structural school, because these factors of production are “freely” available (i.e. for money) and thus cannot be responsible for differences between firms (Barney, 1986a). Sanchez, Heene & Thomas (1996:7, emphasis mine) describe an asset as:

“anything tangible or intangible the firm *can use* in its processes for creating, producing, and/or offering its products (goods or services) to the market.”

Examples of this generic definition are both the tangible assets of a steel mill, such as its machinery (blast furnaces, hot stoves, steel converters, etc.) and infrastructure (harbours, cranes, railways, etc.), and its intangible assets, such as the process characteristics of steel during continuous casting, and property rights concerning new developments.

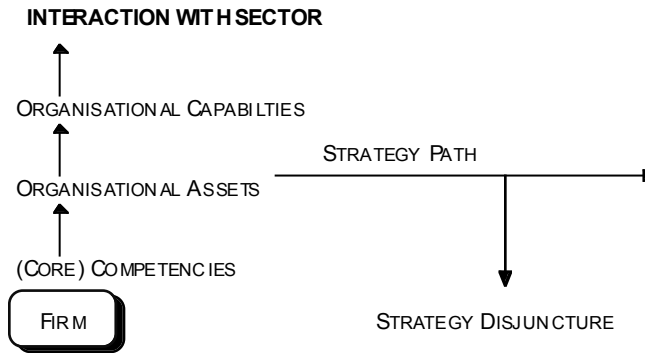
With respect to an organisational asset a company has, in fact, to take a “double hurdle” before it actually generates a profitable action. Knowledge, for example, is an intangible organisational asset which has become increasingly important within the resource-based view, as illustrated by several recent publications. Kogut & Zanders (1992; Zanders & Kogut, 1995) explain that knowledge resides in both individuals and in regularities of group behaviour. As long as knowledge is *only* available in books (like in this dissertation!) it does not generate action. However, as soon as knowledge resides in *behaviour* or *doing* it has become an *ability* (see § 2.3.2 organisational capability) and the first hurdle has been taken. Von Krogh & Roos (1995) argue that knowledge at the individual level (subjective knowledge) develops through a legitimating process in order to come at the group level (social knowledge). The second hurdle, generating profitable action *in the marketplace* with an ability, is not really acknowledged in the resource-based view. This will be the central issue in section 4 of this chapter.

A sub-set of a firm’s organisational assets shares a more distinctive, firm-specific character, which is often exposed by the difficulty of imitating or transferring these assets. They are unique because of their embeddedness within the firm. Examples of these firm-specific assets are superior knowledge concerning the hot rolling of aluminium or a superior geographical location.

Firm-specific clusters are integrated clusters of firm-specific assets which, taken as a whole, make the firm a possibly distinctive performer (Teece et al. 1997). These integrated clusters refer to a phenomenon that might be termed the *Achilles’ heel* of the resource-based view. Sometimes the whole of a firm’s assets make the firm a distinctive performer while it remains impossible to reduce this distinctiveness to “distinctive” assets. Hoogovens’ good performance as a whole, for example, is not easily reduced to a certain firm-specific asset but is more likely to reside in the specific combination of the tangible and intangible assets of its production line ranging from blast furnaces to its application mills. This dissertation will be more specific than this latter statement. However, the point made here is that extreme reductionist thinking will not bring us something like the “holy grail” of a company’s performance.

In the literature these firm-specific clusters are also addressed as competencies, but like Bogner, Thomas & McGee (1996) I will use this term for the ability of a firm to *create* new firm-specific resources. Thus, competencies *produce* firm-specific resources and these resources are the outcome. Consequently, “*Organisational Assets*” are a firm’s owned, controlled and/or addressable assets (both tangible and intangible).

**FIGURE 2-2 A RESOURCE-BASED VOCABULARY AT THE FIRM LEVEL**



### 2.3.2 Organisational Capability

The ability *to use* what is available to a firm represents the predicate: “the proof of the pudding is in the eating.” At an individual level this is related to skills, at a group or firm level this is related to routines or *organisational capabilities*. Sometimes an individual knows more than he or she can tell. This is referred to as tacit knowledge (Polanyi, 1967), which can only be discovered by observing an individual practising a particular skill. The same seems to be true for a company. That is why this present study has *observed* a company’s actions over time. Collis (1994) argued that there are probably as many definitions of organisational capabilities as there are authors in this field of study. Three categories of capabilities distinguished by Collis are:

- capabilities as an ability of the firm to perform basic (functional) activities (e.g. Amit & Schoemaker, 1993);
- capabilities as the common theme of dynamic improvement, such as “dynamic routines” (e.g. Teece, Pisano & Shuen, 1997); and
- capabilities as the more metaphysical strategic insights in the future used to develop novel strategies (Henderson & Cockburn, 1994).

The definition adopted here concurs mostly with the second category because it focuses on “doing and improving”, whereas the third category is about developing new strategies (the first category is included in the second category).

Consequently, an “*Organisational Capability*” is the ability (i.e. the skills and the routines) of a firm to use its available assets to a desired, intended end (performance).

A skill is a capability at a personal level. A firm does not have skills, an individual does. At the organisational level, skills are defined as organisational routines or capabilities, which are complex patterns of social action (Pentland & Rueter, 1994) and not - as it is often conceived - "mindless" repetitive behaviour (Giddens, 1984). When the skills of several people have been collective and they have become a pattern of interaction there then exists a so-called organisational routine. Organisational routines are patterns of interaction that "enable distinctive activities to be performed" (Teece et al. 1997: 516). A typical example of an organisational routine is the probability of "hitting the target" (intended composition) within the steel production practice. This is a rather uncertain process which is learned by extensive experience only.

Routine clusters are integrated groups of organisational routines, which together make up a distinctive or firm-specific capability (also called an organisational capability). Teece et al. (1992:22) argue that critical resource differences between firms refer to organisational capabilities, by which they mean the abilities "of a firm to organise, manage, coordinate, or govern specific sets of activities." The ability of Hoogovens to fabricate very thin cold-rolled steel sheet for the production of batteries is a good illustration of an organisational capability (a routine cluster). Because of the thinness of cold-rolled sheet even the slightest irregularity - which could occur in the blast furnace process at a much earlier stage in the production process - can result in pinholes in steel sheet. The question, however, as to which of these routines in the production process *really* makes this organisational capability *distinctive* can hardly be answered.

Distinguishing organisational routines empirically from routine clusters is difficult and a matter of nuance. The difference between routines and capabilities may be compared with the difference between firm-specific assets and firm-specific clusters of assets, which comes down to the degree of relative importance to the firm. This relative importance is difficult to distinguish in a company since it is co-determined in interaction with the sector.

### **2.3.3 (Core) Competencies: The Change Ability Of The Firm**

Teece et al. (1992:26) suggest that since history matters, clusters of firm-specific assets need to be viewed in dynamic terms; as changing through time. This process of asset evolution is supposed to be governed by what is referred to as "dynamic capabilities." However, these capabilities still seem to be rather mystical forces helping the firm to sustain its ability to generate profits. In my opinion, viewing the development of a firm's available assets and capabilities as an evolving process requires more than just using the adjective "dynamic."

Concerning the change ability of the firm, I concur with Bogner, Thomas & McGee (1996) in the distinction they draw between *competencies* (i.e. the ability to sustain a pool of resources over time) and the *outcome* of

competencies (new resources). They argue for the concept of core competence to be used only if it leads:

“a firm, directly or indirectly, to a persistent competitive advantage by satisfying a customer better than competitors, or at lower cost than competitors, or by producing an advantageous combination of both.” (p. 13)

While I agree with their reasoning for a “strong rule” I opt for the concept of competence until proven core (ex post), based on my introductory remarks concerning firms in the “pack” which might not have core competencies but are competent to stay in the business for 75 years or more.

*“Competence” is a firm’s ability to create new resources, which is called Core Competence if it produces repeatedly unique or firm-specific resources.*

Whereas organisational capabilities are the ability to *use* organisational assets to a desired end, competence is the ability to *create* new resources to a desired end. Creating new resources can originate from an ongoing (continuous or evolutionary) process or from a breakthrough (i.e. a discontinuous or revolutionary) process. The former remains in line with past resources whereas the latter signifies a disjuncture from past resources.

In the change ability of a firm, both institutionalisation and legitimisation play an important role. As mentioned before, Leonard-Barton (1992) points to the reverse side of capabilities, namely rigidities. What rigidities are to capabilities is what sunk costs are to firm-specific assets. Capabilities are known to be “sticky” and this “stickiness” eventually can become a burden or barrier to change. Sometimes burdensome strategy paths can only be overcome by new technological “breakthrough” opportunities. An important - and within the resource-based view often neglected - contextual variable is technology. McGrath, MacMillan & Tushman (1992) have addressed this neglect but consider it a content issue that points to the major choices and decisions facing the executive team when considering technology strategy. However, they consider technology as a process as well, implicitly arguing that the technological context is a process underlying the industry, as well as the firm, and is subject to technological change, market change, regulatory change and social change. This technological trajectory is an important aspect of the “strategy path” of a firm.

#### **2.3.4 Strategy Path**

According to Grant (1991:132), a change in a firm’s pool of available assets and capability is gained by a change in *commitment* towards “a particular path of technological development” (path commitment). Given a specific commitment, resources will be developed automatically because of learning and repetition (Grant, 1991). Resources can also be developed without a specific deliberate commitment, as has been the case in the architectural firm “Arcop” of Mintzberg et al. (1988:338). With the repeated acceptance of specialised

building orders, this architectural firm became the unintended specialist in these particular buildings.

Processual concepts will be needed to describe or qualify an ongoing process. Truly processual concepts show aspects of a phenomenon while in action: they are a combination of available assets and capability. Teece, Pisano & Shuen (1992, 1997) use several overlapping concepts to describe an *ongoing* process, such as path commitment, learning, path dependence, and path change. These different concepts highlight different aspects of evolution of - ultimately - a company's performance in terms of its resources (e.g. the greater hunger). Most of these concepts explain some aspects of why a firm is as it is. Sony is a well performing electronic appliance company because it has committed itself to a particular kind of technological expertise which it has improved along the way, etc. The question of how precisely this commitment came about is much more complex. As several case-studies of Honda illustrate, several initiatives (small and large commitments, coincidences, emergent strategies, reciprocities, learning, technological trajectories) eventually came together in a strategy path (i.e. a realised strategy), resembling what we know as the Honda organisation (Pascale, 1984; Ghemawat, 1991).

The strategy of a firm can be compared with the evolution of a forest walk or track. The first time someone takes a certain path it is hardly recognisable and sometimes even "illegal." As time goes by slowly the contours of a track emerge and when several tracks come together a path evolves. When a firm is in "good repair", well established alternatives become less visible or represent paths that lead astray. The concept of *strategy path* is introduced here because it describes a firm's strategy in processual terms. In the case of Hoogovens it follows its strategy course through the years in terms of the corporate behaviour of continuity, choices, and changes.

Nelson & Winter (1977; 1982) use the term path or trajectory as "what is taken to follow as a matter of course" (MacKenzie, 1992:31). This definition does not make an explicit choice in favour of either voluntarism or determinism. In the concept of a strategy path, following Sztompka (1991:74) it is argued that firms as well as managers "appear as both producers and products, shaped and shaping, subjects and objects, puppets and puppet-masters at the same time." In interpreting the causal effectiveness of a firm's actions as on a strategy path these are partially determined, although there are possibilities for evading this determination. An important "rule of thumb" concerning the determination of managerial (human) action is that he or she could always have acted otherwise (Giddens, 1984). However, how these choices to act otherwise influence the wider processes is a different question again. Dosi (1982:153), on the other hand, is very close to determinism, stating that a (strategy) path shows "a momentum of its own." A path possessing "a momentum of its own" implies excluding the *possibility* of choice of management. Business events are causally interrelated, sequentially ordered, and cumulative through time, but do

not run their own course. Consequently, the concepts strategy path and sector survival path (to be introduced later), used in this dissertation, do possess momentum, "but never momentum of its own" (MacKenzie, 1992:31).

The social dimension of a strategy path is at least as important as the technological dimension. By drawing on Giddens (1984), Orlikowski (1992) addresses this "duality" by pointing to technology as partly enacted by human beings and as institutionalised in social structure. Also MacKenzie (1992) points to the self-fulfilling aspect of a path. Paths are persistent, in part, because the parties concerned believe they will be consistent. An important argument for mechanisation, for example, has been the assumption that others (firms, countries, etc.) do it. As a consequence we will do it too! Another typical example is the increase in speed of computers. In the steel industry there is a collective belief that steel sheet will become ever thinner. As a consequence, much energy and money are invested into this reinforcing this belief in practice. This is consistent with the concepts of salients and reverse salients, introduced by Hughes (1992). A path consists of several technological components developing at different pace. Components ahead are salients "pulling" others (some of which are reverse salients) along. For example, in order to arrive at thinner steel, one needs to increase strength as well. Also Van den Belt & Rip (1987:141) argue that technological development "is far from deterministic," because the intentions and expectations of the people involved play a role.

There is also an economic dimension to a strategy path, as it can involve an "escalating commitment" (Tang, 1988). An escalating commitment refers to the idea that capital intensive firms, for example steel and aluminium mills, will hang on to their past ill-conceived investments because it is too expensive to switch. This behaviour can be backed up with sound economic justifications (such as a negative return on investment!). Teece et al. (1997) have also referred to previous investments and the repertoire of routines as constraints on future behaviour. In turn, the structures of the past also enable and even enforce future behaviour (Giddens, 1984; Sztompka, 1991).

It has become clear that in conceptualising a strategy path through time interactions with the sector are automatically included. These interactions will be discussed extensively in section 4.

Consequently, a *"Strategy Path"* is a firm's course of strategy through time based on certain resources, starting from its foundation until the present and moving on to the future.

The strategy of a firm is the - sometimes consistent - way of dealing with important corporate issues throughout their history. This is what is meant by the term strategy path. Multi-business firms will have more strategy paths depending on the businesses' interrelatedness in terms of resources and on the number of different sectors involved. A strategy path is based on a firm's resources (available assets and capability) and is connected to, and interacts with,

a sector survival path (as will be introduced later in section 3). Several insightful empirical “tracking strategy” studies by Mintzberg (1982, 1984, 1985, 1988) confirm this. Chapters 4 to 6 of this dissertation will provide several documented examples of strategy paths.

### **2.3.5 Strategy Disjuncture**

Very much in line with the concept of strategy path, as a firm’s course of strategy through time based on certain resources, is the idea that this course will undergo path-breaking changes because of a change in or an addition to a company’s strategy. The concept “strategy disjuncture” is characterised by initiatives or activities - possibly starting at the individual level - to act in a different way from before. A “*Strategy Disjuncture*” is a distinctive departure taken by a firm from its present strategy path in order to change the course of its path or to acquire a new path.

It is possible for these activities to become more formal to the point of an acknowledged commitment. This acknowledgement may result in the formation of special committees to “design” strategies and procedures, etc., ultimately to the point of a strategy of the firm - often post-rationalised.

## **2.4 RESOURCE-BASED VIEW CONCLUSIONS**

This section on the resource-based view of the firm has pointed to the firm-level explanation of performance. Recently, the strategic management field of study has adopted this view extensively, encouraging a more intensive focus on the firm, as opposed to the sector in which it operates. Following the dynamic school of the resource-based view both processual and descriptive concepts have been introduced, mostly in line with recently published efforts for the standardisation of concepts. Central to this study is the concept of strategy path illuminating the trajectory through time of a firm. Along this strategy path new resources (assets and capabilities) will be created and further developed. Sometimes strategy disjunctures will be taken opening up the development of new paths. However, management is not completely free to act. It is limited (and facilitated) by past decisions and by their cognitive capabilities. Moreover, change is dependent on activities at sector level, i.e. involving interaction between firm and sector.

## **3. THE FIRM-IN-SECTOR PERSPECTIVE**

In the 1970s Richardson argued that “firms are not islands but are linked together” (Richardson, 1972). So far, I have provided a resource-based vocabulary in order to describe the coming into being of a firm through time by its strategy paths and corresponding resources. As the title of this chapter suggests there is an overriding concern with the context or territory in which resources are put to use. Explaining the path of a firm from an inside-out resource perspective is only half the story. This section sets out to supply the outside-in perspective - the territory - of the story.

In order to gain insights into the territory of a firm beyond that of the industry, the firm-in-sector perspective was chosen. Whereas an "industry" embraces the product market (the immediate competitors); a "sector" embraces the entire value chain (Eriksson et al., 1996).

Smith et al. (1990) start with the sector as an "objective reality". The dominant approaches in studying the objective dimension of a sector are the industrial organisation approach and population ecology. For example, according to Bain-type industrial organisation, firms within an industry are considered to be homogeneous and only differ in terms of size. Explaining the performance of a specific firm in this context corresponds to explaining the general performance of an industry. Consequently, the structure of an industry determines the conduct (i.e. strategy) of its constituent firms and as such the performance. To balance this economic determinism the firm-in-sector perspective also moves towards psychological and sociological notions of the sector, a "cognitive reality". The sector is also a mental construct and a "collaborative network" constantly trying to find some middle ground between economic determinism and cultural relativism.

In their book *Reshaping Work: The Cadbury Experience*, Smith, Child and Rowlinson (1990) have used the firm-in-sector perspective as an explanation of change (or transformation) of a firm (Cadbury Ltd.), embedded within its sector (confectionery).

In the following section the three dimensions of the firm-in-sector perspective will be described. Several developments in the literature concerning the firm-in-sector perspective will then be discussed in order to extend the perspective on a firm within its sector. Consequently, a firm-in-sector vocabulary will be presented in order to connect the change in a firm's resources to the change in the sector in which it is active and vice versa.

### **3.1 THREE DIMENSIONS OF THE FIRM-IN-SECTOR PERSPECTIVE**

Before describing the three dimensions of the firm-in-sector perspective, the concept of "sector" will first be defined. Smith et al. (1990:310) have used the term "sector" to

"designate a domain of interrelated activities contributing to a particular set of end-products..... compris[ing] populations of firms producing similar goods and services, together with others providing close support such as suppliers and consulting firms which specialise in serving the producers."

Accordingly, the term "sector" has been associated with end-products and the total network of providers which are responsible for producing these end-products. Furthermore, Smith et al. (1990) purport that a sector has a structure of objective conditions; a sector is a cognitive arena which is a domain of ideas and practices; and a sector is a network of collaborative relationships (Smith et al. 1990:310-11). Sectors are not consciously planned and built but are a complex result of the past, or as Räsänen and Whipp (1992: 47) argue:

“... an historical formation of complementary, interlinked and co-evolving business activities. It is often, though not uniformly, linked to certain geographic locations and it appears in a certain period of time. A sector contains organisations which provide similar goods or services, together with those who regularly transact with them in supplying, servicing, regulatory or customer roles.”

Consequently, Smith et al.'s (1990) dimensions of the sector will be set out in the following sections.

### ***3.1.1 The Sector As An Objective Reality***

Typically, when a sector is taken as an objective reality the focus is on the criteria it imposes on a firm's survival. The underlying assumption is that the sector “especially when strongly competitive, largely determines the path a firm must take for future success” (Child & Smith, 1987:567). The industrial organisation approach has isolated identifiable and measurable characteristics which somehow *co*-determine a firm's strategy and structure. Examples of these characteristics are: market concentration, height of entry barriers (capital intensity), R&D intensity and technological specifications, buyer/seller power, labour market conditions and governmental actions, etc. (e.g. Porter, 1980; Scherer, 1980).

In this context, poor performance relative to competitors in the same sector is the major impetus for change in a firm, together with altered resource scarcities and technological developments. Population ecology and its biological analogy have indicated that there is something like a “survival path” within a sector (Hannan & Freeman, 1977). The sector is taken to be the area in which “survival of the fittest” takes place. Deviance from such a path is either a drive towards change (i.e. adjustment towards this survival path) or a definite road to extinction. Some have taken the biological analogy further and elaborate on sector life-cycle models as the way firms develop through several phases. For example, a pioneering firm starts with a fluid pattern through a transition pattern towards a specific pattern of maturity, whereas there is a possibility of de-maturity (Abernathy, Clark & Kantrow, 1983) or re-juvenating (Baden-Fuller & Stopford, 1992) (see Table 2-4, page 34 for the sector as an objective reality).

Child & Smith (1987:568) ask themselves the question if there is a possibility of more than one survival path within a sector around different product types. Based on their case-study on chocolate confectionery, they conclude that within an oligopoly “the significant other firm's” recognition of a survival path may be a far more important drive for change than the sector as a whole. This question leads them to the sector as a cognitive arena balancing the determinism of the sector as an objective reality.

**TABLE 2-4 SECTOR AS AN OBJECTIVE REALITY**

Characteristics	The sector, particularly when strongly competitive, largely <i>determines</i> the path a firm must take for future success.
Performance	Performance is a function of deviance from the survival path. The less deviance the better.
Change	Poor performance (relative to competitors in the same sector), changed resource scarcities and new technologies are the major triggers of organisational change. Organisational change always resembles a reaction to some external stimulus.

### 3.1.2 *The Sector As A Cognitive Arena*

The sector, as a cognitive arena, focuses on "a bearer of external exemplars against which a firm's current strategy and structure, and the policies underlying these, may be compared and may therefore serve to guide the new configurations towards which a transformation is directed" (Smith, Child & Rowlinson, 1990:312). The sector as such - or important proponents within it - provides the proverbial mirror for a firm within that sector. Spender's (1980) findings on "industry recipes" indicate that, particularly within well-established industries, there are "rules of the game" which are homogeneously held within a sector. Spender calls these rules of the game an industry recipe. Smith & Child (1988) concluded that Spender does not rule out *multiple* recipes corresponding to *different* sector survival paths. This is also in line with Whipp & Clark (1986:27) who argue that "sectors may be characterised by distinctive corporate languages, constructs and frameworks, all of which have an important influence on the evolvement of learning paths in the sector."

It is important to note that a *cognitive* arena is a "personal" metaphor projected on to collective action. With this the sector is portrayed as a phenomenon with the cognitive characteristics of a person. However, the sector as a cognitive arena, as described above, is much like a sector *culture* because it supplies the sector with norms and values of how one should do business (see Table 2-5, page 35 for the sector as a cognitive arena). Smith et al. (1990:315) have made an interesting "switch" from cognitive arena (culture) towards individual perception (cognition), when they noted that "changes in a sector are only appreciated through the perceptions of organisation members." They have consistently followed Weick (1969) and Smircich & Stubbart (1985) with the notion that a human actor does not react to an environment but enacts the environment. This seems to be a switch from cultural or institutional ruling

towards cognitive framing (e.g. Hellgren & Melin, 1992), which is very different, since the former is in line with (institutional) determinism, and the latter with voluntarism. Hellgren & Melin (1992: 195 italics in original) conclude that in order to create a true contextual approach (e.g. Pettigrew, 1985) “a conceptualisation of different recipes should consider the role of *both* institutional ruling and cognitive framing”. This distinction, also known as cognition vs. culture, will be taken further in § 3.3.2 and section 4 concerning interaction between firm and sector.

**TABLE 2-5 SECTOR AS A COGNITIVE ARENA**

Characteristics	There are “rules of the game” (industry recipes) which are relatively homogeneously held within a sector.
Performance	The sector is a “bearer of external exemplars” against which a firm’s current performance can be compared and which may serve as guidance towards improved performance.
Change	Change is a process of enactment; a change in the rules of the game (frame breaking) or within the rules of the game.

Smith et al.’s (1990) consideration of the sector as an objective reality and the sector as a cognitive reality serves as an example of two extreme positions of objectivism and subjectivism. They argue that there is merit in taking both views because change is better understood when both the strategic interpretation held by management and the extent to which the external conditions supply the management with substantive control over these conditions are held in balance. This “substantive control” corresponds with the ease with which a firm can secure good performance and when it needs to change in order to deal with crises. In following Whittington (1992) in emphasising the importance of structures and resources and human agency (e.g. Giddens, 1984), Smith et al. (1990:317) conclude that there is an interdependence between the firm and its context “that extends beyond the economic sphere.” The consideration of taking both (extreme) sides of the phenomenon of strategy (objectivism and subjectivism) is a step forward, but it will be argued in this dissertation that we need another step forward in taking interaction *seriously*. We need to take into account the relative strength of both sides of the coin *over time*.

### 3.1.3 The Sector As A Collaborative Network

At first glance, the sector as a collaborative network would seem a stranger in the midst of the objective and cognitive reality. However, most of the time a sector is likely to be considered in terms of competitive relations as within an industry. Smith & Child (1988) emphasise that a sector is also a network of *collaborative* relationships with both competitors and other parties. As a consequence, a sector is an interactive reality with many different members (see Table 2-6, page 35 for the sector as a collaborative network).

When dealing with change, collaborative relationships play an important role, particularly when this involves technological change. An example of such a collaborative relationship is the customer-involved development of innovations (Von Hippel, 1988). However, it is not only technological innovations which may benefit from collaborative relationships; exposure to new management practice is also valuable. The exposure of a firm to its sector is never a single-minded one of, for example, its top management only. There are several people with different occupations - and corresponding perceptions - facing different aspects of the sector. The sector as a collaborative network emphasises these multiple external linkages. Examples are memberships of sectoral federations but also visits to plants or conferences.

**TABLE 2-6 SECTOR AS A COLLABORATIVE NETWORK**

Characteristics	A sector is a network of collaborative relationships emphasising multiple external linkages.
Performance	Collaborative relations form a basic platform for new insights for improvement
Change	The exposure to this network is "an early warning system", etc. and therefore a possible source of change.

The firm-in-sector perspective is much larger than can be accounted for in these few pages, because it embraces several very large streams of literature (e.g. industrial organisation, population ecology, cognitive psychology and actor-network perspective, etc.). The point of the three different perspectives on the sector, however, will be elaborated and reconstructed in the next sections.

## 3.2 DEVELOPMENTS WITHIN THE FIRM-IN-SECTOR PERSPECTIVE

This section sets out to describe the developments within the firm-in-sector perspective as well as to touch upon the broader literature of strategic management. Connecting the firm-in-sector perspective to the strategic

management literature will be done more extensively in section 3.3, which deals with the vocabulary to be used.

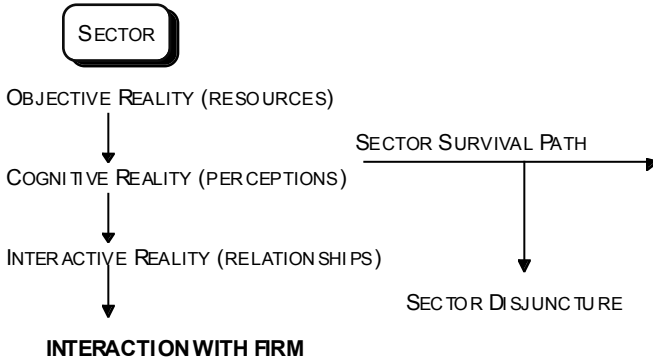
Several papers which elaborate on the firm-in-sector perspective have been published in a volume edited by Whitley (1992). Whitley introduced the concept of a business system which is “particular arrangements of hierarchy-market relations which become institutionalized and relatively successful in particular contexts”(1992:6). In these particular contexts, according to Whitley, there are a number of ways to perform successfully, none of which is the single best way. What is interesting in this concept of business system and particularly the different ways in which a firm can perform successfully is that it is the “institutional ruling” side of the sector as a cognitive arena. However, there is also an objective dimension to the business system. For instance, the judicial system supplies the firm with a limited number of institutional forms within a certain geographical context. So the “nature of the firm” also has objective characteristics, in addition to its cognitive/cultural dimension. All authors in Whitley’s volume acknowledge the need for a useful perspective to go beyond the extremes of cultural relativism and economic determinism (1992:46).

Räsänen & Whipp (1992) confront the problems of units and levels of analysis and how to deal with these empirically. The concept of business systems, as put forward by Whitley, has been connected to a nation state. However, there are several other “natural” units of collective action such as industries, sectors, districts, regions, etc. (Räsänen & Whipp, 1992: 47). Räsänen & Whipp have highlighted the concept of the sector because national and international economies can be considered as combinations of various sectors. In conceptualising their ideas, they learned how difficult it is to assume that there is only one dominant and stable recipe. Their conclusions correspond with the findings of Smith et al. (1990).

In investigating a sector (e.g. Whipp & Clark, 1986; Räsänen, 1993), one should look for its historical conditions, because these may prove important in explaining the development of these sectors (Stinchcombe, 1965). Also, sectors may have identifiable patterns of change (Abernathy et al. 1983) or distinctive languages or bodies of thought (e.g. Spender, 1982; Huff, 1982). They may also have specific dynamics of technological development (e.g. Pavitt, 1984). A survey of strategic management literature for useful contributions to the firm-in-sector perspective throws up three particular streams of publications.

- the mostly economic-oriented strategic group literature;
- the rather large stream of cognitive/psychological-oriented literature;
- the network/organisational literature (e.g. Reger & Huff, 1993).

These streams of literature will be used to help develop a firm-in-sector vocabulary in the next section.

**FIGURE 2-3 A FIRM-IN-SECTOR VOCABULARY AT THE SECTOR LEVEL**

### 3.3 A FIRM-IN-SECTOR VOCABULARY

The above streams of literature - corresponding with the three dimensions of the Firm-in-Sector perspective - show different but complementary sides of the sector phenomenon. This section will elaborate on these in order to supply a recognisable vocabulary to be used in the description and analysis of a sector through time.

The threefold influence of the sector will lead to three sector concepts for describing the situation of a sector. The objective reality refers to imposed rules or norms (*resources*) of survival for companies. The cognitive reality focuses on *perceptions* of ideas, beliefs and convictions concerning the behaviour of companies, whereas the interactive reality is concerned with reciprocal, mutually oriented *relationships* directed at the interaction of companies. Sztompka (1991) refers to the complex, idiosyncratic *fusion* of these realities as providing an enabling, limiting and enforcing *context* in which a firm is located.

Corresponding to the strategy path and the strategy disjuncture at the firm level of analysis, the central concepts of social becoming at the sector level of analysis will be the "sector survival path" and the "sector disjunction." For an overview of the vocabulary to be explained in the following sections see Figure 2-3 on page 38.

#### 3.3.1 Objective Reality (*resources*)

Smith et al. (1990) begin their argument concerning sector survival paths by drawing on their insights from industrial organisation and population ecology. Starting with the sector as an objective reality, the concept of strategic groups would appear to contribute to the discussion. A "strategic group" has been defined as "a group of firms within the same industry making similar decisions in key areas" (Reger & Huff, 1993) or "having similar assets, strengths and competencies" (McGee et al. 1995). These similar decisions and

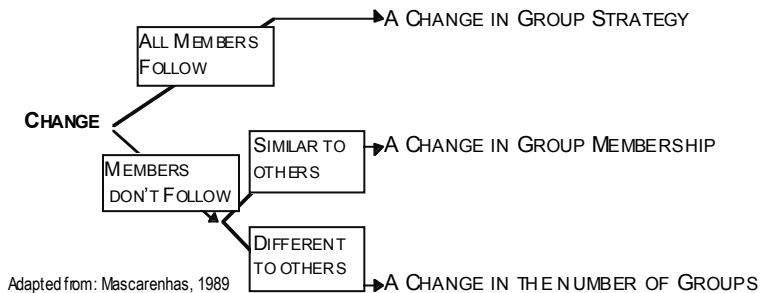
activities of firms within a group create mobility barriers (certain resources) between groups consistent with the resource-based view.

To be able to compete in a particular sector a firm will need to have certain resources in order to survive in that sector. A simple example from the aluminium sector would be the necessity of smelter knowledge for making primary aluminium. Without access to this knowledge, a company will be unable to operate in this sector as a producer of primary aluminium. Which resources will be necessary will depend on a firm's products and market orientation, etc. At the surface-level these characteristics will be more or less identical to several other groups of firms in the sector "having similar assets, strengths and competencies." In the steel sector there are integrated mills and there are minimills referring to a different production orientation. Groups can also be identified by their level of organisational strategy, by the scope (difference of products or product-lines, by the level of vertical integration, market orientation, etc.) and by their resource-deployment (capital intensity, technological capability, etc.) and the time period (e.g. Fiegenbaum & Thomas, 1993).

Consequently, *an objective reality refers to the imposed rules or norms in terms of necessary resources needed for survival in a sector.*

In general mobility between these so-called strategic groups will be rather low. This is especially the case in capital-intensive sectors such as the steel and aluminium sector. The level of mobility among these groups tends however to be higher in periods of economic decline than in periods of economic stability (Mascarenhas, 1989). Sometimes a crisis is needed in order to get a firm "moving."

#### FIGURE 2-4 STRATEGIC GROUP DYNAMICS



When it is possible for some firms in a specific group to change in terms of strategy this can attract three reactions on the part of their group members (see Figure 2-4 on page 39):

- All members follow, hence a change in group strategy;
- Members do not follow, but the change is similar to other strategic groups, hence a change of group; or

- Members do not follow and the change is different from other strategic groups, hence a change in the number of groups.

This view of strategic group dynamics focuses on institutional criteria influencing or determining the membership of a typical firm in a typical strategic group. Highly competitive sectors determine the membership of a firm in a certain strategic group and consequently the sector survival path it must take for future success. The sector survival path followed, however, is not only an effect of economic conditions and the characteristics of the firm, but also reflects the perception of a sector as a cognitive reality.

### 3.3.2 *Cognitive Reality (perceptions)*

In examining the sector as a cognitive reality, the concept of "recipe" is quite illuminating. Spender (1989) and Porac et al. (1989, 1995) have argued that sectors can be grouped around certain perceptual categories. Porac et al. (1995) argued:

"As White and Eccles (1987: 984) noted, imperfect competition is a 'tangible social construction' defined by the rivals involved. To identify who competes with whom in imperfect markets, one must capture the belief systems that allow these definitions to persist."

Moreover, they point to the tension between the "knowledge requirements of rivalry" and the "ambiguity of market structure" as the main determinants of the playing field of business. After all, the more ambiguous a market the more difficult it will be for a firm to gain knowledge concerning its competitors and thus have fewer bases for interfirm comparisons. Within their Scottish knitwear case there were six clusters of firms which shared similar constructs. Here, organisations in markets are perceived by the social actors involved as comparable and are defined in cognitive groups (Porac et al., 1995).

A sector or industry "recipe" has been defined as "a bearer of external exemplars against which a firm's current strategy and structure, and the policies underlying these, can be compared and which may therefore serve to guide the new configurations towards which a transformation is directed" (Smith et al., 1990). Consequently, a recipe can be an ideal-type against which firms measure themselves. Often, as is the case in the steel industry, there are a small number of firms which together form a kind of flagship. Recipes do not only result from a historical trajectory of economic, social and technological conditions, they also describe the present-day sector in terms of "size, technology, location, and product styles" (Porac et al. 1995:222).

Consequently, *a cognitive reality refers to perceptions of ideas, beliefs and convictions concerning the behaviour of the companies in a sector.*

The point of this all is that the behaviour of firms in a sector is influenced by each firm's membership of a particular cognitive community. And these mental models in turn are important, among others, for a firm's direction of resource accumulation (Barr, Stimpert & Huff, 1992). The

membership of a firm in a certain strategic group and/or cognitive community also influences the parties with which the firm has relationships. This dissertation's interpretation of cognitive reality is different from Smith et al's (1990) interpretation since the focus will be cognitive framing (perceptions) instead of *both* cognitive framing and institutional ruling. In section 4 when the model of social becoming of Sztompka (1991) will be introduced this will be highlighted.

### 3.3.3 *Interactive Reality (relationships)*

The sector as an interactional network focuses on the way different firms relate to each other and to other parties in the sector. A sector can be analysed according to the different relationships firms have. The communication channels in the sector for example enable or constrain the possibilities of co-operation open to a firm. The steel sector is known for its openness, whereas the aluminium sector is rather closed.

Consequently, *an interactive reality refers to reciprocal, mutually oriented relationships of the companies in a sector.*

Groenewegen & Beije (1989:1062) write:

“The network is often an arena in which actors compete, dominate, and cooperate. Their power relations are based on information and knowledge concerning technological development, market developments, the position of competitors, suppliers, customers, and potential entrants [Porter 1980]. The actors in a network try to develop a ‘core business, technological base or a *métier*’ in which they have special capabilities based on a long-run learning process [Richardson 1972].”

The sector as a collaborative network, as Smith et al. (1990) have described it, is of a different order from the sector as an objective reality and the sector as a cognitive reality. The sector as an objective reality, as well as the sector as a cognitive reality, can both be described in terms of a collaborative network.

The above quotation from Groenewegen & Beije (1989) illustrates this because it addresses networks from an objective reality point of view. This becomes apparent in citing Porter's five forces framework describing a network. Smith et al (1990) explicitly consider Porter as a scholar, a representative of the objective dimension. Also, networks are not only collaborative, but also arenas in which actors compete and dominate. Smith et al. (1990) seem to address the sector as a collaborative network because sectors are for most of the time considered only in terms of competition and domination. However, within the area of industrial marketing (e.g. Håkansson & Snehota, 1989), the network as interaction between actors, resources and activities is a central item.

Langlois (1992) describes the market as a network in which the creation of *external capabilities* can take place. External capabilities are placed against internal capabilities within firms. External capabilities represent Marshall's

external economies and are created within "a network of competing and cooperating firms rather than within the boundaries of large vertically integrated organizations" (Langlois, 1992:4). The most explicit example of external or sector capabilities is the computer sector. Computers are modular and depend on the general acceptability of system and software. Bypassing these demands and focusing on superior non-compatible solutions is a secure way of distinction in this sector. The computer sector is an extreme example, but there are also sector capabilities in the steel sector such as generally accepted steel qualities. Even superior new steel qualities have to clear quite a few hurdles before becoming accepted. It would be interesting to relate external or sector capabilities to different sector survival paths because this is a "resource-based concept" at sector level.

### 3.3.4 Sector Survival Path

In considering the concept of the *sector survival path* there are at least three (aforementioned) angles of approach. However, the basic idea, for reasons that will be explained, is that there are one or more survival paths that firms can follow in a sector through time.

In studying strategy processes in their territory both firms and sectors are important. However, the two are not identical in terms of character. A sector is a *social* structure which is only indirectly observable, unlike for example concrete groups of people, such as firms and their actions, which are directly observable. This characteristic of the sector makes it harder to capture by means of analysis. A social structure such as a sector is *not* just the sum of aforementioned three realities; it is a complex, idiosyncratic *fusion* of these realities providing an enabling, limiting and enforcing *context* in which a firm is located (Sztompka, 1991). Sectors are relational networks which show patterned regularities or processes through time, such as sector survival paths. Or as Fombrun (1986:404) states, it is:

"a dialectical unfolding of relations between embedded social actors that translates individual action into societal consequences."

This quotation highlights several interesting features of the process taking place in the sector. A "dialectical unfolding of relations" refers to (often inconsistent) interactive development for example between firms. These firms or other "social actors" are closely involved or "embedded" and not detached or distant. Moreover, within this process of interaction a translation takes place from individual actions to social consequences (e.g. Sztompka, 1991). This is also in line with Holm (1995:417-418), who argues for a nested-systems perspective which distinguishes between "action guided by institutions *and* action aimed at changing or defending institutions." The point is that the actions of embedded firms in a sector are constrained (limited or enforced) and enabled (guided) by the sector and, at the same time, the sector itself is

“reproduced” or changed by the actions of the firms (see also Pettigrew, 1985; Leavy, 1991 and especially Giddens, 1984).

In line with the “dialectical unfolding of relations” which can be described as an objective reality, a cognitive reality and an interactional reality, a definition of a sector survival path may be put forward.

*A “sector survival path” is a sector’s course through time based on the fusion of the objective reality of resources, the cognitive reality of perceptions and the interactional reality of collaborative and competitive relations.*

Through time the sector - especially when well-established - will have developed one or more “sector survival paths” that firms take in order to survive within that sector. Kikulis et al. (1995) argue that there are sector-specific patterns of organisational change. As long as a firm is not moving from one sector survival path to another (a sector disjuncture) one can distinguish firms as being on a certain type of sector survival path. Kikulis et al. (1995) distinguish between an inertial path, a convergent path, a reversal path or an unresolved path in order to highlight the consistency of direction alongside the two different kinds of movement (evolutionary v. revolutionary movement).

The forced conformation of a firm to a sector survival path is characterised as following an inertial path. Incremental changes to an existing sector survival path is called a convergent path, whereas a reversal path refers to a firm going back on a decision. Finally, an unresolved path refers to a firm “stuck in the middle” of a change process. A sector disjuncture or path-breaking behaviour, on the other hand, is connected to a firm or a number of firms being on a reorientation path (§3.3.5)

Both change in a sector survival path or change of a sector survival path (a disjuncture) are related to resource mobility barriers to change, cognitive categories (perceptions) and relationships with other sector “members”.

### **3.3.5 Sector Disjuncture**

When dealing with sector survival paths through time there is besides a concern for change *in* also a concern for change *of* these paths. Change *in* a sector survival path is what has been referred to as “enhancing discontinuities” (Tushman & Anderson, 1986). Within Hoogovens this has been called the *ongoing strategy* of continuous improvement and operational excellence.

Change of a sector survival path refers to a “competence destroying discontinuity.” Corresponding to the concept of “strategy disjuncture” - as used in the resource-based view vocabulary - the concept of “sector disjuncture” will be used to describe the early attempt of a cluster of firms to act in a fundamentally different way from before. New sector disjunctures can be established by (management) decisions, new ideas or collaborative efforts. Hoogovens referred to this competence destroying as a *breakthrough strategy* emphasising the fact that “old” resources are left behind.

Consequently, *a “sector disjuncture” is a distinctive departure of a generally accepted sector survival path either by an individual firm or a group*

*of firms intended to change the course of this path or to create a new sector survival path.*

Key to sector disjunctures in technology and capital-intensive sectors such as the steel and aluminium sector are so-called breakthrough technologies.

### **3.4 FIRM-IN-SECTOR CONCLUSIONS**

Studying the strategic group literature, one cannot help but wonder whether these groups correspond with different cognitive realities and interactional realities within a sector. Perhaps Spender's (1989) findings that industry recipes are especially apparent within *well-established* industries points to an explanation of the correspondence between strategic groups, cognitive recipes and relationship networks. Porac et al. (1995) in the illuminating Scottish Knitwear case show that there is a taxonomy of six clusters of firms within this old and well-established sector based on cognitive concepts. Their findings (1995:221) suggest

"that a collectively understood industry model of organizational forms has become part of the macro-cultural belief system of industry participants. This cognitive ordering is shaped around organizational attributes that are highly descriptive of organizations in the industry and provides managers with the knowledge required to define market structure."

Strategic grouping based on resources and mobility barriers would easily fit into the objective reality of the Firm-in-Sector perspective whereas Porac et al.'s clustering portrays the sector as a cognitive reality. Fiegenbaum & Thomas (1995) confirm that an objective reality or a cognitive reality alone is not sufficient to explain these phenomena and call for a combination of empirical findings and theoretical constructs of both strategic groups and cognitive communities. However, Reger & Huff (1993:105) conclude in their paper that whereas cognitive and economic factors can strengthen one another, "fundamental questions about the real and the perceived cannot be answered definitely by any research endeavour." In this chapter, economic and cognitive reasoning has been discussed in order to better understand differences between firms in relation to sector phenomena, not for answering the fundamental questions noted above.

The key concept in the study of the sector is the sector survival path pointing to a sector's course through time. The direction and momentum of this course comes from the fusion of the objective reality of resources, the cognitive reality of perceptions and the interactional reality of relationships. In distinguishing between evolutionary change and revolutionary change, the first occurs along an existing sector survival path while the latter indicates a sector disjuncture. As a whole the sector is the "playing field" in which firms act. The consequences or *practice* of a firm's actions depend on the actual contest between a firm and the sector.

#### 4. LINKING LEVELS OF ANALYSIS

The question that comes to mind after the discussion of the firm and the sector as two levels of analysis is when, where, and how these levels of analysis “meet” in actual contest. The literature on strategic management offers many opinions on this question (cf. Mintzberg’s ten schools of strategic management). Most opinions shed a partial or one-sided light on phenomena, drawing from certain models of management. Consequently, there are so-called prescriptive schools emphasising a somewhat rational and sometimes an even omniscient manager, whereas there are also descriptive schools emphasising a more emotional and sometimes irrational manager.

Within the many opinions concerning strategy there is also a division between “inside-out” and “outside-in” as mentioned earlier in this chapter. The linkage between the firm and its sector is not only closely related to the way management is conceptualised, but is also closely related to the character of the firm and the sector. With respect to an 80-year-old steel and aluminium company, the interaction between this company and its sector has changed over time in sympathy with changing circumstances both at the level of the firm and at the level of the sector.

However, the coming into being of *resources* over time *within* a firm is easily characterised as a learning process. For example, a steel company which is developing a rolling capability resembles the proverbial learning-by-doing. Taking a closer look at the learning perspective in the strategy literature there are, again, many opinions concerning the influence and knowledgeability, etc. of management. Lindblom (1959), for example, described the management process as one of “muddling through”, while violating all premises of rational management. The muddling “manager”, however, can hardly be regarded a strategist. Quinn (1980), on the other hand, switched to the other side of the spectrum in the learning perspective by distinguishing between the formulation of a strategy as a learning process and the implementation of the strategy as a sort of design process by the top management team (Mintzberg, 1990).

Besides these many different opinions, learning has a rather subtle connotation of “getting on top,” of “internal *cumulative* experience” “as strategists come to know a context and their organization’s capability of dealing with it; eventually the organization converges on patterns of behavior that work” (Mintzberg, 1990:147). A learning perspective, such as presented in strategy literature, resembles an inside-out approach too closely to be of use in describing and analysing the interaction process between a firm and its sector.

Pettigrew (1992, 1997) referred to the sociologist Sztopka (1991) and the theory of *social becoming* as an important basis for strategy process research. Sztopka’s basic question is why some societies are passive and others active. Or in other words, why are some societies merely reproductive and others transformative. His theory of social becoming highlights *interaction* processes of emergence, of development, and of decay as taking place in

between "structures" and "agents". Of course, society is more than (just) firms competing and co-operating in a sector. On the other hand, many dynamics which Sztompka (1991) refers to as social becoming are relatively easily transferable to business life. The quintessence of social becoming is the fusion of structure (cf. sector) and agents (cf. firms) to produce a joint effect through time.

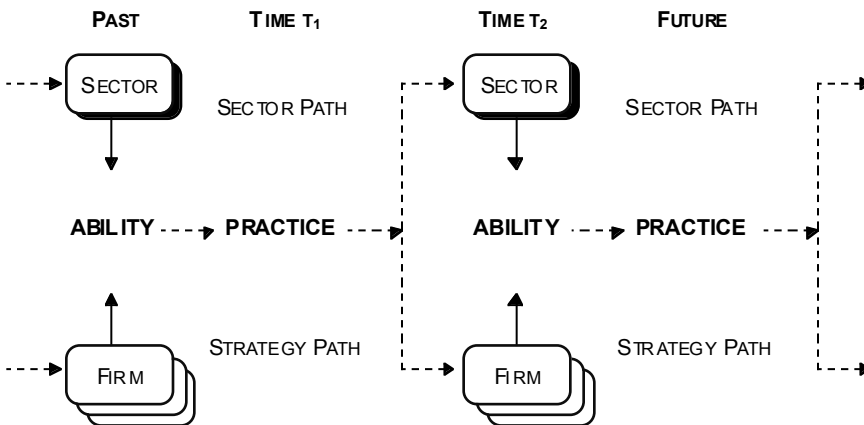
A steel company competes and co-operates, etc., not only side by side with other steel companies but within the "whole" sphere of influence of the steel sector. As a consequence, the learning taking place within a certain steel company and the effect it will produce is dependent on the learning taking place in the sector as a whole. Or, as a general manager argued in a strategy meeting (3 June 1997): "Let us not forget that at this very moment there are other firms intending to do the same!"

Sztompka (1991:4) explains that in putting forward social becoming he

"attempts to find the middle ground between the rigid determinism of reified totalities and the unbridled voluntarism of free individuals."

The point of this section is to emphasise the synthetic, conciliatory, "middle-of-the-road" character of *social becoming* in describing and analysing strategy process as interaction between a firm and its sector.

**FIGURE 2-5 A PROCESS MODEL OF "BECOMING"**



An important element of social becoming is that there are two modes of existence: (potential) *ability* and (actual) *practice*. In strategy literature this is easily recognised as the deliberate versus realised strategy at the level of the firm. It is in ability and practice that the firm "meets" its sector and vice versa. Practice is the proverbial proof of the pudding of everything a firm and the sector have to offer. Also, it is practice that sets the stage for the "next" interaction (this, of course, is a continuous process).

## 4.1 THE COMING INTO BEING OF A FIRM'S RESOURCES

Sztompka distinguishes four causal loops in the aforementioned social becoming which he refers to as the *historical process*. But what does historical process have to do with a strategy path or a sector survival path? Everything! Sztompka (1991:110) is trying to “deal with” society when he argues that patterns in society must mostly be “credited to the rule of the ‘invisible hand’” but (!) sometimes there are *visible hands at work* - and for societies often too visible (i.e. dictators, tyrants, revolutionaries, etc.). We, on the other hand, are dealing with the business society and are very interested in this alternative to the invisible hand. Transferring Sztompka's causal loops to the present business context leads to change by way of:

- Sector effects;
- Firm's resources;
- “Humanised” nature;
- Changed recipes (both collective and individual).

### 4.1.1 Sector Effects

In section 3.1 the sector has been defined as “an historical formation of complementary, interlinked and co-evolving business activities [...] which provide similar goods or services, together with those who regularly transact with them in supplying, servicing, regulatory or customer roles” (Räsänen & Whipp, 1992:47). The historical formation of the sector has been conceptualised by way of the “sector survival path” which consists of all “strategy paths” of firms participating in the sector *plus* their interactions. The sector's influence on practice is threefold, as explained in section 3 of this chapter:

- the objective reality: imposed rules or norms (resources) of survival for companies;
- the cognitive reality: *perceptions* of ideas, beliefs and convictions concerning the behaviour of companies; and
- the interactive reality: reciprocal, mutually oriented *relationships* directed at interaction of companies.

In line with the sociological literature, Sztompka (1991) specifies *four* levels of social structure. Because Sztompka's theory of social becoming is central to this dissertation, these four levels will be discussed shortly and connected to the three aforementioned realities of the sector in this dissertation based on management literature. Sztompka (1991:124) distinguishes between:

- the opportunity level: variable access to or allocation of resources and facilities among populations (of companies);

- the normative level: the network of rules, norms, values and institutions prescribing and proscribing conduct;
- the ideal level: the network of ideas, beliefs, images and convictions about reality; and
- the interactional level: interactions, the reciprocal, mutually oriented actions of mutually oriented actions of multiple individuals.

The latter - interactional - level is easily connected to our earlier defined interactional reality. The same, but slightly different, counts for the ideal level referring to the cognitive reality. As mentioned in §3.1.2, the cognitive arena as defined by Smith et al. (1990) included *both* cognition *and* culture, or cognitive framing and institutional ruling. Sztompka (1991) included the latter in the normative level involving institutions prescribing conduct thus separating culture (determinism) from cognition (voluntarism). In this dissertation's firm-in-sector vocabulary, as defined in §3.3.2, cognitive reality has a clearer focus on perceptions and cognitive framing. Sztompka's opportunity level and normative level come reasonably close to the objective reality as defined in §3.3.1: an objective reality refers to the imposed rules or norms in terms of necessary resources needed for survival in the sector. The opportunity level, however, explicitly emphasises differences of firms' access to resources as well as the differences in allocation of resources in a sector. Implicitly, differences in resource access and resource allocation are included in the objective reality by way of concepts such as resource mobility barriers, sunk costs, etc.

Sztompka (1991) refers to the degree of determining influence as a complex, idiosyncratic *fusion* of these realities ranging from an *enabling* context through a *limiting* context to an *enforcing* context in which the firm, *as an agent*, is located.

#### **4.1.2 Firm's Resources**

A firm as an *agent* consists of *actors*, which are human beings each consisting of "a set of specific drives, skills, abilities, 'powers' which may be mobilized and manifested in action" (Sztompka, 1991:99). The firm as an agent, however, includes aforementioned actors' capabilities (e.g. the resource-based concepts of knowledge, skills, etc.) and "the means by which those capabilities are pooled together in *collective conduct*," (1991:99, italics mine) such as organisational assets and capabilities as well as (core) competences. The focus of this dissertation will be primarily on the collective - resource-based - conduct of the firm but will also include individual actors who "act as representatives of others" (1991:127): the management of the firm. The so-called legitimating process in order to come from individual knowledge and skills to firm-level resources will need to be downplayed in this research (Von Krogh & Roos, 1995). It is emphasised here that this is a choice which *simplifies* the nature of business reality and consequently reduces the ambition - as well as the complexity - of research. However, to be able to embrace the complexity of

a firm's resources in *interaction* with its territory (sector) this is a necessary choice.

Consequently, a firm's owned, controlled and/or addressable assets joint with its ability to use these assets - and if necessary or possible to create new ones - will serve as the bearer of collective conduct of that firm. The historical formation of a firm is the cumulation of its resources applied in "practice" through time and is conceptualised by way of (several) "strategy path(s)." In its actions, a firm as a whole can be either *reproductive* or *transformative*. In the first case, a firm is developing along its strategy path and allocating existing resources in line with "its" sector survival path. This might involve evolutionary or emergent change. In the second case, a firm is heading for a strategy disjuncture or when following a collective trend, a sector disjuncture. In the latter case new resources have been or will need to be developed.

#### **4.1.3 "Humanised" Nature**

The general environment surrounding the interaction between the firm and sector has until now been treated somewhat implicitly. Of course, there have been several hints of the environment in this text thus far both in the sector concepts and the firm concepts. An example of this can be found in resources in general because these include natural sources. Sztompka (1991:100) explains that within the environment there is an inevitable duality since human beings are both natural objects and conscious subjects at the same time. Because the natural environment appears in both external conditions (natural resources, ecology, etc.) and internal conditions (mental skills, physical strength, etc.), practice is influenced "from without" and "from within." These conditions, of course, do not remain the same. By way of technology and civilisation nature can both be extended and can deteriorate. Skills and strength can also be changed by training, education or age.

#### **4.1.4 Changed Recipes**

A second type of general environment is found in consciousness. Giddens (1984:xxii) refers to the knowledgeability of human beings who have "the capacity to understand what they do while they do it." Consciousness also appears in both external conditions (e.g. industrial recipes, ideologies, traditions) and internal conditions (e.g. the individual consciousness of a manager). Mental models are considered to be important for the resource development process. As Barr, Stimpert & Huff (1992:34, italics mine) imply:

"Our study suggests that the mental models of firm leaders play a critical role in *directing the path* of the resource accumulation process, and the link between mental models and patterns of resource acquisition may be a potential addition of the resource-based theory of the firm."

The limiting, enabling or enforcing impact of both environments is mediated by consciousness. The ability "has to be 'awakened' to natural threats or promises", while social structures - such as the sector for the firm - do not

impact in a direct way but "only to the extent that people recognize them and define them as impediments or resources" (Sztompka, 1991:103). Hence the importance of the sector as a cognitive reality.

#### 4.1.5 Types Of Ability

*Ability* as illustrated in Figure 2-5 (page 46) is the *fusion* of the sector as an enabling, limiting and enforcing power with the firms' reproductive and transformative power. A first step in conceptualising interaction is introducing fusion of sector and firm. According to Sztompka (1991), this fusion produces six different (ideal) types of ability (see Table 2-7 on page 50):

1. *Sector Encouraged Ability*: transformative firms can act within sectors facilitating or enforcing change;
2. *Firm Released Ability*: transformative firms act within sectors which only enable or allow change, but do not require it;
3. *Sector Forced Ability*: reproductive firms are forced into transformative actions by the sector;
4. *Sector Blocked Ability*: transformative firms encounter a complete block to their actions in the sector;
5. *Firm Abandoned Ability*: sectors are permissive, enabling change but no firm cares to use them;
6. *No Ability*: reproductive firms live in the world of limiting sectors, blocking any attempts of change.

**TABLE 2-7 SIX TYPES OF ABILITY**

		SECTOR FORCES		
		ENABLING	LIMITING	ENFORCING
FIRM FORCES	TRANSFORMATIVE	<b>FIRM-RELEASED ABILITY</b>	<b>SECTOR-BLOCKED ABILITY</b>	<b>SECTOR-ENCOURAGED ABILITY</b>
	REPRODUCTIVE	<b>FIRM-ABANDONED ABILITY</b>	<b>NO ABILITY</b>	<b>SECTOR-FORCED ABILITY</b>

Although these six ideal-type abilities are rather abstract and static, any manager can come up with examples in which he or she faced a situation in which there was either much freedom to act or, on the contrary, little freedom. Aforementioned six abilities describe the ways of interaction between a firm and its sector. Focusing on the history of a steel and aluminium company there are

many examples of different types of ability through time. Examples of abilities will be discussed in chapter 5.

#### **4.1.6 Abilities Through Time**

Recently, the evolutionary approach (the *invisible hand?*) has received much attention within the discussion of the resource-based view (e.g. Montgomery, 1995). The incorporation of this approach into the resource-based view highlights the interaction of the firm-level and the sector-level with the concept of “co-evolution” (Levinthal, 1994; McKelvey, 1995). Levinthal & Myatt (1994) have introduced the perspective of “evolutionary systems” that emphasise the role of positive feedback effects. These feedback effects, in turn, refer to a learning process taking place between a firm and its sector and this learning process is closely connected to the environment (cognitive community, strategic group, etc.) of which a firm is part.

As will be illustrated by the empirical part of this book, the initial conditions of a firm are highly specific to that firm (e.g. Levinthal, 1995) and these conditions will contribute to the firm’s development (Stinchcombe, 1965). From an objective point of view firms face the same environment, but also develop in their own firm-specific way. One way of explaining this difference is in terms of their different starting points. Taking a cognitive reality, however, the notion of the “same” environment is questioned because firms are characterised by different ways of dealing with resources and changes in resources.

For example, there are specific economic barriers that provide justification for a firm to refrain from technological change. Tang (1988) provides evidence that these barriers can lead a firm to “escalating commitment” while sticking to the incremental improvement of existing technology. Escalating commitment is a particular problem in circumstances of continuous technological change within a sector, as the process of deterioration starts as soon as new installations are built. Hence, postponement is relatively easy.

Apart from economic barriers that hold a firm back from change, there are important cognitive barriers, also called myopia. According to Levinthal & March (1993) there are three forms of myopic learning. First there is a tendency to overlook distant times by referring to the possible discrepancy between the short and the long run (temporal myopia). Another form of myopia is the tendency to overlook distant spaces. This is characterised by the personal selection made by learners and by the diffusion of knowledge (spatial myopia). Finally, there is a tendency to overlook failures, putting a different slant on the slogan “success breeds success”. Learners tend to highlight past successes and to downgrade past failures (failures myopia). This myopia in learning makes it evident that the process of learning has its barriers. For firms, overcoming these barriers will separate the “boys” from the “men”.

## 4.2 PATH DEVELOPMENT

A firm utilising its resources in a sector receives reaction (feedback) on the use of these resources. Normally, the firm, in turn reacts to this feedback in order to optimise the utility of its resources.<sup>iii</sup> However, besides waiting for feedback, a firm also anticipates feedback by, for example, competitors in the sector. Sometimes members of the sector react as expected by the management of a firm, sometimes they do not. Business is created by "intentional activities but is not an intended project" (Giddens, 1984:27). Levinthal & Myatt (1994) term anticipated feedback as *feedforward effects*.

Interestingly, these feedforward effects form the basis of discretionary management behaviour. For example, choosing which markets to serve provides the territory in which resources need and will be developed. The way a company's resources evolve is closely connected to the "territory" it is in (i.e. the market it serves). Levinthal & Myatt (1994:46) noted that the specific market a firm covers will lead to "a distinctive, though not necessarily unique, set of capabilities."

Because firms differ in their ability to change, coping with change is an important element of resource differences. Economic and cognitive barriers to incremental and frame-breaking change are illuminating to the development of resources and will be a recurrent theme in this book.

The capacity of a firm to reach outside its own internal resources to sector resources, that is to have close relationships with sector members, has been referred to as "absorptive capacity." Consequently, the degree of linkage between a firm and sector is (partly) dependent on a firm's ability to do so. Cohen & Levinthal (1990, 1994) argue that superior cognitive structures underlying learning, and leading to absorptive capacity, permit a firm to have better insight into the future technological development and commercial application of the sector. However, this ability is not purely based on firm-level characteristics, as has been put forward by Porac et al. (1995). There is a tension between the "knowledge requirements of rivalry" (in a way comparable to absorptive capacity) and "the ambiguity of market structure" resembling the accessibility of the sector. The accessibility of a sector influences the way managers make sense of it (i.e. enact their environment) and lead to multiple possibilities of being successful (i.e. sector survival paths).

In viewing both the firm and the sector as moving along paths the focus will be on the continuity and change of these paths. One way of describing the development of paths is by distinguishing between resource *creation* and resource *development*. Tushman & Anderson (1986) note that there are "competence-enhancing discontinuities" and "competence-destroying discontinuities" that influence the path development of both the firm and the sector. Competence-destroying discontinuities typically initiate or create a new

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<sup>iii</sup> Reactions to feedback of the sector are not to be conceived of as mindless "machine-like" reactions by firms, like some "naturalistic versions of social science" (Giddens, 1996:73) put forward.

path demanding new resources. At the sector level, fundamentally new resources always signal a competence-destroying continuity whereas at the firm-level this need not be the case. For example, when a firm is catching up with developments, resources that are new for this firm might already be accepted by the rest of the sector.

In joining up the above-mentioned six ideal-type abilities with our different concepts of change, as distinguished before in this chapter interesting paths of *actual practice* emerge.

In the case of a sector-encouraged ability an enforcing sector ‘meets’ a transformative firm. With both the sector and the firm as moving on a reorientation path (Kikulis et al., 1995), there is both a sector disjuncture and a strategy disjuncture. An *encouraged sector strategy disjuncture* entails revolutionary change at both the firm and the sector level. This rather rare combination creates the most powerful context for change. Within the history of Hoogovens and the steel sector this situation has not occurred (yet). However, an example might be the invention of antibiotics within the pharmaceutical sector. Government supported penicillin research provided a completely new resource set while destroying the old set for all firms in this sector (Bogner, Thomas & McGee, 1996a).

A firm-released ability points to transformative firms acting within sectors which enable or allow change, but do not require it. In this case a reorientation path only consists of revolutionary change at the level of the firm and not necessarily of the sector at the same time. In other words a *released strategy disjuncture* is characterised by a distinctive departure taken by the firm concerning its present strategy path. Hoogovens’ move into wide strip is a typical example of such a strategy disjuncture (see §3.3 of chapter 5).

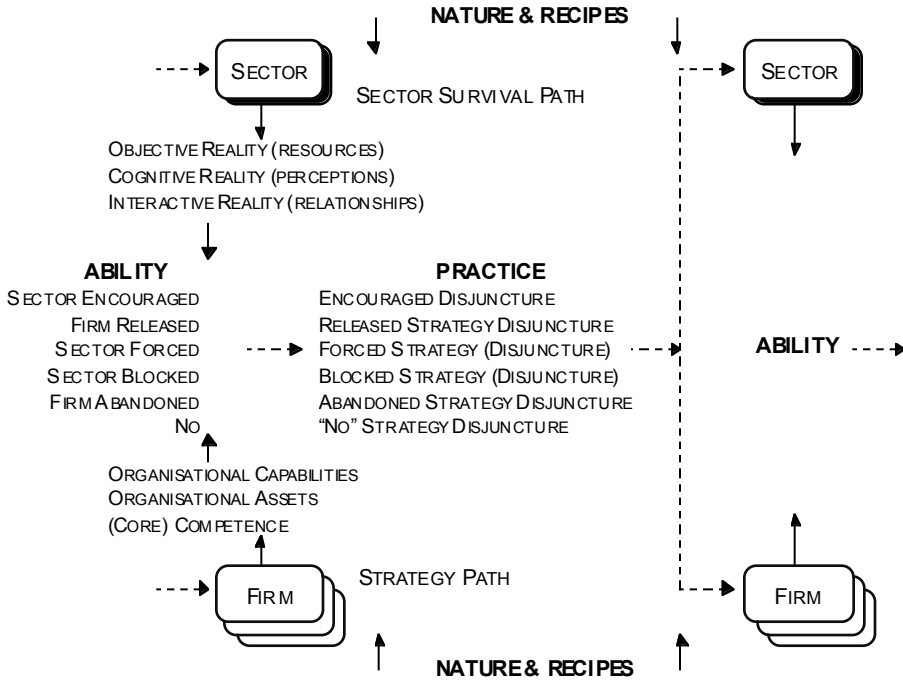
In the situation of sector-forced ability a reproductive firm is forced to conform, to adjust its strategy (a strategy disjuncture) to (revolutionary) change which took place earlier in time in the sector. This is a typical situation in which a firm has not followed changes which have taken place in the sector. When these changes in the sector have become widely accepted by both competitors and customers change will be enforced upon a conservative firm: an *enforced strategy disjuncture*. An example of an enforced strategy disjuncture of Hoogovens is the move towards continuous casting in the 1970s (see § 3.5 of chapter 5).

The case of sector blocked ability also refers to a convergent path but this time a firm is forced to conform to the continuity instead of the change in the sector. In spite of the firm’s intentions for change it moves along its strategy path. The first thirty years of Hoogovens’ history were characterised by a *blocked strategy path*.

In the situation of firm-abandoned ability there is an inertial path because the firm “chooses” to continue with mainstream sector behaviour

where there is a possibility of changing. An *abandoned strategy path* is characterised by a firm missing out on sector change possibilities. Finally, there is an extreme situation of no ability where there is also an *inertial path* but this time there is no possibility to choose otherwise (see Figure 2-6). A “no” *strategy path* refers to situations such as during the Second World War. Companies have nothing else to do but to wait for better times.

**FIGURE 2-6 PATH DEVELOPMENT**



**5. CONCLUSIONS**

In this chapter a wide body of literature has been discussed in order to provide a theoretical foundation for the coming into being of firm resources in the midst of the sector. The first objective of this dissertation, to overcome important obstacles of synthesis regarding strategic management theory, has been dealt with by providing a conceptual process model.

Since it is my goal to analyse and describe the development of differences in firm resources, the resource-based view has been discussed first. Because of the rapid developments that are taking place, it is relatively difficult to arrive at a set of concepts which is consistent with most of the literature. It has been concluded that the structural school of the resource-based view is constrained by its stringent economic assumptions. Moreover, its static focus on resource “defence” alone render it unfit to supply a framework for resource formation.

Zajac & Kraatz (1993:100) phrase the structural school's shortcoming as follows:

"It appears almost as a static theory: if an organization already has a resource, it is in a fortunate position, but if it does not, and if the environment calls for it, the organization is in trouble."

Furthermore, they conclude that the resource-based view is not adequate for longitudinal study if its internal focus is combined with an external focus. The reason for this conclusion was that when organisations are forced to change by the environment and consequently need to enter new markets they do so despite their lack of resources (Zajac & Kraatz, 1993). This is inconsistent with the structural resource-based view because it would argue that the firm would be limited by initial resource constraints and cannot enter new markets. Their results show - and this is also in line with the empirical results in this book - that if organisations lack the necessary resources they will do their very best to get them and often succeed.

In moving on with the dynamic school of the resource-based view, concepts were formulated in order to stress the path dimension of resource development. This is in line with most of the recent developments in literature, such as the dynamic capabilities approach of Teece et al. (1997). The first question to be answered in this chapter was in what way do a firm's resources *emanate from* the firm's actions and activities? Resources are what a firm has - its organisational assets - and the ability to use these - its organisational capabilities - to a desired end. By way of specific commitments resources and with that performance will emanate due to learning and competition. The ability of a firm to actually change its resources in a fundamental way has been referred to as competence.

Following the call for integration of inside-out and outside-in approaches (e.g. Zajac & Kraatz, 1993; Levinthal & Myatt, 1994; Baden-Fuller, 1995, etc.), the resource-based concepts have been mirrored on sector-based concepts that answer the second question as in what way a firm's resources are *enforced by* actions and activities in the sector? A sector imposes rules and norms for survival in terms of necessary resources which, combined with multiple cognitive realities, can lead to more than one survival path. The degree of determining influence of the sector has been nuanced ranging from an enabling, limiting and enforcing context.

Finally, in section 4 both levels of analysis have been brought into interaction, thereby providing the framework needed for the analysis of resources in their territory.