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Gaining competitive advantage after privatization
A case-based analysis of dynamic capabilities

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1 Introduction

Privatization can be traced back to Ancient Greece, when governments sold almost all public goods to the private sector. Over time, privatization has been adopted by other governments around the world. For instance, in the last century, West Germany's government embarked on a large-scale privatization movement, including selling its majority stake in Volkswagen to small investors in a public share offering in 1961 (Parker and Saal 2003). Similarly, in the 1970s, the new Chilean government privatized hundreds of state-controlled industries (Angell 1991). However, it was in the 1980s with Margaret Thatcher's leadership in the UK that privatization gained worldwide momentum. Although the large-scale privatization during Thatcher's rule was not the first, it was the most important one in history during that time. Thatcher embraced the word "privatization," which was originally created by Peter Drucker and which replaced the term "denationalization" (Yergin and Stanislaw 1998, 114). In the UK, this led to the 1993 privatization of British Rail, which had been formed from a nationalization of private rail companies, under Thatcher's successor, John Major.

Significant privatization of state-owned enterprises have occurred in the utilities sectors, namely, telecommunication, water, power, and transport. In these sectors, privatization has involved the transfer of enterprises with considerable market power to the private sector. Private monopoly is not attractive for all the usual reasons associated with the abuse of market power, namely high prices, lax cost control, lack of innovation, and poor customer service. For this reason, utility sector privatizations created the need for both the active encouragement of new competition and continuing state regulation of the monopolist until such time an effective competition is fully developed (Parker and Saal 2003).

Having said this, on one hand, these newly privatized companies face competition and need to develop strategies for how to sustain their market power or even how to extend it. In addition, these companies need to deal with regulations by their respective governments, in order to maximize their profits.

Thus, privatization brings about new challenges that need to be addressed by strategic assets known as dynamic capabilities. In times of a rapid, dynamic, or high-velocity change (Teece, Pisano, and Shuen 1997; Hitt, Ireland, and Hokinson

2009; North 2002; Eisenhardt and Martin 2002), dynamic capabilities are considered a necessity. Eisenhardt and Martin (2000, 1115) distinguish between moderately dynamic and high-velocity markets. The former are characterized by sophisticated routines that enable firms to gain competitive advantages while the latter are ruled by simple rules, that is, simple but efficient, long-term solutions to short-term problems in times of high uncertainty when there is less opportunity for sophisticated planning. Teece, Pisano, and Shuen (1997) see dynamic capabilities as a prerequisite to successfully surviving the storm of global competition and the changes it brings to the product life cycle or the amount of rivalry it causes between firms.

The differences between the two definitions emerge along four frontiers, namely source, necessity, direction, and determination (Table 1).

Table 1: Differences between two perspectives of the dynamic capabilities framework

Differences	Teece, Pisano, and Shuen	Eisenhardt and Martin
Source	Dynamic capabilities in Teece, Pisano, and Shuen's definition stem from "organizational abilities."	Dynamic capabilities in Eisenhardt and Martin's definition originate from internal processes.
Necessity	Teece, Pisano, and Shuen see rapidly changing environments as the main determinant of dynamic capabilities.	Eisenhardt and Martin see the necessity for dynamic capabilities as coming from changes external to a firm.
Direction	Teece, Pisano, and Shuen see dynamic capabilities as main endowments that enable a firm to not only react to a changing environment but also achieve new and innovative forms of competitive advantages. The main aim of dynamic capabilities	Eisenhardt and Martin see dynamic capabilities as the ability to react to market changes and even to introduce market changes.

	in the framework provided by Teece, Pisano, and Shuen is to identify abilities that guarantee (long-term) competitive advantages.	
Determination	Teece, Pisano, and Shuen see dynamic capabilities as being determined not only by external market factors but also by path dependencies relating to past decisions. Hence, dynamic capabilities can be seen as some kind of a fingerprint of the past development and the actual market position of a firm.	Dynamic capabilities in Eisenhardt and Martin's view are found within a firm originating from firm-specific resources.

Based on the above definitions, it is clear that although “dynamic capabilities” is a fluid concept that has some commonalities and variances in meaning among researchers. Furthermore, the concept is prone to the criticism of tautological reasoning (Williamson 1999) and is found to be recursive and non-operational (Priem and Butler 2001). This is a direct result of the dynamic capabilities framework emerging out of inductive reasoning, and hence, being in no way indirectly verifiable. The respective criticism will be addressed in the course of this thesis, the aim of which is to present dynamic capabilities as a kind of heuristic according to Tversky and Kahneman's (1974, 1986) meaning of the term, that is, as rules of thumb that enable firms to find a foothold in a constantly changing environment.

Furthermore, it is my opinion, an opinion that will become a “grounded opinion” in the course of this thesis, that dynamic capabilities lack the required ingredients in order to become accepted as a theoretical framework. Currently, the framework qualifies as a heuristic that provides managers with cues about how to deal with changing environments, but does not provide a blueprint for successful management of change. This is largely owing to its idiosyncratic components, most notably the concept of path dependence that makes success a function of

firm-specific and idiographic variables. Nevertheless, the concept or heuristic proves to be quite useful when changing times are encountered by managers, as will also be shown in the course of this thesis. Despite these criticisms of dynamic capabilities, this thesis will adopt the concept of dynamic capabilities and condense it further into a heuristic that will not only guide managers how to weather the storm of global competition, but also show them a pattern that will enable them to analyze their firms' actual strategic behavior (Winter 2003).

However, in order to do so, in chapter 2, I will place the concept of dynamic capabilities on the right position in the context of strategic management. Since the concept is linked to a top-down approach wherein managers decide and preside over the fate of a company, it is essential to introduce the overarching concept of strategic management when discussing dynamic capabilities (Augier and Teece 2009). In addition, in this chapter, I will explain why the resource-based view (RBV) provides the starting point for the dynamic capabilities framework, on which the framework is firmly rooted. The introduction of such an overarching concept is especially necessary because Teece (2011) conceptualizes dynamic capabilities as a management-driven project that is deeply embedded in the RBV (Barney 1991; Wernerfelt 1984) of management and, furthermore, adjacent to the evolutionary theory of business process developed by Schumpeter (1964). Schumpeter's concept sees an everlasting cycle of creative destruction where each innovation provides something new that replaces or destroys something old.

In Chapter 3, I will review the concept of dynamic capabilities from scratch in such a way that its definition or operationalization meets scientific standards. This is especially important because the concept of dynamic capabilities is in some kind of limbo, that is, it is unclear whether dynamic capabilities can be found in nature (i.e., are tangible resources), in men's minds (i.e., are intangible resources), or in both.

In Chapter 4, I will explain the usefulness of Grounded Theory for deriving theory from a single case study (Eisenhardt 1989). The aim of Grounded Theory is to discover the meaning assigned to things by people and to use this meaning as a basis upon which to build a theory. Grounded Theory produces "theories" that are firmly based in common rationality, that is, in the meaning assigned to things by the very persons interviewed or studied by a researcher deploying Grounded

Theory (Glaser and Strauss 2006). However, Grounded Theory is not just a method to sample, read through, and abstract from data in a manner that leads to the identification of a theory in the end.

In Chapter 5, I will analyze two companies, Deutsche Post DHL AG and Deutsche Telekom AG, which were former subsidiaries of Deutsche Bundespost. By conducting this empirical research, I intend to answer the following research question:

How do companies gain competitive advantage after privatization by examining dynamic capabilities?

After explaining the methodology of the conducted research, I will present the results regarding dynamic capabilities for each company.

Hence, the next chapters use this background against which to pin down the concept of dynamic capabilities for the following reasons: (1) to understand the basis of the concept, (2) to decide which definition of dynamic capabilities and which application of dynamic capabilities is the correct one, (3) to offer counter criticism by providing at least the starting points for building a comprehensive theory, and (4) to elaborate a heuristic of dynamic capabilities that complies with the results of existing research, which can be used to guide further research in the field and provides the cornerstones for theory building.

2 Dynamic capabilities: Are they just resources used in a dynamic environment?

Much has been written about strategy, strategic management, and how both result in superior performance. However, concepts of strategic management compete with each other and overlap to some degree. Although these concepts were derived from some theoretical reasoning in the past, they have deviated from that basis. Therefore, this chapter aims to establish a connection between strategy and strategic management. It is quite obvious that although strategic management is a broader concept than strategy as it encompasses more tasks and actions, it revolves around strategy. It starts, as will be shown, with the gathering of information that provides the basis for strategy formation, followed by the formulation of the strategy, and finally the implementation and monitoring of how the changes in reality fit the expectations formed on the basis of the strategy (Afuah 2003; Keidel 2010). Hence, strategy is the connective link between the past conduct of a firm, its success in the market, and future conduct, which means that strategy in a dynamic capabilities framework should not only reflect resources at a firm's disposal but its path dependency as well, since past decisions will influence a firm's present stand (Teece, Pisano, and Shuen 1997). However, if path dependency links past decision to present performance and resources, then market position is relevant as well (Teece 2011), which means that strategy, as will be defined in this thesis, is a result of stock taking on the one hand and a fathoming of chances and opportunities on the other. Accordingly, strategy is the summary of a firm's capabilities. This statement points back to the RBV, which provides the starting point for the dynamic capabilities framework, in which it is firmly rooted.

2.1 Defining strategy and strategic management

Strategy is a means to a certain end. This, however, is too broad a meaning to be of any use. While there is abundant literature about strategy and strategic management, definitions of strategy are rather scarce; for example neither Betz (2001), Huffman (2006), nor Iansiti and Levien (2006) define what they mean by "strategy," though the title of their books or articles explicitly includes the term. Hence, the definition has to be narrowed down. Obviously, strategy means a

planned attempt to reach a certain goal, a meaning assigned to strategy in the realm of game theory (Hargreaves-Heap and Varoufakis 1995). In game theory, strategies are sophisticated plans to maximize one's own utility by considering the expected reactions (or moves) of adversaries (or competitors). Economic models like the Bertrand model or the Cournot model designed to determine the price or output quantity of a particular product refer to so-called reaction curves (Cabral 2000). Teece (2011) stands in line with this definition of "strategy":

The ambition of the dynamic capabilities framework is nothing less than to explain the sources of enterprise-level competitive advantage over time, and provide guidance to managers for avoiding the zero-profit condition that results when homogenous firms compete in perfectly competitive markets. (5)

Here, Teece subscribes to the model of perfect competition that rests on five assumptions: (1) atomicity, which means many suppliers populate a market; (2) product homogeneity, which means that suppliers compete with similar products; (3) perfect information, which means that all agents know all prices set by all firms; (4) equal access to product technology; and (5) free entry of competitors (Cabral 2000). Accordingly, Teece should subscribe to the definition of strategy prevalent in game theory. However, markets are neither in perfect competition nor are actors fully informed; hence, each market is marred with frictions, which are solely why firms are able to harvest competitive advantages by using their singular dynamic capabilities to exploit market niches.

Consequently, both the Bertrand and the Cournot models consider strategy analogous to game theory as a decision-making process that anticipates the reactions of adversaries, competitors, or other actors, and thereby assuming such market players to be acting rationally. Therefore, strategy is a decision-making process based on the anticipated reactions designed to achieve a certain target. From the term "plan," it is implied that strategy is a rather long-term endeavor than a short-term one. Accordingly, McKean (2009, 5) defines strategy as "a plan to achieve a long-term aim." Henderson (1989, 142) adopted the term "strategy" for managerial purposes and defined strategy as a "deliberate search for a plan of action that will develop a business's competitive advantage and compound it." Porter (1996) built on this definition and concluded that "competitive strategy is about being different. It means deliberately choosing a different set of activities to

deliver a unique mix of value.” While Porter sees the reasons for being different in the market environment and in the specific market constellation that sees a firm entangled by the five forces, Barney (1991) and Teece (2011) see the differentiation material as coming from within the firm. For Barney (1991), a particular set of core competencies and key resources makes the entire difference between firms and forms the basis for competitive advantage. For Teece (2011), it is a firm’s ability to adopt core processes, routines, and positions in an ever-changing environment that provides a basis for competitive advantage.

Thus, a strategy is a deliberate attempt to differentiate one’s firm from competitors. To do so, a plan is needed that provides a schedule of decisions that have to be taken in pursuit of the aforementioned goal. Moreover, it is necessary to base this plan on information about a firm’s stand within a competitive environment; according to Flouris and Oswald (2006), an organization’s strategy is based on a series of management decisions founded on quantifiable information and sound judgment. This is where strategic management comes into play. The task of strategic management is not only to form a strategy that fits a firm’s capabilities:

Strategic management attempts to identify the issues that will be important in the future, and based on the capabilities of an organization it provides a roadmap for future behaviors. (Flouris and Oswald 2006, 2)

However, researchers do not unanimously agree upon a common definition of strategic management. In fact, there are various meanings of strategic management. A quick survey of the strategic management literature can start with the definition by Joyce and Woods (2001). The authors are convinced that “strategic management is difficult” and compare the endeavor of “strategic management” to Greek mythology. However, they are unable to give more meaning to strategic management than its being concerned with long-term decisions. Meanwhile, Finlay (2000, 3) states that strategic management is “concerned with the overall direction of the organization and as such it is a critical management activity.” Apart from the statement that strategic management is important, Finlay makes no further assignation in reference to strategic management.

However, Finlay (2000, 4) does equal strategic management with responsibility: “Responsibility for the overall direction of the organization sums up what strategic management is about.” Such normative designations of meaning, however, do not lead very far, because it is unclear how responsibility is going to be filled in the context of strategic management. An attempt to fill this gap in Finlay’s argument brings variables like the allocation of resources and the utilization of capacities into play and shows that strategic management, conceptualized as a decision-making process, is about the best deployment and utilization of resources given a particular business environment and the particular endowment of a firm, or as Morden (2007) elaborates:

Strategic management is concerned with the character and direction of the enterprise as a whole. It is concerned with basic decisions about what the enterprise is now, and what it is to be in the future. It determines the purpose of the enterprise. It provides the framework for decisions about people, leadership, customers or clients, risk, finance, resources, products, systems, technologies, location, competition, and time. It determines what the enterprise should be capable of achieving, and what it will not choose to do. It will determine whether and how the organization will add value, and what form that added value should have.

Strategic management is also concerned with management planning and decision-making for the medium and long-term future. It is concerned with the anticipation of that future, and with the establishment of a vision or view of how the enterprise should develop into the future that it must face. (14–15)

2.2 Strategy formation: Determining relevant information

Tasks as described by Morden (2007) need a reliable basis of information. This means that information gathering and manipulation is an essential part of strategic management. Actually, most of the criticism of the concept of dynamic capabilities, for example by Williamson (1999) or by Mosakowski and McKelvey (1997), point out the problem that information gathering and theory building cannot be separated from each other. This is a cross violation of the principle of independent testability of theoretical stipulations as Popper (2004) described in *The Logic of Scientific Discovery*. However, as will be shown in the course of the thesis, (1) this

problem is not unique to the dynamic capabilities framework – it is entrenched in the RBV as well; and (2) this problem vanishes when the dynamic capabilities framework is reclassified from theory to heuristic.

A heuristic of dynamic capabilities gives up the claim of explaining how long-term competitive advantages evolve within firms, and instead supplies managers with a number of criteria to guide their quest for such long-term competitive advantages. However, information is abundant and the problem for managers is choosing the relevant information. In order to choose the relevant information, it is important to know the conditions of entrepreneurial success especially within a dynamic environment, which in itself is a theoretical question depending on the assumptions about causal links between a firm's success, its resources, and its competitors. In order to explain "success" within a framework of dynamic capabilities, it would be necessary to make general assumptions about cause and effect, that is, about what causes success.

However, dynamic capabilities are modeled by Teece, Pisano, and Shuen (1997, 518) as unique and idiosyncratic processes that emerge from path-dependent histories of individual firms. This very definition of dynamic capabilities prevents dynamic capabilities from explaining firm success other than the success of the firm under consideration. Since there is no way to deduce general sentences out of singular observations (individualistic fallacy), it is necessary to aggregate singular observations to formal classes to which they belong, in the manner shown by Eisenhardt and Martin (2000).

Furthermore, formal classes must not be confused with general statements. While the latter provide the basis for explanation, the former do not—they simply direct attention without a guarantee of the success of a firm (Hempel and Oppenheim 1948). In this respect, the industrial organization view or the market view can be seen as the approach that provides information about market position and factors affecting market position, with market position being one antecedent to the formation of dynamic capabilities (Teece, Pisano, and Shuen 1997).

Moreover, in its early version, the industrial organization view denies any influence of management on firm performance; Schmalensee (1985) states that differences among firms are temporary and insignificant. Consequently, a firm's performance

depends on the structure of the markets as Schmalensee (1985) suggested and Slade (2003, 17) recently showed: “Indeed firms’ profits are positively and significantly related to the structure of their markets, and this relationship holds in all specifications that were estimated. A firm’s market share, in contrast, is found to be uncorrelated with profitability.”

If market structure proves to be the sole cause of firm profitability, this thesis has come to a dead end—managerial decisions do not matter, and less so do dynamic capabilities. Managers would be equal to a steering wheel whose purpose is not to deviate the moving business from the carriage way (Porter 1981). However, firms situated in the same market do differ considerably, which suggests that not only does management have a hand in a firm’s performance, but also that market structure is not the sole explanation of firm performance (Mintzberg 2009). Accordingly, the RBV stresses the importance of internal resources for a firm’s performance (Barney 1991). To be successful in a market is equal to the optimal or close to optimal deployment of firm resources. Furthermore, since deployment of resources is the task of management, management does matter after all, as Bowman and Helfat (2001) state:

The empirical evidence that corporate effects are non-trivial suggests . . . that firm resources affect competitive advantages not only at the business level but also at the corporate level. (3)

Furthermore, because the reality of strategy is that it is the result of resource allocation, and because resource allocation is substantially influenced by structural context, Bower and Gilbert (2005) believe that structure drives strategy. Hence, one could argue that a firm’s success in the market is a function of the unique market situation and experience of the firm and the optimal deployment of its endowments. Put differently, given path dependence and the unique assembly of resources of a firm that is the result of past experience and past decisions, success for a firm can be defined in terms of the optimal deployment of internal resources given a particular market position (Augier and Teece 2011). This explanation is linked closely to the evolutionary perspective of the firm, because it can be argued that only firms that have proven themselves capable of making the right decisions in the past will survive in the market. This, however, poses a problem for the concept because obviously a firm still in existence has proven its

ability to survive, and since, according to Augier and Teece (2011), dynamic capabilities are the core ingredients for survival, surviving firms inevitably must have them.

Nevertheless, firms are not the log in the ocean of business that drifts with the current; firms can determine their fate by influencing markets or by closely regarding the market. This will be discussed at length in the third chapter. It is, however, important for the RBV to be described in the next chapter. Arguably, the ability of a firm to discover opportunities and to identify threats to its business model depends on its “resources for discovery.” Again, it is the endowment of a firm that decides whether the firm can survive in or even manipulate a market. Within the framework of dynamic capabilities, this need for gaining and deploying dynamic capabilities is described as follows: “For analytical purposes dynamic capabilities can be disaggregated into the capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and when necessary, reconfiguring the business enterprise’s intangible and tangible assets” (Teece 2011, 4).

Obviously, the task described by Teece (2011) is intended for all firms in a market. Each of them has to adapt to a changing environment. To differentiate adaptation efforts, it is important to base these efforts on unique, that is, not easily imitable, resources and capabilities: “This approach focuses on the rents accruing to the owners of scarce firm-specific resources rather than the economic profits from product market positioning. Competitive advantage lies ‘upstream’ of product markets and rests on the firm’s idiosyncratic and difficult-to-imitate resources” (Teece, Pisano, and Shuen 1997, 513). This approach leads straight to the RBV.

2.3 Resource-based view

In one sense, the RBV is an extension of the industrial organization view, and in another sense, it is a result of a dissatisfaction with the industrial organization view. As a quick reminder, the industrial organization view as shaped by Porter (1979, 1980) proposes that success is a matter of finding the right strategy by looking at a firm’s position in a market and with respect to five forces: amount of

rivalry, threat of new competitors entering the market, threat of substitutes, bargaining power of suppliers and bargaining power of buyer. Management has to find a generic strategy that best fits the market position of the firm as it appears with respect to the five forces. Management can choose from among a strategy of cost leadership, a strategy of differentiation, or a niche strategy.

For instance, Penrose (1959) and Learned et al. (1973) point out that a strategic management that aims at gaining competitive advantages cannot restrict itself to external variables; rather it has to consider the capabilities and opportunities provided by a firm's resources as well. Furthermore, it has to fit internal capabilities to external conditions. Schmalensee (1985) paved the way for the RBV when he demanded to consider a firm's resources in the quest for competitive advantages as well. Schmalensee's demand for a framework that links competitive advantages to a firm's management of resources is but a small step, as Barney describes:

The RBV of the firm substitutes two alternative assumptions in analyzing sources of competitive advantage. First, this model assumes that firms within an industry or group may be heterogeneous with respect to strategic resources they control. Second, this model assumes that these resources may not be perfectly mobile across firms, and thus, heterogeneity can be long lasting. The resource-based model of the firm examines the implications of these two assumptions for the analysis of sustained competitive advantage. (101)

It is the axiom of the RBV that competitive advantages are the result of the resources at a firm's disposal. Since different firms have different resources, the RBV seems to be a handy explanation for the fact that within the same industry and across the expectations formed in the framework of the industrial organization view, different firms have different market shares and performances. This, however, is too broad a view, since firms differ in many respects and resources can be almost anything available within a firm: "a resource . . . is a fixed input which enables a firm to perform a particular task. The input is made up of people and the real assets that they use" (Rubin 1973, 937).

A critical resource refers to a small number of resources that play a crucial role in bringing about a competitive advantage. To qualify as a critical resource, a

resource must satisfy the following conditions: “(a) it must be valuable, in the sense that it exploits opportunities and/or neutralizes threats in a firm’s environment; (b) it must be rare among a firm’s current and potential competition; (c) it must be imperfectly imitable; and (d) there cannot be strategically equivalent substitutes for this resource that are valuable but neither rare or imperfectly imitable” (Barney 1991, 105–106). If it is competitive advantages every strategy aims for and if it is critical resources that bring about competitive advantages, then management will have to identify these critical resources and form a strategy based on these resources. The question now is how to find resources that differentiate between firms while at the same time qualifying as a critical resource.

Barney (1991) provides a number of cues for the successful search for critical resources. He suggests that each firm can look back on its own idiosyncratic history that shaped its very own climate and social composition, which in turn can help determine the unique resources that might result in a competitive advantage. In the same vein, Wernerfelt (1984) stresses the value of home-grown resources like customer loyalty, production experience, and technological edge. Critical resources like customer loyalty or production experience provide a firm not only with a competitive advantage; they also act as barrier against new entrants in a market by raising initial costs. Unique resources make up for competitive advantages; accordingly, it is the quest of management to identify unique resources. Unique or critical resources are linked to core competencies. Hence, it is now core competencies that make the competitive difference between firms. Not only is management expected to know all about the core competencies of its own firm, but about the core competencies of competitors as well (Enders 2004, 14).

Moreover, because the core competencies of different firms are by definition mutually exclusive, this rationale provides the basis for the development of the SWOT analysis, which lists the strengths and weaknesses of one’s firm and contrasts them with opportunities and threats in the market that are usually caused by the strengths and weaknesses of competitors. The relationship between strategy and core competencies outlined so far is summed up in the following concluding statement by Barney (1991):

A firm is said to have a competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by current or potential

competitors. A firm is said to have sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitor and when these other firms are unable to duplicate the benefits of this strategy. (102)

Managerial tasks derived from the RBV encompass almost anything that results in the identification of a core competency; hence, they usually start with an inventory of resources. However, the identification of resources and filtration of critical resources is a static endeavor in an ever-changing business environment. Thus, management does not stop with identifying core competencies; rather, management has to project core competencies into the future and to identify lacking competencies that could or will become important sometime in the future. According to Osterloh and Fost (2000), the top management's priority is addressing the gap between existing resources and organizational targets. Strategy has been defined as a managerial decision process with the aim to become different and including a deliberate search for "a plan of action that will develop a business competitive advantage and compound it" (Henderson 1989, 142). Therefore, it can be argued that strategy is all about information. Within the RBV, the quest for suitable information is directed to critical resources, like unique capabilities, technological advantages, core competencies, social composition of the workforce, and the climate in the firm. The importance of the climate in a firm has been stressed by, among others, Ekvall (1983), who tried hard to show a direct causal link between the innovative climate in a firm and the number of innovations released to the market by the firm.

2.4 Dynamic capabilities

The main question to be addressed in subsequent chapters will be concerned with the content of dynamic capabilities, the empirical results gathered under the regime of "dynamic capabilities," and the criticism the concept has drawn upon itself so far. However, before this question can be addressed, it is necessary to clarify the content of dynamic capabilities, to uncover the core meaning of the concept, and to distinguish the different strands of frameworks for the concept. As already mentioned above, even between authors who most intensely use the concept of "dynamic capabilities" and who agree on a certain set of elements as

consisting of the core of dynamic capabilities, there exist diverging opinions or operationalizations of the concept. This has been shown by contrasting Teece, Pisano, and Shuen's (1997) original framework with Eisenhardt and Martin's (2000) extension of the framework. Both concepts will be treated in this thesis as the foundation and extension of the concept of dynamic capabilities. However, in between these two variants of dynamic capabilities lies a host of different definitions or operationalizations that try to capture the meaning of dynamic capabilities, some of which are discussed below.

Rindova and Kotha (2001) discussed dynamic capabilities in a framework of rapid change that requires constant adaptation to changes by firms. Dynamic capabilities are simply defined as the tools that allow for quick and efficient adaptation to changing environments and they are declared to rest in the form of an organization that is distinct of the function of an organization. Accordingly, Rindova and Kotha are concerned with the profound morphing changes that "include significant changes in the range of products and services offered, along with reconfigurations of the resources, capabilities, and structures employed to deliver the extended range of products" (1264). Here, capabilities are at the same level as resources and structures. Capabilities, consequently, are distinct from resources; they are something different and they are "related to organizational form," whereby organizational form is defined as "those characteristics that identify [the organization] as a distinct entity and at the same time, classify it as a member of a group of similar organizations" (Rindova and Kotha 2001, 1264).

By contrast, Griffith and Harvey (2001) define dynamic capabilities as "the creation of difficult-to-imitate combinations of resources, including effective coordination of inter-organizational relationships, on a global basis that can provide a firm a competitive advantage" (598). Like a shape-shifter, dynamic capabilities mutate from being distinct from resources to being made of resources, from concrete assets in a firm's arsenal to meta-assets that assemble a number of assets in a particular way. Needless to say, Rindova and Kotha, and Griffith and Harvey are talking about quite different forms of dynamic capabilities.

Meanwhile, Hutzschenreuter and Israel (2009) add their own definition to the dynamic capabilities patchwork by stating that the "group of organizational contingencies is the foundation of competitive advantage" (442). While this is a

somewhat broad definition, it does nothing to shape the field of research and as such is almost useless.

There are also definitions attached to the dynamic capabilities framework in many papers that suffer from problems such as “circular reasoning” or “tautology.” For example, Teece (2007) and Sirmon et al (2011) state that dynamic capabilities are evidenced by the ability to develop antecedents strategic routines by which the management exploits its resource base—acquires and sheds resources, integrates them, and recombines them—to generate new value-creating strategies. Winter (2003) seems to share this definition. Similarly, Helfat (1997), who in reference to Teece, Pisano, and Shuen (1997, 339), defines dynamic capabilities as “the subset of the competence/capabilities which allow a firm to create new products and processes and respond to changing market circumstances.”

King and Tucci (2002, 171) define dynamic capabilities in reference to Eisenhardt and Martin (2000) as “organizational and strategic routines by which firms achieve new resource configurations as markets emerge” and go on to stress that “these capabilities both constrain and enable a firm’s ability to change because they must be built through experience rather than acquired through market transactions.”

Zollo and Winter (2002, 340) define dynamic capabilities as “routinized activities directed to the development and adaptation of operating routines.” While they give a direction for dynamic capabilities, they also fail to provide an exact reference that enables researchers to find and label dynamic capabilities correctly.

Zott (2003, 97) defines dynamic capabilities as a “set of routines guiding the evolution of a firm’s resource configuration.” This definition adds another characteristic to dynamic capabilities, this time an intangible one.

Finally, Teece (2007, 1320) provides a version of dynamic capabilities that puts them right between tangible and intangible assets: “Dynamic capabilities enable business enterprises to create, deploy, and protect the intangible assets that support superior long-run business performance.”

Hence, it can be stated that dynamic capabilities are almost anything that may have any kind of influence on a firm’s performance. Again, it has to be said that the concept, as it appears in this short review of the literature, fails to meet the

basic standards of scientific rigor; that is, it does not provide statements that can be empirically tested, independently tested, and inter-subjectively tested (Popper 2004). If the existence of dynamic capabilities is proven by the ability to deploy dynamic capabilities that becomes obvious if a firm proves capable of fulfilling certain tasks that are usually assigned to the existence of dynamic capabilities, then there is no way to prove that dynamic capabilities really do exist. This is because if a firm that is successful in adapting to a changing environment is considered in possession of dynamic capabilities, then dynamic capabilities must exist in that firm. To put it another way, dynamic capabilities are nothing short of something mythical that shows its presence in successful firms and is absent in failing firms. Thus, it is necessary to find a meaningful definition for dynamic capabilities that allows for dynamic capabilities not only to be found in reality but also to be put to the test with respect to a firm's ability to adopt itself to a changing environment. Accordingly, this thesis will start with the definition given by Teece, Pisano, and Shuen (1997) and trace the path the authors take in their paper in order to draw the concept of dynamic capabilities out from the claws of scientific oblivion.

This brief review of definitions given in the literature not only reveals a plethora of different meanings for the concept of dynamic capabilities, but also a number of logical shortcomings. Hence, in order to found a sound theoretical basis that carries the research conducted in this thesis, it is necessary to review the concept of dynamic capabilities from scratch and to refine it, if necessary, in such a way that it meets scientific standards. This is especially important because, as elaborated above, the concept of dynamic capabilities is in some kind of limbo; that is, it is unclear whether dynamic capabilities can be found in nature (in other words, if they are tangible resources), whether they can be found in men's minds (in other words, if they are intangible resources), or whether dynamic capabilities have elements of both intangible and tangible resources. Furthermore, it is somewhat striking that most papers on the dynamic capabilities framework fail to mention either of the parent views, that is, the RBV or the VRIN attributes derived from the RBV (Eisenhardt and Martin 2000). In order to be able to meaningfully deploy the concept, it is of the utmost importance to fill the black box labeled "dynamic capabilities." The next chapter will attempt to do just that.

3 Dynamic capabilities: Defining a slippery concept

After all that has been said so far, it is obvious that dynamic capabilities are linked to the ability of a firm to adapt to a changing environment. Therefore, dynamic capabilities refer to observation and learning, which are intangible assets. In order to realize change, observation is needed. In order to react to change, learning is needed. Since learning needs to consider the specific situation within a firm as well as the demands of a changing environment, experience is a useful ingredient. The more experience a firm has, the quicker it can address the demands made by changes in the environment to determine what is going to be changed and how. In other words, the necessities for change are confronted by what change is feasible within a firm.

The present situation of a firm, with respect to its internal resources and to its external market position, is the consequence of past decisions. In other words, a firm's path depends on the past decisions that were taken; once the firm has reached the decision crossroads, it must choose one path over the other. Furthermore, possible and feasible changes depend on the resources stored within a firm.

For example, while there may be a pressing need for a small company to internationalize its business, this option may not be possible and feasible at this time due to a lack of funding. The company may be constrained by a host of previous decisions that have liabilities, making it impossible to internationalize and respond to environment pressures. Whether the constraints or the pressure to respond to market change are in themselves a solvency risk for the firm, or whether a firm can survive without adapting to the environmental changes, is a question of the intensity of competition. The more fierce the competition and the greater the pressure to change exerted by the market and the business environment, the more important it is for the firm to change and the more important resources become a firm's capabilities to do so, that is, its dynamic capabilities.

This is, in a nutshell, what Teece, Pisano, and Shuen (1997) state in their paper will be analyzed in the rest of this chapter. I will mostly refer to the original paper that introduced the idea of dynamic capabilities. This is motivated by the fact that later adaptations of dynamic capabilities, mainly by Teece, sometimes in

cooperation with other authors, developed the concept into a catch-all concept and stripped it, from my point of view, almost entirely of its scientific value. For example, in the preface of his book, *Dynamic Capabilities*, Teece (2011, ix) writes:

Dynamic capabilities scholars further agree . . . that the essence of a firm's dynamic capabilities is resident in its tacit knowledge and its organizational processes . . . and in the leadership skills of its top management. In particular, firms with strong dynamic capabilities display the ability to learn and to adjust. The focus of the framework is on how firms can extend or modify their resources and/or specific assets, as they sense and create, seize and accept opportunities while simultaneously managing competitive threats, and effectuate necessary transformations. . . . Dynamic capabilities are . . . about how an organization extends its capabilities, synchronizes them with the business environment, and/or shapes the business environment in its favor."

Some pages later, another version of dynamic capabilities unfolds: "For analytical purposes, dynamic capabilities can be disaggregated into the capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and when necessary, reconfiguring the business enterprise's intangible and tangible assets" (Teece 2011, 4). Although, many words have been said about the concept of dynamic capabilities, almost nobody has been able to give a concrete example of a dynamic capability. The entire sequence cited here revolves around the introduction of vague terms, the existence of which is a given after another paraphrase and, once it is a given, mutates into something that can be described by deploying a host of verbs. This has nothing to do with scientific rigor, and this is why the search for the meaning behind the concept starts with the early work by Teece, Pisano, and Shuen (1997).

Hence, to verify my reading, it is best to start with the definition of dynamic capabilities that can be found in the paper by Teece, Pisano and, Shuen (1997, 516):

We define dynamic capabilities as the firm's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments. Dynamic capabilities thus reflect an organization's ability to achieve

new and innovative forms of competitive advantage given path dependencies and market positions.)

Later Teece reverts to an evolutionary theory of innovation, which closes ranks with the concept of path dependency developed by scientists. Advocates of path dependency led by Arthur (1989) piled up arguments that provide strong evidence for the claim that innovations cannot be taken as the result of rational deciding actors. Furthermore, they have challenged the claim that any innovation is a turn for the better, however useful it might appear at first glance. Accordingly, Arthur describes that the processes of learning make people used to a certain technology, and that as people get used to the technology, their awareness of the technology's shortcomings vanishes.

Additionally, the attractiveness of a technology increases with the number of its users, and finally, the status of a technology as an indispensable tool is solidified by a network of other technologies relying on the respective technology, for example, the many software packages designed for use with Microsoft Windows. Taken together, these three points increase the costs attached to the use of another technology until finally the threshold that has to be overcome in order to change the technology becomes too high.

This argument leads to three main ascertainties.

First, innovations are path dependent; an innovation is not always the best solution to a given problem, and it is not easy to replace an ineffective innovation. This argument provides serious problems to those definitions that incorporate an assessment.

Second, it is not always possible to trace innovations back to the rational decision of an actor. This reduces the possibilities for intervening in the process of innovations. However, as is always the case with evolutionary theories, one problem remains—the problem of circular reasoning and along with it the problem that evolutionary theories cannot be falsified. An invention is labeled an innovation after it has emerged and after it has been successfully implemented. Subsequently, this argument is proof that evolution provides men with innovations.

According to Mascitelli (2000, 181), “in particular, there is a growing consensus that breakthrough innovations are often an outgrowth of a deeply held and highly

personal form of knowledge, derived from a lifetime of experience and learning.”. This sets the focus to “the role of human aspects in innovation” (Nijhof, Krabbendam, and Looise 2002, 676).

Dynamic capabilities are firmly rooted in a firm’s past, and the opportunities they offer depend on a firm’s resources and market position. Given the criticism discussed in the previous pages, it can hardly be said that the definition by Teece, Pisano, and Shuen (1997) escaped criticism. However, this evaluation becomes more positive once the context of this definition is introduced. The most important frame for the definition given here, the definition that can be found in a number of research papers without reference to its context, can be found on page 514. At this point in their article, Teece, Pisano, and Shuen discuss the RBV and derive the importance of finding and/or developing resources that have the characteristics to qualify as critical resources as defined by Barney. To do so, these resources have to be “valuable, rare, inimitable, and non-substitutable” (Barney 1991, 105–106).

Critical resources provide firms with advantages in competition because they are idiosyncratic and, as such, may not be easily imitated by competitive firms. Furthermore, as Teece, Pisano, and Shuen (1997, 514) point out, “firms lack the organizational capacity to develop new competences quickly . . . some assets are simply not readily tradable, for example tacit know-how . . . and reputation. Thus, resource endowments cannot equilibrate through factor input markets. Finally, even when an asset can be purchased, firms may stand to gain little by doing so.”

The concept of idiosyncratic endowments upon which competitive advantages can be based is clearly visible along these lines. Put differently, each firm is a unique pattern of endowments that enable the firm to do some things, while preventing it to do others. Because of that, a firm needs to cross check its internal resources with the opportunities and threats looming in the market. This cross checking, which streamlines the existing routines into a quick response target, is the basis of dynamic capabilities. Teece, Pisano, and Shuen (1997) state that dynamic capabilities serve as the basis for creating, maintaining, and improving unique and inimitable competitive advantages. However, the fact that dynamic capabilities are idiosyncratic endowments makes their identification a project to be performed at the firm level. However, to escape from this kind of idiosyncratic consequence that runs counter to almost anything science aims at, Teece, Pisano, and Shuen (1997,

518) present a formal aggregation of “classes of factors that will help determine a firm’s distinctive competence and dynamic capabilities.” A summary of these classes encompasses the following elements: processes, positions, and paths.

Clearly, dynamic capabilities do not pertain to anything that emerges out of a vacuum. Dynamic capabilities refer to processes embedded in a firm’s routines, and that encompass production as well as managerial processes (Table 2). Positions reflect the industrial organizational view and identify the variables used in the five forces framework, like external relations with suppliers and competitors as well as assets that establish a firm’s market position such as “endowments of technology, intellectual property, complementary assets, and customer base” (Teece, Pisano, and Shuen 1997, 518). Paths symbolize past decisions that resulted in choosing a particular course of action over another. Each one of these classes is subdivided into subclasses that should guide the idiosyncratic search for dynamic capabilities.

Table 2: Processes and their subclasses involved in dynamic capabilities

Subclasses	Processes (organizational and managerial)
Coordination and integration	This refers to how production is organized and coordinated.
Learning	Learning according to Teece, Pisano, and Shuen (1997) is not the reaction of an organism to a stimulus, but the result of repetition (Staddon 1983). Hence, they think of learning not as the basis of something new, but as the basis of economies of scale and scope. Accordingly, they deduce that “learning requires common codes of communication and coordinated search procedures” (Teece, Pisano, and Shuen 1997, 520).
Reconfiguration	With a slight hint of tautology, reconfiguration is defined as “the ability to sense the need to reconfigure the firm’s asset structure and to accomplish the necessary internal and external transformation” (Teece, Pisano, and Shuen 1997, 520). However, again in the context of reconfiguration, the close link to market forces and the industrial organization view becomes obvious.

While the strategic posture of a firm is largely determined by its learning abilities, positions as specific assets play their part as well. These specific assets mainly consist of market assets, that is, assets that make a difference and can be traded in the market (Table 3).

Table 3: Positions that influence the formation of dynamic capabilities

Positions
Technological assets, special production facilities, and the like
Complementary assets
Financial assets
Reputational assets
Structural assets, such as the degree of hierarchy
Institutional assets, such as regulatory systems, tort laws, and antitrust laws; in short, the legal environment of a firm
Market (structure) assets: This is mainly the firm's position in the market or its market share. This is the most fragile position of the firm especially in times of rapid change: "Market position in regimes of rapid technological change is often extremely fragile" (Teece, Pisano, and Shuen 1997, 522).
Organizational boundaries: Organizational boundaries are nothing less than the result of the make-or-buy decision that, in transactional economics, is a question of the boundaries of the firm, as posed by Coase (1937). Accordingly, questions of vertical and horizontal integration are handled in this subclass. Coase's (1937) question is as follows: "It is clear that these [firms and markets] are alternative models of coordinating production. Yet, having regard to the fact that if production is regulated by price movements, production could be carried on without any organization at all, well might we ask, why is there any organization?" (387), or: "But in view of the fact that it is usually argued that co-ordination will be done by the price mechanism, why is such organisation [a firm] necessary? . . . Outside the firm, price movements direct production, which is co-ordinated through a series of exchange transactions on the market. Within a firm, these market transactions are eliminated and in place of the complicated market structure with exchange transactions is substituted the entrepreneur-co-

ordinator, who directs production” (388). Vertical integration, from sourcing raw materials to selling resulting products through a firm’s own retail stores, as well as horizontal integration, such as through mergers and acquisitions, usually raise the question why a structure in which products are self-made should be superior to a market solution in which products are bought. The relation of a firm with its dynamic capabilities may be described along these lines: dynamic capabilities may be strengthened by an acquisition or by vertical integration because integration not only affects a firm’s position in a market, but it also increases a firm’s access to and base of firm-specific resources, thereby increasing the repertoire for critical resources and the formation of dynamic capabilities. Hence, organizational boundaries describe an interface where dynamic capabilities not only react to market conditions faced by a firm but influence market conditions as well (see Livesay and Porter (1969) for an introduction to integration, and Williamson (1998) for an excellent overview of transaction cost economics).

Table 4: Paths and their subclasses that influence the formation of dynamic capabilities

Subclasses	Paths
Path dependencies	On the one hand, the repertoire of routines restrains a firm’s abilities to react to competitive demands. On the other hand, the repertoire is the result of past decisions and provides the window of opportunity insofar as it shapes the firm’s reaction possibilities to competitive demand. Accordingly, past investments shape current investment opportunities and may function as a constraint if past investments are constrained by out-of-date technology (Teece, Pisano, and Shuen 1997).
Technological opportunities	These opportunities refer mainly to a firm’s R&D initiatives. R&D enables a firm to engage in a market niche or to take advantage of a market opportunity that has not yet been found by competitors.

Assessments	Assessments are, as can easily be imagined because of the rather vague theoretical reasoning, the main element of path dependency. They are made up of comparisons between the market necessities and a firm's abilities: "The essence of a firm's competence and dynamic capabilities is presented here as being resident in the firm's organizational processes, that are in turn shaped by the firm's assets (positions) and its evolutionary path. . . . What the firm can do and where it can go are thus rather constrained by its positions and paths. . . . Indeed, to some extent individuals can be moved in and out of organizations and, so long as the internal processes and structures remain in place, performance will not necessarily be impaired. A shift in the environment is a far more serious threat to the firm than is the loss of key individuals, as individuals can be replaced more readily than organizations can be transformed" (Teece, Pisano, and Shuen 1997, 524).
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These lists of classes and subclasses clearly identify the concept of dynamic capabilities as a heuristic that will guide managers through their daily business, but does not necessarily explain the success of a firm. Why particular dynamic capabilities, as they are identified after they have been successfully deployed, turn out to be the causes of success, cannot be answered by the concept of "dynamic capabilities." Nevertheless, an assumption about why they turn out that way can be made. The assumption points to the replicability and imitability of processes and positions, and by that account, begs the question described below:

Thus far, we have argued that the competencies and capabilities and hence competitive advantage of a firm rest fundamentally on processes, shaped by positions and paths. However, competencies can provide competitive advantage and generate rents only if they are based on a collection of routines and skills, and complementary assets that are difficult to imitate. (Teece, Pisano, and Shuen 1997, 524)

This statement is somewhat sobering, because on page 518 of their paper Teece, Pisano, and Shuen state that they would mention the classes that allow for the

identification of a “firm’s distinct competence and dynamic capabilities.” Six pages further on, after mentioning the classes, they reveal that what really distinguishes dynamic capabilities is that they are hard to imitate and replicate. Accordingly, they have come full circle and use as *explanans* what should be the *explanandum*. Accordingly, Williamson’s (1999) allegation of tautological reasoning seems to be justified after all, and Eisenhardt and Martin (2000) must have reached the same conclusion. Therefore, Teece, Pisano, and Shuen endeavored to correct the shortcomings of the concept of dynamic capabilities.

3.1 Dynamic capabilities revisited

Dynamic capabilities as described in the previous chapter refer to the important role management has to play in achieving firm success. According to Teece, Pisano, and Shuen (1997), the dynamic capabilities approach focuses on developing management capabilities and inimitable organizational, functional, and technological skills. This is why the approach is firmly rooted within the boundaries of strategic management.

Furthermore, since dynamic capabilities is all about “exploiting existing internal and external firm-specific competences to address changing environments” (Teece, Pisano and Shuen 1997, 510), it is up to management to find resources that cannot be emulated or imitated by competitors and to gain competitive advantages by deploying them. At the end of the previous chapter, the three components, namely processes, positions, and paths have been introduced, which are seen by Teece, Pisano, and Shuen (1997, 518) as the core elements that must be considered when trying to tailor a dynamic strategy that brings lasting competitive advantages:

We thus advance the argument that the competitive advantage of firms lies with its managerial and organizational processes, shaped by its asset positions, and the paths available to it. By managerial and organizational processes, we refer to the way things are done in the firm, or what might be referred to as routines, or patterns of current practice and learning. By position we refer to its current specific endowments of technology, intellectual property, complementary assets, customer base, and its external relations with suppliers and complementors. By paths we refer to the strategic alternatives available to the firm, and the presence or

absence of increasing returns and attendant path dependencies. Our focus throughout is on asset structures for which no ready market exists, as these are the only assets of strategic interest.

It is worth noting that some of the assumptions included in this statement are rife with problems.

First, because dynamic capabilities are thought to be idiosyncratic owing to their basis on the firm's market position and "heritage," which is engraved in its internal procedures, each firm has its own unique set of dynamic capabilities. However, since dynamic capabilities are idiosyncratic entities to be found only within one firm, nothing will be gained by looking at a particular successful firm. Its success is the result of its idiosyncratic use of its unique endowments, routines, and asset positions. It is possible that the firm's use of such capabilities is not as efficient as it could be, and so there is still some room for improvement; however, again, insight is restricted to that particular firm. I will call this problem the problem of generalization. This problem is rather important because science is not about finding idiosyncratic issues, but about the formulation of general statements, sometimes called "laws" (Hempel and Oppenheim 1948). Laws describe regularities within the world and allow for deducing consequences given a particular law and a particular set of antecedents. Idiosyncratic statements allow for nothing of this kind and, as a consequence, idiosyncratic statements have no real value in science, apart from illustrating a particular case (Popper 2004).

Another problem has been stressed by Williamson (1999) as well as Priem and Butler (2000). If dynamic capabilities are idiosyncratic and a function of the endowments and resources as well as the market position of a particular firm, then there is no way to determine them upfront. Managers can try their best to find valuable, rare, inimitable, and non-substitutable (VRIN) resources (Eisenhardt and Martin 2000), but they will never know if such resources will turn out to be dynamic capabilities until they do, that is, until the particular strategy built upon potential VRIN resources turns out to be successful. In a more scientific language, there is no way to measure dynamic capabilities independent of firm success. In the end, all that Teece, Pisano, and Shuen (1997) accomplished with their discussion of processes, positions, and paths, was to introduce a further level of linguistic distinction.

Instead of constantly scanning, searching, and exploring across technologies and markets, both “local” and “distant” (Teece 2011), for capabilities that allow the firm “to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (Teece, Pisano, and Shuen 1997, 516), a manager is expected to scan and search for processes and positions that allow to integrate, build, and reconfigure internal and external competences. This is not really an improvement. To comply with scientific standards, Teece, Pisano, and Shuen (1997) and Teece (2011) should list the criteria that allow for the identification and derivation of dynamic capabilities, making them unique and hence distinguishable from other resources. This could allow the deduction of hypotheses that could be empirically tested, that is, hypotheses that are required to stipulate a correlation between a specific dynamic capability and the efficient adaptation to a changing environment, success, financial performance measure, or firm performance. In any case, such hypotheses would relate dynamic capabilities to an empirically observable change in the environment of the firm.

I will call this problem the problem of falsification, with reference to the criteria Popper (2004) introduced to differentiate between scientific and metaphysical statements. To count as a scientific statement, a theory, or a law, the respective statement has to say something about reality that can be checked against reality and that can fail. This requires that statements are inter-subjective in nature so that scientist A could use, repeat, or test research done by scientist B in a different setting. In more general methodological terms, what is lacking in the dynamic capabilities approach is validity and reliability (Carpenter and Reilly 2006).

A final problem attached to the dynamic capabilities approach is its openness on the one hand and its narrowness on the other. Openness refers to the fact that almost anything can be counted as a dynamic capability, while narrowness refers to the idiosyncrasy of results. Put together, openness and narrowness interact to make research in dynamic capabilities arbitrary, because the assignment or identification of resources as dynamic capabilities is not guided by criteria, and cannot be challenged or tested either, because the idiosyncratic results, which refer only to a particular firm, preclude it. All that can be done on the basis of the results gathered in the framework of dynamic capabilities is to question the results

and to argue about the suitability of a particular interpretation of dynamic capabilities in a particular firm.

This is hardly what constitutes scientific progress and I will refer to this problem as the problem of scientific feasibility. All three problems identified above pose a considerable threshold to the scientific usefulness of the dynamic capabilities approach. However, Eisenhardt, together with a changing set of co-authors (e.g., Bingham and Eisenhardt 2008; Davies, Eisenhardt, and Bingham 2007; Eisenhardt and Martin 2000) endeavored to put the dynamic capabilities approach on a scientifically sound basis. Whether this attempt has proved successful is a question I will try to answer with respect to the three problems identified in this chapter:

- the problem of generalization;
- the problem of falsification; and
- the problem of feasibility.

3.2 Attempts to reformulate the concept

Eisenhardt and Martin (2000) attempted to shore up the dynamic capabilities approach against criticism, especially the criticism of being tautological. They do this by addressing two distinct features of the dynamic capabilities approach—one being the unique and idiosyncratic processes that arise from the peculiar experiences of a firm and the other being the assumption made by Teece, Pisano, and Shuen according to which rapidly changing and highly dynamic markets require dynamic capabilities, which are embedded in routines and processes, which in turn build on past decisions and provide the firm with resources and a particular market position and are accompanied by a particular kind of inertia (Teece, Pisano, and Shuen 1997, 514):

Resource endowments are 'sticky:' at least in the short run, firms are to some degree stuck with what they have and may have to live with what they lack. This stickiness arises for three reasons. First, business development is viewed as an extremely complex process. Quite simply, firms lack the organizational capacity to develop new competences quickly (Dierickx and Cool 1989). Secondly, some assets are simply not readily tradable, for example tacit know-how (Teece 1976,

1980). . . . Finally, even when an asset can be purchased, a firm may stand to gain little by doing so.

This is a blatant contradiction to other scholars' arguments, not only to that of Eisenhardt and Martin's (2000). How can dynamic capabilities evolve in a context of sticky resources? How can a company stricken with inertia become a dynamic entity capable of adapting to rapid change?

The first solution presented by Eisenhardt and Martin addresses the problem of generalization in a rather unique way. Eisenhardt and Martin stress that though idiosyncratic processes and resources across different firms have some structure or some patterns in common, that is, though the content differs, the form is the same or at least comparable: "Dynamic capabilities also exhibit commonalities across firms that are associated with superior effectiveness. So while the specifics of any given dynamic capability may be idiosyncratic to a firm (e.g., exact composition of a cross-functional product development team) and path dependent in its emergence, 'best practice' exists for particular dynamic capabilities across firms" (Eisenhardt and Martin 2000, 1116).

This formal commonality across specific content is backed by a number of examples taken from different firms, as Eisenhardt and Martin write, "Effective product development processes also involve routines that ensure that concrete and joint experiences among team members, such as working together to fix specific problems or participating in brainstorming sessions occur. Such experiences enhance innovation by breaking down the thought worlds that arise because people with different expertise not only know different things, but know those things differently" (Eisenhardt and Martin 2000, 1109).

Eisenhardt and Martin (2000) then refer to Dougherty (1992), who found that common customer visits and feedbacks were essential for an effective product development process. They also refer to an example that shows that successful acquisitions are found mainly in firms that have pre-acquisition routines in place that assess cultural similarity and consistency of vision (Eisenhardt and Martin 2000).

Though meant to solve the problem that dynamic capabilities are found post-hoc, that is, after something has been successfully accomplished by a firm, the

examples given by Eisenhardt and Martin (2000) do nothing of the kind. The authors beg the question, which becomes quite obvious once the following question is asked: “What in particular makes a ‘pre-acquisition routine’ successful?” The answer to this question has to refer to the particular firm that was successful and has to delve into idiosyncratic evidence. However, by inductive reasoning, Eisenhardt and Martin (2000) propose that it is possible to build classes, commonalities, or best practices that can lead the ex-ante search for dynamic capabilities.

Inductive reasoning starts with single observations, tries to find commonalities between different “single observations,” and aims to elevate single observations to general rules or features. However, inductive reasoning is tainted with two problems that cannot be solved.

First, inductive reasoning is always directed reasoning. In order to observe something, you have to know in advance what you are looking for. Accordingly, it is hardly possible to “observe” something without having a clear picture of what to expect. This predetermination of findings taints results and leads back to already mentioned problems. Since it is from observing firms that successfully mastered a particular task, say the acquisition of another firm, how is one going to identify the ingredients that lead to the respective success, without a theory about what causes this success? However, this is exactly what is lacking in the dynamic capabilities approach, a theoretical basis from which it is possible to formulate expectations. Hence, while only theoretical guidance can provide a hypothesis about what causes the success of acquisitions, it is exactly this theoretical guidance that is lacking in the dynamic capabilities approach. Worse still, Eisenhardt and Martin (2000) suggest that this theoretical guidance could be gained post-hoc by looking at the data.

Second, it is not possible to overcome the rift between a theoretical or general statement and a singular statement formed on a single observation. Even assembling many singular statements that show altogether the same structure does not eliminate the rift, because the scope of a general sentence like “acquisitions will be successful when an acquisition team is assembled to handle cultural problems” is always going to be greater than the scope of a sentence like “from observing the acquisition attempts of 200 firms, it appears that those that

were successful had an acquisition team in place that addressed cultural problems” (Albert 1991; Salmon 2006).

As the analysis so far has shown, those “best practices” identified have a level of abstraction that renders them almost useless when it comes to the question of how to identify critical resources that can be built into dynamic capabilities. Even the attempt to build a typology of strategic logic linking made by Bingham and Eisenhardt (2008) fails in this respect. Bingham and Eisenhardt (2008) differentiate three kinds of strategic logics for the use of dynamic capabilities or core resources. They define resources as “the tangible assets (i.e., location, plant, equipment), intangible assets (i.e., patents, brands, technical knowledge), and organizational processes (i.e., product development, country entry, partnering) from which managers can develop value-creating strategies” (Bingham and Eisenhardt 2008, 243).

These three kinds of logics are 1) leverage logic, which creates competitive advantages from leveraging existing core resources (Bingham and Eisenhardt 2008, 244); 2) position logic, which creates competitive advantages by “executing different activities than the competition or executing the same activities in a differentiated way” (Bingham and Eisenhardt 2008, 246); and 3) opportunity logic, which argues (in succession to Schumpeter) that competitive advantages are the result of entrepreneurial initiative (Bingham and Eisenhardt 2008).

The position logic clearly alludes to “position” in the framework of Teece, Pisano, and Shuen (1997) and is an adaptation of the three generic strategies, that is Porter’s (1979, 1980, 1985) concept of strategic management, which encompasses the strategies of cost leadership (gaining competitive advantages by increasing margins), differentiation (providing a premium benefit to customers and receiving a price premium in return), and niche (finding a niche in the market that can be built into a “local” monopoly).

While this paper adds a further linguistic layer to the concept of dynamic capabilities, it does not clear the vista, that is, the question of how to find the resources necessary to deploy the respective logics remains largely unanswered, if one does not count the rather flimsy and abstract statements.

For instance, Bingham and Eisenhardt (2008, 244) state that “under leverage logic, strategy consists of identifying, building, and exploiting a portfolio of core resources that is valuable and rare in current markets and deploying these core resources into additional markets (e.g., segments and industries) where they are also valuable and rare.” Though the authors talk about “leverage logic,” there is hardly anything new in this definition compared to the original definition of dynamic capabilities by Teece, Pisano, and Shuen (1997), or the description of critical resources by Barney (1991).

Furthermore, Bingham and Eisenhardt (2008, 246) also argue that “under position logic, competitive advantages stem from executing different activities than the competition or executing the same activities in a different way.” This rather curious adaptation of Porter’s (1980) strategy of differentiation boils down to the statement that doing something different produces competitive advantages. Nobody in their right mind can take a statement like this seriously, if only because it would mean that management is expendable, since it is difference, not a particular kind of difference that produces a competitive (dis-)advantage. Put differently, this sole sentence renders the entire endeavor of dynamic capabilities meaningless.

Bingham and Eisenhardt (2008, 249) add that “a strategic logic of opportunity argues that competitive advantage stem from entrepreneurial action.” In this statement, the authors allude to the central role the entrepreneur takes in the innovation cycle as depicted by Schumpeter. Here, it is the courageous or bold decisions taken by an entrepreneur that make the difference in performance. The entrepreneur has the task of scanning the market of ideas, finding promising ones, and providing the funding to develop them into innovations, be they product or process innovations, or entry into new markets. However, the question of how an entrepreneur identifies suitable ideas with the potential to become successful innovations is neither addressed by Schumpeter nor by Bingham and Eisenhardt, who again produce a linguistic agglomeration that differentiates between spontaneous and improvisational action that is useful in one situation, and experimentation and learning by doing that is useful in another situation. Again, no criteria providing guidance to a manager in search for a suitable idea are mentioned.

However, the opportunity logic refers to the second point made by Eisenhardt and Martin (2000) in their attempt to put some meaning into the concept of dynamic capabilities. To recapitulate, the second problem arises from the fact that sticky resources and organizational inertia, claimed to be a feature of firms by Teece, Pisano, and Shuen (1997), are expected to somehow translate into dynamic capabilities that are useful for dealing with an ever and rapidly changing business environment and its requirements.

The solution provided by Eisenhardt and Martin dichotomizes markets with respect to their speed of change or their dynamics. High-velocity markets require managers to stray from their daily routines, which are, as known from the description of Teece, Pisano, and Shuen (1997), fraught with inertia and hence, need some unfreezing, as could also be said for Lewin's (1947) concept of change management. Accordingly, Eisenhardt and Martin (2000) see times of rapid change as commanded by trial-and-error, simple solutions, and sequences of problem solution. They claim that in the case of high-velocity markets, dynamic capabilities depend more on the efficient creation of new situation-specific knowledge and less on existing knowledge. They further explain: "In contrast, in high-velocity markets, dynamic capabilities take on a different character. They are simple (not complicated), experiential (not analytic), and iterative (not linear) processes. They rely on the creation of situation-specific knowledge that is applied in the context of simple boundary and priority setting rules" (Eisenhardt and Martin 2000, 1113).

By contrast, daily routines and processes, the basis of Teece, Pisano, and Shuen's (1997) formulation of dynamic capabilities, are required or useful only in moderately dynamic markets: "In moderately dynamic markets, dynamic capabilities resemble the traditional conception of routines That is, they are complicated, predictable, analytic processes that rely extensively on existing knowledge, linear execution and slow evolution over time" (Eisenhardt and Martin 2000, 1113). In other words, dynamic capabilities in high-velocity markets require techniques for decision making under uncertainty, because routines and processes that provide calculable benefits in moderately dynamic markets will not work.

As has been shown by Tversky and Kahneman (1986), the human ability to make sound decisions under uncertainty is rather limited. Accordingly, the question of how to make sound decisions under uncertainty is of some importance to the framework of Eisenhardt and Martin (2000). Unfortunately, they do not address this question. They simply report of firms that use trial-and-error methods, apply simple and easy reversible steps to the new environment, and the like. They do not make the link between reducing costs of failure by making decisions of rather short-ranged consequences, or decisions that can be reversed without accruing too much cost. This technique is nothing else than the patchwork technique introduced by Popper in order to provide historical explanations. In order to deal with uncertainty, a firm's management has to make short-range and sometimes quick decisions. It has to keep an eye on the process of implementation and it has to be able to react if things go wrong. In other words, what is needed is flexibility and speed, two ingredients quite prominent in the balanced scorecard (Kaplan and Norton 1996). Within the framework of the balanced scorecard, the fourth perspective is entirely dedicated to strategic feedback and learning.

Accordingly, Eisenhardt and Martin (2000) emphasize the importance of learning and redefine path dependency as "learning mechanisms." Thus, the capability to handle high-velocity markets with their demand for selection, bold decisions under uncertainty, that is, and the capability to handle variations required by moderately dynamic markets, is grounded in the learning mechanisms inherent to a firm, its experience as accumulated across employees.

Table 5 summarizes the consequences of different market dynamics for the concept of dynamic capabilities, while Table 6 shows a synopsis of the reconfiguration attempted by Eisenhardt and Martin (2000) in order to solve the three problems identified above.

Table 5: Dynamic capabilities and types of dynamic markets (Eisenhardt and Martin 2000, 1115)

	Moderately dynamic markets	High-velocity markets
Market definition	Stable industry structure, defined boundaries, clear business models, identifiable players, linear and predictable change	Ambiguous industry structure, blurred boundaries, fluid business models, ambiguous and shifting players, nonlinear and unpredictable change
Pattern	Detailed, analytic routines that rely extensively on existing knowledge	Simple, experiential routines that rely on newly created knowledge specific to the situation
Execution	Linear	Iterative
Stable	Yes	No
Outcomes	Predictable	Unpredictable
Key to effective evolution	Frequent, nearby variation	Carefully managed selection

Table 6: Contrasting conceptions of dynamic capabilities (Eisenhardt and Martin 2000, 1111)

	Traditional view of dynamic capabilities	Reconceptualization of dynamic capabilities
Definition	Routines to learn routines	Specific organizational and strategic processes (e.g., product innovation, strategic decision making, allying) by which managers alter their resource base
Heterogeneity	Idiosyncratic (i.e., firm specific)	Commonalities (i.e., best practice) with some idiosyncratic details

Pattern	Detailed, analytic routines	Depending on market dynamism, ranging from detailed, analytic routines to simple, experiential, ones
Outcome	Predictable	Depending on market dynamism, predictable or unpredictable
Competitive advantage	Sustained competitive advantage from VRIN dynamic capabilities	Competitive advantage from valuable, somewhat rare, equifinal, substitutable, and fungible dynamic capabilities
Evolution	Unique path	Unique path shaped by learning mechanisms such as practice, codification, mistakes, and pacing

3.3 Assessment

In the previous subsection, I have identified three problems that call the scientific soundness of the dynamic capabilities framework into question:

- the problem of generalization;
- the problem of falsification; and
- the problem of feasibility.

None of the three problems has been solved by the reformulation of the dynamic capabilities framework as provided by Eisenhardt and Martin (2000). Though they try hard to generalize idiosyncratic results, they fail to do so, because the very nature of idiosyncratic results does not allow for generalization. Accordingly, artificially introducing a new linguistic layer that samples different idiosyncratic results under a common headline like “acquisition team dealing with culture” does not really help when searching for dynamic capabilities, that is, if one is not prepared to suggest that introducing an “acquisition team” as such will guarantee success. This, however, would leave the idea of effort and merit of experience and learning, of which the latter pair is central to the concept of Eisenhardt and Martin (2000), in shambles, so it is not a suitable avenue to follow.

Again, the falsification of “dynamic capabilities” as gained from inductive insights is not possible, because dynamic capabilities cannot be tested independent of the context in which they have been found. Again, simply introducing a new linguistic layer does not solve the original problem. Since no criteria are given that allow for, on one hand, the identification of dynamic capabilities, and on the other, the formulation of hypotheses that state the effects of the very capabilities on a firm’s performance that can be tested in reality, falsification is not possible, and thus the respective criteria are not met.

Finally, the problem of feasibility is not solved either. It is not possible to argue why it is that certain best practices are considered dynamic capabilities while others are not, or in a different setting, why some results are considered best practices while others are not. To simply state that best practices are those proven to be good somehow begs the question and does not ensure the user of best practices that a particular best practice will work in his firm as well. Again, the attempt to reformulate the dynamic capabilities framework has not reached its target. Accordingly, the attempt to establish the dynamic capabilities framework as a theoretical framework has utterly failed.

Thus, the question is how the concept can be made useful for the purpose of this thesis. To find an answer to that question, the next chapter will give an overview of the research done with the dynamic capabilities framework. This review of the literature is not meant to provide evidence for the empirical validity of the framework, as this would be an endeavor doomed to fail because most authors do not agree on the content of the concept of “dynamic capabilities.” Rather, it is an attempt to assess the usefulness of the concept of dynamic capabilities when taken as a heuristic, that is, a sampling technique useful for acquiring a sense of what might influence adaptation to moderately or rapidly changing business environments or not.

3.4 Dynamic capabilities in empirical research

The review of the literature presented in this chapter is not comprehensive and does not endeavor to be comprehensive. The task of the review given in this chapter is to assess the feasibility of the dynamic capabilities concept being used

as a heuristic. If the concept is a useful heuristic, at least some patterns should appear in the literature.

Several researchers have attempted to define dynamic capabilities as a multidimensional construct. For instance, Barreto (2010) ends his review of the literature on dynamic capabilities with the suggestion that dynamic capabilities should, according to the plethora of definitions and different usages of the concept, be treated as a multidimensional construct so as to include all the different aspects of the concept found in research. Zahra, Sapienza, and Davidson (2006) reference Barreto (2010) in proposing a new definition and a new model of dynamic capabilities as a reaction to the multitude of different meanings and research agendas the concept has meandered into. However, with every new attempt to bring order to the chaos engulfing dynamic capabilities, seeds are planted from which a new chaos emerges. Wang and Ahmed (2007) provide yet another attempt to clarify the meaning of the dynamic capabilities concept. As are the attempts made by Barreto (2010) and Zahra, Sapienza, and Davidson (2006), Wang and Ahmed's (2007) attempt is to be welcomed. However, because it deviates from the aforementioned attempts by introducing another three component factors that are meant to reflect the common features of dynamic capabilities, it does not contribute too much to clear the field.

Meanwhile, other researchers viewed dynamic capabilities as primarily stemming from social and/or human capital. For instance, Blyler and Coff (2003) define dynamic capabilities as the social capital within and between firms, and highlight the important role of individuals as hosts of social capital. King and Tucci (2002) investigated firms entering new markets. Since they deployed the dynamic capabilities framework in their research, it means they investigated the role of experience. They found that experience in existing markets and with previous market entries do not only denote dynamic capabilities but also explain the different success in new markets, that is, firms with more experience in markets and with entering new markets did better than firms with less experience.

Others defined dynamic capabilities mainly as consequences of resource deployment. Rindova and Kotha (2001) developed the concept of "morphing" as a result of their two case studies of web search portals Yahoo! and Excite. Both companies have undergone wide ranging changes in products and services: "the

changes we describe as continuous morphing are profound transformations. They include significant changes in the ranges of products and services offered, along with reconfigurations of the resources, capabilities, and structures employed to deliver the extended range of products and services” (Rindova and Kotha 2001, 1264). While the authors attribute changes in form to product changes, they reserve changes in structure for dynamic capabilities. Hence, they disentangle products as a particular resource from dynamic capabilities that remain with the rest of the resources and organizational arrangements. Whether this different view on dynamic capabilities, which seems to highlight only the fact that constant change is required in some markets, is a fruitful approach for research remains to be seen. Zott (2003, 99) investigated what makes firms that share the same industry perform differently. He looked especially at dynamic capabilities and defined them as a set of “routines guiding the evolution of a firm’s resource configuration” (Zott 2003, 99). Consequently, the deployment of dynamic capabilities is a matter of timing, cost, and (feedback-)learning. He found differences in timing, cost, and (feedback-)learning to have a direct effect on the performance differences between firms. However, he does not dig into the causes for these differences in timing, cost, and (feedback-)learning, so that it is only possible to attribute these differences to differences in dynamic capabilities that, according to Zott’s definition, are a matter of guiding routines and as such path dependent, which leads to the rather unsatisfactory conclusion that past decisions and experiences and their effects on the present determine or at least influence performance so that differences in past decisions and experiences account for differences in performance.

Still, many researchers viewed dynamic capabilities as resulting from the combination of human capital and resource availability of deployment. Helfat (1997) investigated the relationship between dynamic capabilities and investment in R&D, and came to the conclusion that firms that commanded larger amounts of complementary technological knowledge and physical assets had more to spend in R&D on synthetic fuel processes (coal conversion). The dynamic capabilities involved here are complementary technological knowledge and physical assets, that is, positions in the typology introduced by Teece, Pisano, and Shuen (1997) and resources in the terminology of Bingham and Eisenhardt (2008). To Døving

and Gooderham (2008), dynamic capabilities can be found in human capital, internal development routines, and alliances with complementary service providers. They tested whether dynamic capabilities defined in that way impact the scope of services provided by 254 small Norwegian accountancy firms, and found that they do. Teece (2007) advances a framework that is a variation of the theme discussed in previous chapters. Firms high in dynamic capabilities like distinct skills, processes, procedures, organizational structures, decision rules, and disciplines are intensely entrepreneurial, adapt to business ecosystems, and shape these ecosystems through innovations. Teece puts the framework forward but does not test it. Verona and Ravasi (2003) investigated a leading producer of hearing aids and showed the company's ability to release innovations into the market in the past. They assume the dynamic capabilities responsible for the past success of the firm are knowledge creation, knowledge absorption, knowledge integration, and knowledge reconfiguration. Zollo and Winter (2002) provide a framework of dynamic capabilities formation. They stress the importance of experience accumulation, knowledge articulation, and the knowledge codification process for dynamic capabilities formation, and hypothesized that the co-evolution of these learning mechanisms is crucial for dynamic capabilities formation. Zollo and Winter's work corresponds to the impetus on learning made by Eisenhardt and Martin (2000) in their reformulation attempt, and somehow corresponds to the argument of path dependent learning possibilities as put forward by Teece, Pisano, and Shuen (1997).

Meanwhile, Brown and Eisenhardt (1997) defined dynamic capabilities as arising from procedures. They investigated six firms that released multiple-product innovation into the market. They found successful innovations to blend limited structures and freedom to improvise products, wide varieties of cost probes and rhythmic links between the present and the future, which leads them to suggest that "sequenced steps," "semi structures," and "links in time" provide the dynamic capabilities useful for success in a dynamic, and later called high-velocity market (Eisenhardt and Martin 2000).

Finally, Menguc and Auh (2006) define dynamic capability as a market orientation enabling a firm to release innovation into the market at high rate. This, in turn, is taken as a measure of the innovativeness of the respective firm and is linked to

internal resources that, in turn, are expected to have a positive effect on market orientation. Thus, it comes as no surprise that a market orientation that fits the internal resources positively affects firm performance.

Based on the research results reported so far, a densification as proposed in Glaser and Strauss's (2006) concept of the Grounded Theory can be made. The main results of the reported research have been assembled in Table 7.

Table 7: Densification of research results into dynamic capabilities

Study	Results	Densification
Barreto (2010)	Dynamic capabilities = multidimensional construct	
Blyler and Coff (2003)	Individuals as hosts of social capital are important for dynamic capabilities	Social capital; human capital
Brown and Eisenhardt (1997)	Dynamic capabilities as a result of sequenced steps, semi-structures, and links in time	Procedure
Døving and Gooderham (2008)	Dynamic capabilities = human capital, internal development routines and complimentary alliances	Human capital, learning ability and resource deployment
Helfat (1997)	Dynamic capabilities = amount of technological knowledge and physical assets	Human capital and resource availability
King and Tucci (2002)	Dynamic capabilities = experience	Human capital, experience
Menguc and Auh (2006)	Dynamic capabilities = market orientation	Attitude
Rindova and Kotha (2001)	Dynamic capabilities = reconfiguration of resources	Resource deployment
Teece (2007)	Dynamic capabilities = skills, processes, procedures, organizational structures, decision rules, disciplines	Human capital, resource availability and deployment,
Verona and Ravasi (2003)	Dynamic capabilities = knowledge creation, knowledge absorption, knowledge integration, knowledge reconfiguration	Human capital, experience, resource deployment

Zollo and Winter (2002)	Dynamic capabilities = experience accumulation, knowledge accumulation, knowledge codification, learning mechanisms	Human capital, experience, learning ability
Zott (2003)	Dynamic capabilities = routines, timing, cost and (feedback-) learning	Resource deployment, learning ability

Densification in Table 7 shows that dynamic capabilities refer to human capital, resources and their availability and deployment, and most of all, capabilities that foster learning processes and efficient resource deployment. Hence, dynamic capabilities can best be described as capabilities that enable a firm, based on the resources available to it, to adapt its business as quickly as possible to a changing environment. This broad definition leaves enough space to accommodate Eisenhardt and Martin's (2000) concept of high-velocity markets and moderately dynamic markets as well as the inertia inherent to the firm's ability to transform processes, because of sticky resources (Teece, Pisano, and Shuen 1997).

Thus, a firm's ability to adapt to changing markets is not a matter of different market pressures exerted by different market dynamics. Rather, it is the result of different abilities to adapt to different market requirements. Key to this process of adaptation is resources in humans, resources to which access is provided through strategic alliances, and resources in financial and other assets. This new linguistic stance, however, does not resolve the basic problem inherent to the dynamic capabilities approach: the approach remains highly tautological; does not tell anything about how to "discover" a dynamic capability, that is, a capability that guarantees successful adaptation to a changing environment; does not give any hint on the concrete nature of a dynamic capability that will allow firm X to adapt successfully to market changes; and does not solve any of the three problems identified in Chapter 3.1. This leaves only one solution to the problem, which is to treat the concept of dynamic capabilities as a heuristic that provides some cues about where to look when searching for dynamic capabilities.

First, dynamic capabilities may be found in the stock of human, social, and cultural knowledge. In this view, human capital is a proxy for education and knowledge in humans that reaps benefits when deployed. Referencing Becker (1993), education

and training are the most important investments in human capital. According to Becker, many studies have shown that high school and college education have a positive impact on a person's income in the United States.

Meanwhile, social capital structures relations and provides access to resources. The most common definition of what social capital is all about is given by Coleman (1988, 100–101):

Social capital, however, comes about through changes in the relations among persons that facilitate action. If physical capital is wholly tangible, being embodied in observable material form, and human capital is less tangible, being embodied in the skills and knowledge acquired by an individual, social capital is less tangible yet, for it exists in the relations among persons. Just as physical capital and human capital facilitate productive activity, social capital does as well. For example, a group within which there is extensive trustworthiness and extensive trust is able to accomplish much more than a comparable group without that trustworthiness and trust.

Finally, cultural capital for the purpose of this thesis will be defined as the knowledge of attitudes and habits of people alien to the cultural context of the observer (Bourdieu 1983).

Second, dynamic capabilities may also be in the stock of resources available to the firm. Firm resources are defined here as comprising tangible and intangible assets, ranging from buildings to patents.

Third, dynamic capabilities may also be found in the ways and means resources are and could be deployed and fit properly to available capital, that is, the proceedings guiding the deployment of resources and adaptation processes. Routines that play a prominent role in the dynamic capabilities approach would enter the frame at this point (Teece, Pisano, and Shuen 1997). However, it is not just a question of routines that is to be addressed when efficient deployment of resources via an optimal use of available human capital is in question. It is also a question of the need to tailor quick and makeshift solutions for efficient deployment.

Finally, dynamic capabilities may also be in the learning abilities and experiences that allow for quick incorporation of new experiences and quick adaptation to

changing environments. The core of almost all managerial frameworks, most notably of the Balanced Scorecard (Kaplan and Norton 1996), is the ability to learn. The literature dealing with a firm's ability to learn in the learning or knowledge society is abundant. Quantity, however, does not signify importance, and hence, the importance of learning and experience has to either be deduced by logical reasoning or tested in empirical research. While there are a number of papers dealing with the impact of learning abilities on firm performance (i.e., Camps and Luna-Arocas 2012; Ellinger et al. 2002; Goh, Elliot, and Quon 2012; Marsick and Watkins 2003; Perez Lopez, Montes Peon, and Vasquez Ordas 2005), I will deduce the importance from simple logical reasoning. Change requires adaptation and adaptation is nothing else than modifying the current approach so that it may fit new requirements. To do so, new requirements must be understood and learned, that is, in the process of fitting (the processes for new requirements), errors and misjudgments must be corrected. To correct for errors is to learn. If something did not work the first time, the approach must be modified and tested. More formally, learning is a response of an organism to a stimulus presented to it (Hilgard and Bower 1956).

That there is not more to the dynamic capabilities framework than just providing cues is obvious, because the densification in Table 4 does nothing else than to add another linguistic layer to the already countless layers in existence. Thus, the main benefit of densification here is that categories in which to look for competencies required to master changing environments are given. There is nothing more that can be done without reaching the limits of tautological reasoning, because dynamic capabilities are path dependent and a result of particular endowments and resources; hence, the human capital that gives one firm the edge over another, *nota bene*, has to be idiosyncratic. This gives a logical proof to the assumption that the dynamic capabilities framework can only be used as a heuristic, guiding managers in their attempt to find competitive advantages. However, human capital as a guiding category is a rather broad concept, which shows another problem of the concept: It is meaningless to look for special capabilities without referencing them to a particular goal. You do not need employees with an IQ of 160 and over, you need employees capable of solving a particular problem; whether a respective employee with an IQ of 160 or beyond

can be found is another question. Thus, the task for strategic management, as it is derived from the dynamic capabilities framework as discussed so far, can be summarized as involving making a sound evaluation of a firm's situation in the market, that is, by applying Porter's five forces (1979); determining market pressures and developments; developing a vision, a target for business activity; sampling opportunities and strengths, as well as threats and weaknesses with respect to this particular target, that is, by performing a SWOT analysis (Henry 2008); looking for critical resources, that is, VRIN resources (Eisenhardt and Martin 2000); using human or social capital to deploy resources to reach targets; and using proceedings that allow for modification and adaptation of processes "on the fly." This alludes to the patchwork method introduced by Popper (1971), a technique that consists of a series of trials and errors.

It is expected that managers, willing to develop their firm and adapt to a changing environment, will follow these suggestions, and whether they do so or not is a question to be addressed in the empirical part of this thesis. However, the heuristic given above resembles a recipe for brewing ale in so far as it provides formal steps but not content. Adding content, the idiosyncratic part of the endeavor, is the task of managers. Again, we end up with one insurmountable obstacle, which is whether a dynamic capability is one that can only be determined once it is deployed. However, in order to prepare for empirical testing, and following what could be called a "Meta-Grounded-Theory approach," a second review of the literature has been performed, restricting the search for useful papers to those papers that looked for or found either of the above-mentioned categories of human or social capital, resource deployment, and availability of learning capacities, knowledge, and experience.

One might argue that the knowledge gained from the previous paragraph, the heuristic for identifying dynamic capabilities as it has been assembled in the course of this thesis, is not all too different from the proposition made by Teece, Pisano, and Shuen (1997). However, there is a rather big difference between the proceeding in this thesis and the one used by Teece, Pisano, and Shuen (1997). While they assembled their framework and set it as a given, this thesis derives the heuristic for identifying dynamic capabilities from the literature and tests the heuristic, that is, a search is performed in order to identify recent and relevant

articles that deal with either of the categories identified as potential hosts of dynamic capabilities. Accordingly, it could be argued that inductive reasoning brought about the heuristic for finding dynamic capabilities, while deductive reasoning was deployed to test the feasibility of the categories developed above. Furthermore, the subsequent chapters will report the results of an empirical test that deploys means of qualitative research in order to get some insights in the process of strategy formation and especially in the how's of finding critical resources that might turn out as dynamic capabilities.

The result of the additional literature review, again done with no intention to provide a comprehensive picture of the research, indeed yielded research that looked for or found a link between dynamic capabilities and either human or social capital, resource deployment, and availability of learning capacities, knowledge, and experience.

Regarding the link of dynamic capabilities to human capital, Sirmon and Hitt (2003) investigated small and medium-sized firms to which categories of the unique characteristic providing them with competitive advantage can be attributed. They concluded that capabilities can be fit into the categories of human capital, social capital, survivability capital, and governance structure. The finding that governance structure contributes to firm performance is new to the study of dynamic capabilities, despite the fact that Teece (2012) discusses governance structure, referring to transaction theory, in a recently published book. Governance structure as operationalized in Sirmon and Hitt refers to outsourcing and offshoring decisions and widens the field of dynamic capabilities beyond the boundaries of the firm. Whether this is a sensible thing to do has to be proven by further research, though. Accordingly, governance structure will not figure prominently in the remainder of this thesis. Later, Sirmon, Hitt, and Ireland (2007) addressed the criticism directed at the RBV by reformulating the framework with respect to dynamic capabilities. While they stress the importance of diversifying resources, bundling resources, leveraging capabilities, and finding dynamic capabilities, they have nothing to offer to readers who are interested in finding dynamic capabilities. However, a brief review of the research done by the authors shows the importance of human capital bundling and leveraging, which provides further evidence to human capital as a core category when looking for dynamic capabilities. The

authors added to the framework provided by Bingham and Eisenhardt (2008), who distinguished between the leverage logic (exploiting a portfolio of resources), position logic (different activities in the market), and strategic logic (innovation) by stressing the importance of interrelationships between employees.

Similarly, Khandekar and Sharma (2005) investigated the effect of “human resource capabilities” on firm performance. While they operationalized human resource capabilities in a rather broad sense, they showed a direct link between the amount of human resource capabilities and firm performance. Later, Kang, Morris, and Snell (2007) investigated the importance of relational configurations between employees with respect to structural, affective, and cognitive variables. They established that relationships between employees, as described in these terms, can provide important and unique capabilities that can be seen as dynamic capabilities. However, in some odd way, the authors speak of “archetypes.” The term “archetypes” was coined by Jung and describes the unconscious and deeply ingrained motives that form the basis of some kind of heritage of all humanity:

What Jung was proposing was no less than a fundamental concept on which the whole science of psychology could be built. Potentially, it is of comparable importance to quantum theory in physics. Just as the physicist investigates particles and waves, and the biologist genes, so Jung held it to be the business of the psychologist to investigate the collective unconscious and the functional units of which it is composed – the archetypes, as he eventually called them. Archetypes are ‘identical psychic structures common to all’, which together constitute the archaic heritage of humanity. (Stevens 2001, 47)

Thus, speaking of the collective unconscious seems to be at least a bit “unconventional” in the context of dynamic capabilities. Meanwhile, Kor, Mahoney, and Michael (2007) concentrated on individual endowments’ effect on firm level performance. They showed that differences in entrepreneurial experience, knowledge, and ability affect the productive opportunity set of a firm and, hence, its performance. Accordingly, they concluded that differences that exist on a firm level between firms can be attributed to differences in entrepreneurial skills, experiences, knowledge and abilities. Finally, Wu, Lin, and Hsu (2007) tested Taiwanese firms for the effect of dynamic capabilities on innovation performance

and found that the dynamic capabilities' effect is moderated by structural capital, human capital, and relationship capital.

Regarding the link between dynamic capabilities and resource deployment, Dawson (2000) stipulates that in order to survive the increasingly competitive markets, a firm has to develop capabilities that allow it to quickly process new information and transfer this information into organizational changes. Most important in this process are intellectual capital and knowledge capabilities. The latter enable a firm to quickly process new information. Dawson suggests that four fields should be addressed in order to develop these knowledge capabilities: individual technology, organizational technology, individual skills and behaviors, and organizational skills and behaviors. Similarly, Ellinger et al. (2002) tested the relationship between a firm's development of a learning culture that enables employees to quickly adapt and modify their behavior. They found a strong relationship between a firm's learning culture and its financial performance. The more developed a learning culture, the better the financial performance of a firm. Finally, Rothaermel and Hess (2007) empirically tested for the antecedents of innovative output (based on panel data for biotechnology firms covering a 22-year period). They stipulated that antecedents for dynamic capabilities can be found at the individual, firm, and network levels. They tested their hypothesis and found the antecedents for innovation across the different levels, and the antecedents exerting a mutually enforcing influence as well as compensating for capabilities lacking across levels.

Regarding the link between dynamic capabilities and availability of learning capacities, knowledge, and experience, Grant (1996) researched knowledge and found it to be the most important asset required to compete in a hyper-dynamic environment. He investigated especially the importance of the specific relations formed between employees and between firms that aim at harvesting a particular or complementary knowledge. His analysis points to problems not only in establishing efficient and non-opportunistic firm networks, but also in addressing individual organization members. However, the importance of knowledge seems to be an unrivaled finding of Grant's research. The ability to integrate dispersed knowledge (throughout a firm as well as between firms) becomes the most important dynamic capability. Rastogi (2000), like Grant (1996), addresses the

problem of knowledge management as the main cue to identifying dynamic capabilities. To Rastogi, developing dynamic capabilities means enabling a firm to stand firm in high-velocity markets, which means efficiently managing the intellectual capital assembled in the firm and its employees. Dynamic capabilities describe the efficient management of knowledge, that is, the intellectual capital of a firm. Lam (2000) widens Rastogi's approach to include not only knowledge management and intellectual capital, but firm structure (organizational form) as well. To Lam, developing dynamic capabilities is constrained not only by managerial skills and endowments in knowledge, but by the ability of a firm to use endowments and respond to managerial intervention as well. This ability is firmly rooted in the organizational form. Hence, dynamic capabilities can only be developed as far as they can be supported by the organizational form.

Taken together, the research presented so far suggests and confirms the importance of a different kind of capital a firm is endowed with—human capital. Human capital is crucial for a firm's adaptation speed and ability to not only keep up with market developments, but to react to them as well. Social capital will not only facilitate access to knowledge, but to knowledge integration and deployment as well. Structural capital will determine the amount of change a reaction to market developments is able to impose on a firm's structure and stored knowledge, whether as an individual endowment or as a firm asset (patents and the like), which will increase a firm's ability to react to change. Dynamic capabilities denote a firm's ability to react to rapid changes in its environment. Hence, dynamic capabilities can be drawn from either the category of capital endowments (human, social, relational); resources (tangible and intangible assets, knowledge); proceedings, linking demands of the market to firm capitals and resources; structures determining the amount of change a firm can take and, hence, the amount of adaptation it is able to perform; or management skill, the ability to link capital, resources, and market demand while taking structures and processes into consideration.

The subsequent empirical analysis will investigate whether these categories can be found in an individual firm's adaptation attempts by which they want to emulate their offers to market demands. Because this empirical test will use the Grounded

Theory as developed by Glaser and Strauss (2006), I will discuss the method of Grounded Theory first.

4. Grounded Theory

Recent years have seen the Grounded Theory become a research tool much preferred by a number of authors, especially in business or managerial studies (i.e., French 2009; O'Reilly, Paper, and Marx 2012; Sutton, Arnold, and Reinking 2011). Grounded Theory has been linked to case studies and assigned the role of deriving theory from a single case study (Eisenhardt 1989). As such, Grounded Theory is expected to provide a “roadmap for building theories from case study research” Eisenhardt (1989, 532). Grounded Theory, as can be clearly taken from these opening sentences, is an inductive method developed to derive theory from a given set of data (Bohnsack 1999). However, Grounded Theory is more than that; it is firmly rooted in the context of Symbolic Interactionism as developed by Blumer (1969). Symbolic Interaction refers to the patterns of communication, interpretation and adjustment between individuals. As such, Grounded Theory is based on a number of assumptions, most notably that human beings act toward things based on the meaning they assign to these things; meaning assigned to things is derived from interaction with others; and meaning is furthermore the result of an interpretative process, during which it has been handled and modified by the person who encounters a certain thing within an interaction (Blumer 1969).

Hence, the aim of Grounded Theory is to discover the meaning assigned to things by people and use this as a basis to build a theory upon. Grounded Theory produces “theories” that are firmly based on common rationality, that is, in the meaning assigned to things by the very persons interviewed or studied by a researcher deploying Grounded Theory (Glaser and Strauss 2006). Grounded Theory is the result of a cooperation that brought one researcher with a background in quantitative social research (Glaser) and another with a background in qualitative and symbolic interactionist methodology (Strauss) together. Their mutual goal was to formulate a method that would not only guarantee that a theory fits the data, but that would also allow for deriving theories from reality and not from particular scientific minds.

Accordingly, Strauss and Glaser (2006) propose that theories can be found in reality, and therefore, they deviate from the constructive paradigm that sees theories as built in the minds of scientists and tested in reality, which will inevitably lead to the realization that “deductive” theories cover more than what can be

tested, that is, their scope is broader than what the available data can support. Glaser and Strauss (2006) want to change this. They want to make sure that theories are covered 100% by data. I will now show how to accomplish this. However, this brief introduction has made it clear that Grounded Theory is not just a method for sampling data, reading through them, and increasing the abstraction in a manner that allows the speaking of a theory in the end. Grounded Theory is rooted in Symbolic Interactionism. This means that Grounded Theory discovers everyday theories, theories backed by individual perceptions and experience. This naturally precludes everything from the realm of a theory that is beyond everyday experience and the perception of people that is beyond their awareness and control. This has to be kept in mind when Grounded Theory and its methods are put into action. However, as will be shown in the next chapters, Grounded Theory is more a way to look at things than it is an elaborated method.

4.1 The method of Grounded Theory

Grounded Theory starts with an open mind (Birks and Mills 2011); however, this does not mean that Grounded Theory starts with an empty head, as Dey (1999) puts it. Rather, Grounded Theory starts with an idea, and sometimes at the beginning of a research, researchers have a particular model in their head, a model that comes close to a theory but has not yet evolved into one. The important thing is that the researchers remain “theoretically sensitive”, which means generating theoretical strong concepts from the data to explain the phenomenon researched. To do so, they have to start with some ideas and hypotheses, gather data, and analyze how their ideas and hypotheses develop in the course of the research.

Though a number of authors make the point that Grounded Theory does not attempt to test hypotheses, this short introduction has already run into difficulties, because it is hardly imaginable that researchers can sample data or conduct an interview without having some preconceived ideas in their mind and some hypotheses about the topic under consideration in their mind. So far, Eisenhardt’s (1998, 536) description of what Grounded Theory is about is not correct: “Finally and most importantly, theory-building research is begun as close as possible to the ideal of no theory under consideration and no hypotheses to test. Admittedly, it

is impossible to achieve this ideal of a clean theoretical slate. Nonetheless, attempting to approach this ideal is important because preordained theoretical perspectives or propositions may bias and limit the findings.”

Is it, one has to ask, reasonable and even desirable to pretend there is a clean theoretical slate? After all, how do researchers decide what to look at, which codes to apply, which data to sample, which interviewees to ask for their cooperation, and so forth? Each step in empirical research is laden with theoretical assumptions. Even language is full of assumptions. Hence, it is hardly possible to even come close to the “clean theoretical slate.” Moreover, with the demand of a “clean theoretical slate” amounting to self-deception, the question is whether it is desirable to fall victim to one’s own deceptions.

Data gathering is one of the minor concerns of Grounded Theory, because almost any source that provides information about individuals’ perceptions can be used as a starting point to derive a theory (Glaser and Strauss 2006). Nevertheless, most data used as input in Grounded Theory are sampled by means of qualitative interviews, either in-depth or guided. One can argue that in-depth interviews are a variant of guided interviews, because for both kinds of interviews the researcher needs to formulate guiding questions that will not only lead the interviewee through the process of information delivery, but also guarantee that interviewees do not stray too far from the research topic (Seidman 2006).

Whatever the source of a written document, Grounded Theory always deploys a case rather than a variable perspective. Accordingly, different cases are treated as wholes and looked at as closed “theoretical” spaces (Charmaz 2006). This may provide the rationale for researchers thinking about Grounded Theory as some kind of methodological device to analyze case studies like Eisenhardt (1989). However, these researchers miss a crucial point, namely the comparative orientation that forms the core of Grounded Theory: Glaser and Strauss (2006, 105) describe this constant comparison method as consisting of four stages: “(1) comparing incidents applicable to each category, (2) integrating categories and their properties, (3) delimiting the theory, and (4) writing the theory.” Each stage requires a constant comparison, a comparison that could be divided into comparison within cases and comparison between cases.

Starting from these four stages, the process of Grounded Theory formation can be described. The process starts with quite an amount of information, whether consisting of documents to be analyzed or consisting of transcripts gained from in-depth interviews. The search for common theories in the data starts with a process that is called open coding (Strauss and Corbin 1997). Coding, throughout the discussion of Grounded Theory, means “categorizing segments of data with a short name that simultaneously summarizes and accounts for each piece of data. The codes show how you select, separate and sort data to begin an analytic accounting of them” (Charmaz 2006, 43). Open coding requires an open mind, and to get an open mind, a researcher is required to ask himself four questions (Charmaz 2006, 47): “What are the data a study of? What do the data suggest/pronounce? From whose point of view are the data? What theoretical category does a specific datum indicate?”

Once researchers have opened their mind by asking themselves the preceding questions, they need to start coding the data. Coding can be either word-by-word or line-by-line (Bryant and Charmaz 2010). However, practice has replaced both concepts with theoretical coding, which can best be seen as some kind of intuitive method, by whose application researchers start to assign categories to incidents or phrases mentioned by interviewees, and by which consistency is guaranteed by constant comparison of categories or codes: according to Glaser and Strauss (2006), coding “should keep track of the comparison group in which the incident occurs. To this procedure we add the basic, defining rule for the constant comparative method: while coding an incident for a category, compare it with the previous incidents in the same and different groups coded in the same category” (106). Grounded Theory is a method of data reduction and, henceforth, the theory is derived by increasing the levels of abstraction assigned to the data.

Thus, in the first step, the initial coding step, coding raises the level of abstraction and first makes references to a theoretical concept, thereby constantly verifying the relevance of the code or category by cross-checking incidents, codes, and categories. The distinction between categories, codes, and incidents is rather simple: Incidents are statements or terms in the data, codes are applied to incidents or more specifically to cluster dispersed incidents, and categories are formed using similar or identical codes.

Grounded Theory, I would like to note, is a methodological framework developed in the context of social research. Hence, the target is not to find some “objective” rules, but rather to find common theories that can be derived from subjective views. For example, if researchers have five in-depth interviews at their disposal, they are expected to derive a theory for each of the interviews and assemble the five singular theories into a “general” theory that is covered by the data (Strauss and Corbin 1997). Now imagine a transcript consisting of 25 sheets of paper. How is it possible to meaningfully analyze such a significant amount of information, and to do so without a theoretical preconception of about what to look for? Oktay (2012, 56) suggests the following rules in response to this question: code words or phrases that evoke strong emotions; code words and segments that describe actions; code material that reflects symbolic interaction concepts, such as sense of self, expectations of social roles, assessments of the judgments of others, and justification for actions; and look for “red flags” such as phrases that reflect assumptions.

Clearly, the attempt to provide a reliable and valid framework for data coding is to be seen. Avoiding the question, whether reliability and validity may be achieved for the moment, the formal rules presented by Oktay (2012) may provide cues as to what words, sentences, phrases, or paragraphs need coding; however, these formal rules do not say anything about how the correct code, the code that fits the data best, is to be applied. Maybe a well known example given by Glaser and Strauss (2006) will provide further information to the question of how to apply the correct code. The example can be reformulated in the following way:

Pain relief is a major problem when you have arthritis. Sometimes, the pain is worse than in other times, but when the pain is really bad, you do not want to leave the bed. You do not feel like doing anything. Any relief you get from the drugs that you take is only temporary or partial.

The example is about pain, among other things. Pain is described as having a number of properties, of which intensity seems to be the most important. The solution to the problem of pain is presented in the form of drugs; however, drugs do not always relieve pain, and if they do, only do so temporarily, which provides pain killers or drugs with the propensities of duration and effectiveness. As is obvious in this example, the person reporting the experience with arthritis makes a

connection between an incident of pain, its intensity, and the relief provided by drugs. Relief varies in time and degree, so codes applied to this example need to reflect these relationships. Based on this example, it is possible to differentiate the main components of sentences that may enter the focus of a researcher working with Grounded Theory (Table 8).

Table 8: Analytical elements in Grounded Theory and their descriptions (Birks and Mills 2011; Oktay 2012)

Element	Description
Phenomenon	The subject to be analyzed; what binds informational bits and pieces together—in this example, pain
Causal condition	Events or variables attached or caused by the phenomenon—in this example, arthritis
Context	The context has a moderating effect on the causal link between a phenomenon and causal conditions; for example, pain varies in intensity and may depend on the weather
Intervening conditions	Intervening conditions mediate effects, and drugs mediate the effects of pain caused by arthritis
Action strategies	Goal-oriented or purposeful actions performed by an agent in order to do something about the phenomenon—in this example, using drugs to ease the pain of arthritis
Causal condition	Events or variables attached to or caused by the phenomenon—in this example, arthritis

The elements shown in Table 8 guide the coding of data and serve to reconstruct the “folk theory” of an interviewee, that is, the particular way in which the interviewee addresses a particular problem. Hence, based on a single interview, nothing else other than the specific action or action routine, or perception of the interviewee can be derived. To make more of Grounded Theory than simple aggregations of idiosyncratic behavior or perception, it is necessary to compare between different interviews in different situations (Bryant and Charmaz 2010).

However, as Glaser and Strauss (2006) wrote with respect to coding, before comparisons can be made across cases, it is necessary to make comparisons within cases. To do so, a second form of coding is available, intermediate coding. Intermediate coding consists of axial coding (Strauss and Corbin 1998) and selective coding (Glaser 1978).

Axial coding has been described in Table 8. Axial coding is about relating codes to each other by applying a combination of inductive and deductive reasoning. Referring to Oktay's (2012) recommendations, axial coding looks for causal relationships expressed by interviewees and present in the data. In other words causal relationships should be the focus of the attention of a researcher applying Grounded Theory (Birks and Mills 2011). On the other hand, selective coding refers to the theoretical analysis as distinguished above and aims to find a core category, some kind of a meta-category that provides the story line around which the entirety of categories can be assembled (Glaser 1978).

Since this core category is to be derived by inductive reasoning, memo writing is recommended as a method for arriving at the core category. Memos or field notes are "a running commentary to oneself and/or the research team, are an important means of accomplishing [the overlap of data collection and data analysis]" (Eisenhardt 1998, 538). Behind the meaning of the notion of "overlap" is the assumption that it is possible, by gradually increasing the level of abstraction, to end up with a general theory that fits the data exactly. This, however, is faulty reasoning, because the theory to be derived from a case study can do nothing more than reflect the amount of information given in the particular case. It is impossible to gain information by inductive reasoning. Accordingly, to come to a more "general" theory, it is necessary to compare the different cases to each other.

To identify the core category in a given data set is important, because the core category is the center of theory formation; it accounts for most of the variation in the data, and is a highly abstracted category that encompasses all subordinate categories (Charmaz 2006).

As has been shown in this chapter, Grounded Theory is far from being a comprehensive method. Much is left to the whim of a researcher. However, the

amount of suggestions made to guide the researcher is enormous. All suggestions expect the process of Grounded Theory to start with some form of theoretical assumption that guides the coding of data. Coding of data starts as an open process and gets ever more entangled, once axial coding makes connections across categories. Selective coding is required to identify the core category that is the information pinnacle to every data set and that can be used to write a story line that describes the data in question. The link between categories and core categories is established by memos, the aim of which is to gather ideas and condense them into central categories. Once the process of categorization falls back to the ever same categories, saturation is reached and coding ends.

4.2 An assessment of Grounded Theory and its usefulness to the current research

As most methods for data analysis, Grounded Theory is a method for data reduction; however, Grounded Theory claims that inductive data reduction via coding from one level of abstraction to another involves constantly comparing coding results (categories) within and across cases, interlinking different categories and looking for the core category delivers reliable and valid results, and more than that enables researchers to reach a “general theory.” This promise holds most of the appeal that recommends Grounded Theory to researchers, and especially to researchers in the field of business and managerial studies (O’Reilly, Paper, and Marx 2012).

Eisenhardt (1998) is one of those who promote the benefits of applying Grounded Theory in case studies. By doing so, she stipulated that researchers can generate a “novel theory.” Central to finding a novel theory is comparing across cases, which requires valid and reliable coding, a topic hardly discussed in the world of Grounded Theory. Accordingly, most researchers see the risk of investing a significant amount of time in Grounded Theory and gaining next to nothing in return, as the main caveat of the method: “The risks are that the theory describes a very idiosyncratic phenomenon or that the theorist is unable to raise the level of generality of the theory” (Eisenhardt 1998, 547).

Apart from that, problems of reliability and validity are seldom mentioned. That cross-case coding will attach the very same labels to comparable incidents is a

given and, hence, I will not delve deeper into this topic. Nevertheless, the reliability of coding across case studies is a serious problem that needs addressing. In order to increase the reliability of coding, several biases, such as the investigator or informant bias need to be avoided.

The description of Grounded Theory furthermore reveals that at the start of data analysis, some more or less rudimentary hypotheses have to be present to guide researchers through the vast amount of information they usually end up with when deploying qualitative techniques to sample data.

Grounded Theory is used in the course of this thesis to analyze a number of in-depth interviews conducted in the run up to this thesis. Interviews will be used to provide further evidence as to the heuristic value of the concept of dynamic capabilities. While Chapter 3.1 identified a number of categories that guide the managerial search for dynamic capabilities, and while the brief review of the literature showed the feasibility of the respective categories, it remains to be tested whether managers indeed use these categories to identify dynamic capabilities. Hence, interviews (data sampling is described in the next chapter) have been conducted, the aim of which was to provide some insight into the quest for dynamic capabilities. Based on these interviews, what heuristics managers rely upon when looking for dynamic capabilities will be analyzed. Dynamic capabilities will be operationalized as resources that allow for competitive advantage as well as quick adaptation to changing business environments.

Starting from this working definition, the means of Grounded Theory are used to find causal conditions for the phenomenon of dynamic capabilities discovery. Furthermore, contextual (moderators) and intervening conditions (mediators) will be distinguished, as well as action strategies taken by managers to acquire their goals. Hence, the formal blueprint for analyzing data looks at mentioning resources that allow for competitive advantage as well as quick adaptation to changing business environments; causal conditions influencing the discovery of the respective resources or influencing their deployment; variables moderating the need to find the respective resources and to discover the respective resources; variables mediating the causal condition that influence discovery; and actions taken by the management to gather the necessary information and to deploy respective variables.

The heuristic that has been developed in the course of this thesis, and which is expected to guide the search for dynamic capabilities, consists of the stock of human, social, and cultural knowledge; social capital; the stock of resources available to the firm; and resource deployment.

Human capital is a proxy for education and knowledge in humans that reaps benefits when deployed. Referring to Becker (1993), education and training are the most important investments in human capital. According to Becker, many studies have shown that high school and college education have a positive impact on a person's income in the United States.

On the other hand, social capital structures relations and provides access. The most common definition of what social capital is all about is given by Coleman (1988, 100–101):

Social capital, however, comes about through changes in the relations among persons that facilitate action. If physical capital is wholly tangible, being embodied in observable material form, and human capital is less tangible, being embodied in the skills and knowledge acquired by an individual, social capital is less tangible yet, for it exists in the relations among persons. Just as physical capital and human capital facilitate productive activity, social capital does as well. For example, a group within which there is extensive trustworthiness and extensive trust is able to accomplish much more than a comparable group without that trustworthiness and trust.

Cultural capital for the purpose of this thesis will be defined as knowledge of attitudes and habits of people alien to the cultural context of the observer (Bourdieu 1983).

Meanwhile, in the stock of resources available to the firm, firm resources is defined as comprising tangible and intangible assets ranging from buildings to patents.

Finally, the ways and means resources are deployed and could be deployed and fit properly to available capital refer to the proceedings guiding the deployment of resources and adaptation processes. Routines that play a prominent role in the dynamic capabilities approach would enter the frame at this point (Teece, Pisano, and Shuen 1997). However, it is not just a question of routines that is to be addressed when efficient deployment of resources via an optimal use of available

human capital is in question. It is also a question of the need to tailor quick and makeshift solutions for efficient deployment. These are the learning abilities and experiences that allow for the quick incorporation of new experiences and the quick adaptation to changing environments. The core of almost all managerial frameworks, most notably of the Balanced Scorecard (Kaplan and Norton 1996), is the ability to learn. The literature dealing with a firm's ability to learn in the learning or knowledge society is abundant. Quantity, however, does not signify importance, and hence, the importance of learning and experience has to either be deduced by logical reasoning or tested in empirical research. While there are a number of papers dealing with the impact of learning abilities on firm performance (i.e., Camps and Luna-Arocas 2012; Ellinger et al. 2002; Goh, Elliot, and Quon 2012; Marsick and Watkins, 2003; Perez Lopez, Montes Peon, and Vasquez Ordas 2005), I will deduce the importance from simple logical reasoning. Change requires adaptation, and adaptation is nothing else than modifying the current approach so that it may fit new requirements. To do so, the new requirements must be understood and learned, that is, in the process of fitting (i.e., processes to new requirements), errors and misjudgments must be corrected. To correct for errors is to learn. If something did not work the first time, the approach must be modified and tested. More formally, learning is a response of an organism to a stimulus presented to it (Hilgard and Bower 1956).

The elements mentioned above are treated as resources either directly or indirectly influencing the discovery, deployment, and success of dynamic capabilities. The analyses performed in Chapter 5.2 will be based on this framework and will investigate the network of relationships the respective variables are interwoven in. Finally, as a theoretical check, the results gathered by analyzing the data will be confronted by the theoretical framework that has been proposed at the end of Chapter 3.1 as a possible procedure for finding and developing dynamic capabilities. According to this framework, the procedure consists of the following steps or stages: making a sound evaluation of a firm's situation in the market, that is, by applying Porter's (1979) five forces; determining market pressures and developments; developing a vision, a target for business activity; sampling opportunities and strengths, as well as threats and weaknesses with respect to this particular target, that is, by performing a SWOT analysis (Henry 2008); looking

for critical resources, that is, VRIN resources (Eisenhardt and Martin (2000); using human or social capital to deploy resources to reach targets; and using proceedings that allow for modification and adaptation of processes “on the fly.” This alludes to the patchwork method introduced by Popper (1971), a technique that consists of a series of trials and errors.

Whether the results gathered in the course of the subsequent empirical analysis fit with these theoretical expectations or not is the question that will be addressed after the process of data collection as well as by the provision of some brief information about the interviews and interviewees that are presented in the next chapter.

5. How to gain competitive advantages after privatization by examining dynamic capabilities

In 1950, after the Second World War, the Deutsche Bundespost was established in order to secure postal and telecommunication services in Germany. In 1989, after the integration of the Deutsche Post from the German Democratic Republic into the Deutsche Bundespost, the first reform of the postal sector included the segmentation of the Deutsche Bundespost into its subsidiaries Deutsche Bundespost Telekom (telecommunication services), Deutsche Bundespost Postdienst (postal services), and Deutsche Bundespost Postbank (banking services). The second reform of the postal sector included the privatization of the new companies called Deutsche Post AG, Deutsche Telekom AG, and Deutsche Postbank AG.

Note that in this thesis I will not describe the performance of the Deutsche Postbank AG, as the industry of Deutsche Postbank AG is not comparable to those of the other two for the purposes of this research. I only intended to analyze the performance of the two companies, Deutsche Post AG (hereafter “DPAG”) and Deutsche Telekom AG (hereafter “DTAG”). The starting point for the following analysis is the period subsequent to the privatization.

DPAG is an internationally recognized and well-established company. Having started as a monopoly for postal services in Germany, DPAG became the worldwide leading logistics company after it bought and integrated DHL, an air express transportation company (Schlesinger and Berke 2011).

On the other hand, DTAG failed in its overseas expansion, as evidenced by the failed divestment of T-Mobile USA, its U.S. subsidiary. The United States Department of Justice did not approve the sale of T-Mobile USA to AT&T, as they feared a substantial reduction of competition in the American mobile market. (Dohmen 2011; Hennes and Woher 2012; Ohler and Heiny 2011; Ohler and Schröder 2011). In order to solve its problem in the US market, DTAG is currently looking for a suitable buyer for its U.S. subsidiary (Berke 2012). In contrast, DPAG became more profitable after successfully selling its U.S. subsidiary (Schlesinger and Tichy 2011; Bündler 2011). After DPAG bought the US logistics company, Excel, in 2005, DPAG successfully sold its subsidiary, Excel Transportation

Services, to the Hub Group (Reuters 2011). Overall, in terms of market positioning, profitability, and business outlook, DPAG seems to outpace DTAG (Schlesinger and Berke 2011).

Both companies emerged from Deutsche Bundespost in 1995, and since then were involved in several mergers and acquisitions. After 2000, both companies went public. Since then, however, DPAG has performed better than DTAG.

DPAG, overall, has done a better job of selecting and integrating the companies it has acquired. As evident from its track record, DPAG knows how to deal with political and governmental issues better than DTAG (Schlesinger and Berke 2011). For instance, DPAG has successfully lobbied to protect its dominant market position in Germany, while DTAG failed to do likewise. In almost all industrial and economic situations, the German government has upheld the interest of customers instead of supporting DTAG. Hence, DTAG has been forced to focus more on its domestic market, while DPAG is becoming the leading global logistics company.

DPAG earns 68 percent of its total revenues abroad. Its acquisition of DHL has become one of its most successful and highly profitable divisions, with an anticipated yearly growth rate of about 13 to 15 percent until 2015 (Koenen and Ludwig 2011). DHL's mail services division in Germany has made a better-than-expected contribution to the overall earnings of DPAG. DHL is benefiting from the current economic boom in Asia as well (Nicolai 2011).

In contrast, DTAG has made an unfortunate decision with its acquisition of Voicestream, a wireless personal communication services company (later renamed T-Mobile USA; Schlesinger and Berke 2011), for a premium price of €40 billion, or US\$20 per Voicestream customer, which at that time was considered very extraordinary, even in the telecommunications industry. Currently, DPAG and DTAG are direct competitors in the legally binding e-mail services market (Schlesinger and Berke 2011). Once again, DPAG seems to be several steps ahead of DTAG; while DTAG is still waiting for the legal validation of its DE-Mail service, DPAG has successfully rolled out its e-mail service called E-POSTBRIEF in July 2010.

As of the time of this research, DTAG still has not developed a suitable strategy for digital market success, and moreover, has not been able to stop its losses and

improve its cash flow (Maier 2012). In this regard, DPAG is again performing far better, particularly because of the increasing profits from its subsidiary, DHL, brought about by the increasing demand in parcel shipment (Hops 2011; Schlautmann 2012). This performance becomes even more impressive considering that the U.S. Postal Service is facing bankruptcy, which unlike DPAG, could not convert its monopoly position into a long-lasting competitive advantage after privatization (Unterreiner 2011; von Buttlar et al. 2012).

In summary, although both DTAG and DPAG arose from the same parent company, they differ in their performances in their respective industries, in some of which they are direct competitors. I aim to identify the reasons for these different performances, specifically the different competitive advantages that have led to different market performances.

5.1 Methodology

I adopted the Grounded Theory approach (Glaser and Strauss 2006) in order to gain an in-depth understanding of the existing dynamic capabilities of DTAG and DPAG. The aim of this thesis is to pursue an inductive research approach, following King, Keohane, and Verba (1994); Miles and Huberman (1994); and de Rond (2003). Focusing on dynamic capabilities, I address Balogun, Huff, and Johnson's (2003) call for a research design that prioritizes breadth.

5.1.1 Sample

In order to concentrate on detail as well be precise in fulfilling the aims and scope of the study, I examined the longitudinal research process proposed by Johnson, Melin, and Whittington (2003). This research process includes individual and group interviews, as well as reflection cycles that challenge opinions, encourage dialogue, and reflect upon assumptions and procedures (Torres and Preskill 2002). To determine the various perceptions of the management in the two companies and to avoid interviewee bias, I interviewed executives, as well as external consultants that work with the company (Isabella 1990). The interviewees represented different corporate levels, and included board members, executive members, and mid-level managers. The interviewees were selected based on their

broad or in-depth knowledge of their firms' strategy and strategic management, and their decision-making roles (Mäkelä and Maula 2005).

The results reported in this chapter are based on 23 interviews conducted with internal and external experts from DPAG and DTAG. More specifically, nine representatives each from DPAG and DTAG were interviewed. In addition, two consultants—a managing director from an advertising agency and a partner from an international renowned consulting practice—were also interviewed as external experts on DPAG. Finally, two managing directors and one partner from two international renowned consulting practices were interviewed as external experts on DTAG.

5.1.2 Data collection

The in-depth interviews were semi-structured and open-ended, each lasting between 20 minutes to 2 hours, with an average duration of 1 hour. From July to October, 2011, interviews were conducted with the in-company experts and external specialists. For each company, one highly ranked executive, who was also an interviewee, arranged the interview appointments with each required internal and external person. More precisely, the back-office of each executive contacted the interviewees and arranged the appointments. All participants are high-ranking officers in their companies and they need to be informed of the purpose of the research upfront in order to get access to them.

The interviews with in-company experts were conducted face-to-face in their offices. Most interviews with external experts were conducted over the phone. Each of the interviews with internal and external experts was audio recorded with the permission of each participant. This data collection procedure was approved by the supervisor of this thesis.

Subsequently, the interviews, which were held entirely in German, were transcribed and verified to achieve external transparency and reliability of the findings (de Rond et al. 2004; Miles and Huberman 1994; Eisenhardt and Graebner 2007). All transcribed interviews are included in the appendices of this dissertation. Table 9 presents the questions used to guide the semi-structured and open-ended interviews.

Table 9: Interview guidelines

1. Introduction
1.1 Please introduce yourself briefly by stating your name and current position.
1.2 What is the most important focal point of your activities?
2. Evolutionary Path
2.1 What kind of evolutionary path did your company take, especially after privatization?
2.2 What did your company inherit from the parent company after privatization?
3. Development
3.1 In your point of view, how has the development of your company been since privatization?
3.2 Please give positive as well as negative examples.
4. Human Capital
4.1 What kind of human capital or existing knowledge do you think is difficult to imitate?
4.2 Are there any complementary assets? If so, please identify them?
5. Strengths and Weaknesses
5.1 Please mention the noteworthy strengths of your company.
5.2 Are these strengths supporting or reinforcing the existing competitive advantage?
5.3 Please mention the noteworthy weaknesses of your company.
5.4 Are these weaknesses jeopardizing or compromising the existing competitive advantage?
6. Processes
6.1 What are the distinctive processes inside your company that make your company unique?
6.2 Is the competitive advantage of your company diminishing due to decreasing demand or due to external factors in general?
7. Strategy and Competitive Advantage
7.1 In your point of view, what are the most important drivers of your company's current strategy?
7.2 Is the competitive advantage of your company easy to imitate?
8. Changing Environment
8.1 Is your company facing rapidly changing technologies as a threat? And if so, how does your company adjust its internal technology, and organizational and administrative processes, in order to keep up with these changes?
8.2 How quick is the learning process in your company?
8.3 Does your company learn pretty fast compared to other market players?

8.4. Is your company capable of creating new strategic assets in order to cope with these new transitions?
9. Integration and Transformation
9.1 How does your company integrate new strategic assets, such as skills and capabilities, knowledge, or even customer feedback?
9.2 How does your company transform currently existing strategic assets into new assets in order to remain competitive?

5.1.3 Data analysis

I analyzed the interviews following strict Grounded Theory guidelines, which include comparing the collected data with the essential theory throughout the data collection and analysis process (Glaser and Strauss 1967; Glaser and Holton 2004).

After the initial interviews, I analyzed the data in order to develop a theory that would then direct the subsequent interviews. In order to recognize the categories and properties of the collected data, I followed Strauss and Corbin (1998), applying the Grounded Theory coding processes of open, axial, and selective coding.

To further increase the construct validity of the case studies, I used multiple sources of evidence, such as internal company documents, presentations and consulting materials as well as external data resources such as Forrester Research (Yin 2003). Moreover, key informants were allowed to review draft case study reports (Yin 2004). I also conducted a reflective discussion for the triangulation of events (Miles and Huberman 1994; King et al. 1994). Furthermore, theoretical and observed pattern matching was done to increase internal validity (Yin 2003, Eisenhardt 1989) and to determine whether event A leads to B (Yin 2003).

In order to avoid investigator bias, multiple investigators were used in many interviews (King et al. 1994). The reliability of coding was increased as most of the coding process has been done or reviewed by more than one person. Furthermore, in many cases the coding was done within 24 hours (Ozcan and Eisenhardt 2009).

While this methodology does not allow for statistical generalization, it provides an integrated framework for theoretical reflection and replication logic (Eisenhardt and Graebner 2007). Moreover, I used research criteria established explicitly for strengthening causal rigor in case study design, such as reliability, transparency, and triangulation (Eisenhardt 1989; King, Keohane, and Verba 1994; Yin 2003).

5.2 Results

Since the data for the sample analysis came from two different firms, I treated the data as coming from different entities first, that is, I first analyzed all the data for each firm, and then compared the results of each with those of the other. Hence, the next subsections (5.2.1 and 5.2.2) present the discussions on DPAG and DTAG, respectively. Each of these subsections start with a short description of the position of the interviewees within their firm.

Usually, a research using Grounded Theory confronts readers with the result of what is usually called a thorough application of Grounded Theory. The steps that lead to the conclusion the readers are confronted with are hidden behind the coding, which readers have to accept and rely upon as valid. Outside of textbooks, not much can be found in terms of how Grounded Theory has been applied. Compared to this assessment, this thesis will walk a different avenue. While the thesis avoids the traditional process of open coding, it uses and illustrates axial coding, granting readers the opportunity to follow the path that leads to the conclusions that are drawn in the course of the analysis. Axial coding will be used in this thesis to structure the two sets of interviewees belonging to DPAG and to DTAG. Then, selective coding will be used to combine the results gathered by the axial coding.

Hence, in subsection 5.3, the concluding statements about the importance, discovery, and kind of dynamic capabilities mentioned by the interviewees are presented. A final obstacle that can affect how the results are presented throughout this subsection comes from the fact that the interviews were conducted in the German language. In order to ensure both reliability and inter-subjective testability, the process of axial coding will draw upon a translation of the interview transcripts provided by myself.

5.2.1 Dynamic capabilities at Deutsche Post DHL AG

The open coding in the analysis of the DPAG data was guided by the elements identified in Chapter 4.2, namely resources that produce a competitive advantage and consequently enable the quick adaptation to changing business environments; causal conditions influencing the respective resources or their deployment; variables moderating the need to find the respective resources; variables mediating the causal condition that influences the discovery of such resources; and actions taken by the management to gather the necessary information and to deploy the respective variables.

However, the elements listed above have been assigned to categories identified in the course of the theoretical considerations in Chapter 4. These categories are capital endowments (human, social, relational); resources (tangible and intangible assets, knowledge); proceedings linking demands of the market with the firm's capitals and resources; structures determining the amount of change a firm can take, and hence, the amount of adaptation it is able to perform; and management skill, that is, the ability to link capital, resources, and market demand while taking structures and processes into consideration.

With respect to these categories, open coding has produced a number of insights that could be condensed to the categories of human capital and resources; processes, learning capabilities, knowledge, and experience; and process integration.

These three categories will guide the axial coding that is discussed in this chapter and that deals with the data obtained from the DPAG interviewees. They will provide the base structure for further analysis. As has been mentioned above, the axial coding will rely on the original wording assigned in the first step of the analysis to the respective category. However, before starting the process of axial coding, I will give a brief summary of the selective coding with respect to the context, that is, the current situation of DPAG as perceived by the interviewees.

5.2.1.1 Deutsche Post DHL AG: Context as perceived by the interviewees

DPAG is a result of the privatization of a state-owned company at the beginning of the 1990s. DPAG mainly provides mail delivery and logistics services through its

division, DHL. Its main competitors are United Parcel Service (UPS) and FedEx. The firm, once privatized, benefitted from its monopoly in the mail delivery industry; however, such monopoly also yielded some disadvantages, as mentioned by the interviewees, mainly because monopolistic structures in one industry hinder the free development of innovations in another, and might, in a liberal market environment, provide competitors with incentives to enter a market or prompt customers to switch to competitors.

Another disadvantage brought about by the monopoly that was mentioned by most of the interviewees is the *beamten* mentality. Being employed in a state-owned company came with a guaranteed working place and the status of a *beamter*, which is best described as a lifelong civil service position that cannot be made redundant; however, this status also brought a particular *beamten* mentality with it, something that did not improve DPAG's stand in the market once market liberalization took place. In short, DPAG's history as a state-owned company was a liability in that it added inertia to what was already considered as a slow-moving and rather sluggish firm. Another inheritance that hampers DPAG is the obligation to provide the infrastructure necessary for receiving and delivering mail, for example, post offices, letterboxes, and delivery and administrative staff.

Hence, for DPAG, innovation has to take these inheritances into consideration. In the framework of dynamic capabilities, these inheritances function as a path-dependent restriction to innovation, because abolishing infrastructure such as post offices and letterboxes is not an option. Thus, change cannot affect this line of business. This was seen by the interviewees as one of the main disadvantages of DPAG compared to its competitors.

However, the responsibility of delivering 66 million letters per day provides the company significant expertise in dealing with a significant volume of mail and helped the company efficiently structure its processes. Hence, most of the interviewees mention processes as one of the main strengths of DPAG, mainly highlighting the firm's ability to achieve economies of scale.

Another caveat that can be traced back to DPAG's origins as a state-owned enterprise is the high pay level and job security of its employees. As has been mentioned above, the employees of Deutsche Bundespost, DPAG's parent

company, enjoyed above-average wages and a rather unrivaled job security in which they can only be fired for blatant misconduct.

Thus, to summarize the context for the subsequent analysis, DPAG enjoys a monopoly in its core business, mail delivery. On the other hand, its logistics business has to compete with companies like UPS and FedEx, the pressure from which is eased by the secure income from its mail delivery segment. The mail delivery segment, however, is not without its challenges, for example, the declining demand for personal mail and the rising popularity of the e-mail. Accordingly, the company proceeded to establish a position in electronic mail delivery, described by interviewee A.4:

We realize that digitalization engulfs communication markets. That means there is a trend of replacing physical communication, for example, by mail, with digital communication. This is no surprise and, of course, it is a path we will go down together with our customers. When you look at new products especially in the mail delivery segment, you will see that we made some attempts to expand our services to the digital market. However, we have to do this without neglecting our core mail delivery segment. That means we strive for constant improvement in our core segment, which includes aspects of cost reduction, cost reduction that does not transform into lesser service quality, though. By contrast, we need to improve service quality because of increased competition over recent years. By the way, a negative aspect of our inheritance, of being a state-owned company once, is the group of “beamte” employees we inherited, which makes it harder to have proper human resource management.

Condensing the above response through axial coding, the following context emerges: DPAG is formerly a state-owned firm with a monopolistic position in the mail delivery segment, which is its core market. The mail delivery segment changes, resulting in loss of revenues and importance. Furthermore, regulation requires providing infrastructure in the mail delivery segment. DPAG's logistics segment, meanwhile, provides a growth market. However, this segment is not without its challenges, including being situated in a highly competitive market, and having some personnel who are a liability because of their beamten mentality. Therefore, DPAG faces dual requirements owing to the rapidly growing logistic markets and the declining core mail delivery market, and dual obligations owing to,

on one hand, the “inherited personnel” mainly in the core mail delivery segment and the regulations mainly affecting the core mail delivery segment, and on the other hand, the new personnel and the high-velocity logistics market, which requires quick adaptation. Hence, in this thesis, the framework provided by Eisenhardt and Martin (2000) will be used to deal with a company that is situated in a moderately dynamic market and governed by long-term routines, as well as with a company in a high-velocity market governed by short-term trial-and-error decisions.

In the following subsections, the results regarding how interviewees feel about DPAG dealing with the market requirements, based on the context that has been described in this chapter, are presented. The results will be taken from the analysis of data from 11 interviews. Table 10 provides an overview of the interviewees and their codes.

Table 10: Interviewees for Deutsche Post DHL AG

Nr.	Position
A.1	Vice President, Online Marketing
A.2	Corporate Financial Officer (retired)
A.3	Vice President, Communications
A.4	Vice President, Market Intelligence and Pricing
A.5	Senior Vice President, Product Management
A.6	Vice President, Controlling and Marketing
A.7	Senior Vice President, Dialogue Marketing
A.8	Vice President, Product Marketing
A.9	Vice President, Business Development
A.10	Managing Director at a communication agency
A.11	Partner at an international renowned consulting practice

Table 10 shows that all the DPAG personnel interviewees were all at the executive level; thus, the subjective reality presented in the interviews may be said as the reality of the upper management echelons. However, the managerial views were

supplemented by those of two non-executive DPAG employees who function either as marketing advisor or as business consultant to DPAG.

5.2.1.2 Human capital and resources

The data transcribed from the 11 interviews with the DPAG employees and external experts amounts to more than 180 pages. Hence, it is necessary to structure the results not only with respect to the categories identified in the course of this thesis, but also with respect to the interviewees. So as not to overwhelm readers with too much information, a two-stage approach was designed and adopted to identify the responses that provide the most information with regard to a specific topic. Again, relying upon the tools provided by the Grounded Theory, the interviews were ranked with respect to their references, other categories, and amount of causal comparisons. Each section provides the results for the top three to five interviews with respect to the amount of cross references and with respect to the amount of causal comparisons made in the respective sequence of the interview. The three to five interviews are selected based on a saturation model, that is, the amount of new information another citation offers. The axial coding starts from the following interview sequences that have been identified as fitting into the category of “human capital” by open coding procedures. Since the interviews were conducted in German, I will provide the translation and the code while translating, that is, I will not provide a word-by-word and sentence-by-sentence translation but rather attempt to elaborate on the core message of the passage.

Interviewee A.1: “What assets are there? If there is one thing the Post is really good at, it’s processes. Processes, automatization, standardization of processes in extremely high quality is the main asset. That is quite obvious; with 66 million letters transported on a daily basis, you would expect that. However, it transfers to product innovation. I think product innovation is something we do not need to bother about; we can do that quite easily. We are capable of designing good, very good processes, and we can do so with considerable economies of scale. Certainly, being omnipresent in the market is another asset; pure size counts, size that makes you a business partner to almost any other

company in the market. Again, size provides potential for economies of scale that can be used for new themes. . . . The brand is important as well; it is important for customers, business and private customers alike. DPAG is a really strong brand that many firms want to be aligned to in order to get a share of its reputation. Furthermore, the brand is trusted by many people; that, again leads to its value.

Interviewee A.1 makes a strong point in his statement regarding routines. It is the routines established in the company's daily work that provide DPAG with a dynamic capability that can be transferred from one context to another, namely the context of innovation. It is routines and the high quality of processes formed by these routines that enable DPAG to perform well when introducing new products or processes. Thus interviewee A.1 makes a clear connection between human capital and routines.

However, the direction of the causality remains unclear. It is still unclear whether it is routines and processes that improve human capital and allow for the easy transfer of such human capital between segments, or whether it is human capital that improves routines and facilitates their smooth operation. However, the remainder of the statement above suggests that interviewee A.1 thinks of routines as the company shaping individual capability, and hence human capital. This interpretation is suggested by the complete lack of any reference to actors. While it is not surprising that talking about the brand is not accompanied by mentioning those who establish the brand as a trustworthy one, that is, those who ensure the reliable daily delivery of mail, it is rather surprising that the strong market position counted as an asset is not linked to the performance of DPAG at all.

By contrast, interviewee A.4 makes the following comment regarding the trustworthiness of the DPAG brand and its origins: "What competitors can hardly top is the extremely positive image of our brand. A survey asking for the most trustworthy occupations ranked DPAG deliverers on third place, right behind physicians and fire fighters. . . . You can see this from the respect for the Deutsche Post DHL AG mail deliverers. They hold the keys to a number of buildings, in which the letterboxes can only be accessed from the inside. Some of these mail deliverers hold up to 80 keys. This is unique to us. . . ."

The trustworthiness of the DPAG brand can only be explained by referring to another statement made by interviewee A.1 at the beginning of the interview. In this statement, he declared that for DPAG, the disadvantages from privatization were eased by the firm's monopoly in mail delivery, which is its core market at the time of market liberalization. The achievement of becoming a market leader is quite obviously not linked to human capital but rather to the monopoly granted to DPAG by the German state. Consequently, it comes as no surprised that interviewee A.1 is rather more inclined to talk about collective entities like processes, market shares, or the brand than about the people that are behind these entities:

Thus, the most important statement with reference to human capital to be taken from the analysis above is that routines in handling items on a large scale increases the efficiency of processes and results in some kind of "corporate" human capital that can be transferred across interfaces and that enables DPAG to be in the driving seat when new processes and products based on known and well-executed processes are required.

The next statement is a little more concerned with personnel as the source of human capital:

Interviewee A.5: "I say, naturally we are, with respect to our services, a personnel-driven company. This is a big advantage. However, it is undermined by the curse that we have to pay high wages. Our employees' wages are higher than the wages of competitors' employees.

You could say that these high wages are some kind of heritage, and are considered socially just as the source of the quality we provide to our customers are. I mean, high wages guarantee quality work, and when you can only afford to pay €4.50 per hour you will end up with less qualified staff and bad services. However, the advantage competitors gain by paying low wages is hard to compensate for when it comes to pricing and enforcing price increases or legitimizing them vis-à-vis the customers. Customers are price driven, and when you look at public

bidding processes, all they rely upon is price and the cheapest supplier wins the contract. In this climate it is really hard to enforce price increases.”

According to interviewee A.5, competitive advantages are gained through well-paid staff. Well-paid staff deliver highly-quality services, and high quality services result in satisfied customers. However, interviewee A.5 mentions only one end of the causal chain, that is, the end marked by competitive pricing and hence, the advantage of high quality services reached through the performance of well-paid staff evaporates to a certain extent. In contrast to interviewee A.1, interviewee A.5 believes that pay is a cue to good services, and to a certain degree, he seems to think that well-paid staff will do better than underpaid staff. However, just before he comes to this conclusion, he muddies the waters of his own thinking by adding a bit of reality, that is, the ability of competitors to provide cheaper services to customers by paying their staff less than what DPAG pays its staff.

Compared to interviewee A.1, interviewee A.5 identifies human capital as the driving force behind DPAG’s advantages through efficient routines, and identifies pay as an efficient tool or incentive that brings about or at least influences individuals’ performance. The reader may be reminded that the core of Grounded Theory is the method of constant comparison. Thus, to reap the dynamic capability that may be hidden in highly efficient processes (based on routines), it is necessary to adequately pay staff.

However, while above-average pay may increase performance and service quality, it also reduces leverage with respect to competitive pricing. This leaves the decision between good service and low prices in some kind of a limbo: management has to decide whether a strategy of differentiation that plays the high service quality card pays off more than a cost leadership strategy with lower service quality and prices. (See Porter (1980) for an elaboration of these two generic strategies.)

However, as has been described in the previous subsection and with respect to DPAG’s heritage, layoffs and pay reductions are restricted to employees that started working for the company after it was privatized. Hence, the margin for pay reduction is rather small.

Interviewee A.7 adds to the “human capital” corpus that has already been assembled in a number of ways, mainly by differentiating the logistics branch from the mail delivery segment:

Interviewee A.7: “Now there’s the question of who will be counted as competitors. With regard to logistics, I would say that DPAG is better equipped in human capital compared to competitors. This is mainly the result of increased efforts during the 1990s to recruit highly skilled employees. Today, I guess, we are really well placed with respect to human capital.”

Interviewee A.7 provides another twist to the question of reaping dynamic capabilities from human capital. While previous interviewees addressed routines and large-scale processes as the source of human capital, which mainly consisted of gaining economies of scale from repeated work, and highlighted the fact that good employees need to be well paid in order to develop and realize their potential, interviewee A.7 reports of a purposefully designed recruitment strategy targeting highly skilled employees mainly for the newly created and rapidly growing logistics segment. As has been mentioned several times, the mail delivery segment of DPAG inherited a large number of beamte, whom the company cannot eliminate. Hence, recruiting highly skilled employees was mainly restricted to the logistics branch that was created after privatization.

Thus, for the first time, a different development speed that is needed to cope with the different markets (i.e., the high-velocity market in logistics and the moderately, if at all, competitive market in the mail delivery segment) is mentioned by one of the interviewees. Clearly, his appreciation of the need to recruit highly skilled employees is based on his perception that logistics needed to be developed from scratch and therefore needed the recruitment of experienced employees. The endeavor has been successful, and today, DPAG is a leading global logistics provider. However, this development has not been easy, as interviewee A.8 reports at length:

Interviewee A.8: “Well, that brings back to the heritage of DPAG. Maybe it would be quite as simple; however, it would take some time to make revenue, so you would have to invest a lot of money to build

infrastructure, . . . and in order to make profits you would need to gain a large market share, which would be difficult in a physical market that is as sluggish as this. So what would happen is that crowding out of competitors would take place. However, you cannot win a competitive battle that aims at removing competitors in the market or at winning most of their market share with quality, because quality is already high. That means you have to try to win the battle by pricing lower than your competitors. This makes it hard for competitors to enter the mail delivery market and secures DPAG from being pressed by competitors. You can see this mirrored in the fact that competitors in the mail delivery segment usually restrict their business to a local area; they look for small and profitable niches in the market, build a rather small-scale infrastructure, and do a good job in their niche. Human capital plays a major part in this process. DPAG has quite a lot of human capital. Human capital is the core expertise of DPAG. This expertise is some kind of an emergent effect that results from the interactions of employees. Hence, it's the ensemble that makes the expertise. You cannot copy that by poaching employees of DPAG. There are a lot of different things mended together to form this particular kind of expertise."

The new piece of information added by interviewee A.8 is that the competitive advantages of DPAG stem from its heritage, the experience gathered in its workforce, and the intermingling of a number of factors that are unique to the interactions that take place among employees within the firm. Interactions in routines and processes among skilled employees provide a new quality, an emerging entity that makes the services offered by DPAG into something unique. Hence, well-paid employees, routines, and processes on a large scale, and the recruitment of highly skilled employees and their interactions, all form the particular competitive advantage DPAG enjoys. Thus, the components of dynamic capabilities in the field of human capital can be summarized as including large-scale processes and routines resulting from the experience incorporated in the workforce that can be easily transferred into new areas and fields and allow for

easy adaptation to changing markets; well-paid staff and highly skilled employees recruited after privatization; and interaction routines among staff members.

A caveat, however, that has to be mentioned, lies in the inherited employees who bring with them a beamten mentality, who are well paid, and who have job security, leaving DPAG sluggish in its reaction to market trends or to threats posed by competitors. However, this is hardly a problem, given the almost monopolistic position DPAG enjoys in the mail delivery segment.

5.2.1.3 Processes, learning capabilities, knowledge, and experience

The focus of the dynamic capabilities framework is set to the ability to adapt to a rapidly changing environment or to a high-velocity market. Hence, learning and knowledge play a crucial role in the framework. Put simply, knowledge present in a firm facilitates the quick adaptation in response to new trends and the introduction of new products, while sophisticated learning skills and routines reduce the time between the creation of an idea and its introduction to the market. Hence, although knowledge and learning capabilities are important, their efficiency depends on the processes by which they are used, implemented, and addressed. While these processes are manifold and range from remuneration as a variant of extrinsic incentives to intrinsic motivation, this subsection will focus on the link between knowledge, experience, and learning, as far as they are linked by the interviewees. However, this subsection starts with the processes linking these capabilities.

Interviewee A.1: “In concrete terms, we have processes that create value, I mean our ability to provide high-end services at low costs.

These are the classical processes in information logistics, I mean the physical, not the digital processes; you cannot leverage the latter”

As in his first statement cited in the previous subsection, interviewee A.1 sees processes as the core of competitive advantages. Processes are the result of human capital. They are deeply ingrained in the firm and provide the basis not only for learning, but also for new inventions. However, these processes are restricted to the physical market and do not extend to the digital market. Accordingly, one would suspect that DPAG will have to implement something new in order to adapt to and learn the requirements needed in the digital market, that is, to adapt to a

rapidly changing environment. However, that processes form the core of the learning ability of DPAG is an opinion not shared by all interviewees:

Interviewee A.4: “Well, with respect to processes, I cannot think of anything. However, I am not that familiar with operations, so I cannot really assess. . . . Well, I think in operations, what makes as a singular characteristic is . . . if you post a letter in Hamburg it will be in Munich the next day, with 95% probability. This makes us and our services unique. No competitor can provide this level of service.”

Again, the main strength of DPAG is placed in the physical mail market. Delivery speed, which is an accomplishment that links efficient routines with efficient employees, is seen as the unique feature of DPAG that places it above its competitors. So while one-day delivery is an accomplishment that relies on the knowledge and experience of the workforce as well as on efficient processes, the question that has to be addressed with respect to learning and knowledge is how requirements like the one-day delivery transform into routines and efficiency, and how knowledge and experience are formed as strategic assets. The first to address this question at some length and somewhat satisfactorily is interviewee A.5:

Interviewee A.5: “Well, I would have answered this question from a human resources perspective. No one believes that the current state of intellectual capital is purely the result of inheritance from people that worked for DPAG before it has been privatized. It is clear that a vast number of highly skilled employees has been recruited after privatization and that know-how came with them. Furthermore, professionals from consulting firms have been recruited in an attempt to bring as much knowledge to the new firm as possible. And I think this is the only possible way to be successful.”

Knowledge, know-how, and experience has been brought to the company from outside; hence, the strategy aiming at immediate market success and at a significant market share in the logistics segment while relying on a quasi-monopolistic position in the mail delivery segment was a knowledge-dominated strategy that relied especially on recruiting highly skilled and experienced

employees below and at the management level. To be successful, though, this strategy needs to be supported by the employees, a culture of learning, and a valuation of experience and knowledge:

Interviewee A.8: "To be honest, I think we are capable of learning and are eager to learn as well. For example, in logistics, we recently installed a new machine for sorting bulky mail, and this investment is a result of a learning curve. . . . It is quite astonishing to witness the amount of experience and knowledge that lead to the installation of this machine, to see it at work and to see all the processes influenced by this new machine. . . . I see this machine as a pinnacle of learning, and that requires a good deal of investment and able people as well. . . . Concerning digitalization, which requires a great deal of learning, I would say strategic ideas that deal with digitalization are old, not new. A lot of thoughts have been expressed and plans have shifted and changed over the years. The problem has always been to find the right time to go into digital mailing, because you cannibalize your core business of physical mail delivery once you enter the business of digital e-mail. However, with our experience and know-how, I would say that we are far ahead of competitors in this respect.

Learning and experience formation, while seen as crucial for competitive advantages by almost all the interviewees, originates from different sources. Again, although the processes and the skills expressed in equipment and routines are a source of knowledge and skill, managerial skill had to be imported from labor markets and the challenges posed by digitalization, which are yet to be addressed properly. The main problem with digitalization is that it affects the very heart of DPAG, namely its core business of physical mail delivery. This business gave DPAG an initial advantage by providing the company with a quasi-monopolistic position upon which the company quite easily extended the business to another segment, logistics. Furthermore the core business of DPAG is the main source of the company's strong brand and the perceived trustworthiness of the brand, as reported above. Hence, faced with a shifting business environment, management will, sooner or later, have to be assigned a new role in the core business and provide a new rationale that addresses their diminishing importance to the firm.

Accordingly, and reflecting its beginning, DPAG was divided into two parts that require different types of attention and that are faced with different competitive environments, namely a moderately dynamic market for the mail delivery segment and a high-velocity market for the logistics segment:

Interviewee A.1: “I believe we have great difficulties in structural emulation, especially with respect to secondary processes. Well, . . . that means somehow you have to split controlling or finance into two, and distribution, and marketing. We are right in the middle of this process, and I honestly cannot say where this process will lead us. In the end, I think we will complete the task and when we do, it will be the result of a common effort by the management and the employees alike. They will bring about something new. You need to have the power to change processes and structures while fighting for market share, while fighting at two different fronts. What you need is the will to succeed; if you have that will, you’ll win.”

While the will to change is important, the eagerness to do so is equally important, as interviewee A.4 reports:

Interviewee A.4: “The main reason for me to join DPAG was my impression that DPAG was a company eager to try something new. More than that, DPAG had the funds to do something new. . . . This is what DPAG has to offer: the freedom to try new ideas. And you needn’t be afraid of errors because DPAG has a remarkable culture of error tolerance. Errors are the source of learning, Frank Appel says; you need errors to gain experience. This means that not only do we try things, but it is also ok if something goes wrong, because you can learn from your mistakes.

I sum up the information gathered in this subsection and supplement it with additional information not reported here, described as follows. DPAG made a deliberate attempt to get access to highly skilled employees and managers to gain competition competitive edge. This means that knowledge was seen as the main source of competitive advantage from the very start, a view reflected in the new equipment as well as in the culture of trial-and-error that enables employees to

develop ideas without being afraid of failure. Furthermore, experience and the competitive advantage DPAG enjoys in its core business does not only provide the source for high quality services; it also provides the resources needed to adapt to changing environments. However, changes in the environment, most notably digitalization, affect the core business of DPAG and provide problems, to which the solution requires not only a different approach, but also some kind of a new definition of what it means to be DPAG. Weights are shifting at the moment, leading to the formation of two firms within the same firm.

In summary, the interviews analyzed in this section yielded the following insights regarding DPAG's processes, learning capabilities, knowledge, and experience: DPAG's success is based on competitive advantages that were derived from the routines and processes in the core business and supplemented by recruiting a number of highly capable and skilled employees. DPAG has implemented a number of changes that will inevitably change the image of DPAG. Furthermore, DPAG's processes are driven by knowledge and experience and supported by a culture that allows for trial-and-error, and that is perceived as highly supportive to innovation and as providing significant incentives to employees. Finally, the capabilities of learning, experience, and knowledge are core to DPAG's attempts to accommodate its two parts, which are situated in different competitive environments to their respective environments.

5.2.1.4 Process integration

The previous subsections have painted a picture that most clearly attributes the competitive advantages of DPAG to either its market position, its human capital and resources, or its ability to quickly adapt to changing environments through its expertise in large-scale processes or through its decidedly knowledge-driven competitive strategy. If the 11 interviews conducted with the employees and partners of DPAG had to be listed under one common theme, the theme would be that dynamic changes are addressed by highlighting the importance of knowledge. The rationale for this strategy is provided by the saturation of markets, in which service quality does not provide any competitive advantage and in which price competition is difficult to accomplish. The best way to increase profit margins, though, is to reduce costs and to improve efficiency, both of which DPAG has

achieved. The question that remains to be addressed in this subsection is whether the ability to adapt to a changing environment, that is, to develop dynamic capabilities, is somehow mirrored in the way knowledge or new employees, assets, or other resource are being gathered and integrated into DPAG.

Interviewee A.3: "That's difficult. I think it is necessary to distinguish between the two processes. For one, there are internal proceedings to sample customer voices, to gather information on their needs and desires, and to share this information with production and marketing."

To keep up with changing demand, DPAG tracks the changing desires and needs of its customers. As is necessary in quality function deployment (Akao 1990), the desires and needs of customers have to be evaluated regarding their technical feasibility. This seems to be what happens when information is shared with production, as mentioned by interviewee A.3. Thus, within DPAG, routines and processes exist that address, distribute, and use newly gathered information. Interviewee #9 stresses the importance of customer information as well:

Interviewee A.9: "Customer feedback is quite intensive. There are these annual customer surveys, quality surveys. Maybe you are familiar with these surveys because you had to wait in one of our branches? We closely monitor information gathered in these surveys, always asking if there is something wrong with our services, if we can improve, if we can provide better services and products, and so forth."

The information provided by interviewee #9 confirms that routines and processes are in place to deal with and to make the most of customer information. However, once the company addresses a new market segment in which customers do not know exactly what to expect and that is characterized by a fluid situation that leaves room for many ideas and but does not guarantee success, customer desires and needs would be hard to establish, and the need to address market information with internal routines shifts:

Interviewee A.8: "At present, much of the expertise necessary for entering the digital world is built from scratch. There is no way to transfer knowledge from the mail business because digital services require a completely different infrastructure. There is no need for people

delivering mails, no need for machines sorting mails. All you need is a server and a system capable of authentication. However, the relationship with customers does not change. Distribution and key accounting will remain as the intercept between firm and customer. This means that expertise and knowledge gathered in physical distribution and related to customers can be transferred into the digital world. Nevertheless, an organization that provides digital services is distinct from an organization that provides physical services. They run parallel to each other, which is a good thing, because you need to manage a mature product differently from a product that is only just entering the market. And looking at the revenue, it will take quite some time until the digital mail delivery segment can claim to come close to the revenue amassed in the physical mail delivery segment.”

On one hand, customer information may kick-start a new development; on another hand, new internal processes are brought about as a result of customer information or shifting customer demand that will conflict with existing ones. Even if customer service can be kept together, the need to establish new processes will force a separation of the old and new businesses and their developments. Although this phenomenon gives ample evidence to the importance of internal processes, it sheds some doubt on the relevance of path-dependent processes because it shows that change does not necessarily have to be addressed by the entire firm; rather, it is sufficient to implement change in one part of the company and to run the changed and unchanged segments parallel to each other. Therefore, the problem of path dependency can be quite easily solved by establishing new processes or what can be essentially another firm within the firm. However, this is not to say that heritage, and through heritage, path dependency, does not provide structure to the daily business:

Interviewee A.5: “Certainly, we try to transfer our experience from the physical mail delivery segment to the new digital mail delivery segment. Certainly, we try to bring assets that proved successful in one segment to the other segment as well. By that I mean know-how directed toward customers and customer communication. We use this know-how to build a second organization, one that serves the digital market. This

means that the new organization is not solely staffed with new people, but that people employed in the old segment will switch to the new segment. They will be assigned to a new task. We still rely on assets, experience, and knowledge that proved themselves to be successful in the past.”

While establishing something new means building a new organization, what has been proven valuable and beneficial to the firm will not be left out. By contrast, processes are especially designed to integrate knowledge and experiences that can be easily transferred from the old segment to the new one. As it appears, path dependency comes into play after all, albeit in a smaller role than was suggested by Teece (2011).

In summary, the interviews analyzed in this subsection yielded the following insights regarding the process integration at DPAG: For DPAG, the most important avenue to gather information about shifting markets is asking customers. Customer surveys are conducted on a regular basis. DPAG has processes for sharing and incorporating the results of the surveys into its strategy, which involves testing the feasibility of the customer needs and desires, that is, their transformability into new products. New products, however, require a new organization that can build new products, especially new products that shift the importance away from the core products and processes. Such new products require new processes and new organizational routines. This result is somehow at odds with the rationale of path dependency stressed in the dynamic capabilities approach. However, path dependency does enter the fray as transferrable experiences and knowledge, again giving credence to the importance of human capital in general and knowledge in particular.

5.2.2 Dynamic capabilities at Deutsche Telekom AG

Open coding for the analysis of the DTAG data has been similarly guided by the elements identified in Chapter 4.2, namely resources that allow for competitive advantage as well as quick adaptation to changing business environments; causal conditions influencing the respective resources or their deployment; variables moderating the need to find the respective resources; variables mediating the

causal condition that influence discovery; and actions taken by the management to gather the necessary information and to deploy respective variables.

However, in this analysis, the elements listed above have been assigned to categories identified in the course of the theoretical considerations in Chapter 4. These categories are capital endowments (human, social, relational); resources (tangible and intangible assets, knowledge); proceedings linking demands of the market with firm capitals and resources; structures determining the amount of change a firm can take and hence, the amount of adaptation it is able to perform; and management skill, the ability to link capital, resources, and market demand while taking structures and processes into consideration.

With respect to these categories, open coding has produced a number of references that could be condensed into the categories of human capital and resources; processes, learning capabilities, knowledge, and experience; and process integration.

These three categories will guide the axial coding in this subsection, which deals with the data provided by the interviewees employed with DTAG. They will provide the base structure for further analysis. As has been mentioned above, axial coding will rely on the original wording assigned in the first step of the analysis to the respective category. However, before starting the process of axial coding, a brief summary of selective coding with respect to the context will be given, that is, the situation DTAG is perceived to be in by the interviewees.

5.2.2.1 Deutsche Telekom AG: Context as perceived by interviewees

DTAG is the privatized former telecommunications division of Deutsche Bundespost. DTAG was formed in the early 1990s and has, from the beginning, found itself in a highly competitive market. In contrast to DPAG, the monopoly it inherited from Deutsche Bundespost prior to privatization eroded almost immediately, and DTAG found itself faced with the task of not only changing the mentality of its employees, but of developing a competitive business model in a highly regulated market as well. Almost all the interviewees for DTAG highlight the fact that it inherited beamte employees, who brought their beamten mentality formed during Deutsche Bundespost's monopoly period, during which customers

sought the state-owned company's services. After the privatization, DTAG's situation completely changed in that had to attract customers and establish its position in the competitive market. This process was accompanied by the need to internationalize; today DTAG earns most its revenues abroad and sources most of its staff from outside Germany (interviewee B.8). The most pressing problem posed by the inherited beamten mentality was the lack of flexibility (interviewee B.7), which contrasted with the requirements of the high-velocity market DTAG found itself thrown into. For a short time after the privatization, DTAG was able to command a market share close to that from Deutsche Bundespost's monopoly period.

Meanwhile, the company faces massive competition. While still possessing technology and processes that date back to Deutsche Bundespost's monopoly period, and it is confronted with the need for process quality, speed, and innovation. Having made new investments overseas and extended its core business, DTAG had to look for funding elsewhere, and hence, became involved in capital markets. The firm's structure became more complex as a result, and its flexibility, which it still aims to improve, was reduced (interviewee B.8). Finally, as its customer base shifts from those seeking the services of an organization to those facing several other choices, DTAG faced pressure from customers as well as competitors to develop new products and better solutions to existing products (interviewee B.8). As interviewee B.9 describes, DTAG is well placed within the competitive market: "We have interesting products, innovative products, smart employees. We have so many ideas that someone is needed to oversee the development and introduction of these many products."

In summary, the context for DTAG, against which subsequent results have to be compared, can be summarized as follows: DTAG is the privatized former telecommunications segment of Deutsche Bundespost, from which it inherited beamte employees and their mentality. For a short time after privatization, it enjoyed a monopolistic market position; however, it was quickly faced with competition. Thus, DTAG was forced to adapt to high-velocity markets, while still having a large number of beamte employees. The beamten mentality proved counterproductive to flexibility, which was needed in order to adapt to the consequences of switching from a state-owned enterprise to a private service

provider, namely new market conditions, intense competition, and internationalization. Today, DTAG operates in a high-velocity market and is present in many countries; high-velocity markets demand high flexibility, quick adaptation, and quick and continuous introduction of innovations.

The interviews discussed in the remainder of this subsection will have to be understood considering DTAG's business situation as described above. Altogether, 12 interviews were conducted, which yielded some insights on the dynamic capabilities of DTAG. Table 11 lists the names of the interviewees and their interview codes.

Table 11: Interviewees for Deutsche Telekom AG

Nr.	Position
B.1	Member of Corporate Strategy
B.2	Head of Controlling
B.3	CEO of a Venture Capital Holding (subsidiary)
B.4	Chief Product and Innovation Officer
B.5	Director Sales and Service
B.6	Head of In-house Consulting Practice
B.7	Senior Vice President, Strategy and Development
B.8	Chief Technology Information Officer
B.9	Chief Compliance Officer
B.10	Managing Director at an international renowned consulting practice
B.11	Partner at an international renowned consulting practice
B.12	Managing Director at an international renowned consulting practice

5.2.2.2 Human capital and resources

The analyses of the interview data on DPAG shows that the company searched for dynamic capabilities with respect to human capital. It has been stipulated that in order to adapt to rapidly changing environments, it is vital not only to lead capable and experienced employees, but also to provide firm structures, that is, routines and processes, that enable the company to respond to new demands. In short, it is

necessary to have processes in place that allow for flexibility, to have sufficient intellectual capital, and finally, to provide incentives for employees or to establish a culture of innovation that also promotes individual efforts and allows for errors and failures. Based on the analyses of the DPAG interview data, DPAG succeeded not only in recruiting and motivating capable individuals, but also in providing an environment that allows for trial-and-error, which according to Eisenhardt and Martin (2000) is needed to cope and succeed in high-velocity markets. In addition, it had enough resources in place to establish itself as a leading contender in the highly competitive logistics market. As has been elaborated, the quasi-monopolistic structure prevalent in the mail delivery segment gave DPAG a competitive advantage, whose value cannot be underestimated, albeit it is currently fading owing to the rise of digitalization. Whether DTAG, the telecommunications company that originated from Deutsche Bundespost, could establish itself and succeed in its market as DPAG have, and what kind of capital and resources it could rely upon to do so, is the question that will be addressed in this subsection. Interestingly enough, when it comes to human capital, the interviewees paint rather diverse pictures and considerably differ in their assessments of the company:

Interviewee B.2: “This is hard to tell. Well, I say the core of Telekom has always been its technological basis. Obviously, generations of managers tried to move Telekom in the direction of customer and market orientation. However, the basis always has been technology, technological know-how, processes. These certainly are the main assets of Telekom. At the end of the day, this may well be what makes the difference in the market. Anyway, I believe it shapes the image of Telekom. . . . I don’t believe that the strength of Telekom with respect to competitors can be found in customer orientation or customer services or services as such. . . . I do not believe we are good in these services, but neither are competitors.”

It is interesting to note that interviewee B.2 does not think too highly of DTAG’s ability to satisfy customers with its service. Rather, according to him, customer satisfaction is a result of technological standards, and customer service does not pose a significant problem because competitors are doing equally poor in this

aspect. However, DTAG, as the market leader, sets the market standards, and one can quite easily conclude that competitors measure their level of customer service against that of DTAG, and that the customers it seems, do not complain. In his interview, interviewee B.2 also refers to the well known topic of the beamten mentality. DTAG, like DPAG, has inherited quite a number of employees who were used to gathering applications for phone lines, and who were not used to providing customer service. Consequently, the company's main asset is technology and technological know-how, which leads to the question of how this main asset is obtained and maintained.

Interviewee B.7: "I do not believe that we have a great competitive advantage. Certainly, employees in the meantime found their way to the competition, and certainly, we are strong in our core business because of its infrastructure. But I do not believe this constitutes a great advantage over competitors. . . . I believe, however, that a strength of Telekom lies in the delivery of better quality and better products than our competitors do. We are strong in our regional presence. Stronger than our competitors. We have more funds than competitors. We are able to invest in many areas. This is the main advantage, I believe. Products are fairly homogenous, so there is not much to gain with respect to differentiation."

While he does not answer the question of how the main technological know-how is obtained, interviewee B.7 confirms the importance of technology and technological assets for DTAG's market position. However, he mentions some new assets, mainly regional presence and availability of a significant amount of funds, which enable DTAG to invest heavily and quite easily in new technologies. Hence, its competitive advantages can be seen as a result of financial potency. As it appears, dynamic capabilities are found in tangible assets rather than in intangible assets, and thus financial and technological ability is judged to be more important than human capital.

Interviewee B.1: "I believe that Telekom is endowed with good people in the technical area. Telekom suffered a number of highly profile losses in this area, but somehow managed to replace the losses with good and

capable people. Customer feedback shows confidence in our ability to solve problems.”

Finally, people enter the frame. Interviewee B.1 is convinced that DTAG's reputation and competitive position depend on its employees' ability to solve problems. This seems to be the source of the technical know-how stressed by the other interviewees. DTAG technicians serve as an interface between the firm and its customers, and thus are the asset that provides its competitive advantages. Because DTAG technicians are trusted and are expected to solve problems, the poor performance of the company when it comes to customer service not provided by technicians seems to lose in importance.

Interviewee B.9: “I say we have an exceptional basic know-how that adds value. However, this basic know-how is diluted by personality structures that still cling to the times when Telekom was in a monopolistic position. We need to get rid of the ghost of monopolistic times. We need to replace that with team spirit and team coherence.”

According to interviewee B.9, the reason for DTAG's reliance on technological rather than human assets is the mentality that stems from Deutsche Bundespost's monopolistic period, that is, the beamten mentality, which is not suitable to competition. However, this mentality not only affects customer service, but the interrelations between employees and work performance as well. Thus, the situation in DPAG can be found in DTAG as well, that is, that heritage hampers progress. Because the inherited employees cannot be eliminated from the company, the beamten mentality will continue to accompany DTAG and affect its customer service efforts. The beamten mentality problem is consistently found in almost any of the interviews analyzed in this thesis. This trend suggests that the German beamten system is a relic of ancient times, and thus is not appropriate for modern competitive markets. It is a path-dependent asset that significantly hinders flexibility and the ability to react to market conditions, and that restricts the space of opportunity for managers in both DPAG and DTAG.

Interviewee B.10: “The human capital commanded by Telekom is first of all found in the area-wide presence of the company, which is true for technical services as well as distribution. . . . This allows Telekom to

introduce new products and new technologies across Germany, to access even the remotest little village in Germany, and at the same time as its biggest cities. This is the main asset of Telekom.”

It is interesting that when the interviewees use the term “human capital,” they think of tangible assets like offices or branches and think that the most important asset (i.e., human capital) lies with the ability to reach all Germans customers wherever they may live. Hence, the company’s competitive advantage is distribution and market penetration. Meanwhile, reflecting on what has been said about customer service and DTAG employees, who expected to fulfill the respective service, employees are viewed as a liability rather than an asset.

In summary, the interviews that were analyzed in this subsection yielded the following insights regarding DTAG’s human capital and resources: DTAG operates in a highly competitive market (i.e., high-velocity market). Its competitive advantages are related to technology; specifically, know-how stored in technological assets and products is considered to be the most important. Consequently, it considers the technicians its most important employees—they solve technical problems, serve as an interface to customers, and compensate for the company’s mediocre customer service. On the other hand, the company’s customer service is rather poor owing to the beamten mentality that is partly inherited and that seems to be present in the corporate culture. It easily obtains and improves its technical assets and technological know-how owing to its significant funds and its relative financial might. However, it does not consider human capital as a source of competitive advantage.

5.2.2.3 Processes, learning capabilities, knowledge, and experience

As has already been argued, it is necessary to learn quickly in order to quickly adapt to changing environments and to survive in competitive environments. The quick learning in a company is facilitated by motivating and leading capable and experienced employees, and providing structures and processes that promote learning and that motivate learning. Accordingly, this subsection will identify the core processes and will look into the ability and culture of learning at DTAG.

Interviewee B.11: There are two core processes in the operative business. I mean, they are especially important for standing telephone lines, because it is there that you find the most complex processes. If your telephone line is faulty, solving the problem is a complex task that needs a lot of expertise.

Again, technical processes come to mind when speaking about core processes. DTAG managers seem to view technicians as the most important employees in their company, because they engage with the customers and solve their problems. They provide technical services, and as it appears, customer service quality relies entirely on technical services. The quality of technical services, however, relies on the quality of technicians. They have to form an idea of what causes a particular problem, resolve the problem, and provide feedback for improving processes. Hence, it can be stipulated that learning and knowledge creation is closely attached to technical problems.

Interviewee B.10: “The most important process within Telekom is the process of budgeting. Budgeting is closely linked to development of strategy and its foray into product strategy development. The entire company is directed by the process of budgeting and the subsequent processes. It is the main process that unifies the entire company.”

Based on the response of interviewee B.10, not everyone shares the view that technicians run the most important processes within DTAG. Interviewee B.10, an external consultant, is more fixated on textbook content and thus provides a picture of DTAG’s core processes that could be taken from any managerial textbook. Accordingly, the reliability of the information gathered from the external sources can be seriously questioned. The different view of interviewee B.10 becomes clear when the responses of the managers of DTAG are analyzed, which is that DTAG depends on its technical processes and technicians, on which customer service, in turn, is based on. Thus, the question of learning and adaptation, especially regarding technical problems and new technical devices, is crucial for DTAG.

Interviewee B.2: “Looking back, I would say learning did not fit well with Telekom. Today, however, learning cycles are quick, very quick in

telecommunications. Looking at newly developing markets, Internet markets, and the like, I have to say that most competitors do not have the manpower and human capital to keep up to speed with innovation.”

Telecommunications is the most important sector for DTAG. For DTAG, new products and tracking new developments comes rather easily, and one may argue that the impetus on technicians does certainly help in this field. Furthermore, it is obvious that DTAG praises itself for its technicians and its ability to react quickly to market demand.

Interviewee B.9: “Learning at Telekom has two faces: on the one hand, I’d say DTAG is capable of reacting surprisingly quick; on the other hand, it is characterized by some kind of inertia. I would differentiate between DTAG and its employees. DTAG realizes that it has to adapt quickly, but employees get tired after having witnessed about 10 changes in direction. You cannot just take the best employees, the most intelligent ones with you; you have to pick up the “laborious bees” as well. . . . I would say that a company that is good in producing fresh ideas is equally good in transforming ideas into products. Telekom is good in producing ideas.”

Again, the different faces of DTAG appear in the interview data. DTAG is quick to respond to changes, but is hampered by some kind of inertia attributed to employees “tiredness” and somehow linked to intelligence and ability. The better the employees’ abilities, the less likely the employees are to tire in their continuous adaptation to a changing environment. However, what can be taken from interviewee B.9’s account is the same ambiguity that has been mentioned by the other interviewees. DTAG employees can be divided in two groups—one recruited after privatization, eager to work, and considered an asset; and another inherited from the pre-privatization years, laden with inertia, and considered a liability.

Interviewee B.6: “We have to start with the quality of human capital. We are a company in transition. Transition means that we will need different qualifications for some positions. Talking about qualitative skills and responding to the question of whether we are competitive at the moment, the answer is yes. This is evident when we look at IT

specialists, technicians, and the like. . . . I believe that Telekom is gaining attraction, which does not imply that Telekom is lacking attraction at the moment. Telekom is attractive to highly skilled employees. Are we strong enough? Is there room to improve? Yes there is. I believe that our employees are well paid as compared to competitors. However, we need to compensate our existing human capital by qualifying our work force, re-qualifying our workforce, which can be done to a certain degree. Furthermore, exchange of knowledge and knowledge leverage will have to be developed. . . .”

Some of the answers given by the interviewees may challenge coders as well as interpreters. Take, for example, the responses of interviewee B.6. He has a lot to say, but his answers are rather incoherent and he seldom sticks to the point, and even more seldom ends a sequence of sentences with the point he wants to make. Hence, interpretation is more a task of fill-it-in than anything else. After the reading and re-reading of interviewee B.6's responses, it appears that the ambivalence toward employees, which is also apparent in the responses of almost every other DTAG employee interviewed, is also prevalent in interviewee B.6's account. DTAG faces a changing environment and is a company in transition, which can only mean that attempts are being made to bring inherited employees up to the level required in modern business environments. This qualification process is facilitated by an above-average wage structure, and which makes DTAG attractive to capable employees. If one tries to summarize the content of this subsection in terms of learning structures, learning capabilities, and knowledge transformation within DTAG, one would find the almost complete lack of processes for incorporating feedback or for facilitating the learning mentioned. This finding is interesting and can only be attributed to the ambivalence that lingers throughout all of the interviews, an ambivalence stemming from the fact that DTAG has two different sets of employees, only one of which is capable of adapting to and managing in changing environments. In addition, while some interviewees mentioned attempts to improve the latter group of employees who lack competences, others seem to have surrendered their company's fate.

In summary, the interviews analyzed in this subsection yielded the following insights regarding DTAG's processes, learning capabilities, knowledge, and

experience: At DTAG, key or core processes are linked to technical processes, and are comprised of the interface between technicians and customers. Its focus on technology is mirrored in the importance it places on technical processes. Its technicians provide some kind of surrogate customer relationship management. Learning is either restricted to technicians learning new ways to deal with problems or providing feedback resulting from faulty technology. Furthermore, corporate learning is hampered by transition and by the presence of two sets of employees; thus, corporate learning needs to address both the capable and less capable employees. However, managers seem divided about whether corporate learning needs a qualification or re-qualification of lesser able employees, or whether such employees must be phased out because there is no way to improve their abilities.

5.2.2.4 Process integration

So far, a somewhat similar picture to DPAG has been painted for DTAG in terms of the beamten mentality of the inherited employees. However, despite the striking similarities, some remarkable differences have been shown. While DPAG recruited highly skilled employees and pursued a strategy of knowledge accumulation that was designed to provide the requisites to succeed in global competition, DTAG did not pursue a comparable strategy. Instead, DTAG relied on technology and especially on their technicians' ability to appease customers confronted with technical problems. Customer service, in the very meaning of the word, which does not involve solving technical problems, seems to be all but nonexistent at DTAG, and managers seem set on the company's reliance on technology and technicians rather than on establishing comprehensive customer service. However, the responses of some interviewees provided signs of the company's efforts to improve not only in terms of technology but also in terms of customer service. Whether such efforts translate into customer service routines or not will be investigated in this subsection.

Interviewee B.10: "Yes, well, DTAG is perpetually offering new services, which in itself is a process. However, DTAG is an MNC, and therefore solutions and new services need to fit into different places."

The interviewee considers offering new services as a process, though new services are the result of a process rather than the process itself. However, the interviewee's response shows that the assets required for the integration in DTAG routines are technological assets. Until now, the need for learning or improvement in human capital has not been mentioned.

Interviewee B.2: "When you look at the markets, you'll realize that communications markets either stagnate or decline. That forces us to enter new markets. If you look at growing markets, you look at the IT market, for example, a market to which we are attached. It is for this reason that we introduced IT systems that provide a link between the classical communications markets and the IT market. It is in IT communications that we want to expand. . . . However, we need to look at prospects that cover not just new IT markets, but that are also linked to old communications markets."

Path dependency is clearly an issue at DTAG. Path dependency forces new developments to link old assets to new ones. Accordingly, new products and new markets are predetermined by the assets already possessed by DTAG. In the same manner inherited employees hamper the excellence of the company's customer service, old services hamper the penetration of new markets or, to put it differently, reduce the level of freedom for innovation.

Interviewee B.8: "Well, this needs to be looked at from different angles. New technologies, when they appear, require careful and deeper analyses. Certainly, you heard of our decision to invest in broadband technology. This is a strategic decision, because if you look at the other segments of our business, you see a lot of opportunities to learn and get experience, for example, on how quickly can good start-up ideas generated outside the firm be incorporated. Especially, this question requires us to be big and to work on it."

Interestingly, the interviewee equals investments to learning. This, again, shows the reliance of the entire business model of DTAG on technology- and investment-driven progress. However, interviewee B.8 mentions a notable limitation of the company, which is that the incorporation, learning, and adoption of outside ideas is

too slow and needs improvement. This limitation suggests, given the already mentioned reliance on technology and technicians, that learning abilities are rather poor and that apart from the feedback from the company's own technicians, not much informational resources are available to DTAG. However, not everyone agrees with this assessment:

Interviewee B.9: "Well, I believe that DTAG is rather quick in adopting innovative ideas. If we need to adjust to something new, we do it; if we need to change existing processes, we do it. Sometimes it is through coercion that we learn, but we learn. In terms of spirit, engagement and heart, we do what we have to do. The deciding question, however, is transformation: Is it feasible to transform an idea into an innovation? Does it reap profit?"

The learning limitation perceived by interviewee B.8 is not apparent to interviewee B.9, who believes that DTAG is capable of quickly adopting new ideas but that not all ideas can be realized. Accordingly, following interviewee B.9's response, one would expect to find rather elaborated processes in DTAG, processes that assess new ideas and their feasibility.

Interviewee B.6: "Take, for example, the smart grid. How can we develop our already established line-based business model into something new, something that provides customers with the ability to improve the management of their energy supply? To answer this question, we use our assets and construct scenarios. We use these assets because they provide us with a unique business position and give us an advantage over competitors."

The assets mentioned above are in essence the telephone lines that link almost any household in Germany to DTAG. Accordingly, DTAG has a unique position because it has a broad customer base, which is an excellent starting point for launching new campaigns and for introducing and marketing new products. Hence, at the end of the analysis in this subsection, a generic position emerges, a position that provides DTAG with a competitive advantage and that may also be the reason for DTAG's poor customer service. In short, the company still holds a monopoly.

In summary, the interviews analyzed in this subsection yielded the following insights regarding DTAG's process integration: At DTAG, new investments equal learning opportunities. Human resources or excellence in human resources is not seen as a factor relevant to implementing new processes or ideas. Path dependency exists with respect to the need to link innovations to existing products, and processes are in place to assess and test the feasibility of new ideas. Furthermore, monopolistic structures are used as a source of comparative advantage.

5.3. Synopsis of results and selective coding

The previous subsections have provided readers with a significant amount of information that may be too much to process. Thus, this section provides a synopsis of the results (Table 12) and discusses the results of the final step in data coding, that is, selective coding.

Table 12: Dynamic capabilities at Deutsche Post DHL AG and Deutsche Telekom AG

Category	DPAG	DTAG	Recoded Category
Human capital and resources	<p>Large scale processes and routines resulting in experience in the workforce that can be easily transferred to new areas and fields and allow for easy adaptation to changing markets</p> <p>Well-paid staff and highly skilled employees recruited after privatization</p>	<p>DTAG operates in a highly competitive market (high-velocity market).</p> <p>DTAG's competitive advantages are related to technology. Know-how stored in technological assets and</p>	<p>DPAG builds on well established processes and routines, pursues a strategy that highlights the importance of human capital, and actively seeks to recruit highly skilled labor.</p>

	<p>Interaction routines between staff members</p> <p>A caveat comes from the inherited employees who bring with them a beamten mentality, who are well paid, and who have job security, which leaves DPAG sluggish in reacting to market trends or to threats posed by competitors. However, this is hardly a problem, given DPAG's almost monopolistic position in the mail delivery segment.</p>	<p>products is considered to be the most important.</p> <p>Consequently, technicians are the most important employees to DTAG. They solve technical problems, interface with customers, and compensate for the mediocre customer service.</p> <p>Customer service is rather poor owing to the beamten mentality that is partly inherited and seems to be present in the corporate culture.</p> <p>Technical assets and technological know-how from the company's significant amount of funds and financial might.</p>	<p>DC:</p> <p>Processes and human capital</p> <p>DTAG relies on a technology-driven strategy and places rather less emphasis on human capital. Human capital seems to be the consequence of investments in technology.</p> <p>DC:</p> <p>Technology and technicians</p> <p>Path dependency in both cases: inherited employees that hamper development and quasi-</p>
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		Human capital is not a source of competitive advantage.	monopolistic structures that facilitate market success
Processes, learning capabilities, knowledge, and experience	<p>Based on competitive advantages that are derived from routines and processes in the core business and supplemented by recruiting a number of highly capable and skilled employees</p> <p>DPAG has implemented a number of changes that will inevitably change the image of DPAG.</p> <p>The entire process is driven by knowledge and experience and supported by a culture that allows for trial-and-error and that is perceived as highly supportive of innovation and providing significant incentives to employees.</p> <p>The capabilities of</p>	<p>New investments are equaled to learning opportunities.</p> <p>Human resources or excellence in human resources is not seen as a factor relevant to implementing new processes or ideas.</p> <p>Path dependency exists with respect to the need to link innovations to existing products.</p> <p>Processes are in place to assess and test the feasibility of new ideas.</p> <p>Monopolistic structures are used as a source of comparative</p>	<p>DPAG:</p> <p>Knowledge-driven changes that shift the dependence away from the old mail delivery segment to the new logistics segment;</p> <p>learning embedded in a trial-and-error culture</p> <p>DTAG:</p> <p>Investments and technologies are the drivers of learning; path dependency determines the development of new products.</p> <p>DC: (DPAG) learning culture and</p>

	learning, experience, and knowledge are core to DPAG's attempts to accommodate its two parts, which are situated in different competitive environments, to their respective new environments.	advantage.	investment in human capital; (DTAG) investment in new technology
Process integration	<p>Customer surveys are conducted on a regular basis. There are processes for sharing and incorporating the results into the company strategy, which involves testing the feasibility of the customer needs and desires, that is, their transformability into new products.</p> <p>New products, however, require a new organization that can build new products, especially new products that shift the importance away from core products and processes; such new products require new processes and organizational routines.</p>	<p>New investments are equaled with learning opportunities.</p> <p>Human resources or excellence in human resources is not seen as a factor relevant to implementing new processes or ideas.</p> <p>Path dependency exists with respect to the need to link innovations to existing products.</p> <p>Processes are in place to assess and test feasibility of new ideas.</p>	Both: Feasibility studies

	<p>This result somehow is at odds with the rationale of path dependency stressed in the dynamic capabilities approach.</p> <p>However, path dependency does enter the fray as transferrable experiences and knowledge, again giving credence to the importance of human capital in general and knowledge in particular.</p>	<p>Monopolistic structures are used as a source of comparative advantage.</p>	
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Table 9 provides the different results for DPAG and DTAG, which originated from the same parent company. Although they both inherited the same problems, they addressed those problems differently. DPAG emphasized the importance of human capital and adapting to changing business environments by providing an innovation culture that allows for trial-and-error, while DTAG emphasized the importance of technology and sees adaptation as a function of investment, that is, the more the investment, the better the adaptation. Consequently, human capital only plays a minor part at DTAG.

6. Conclusion

Privatized companies face competition and need to develop strategies for how to sustain or even extend their market power. In addition, these companies need to deal with regulations by their respective governments, in order to maximize their profits. In examining the two privatized companies, DTAG and DPAG, which were former subsidiaries of Deutsche Bundespost, the thesis is guided by the following initial research question:

How do companies gain competitive advantage after privatization by examining dynamic capabilities?

In answering this question, this dissertation enhances the extant literature in various ways. The academic contributions of the thesis are described below.

In Chapter 2, I aimed to make the connection between strategy and strategic management. This process starts with the gathering of information that provides the basis for strategy formation, then proceeds to the formulation of a strategy, its implementation, and the monitoring of how changes in reality fit the expectations formed on basis of the strategy (Afuah 2003; Keidel 2010). Hence, as shown in this thesis, strategy is the connective link between a firm's past conduct and its subsequent market success, and its future conduct and market success, which means that strategy in a dynamic capability framework should not only reflect resources at a firm's disposal but its path dependency as well, since past decisions will influence a firm's present stand (Teece, Pisano, and Shuen 1997).

However, if path dependency links past decision to present performance and resources available, then market position is relevant as well (Teece 2011), which means that strategy in the way it was defined in this thesis, is a result of stock taking on the one hand and a fathoming of chances and opportunities on the other hand. Accordingly, strategy is a summary of a firm's capabilities. This statement points back to the RBV, which provides the starting point for the dynamic capabilities framework, and on which the framework is firmly rooted.

An axiom of the RBV is that competitive advantages are the result of the resources at a firm's disposal. Therefore, a small number of critical resources play a crucial role in bringing about a competitive advantage. To qualify as a critical resource, a resource must satisfy the following conditions: "(a) it must be valuable, in the

sense that it exploits opportunities and/or neutralizes threats in a firm's environment, (b) it must be rare among a firm's current and potential competition, (c) it must be imperfectly imitable, and (d) there cannot be strategically equivalent substitutes for this resource that are valuable but neither rare or imperfectly imitable" (Barney 1991, 105–106). If it is competitive advantages that every strategy aims for, and if it is critical resources that bring about competitive advantages, then management will have to identify these critical resources and form a strategy based on these resources.

Moreover, in this chapter, I intended to clarify the content of the dynamic capabilities literature. It was pointed out that diverging opinions or operationalizations of dynamic capabilities exist even between authors who most intensely use the concept of dynamic capabilities and who agree in terms of a certain set of elements as core elements of dynamic capabilities. This has been shown by contrasting Teece, Pisano, and Shuen's (1997) original framework with Eisenhardt and Martin's (2000) extension of the framework. Both frameworks were treated in this thesis as the foundation and the extension of the concept of dynamic capabilities, respectively. However, in between these two variants of dynamic capabilities lies a host of different definitions or operationalizations that try to capture the meaning of dynamic capabilities. Thus, I gave a few examples demonstrating this.

In Chapter 3, I attempted to fill the black box of dynamic capabilities in order to derive any kind of meaningful deployment of the concept. The brief review of the definitions in the literature not only revealed a plethora of different meanings, but also a number of logical shortcomings. Hence, in order to find a sound theoretical basis that carries the research conducted in the thesis, it was necessary to review the concept of dynamic capabilities from scratch in such a way that its definition or operationalization meets scientific standards. This was especially important because the concept of dynamic capabilities is in some kind of limbo, that is, it is unclear whether dynamic capabilities can be found in nature (i.e., are tangible resources), in men's minds (i.e., are intangible resources), or in both.

In this chapter, I clarify that dynamic capabilities provide "the foundation upon which distinctive and difficult-to-replicate advantages can be built, maintained and enhanced" (Teece, Pisano, and Shuen 1997, 516). However, the fact that dynamic

capabilities are idiosyncratic endowments makes their identification a project that should be performed on the firm level. However, to escape from this kind of idiosyncratic consequence that runs counter to almost anything science aims at, Teece, Pisano, and Shuen (1997, 518) present a formal aggregation of “classes of factors that will help determine a firm’s distinctive competence and dynamic capabilities.” A summary of these classes encompasses processes, positions, and paths.

However, I demonstrate that there are three problems that call the scientific soundness of the dynamic capabilities framework into question. These three problems are generalization, falsification, and feasibility.

Therefore, in order to determine the usefulness of the dynamic capabilities, framework, for the purpose of this thesis, I gave a brief glimpse at the research done on the dynamic capabilities framework. This was an attempt to assess the usefulness of the concept of dynamic capabilities when taken as a heuristic, that is, as a sampling technique useful for acquiring a sense of what might influence adaptation to rapidly or moderately changing business environments or not.

Taken together, the research presented suggested and confirmed the importance of a different kind of capital of a firm, namely human capital. Human capital is crucial for a firm’s speedy adaptation and reaction to market developments. Social capital will not only facilitate access to knowledge, but to knowledge integration and deployment as well. Structural capital will determine the amount of change a reaction to market developments is able to impose on a firm’s structure and stored knowledge, that is, whether an individual endowment or a firm asset (patents and the like) will increase a firm’s ability to react to change. Dynamic capabilities denote a firm’s ability to rapidly react to changes in its environment. Hence, dynamic capabilities can be drawn from the categories of capital endowments (human, social, relational); resources (tangible and intangible assets, knowledge); proceedings linking the demands of the market with the firm’s capitals and resources; structures determining the amount of change a firm can take, and hence, the amount of adaptation it is able to perform; and management skill, the ability to link capital, resources, and market demand, while taking structures and processes into consideration.

The subsequent empirical analysis in this research investigated whether these categories can be found in the firm's adaptation attempts by which they formulate their offers to the market. The Grounded Theory, developed by Glaser and Strauss (2006), was used in this thesis and thus is discussed in the next chapter.

In Chapter 4, I explained that Grounded Theory has been linked to case studies and is used to derive theory from a single case study (Eisenhardt 1989). As such, Grounded Theory is expected to provide a "roadmap for building theories from case study research" Eisenhardt (1989, 532). Hence, the aim of Grounded Theory is to discover the meaning assigned to things by people and to use this meaning as a basis upon which to build a theory. Grounded Theory produces "theories" that are firmly based in common rationality, that is, in the meaning assigned to things by the very persons interviewed or studied by a researcher deploying Grounded Theory (Glaser and Strauss 2006). However, Grounded Theory is not just a method to sample, read through, and abstract from data in a manner that leads to the identification of a theory in the end. Grounded Theory is rooted in Symbolic Interactionism, which means that it discovers everyday theories that are supported by individual perceptions and experiences. This naturally precludes everything from the realm of a theory that is beyond everyday experience and the perception of people that is beyond their awareness and control. This has to be kept in mind when Grounded Theory and its methods are put into action. By all means, I found Grounded Theory to be absolutely useful in obtaining the relevant results in the subsequent empirical analysis in this research.

In Chapter 5, I analyzed two companies, DTAG and DPAG, which were former subsidiaries of Deutsche Bundespost. By conducting this empirical research, I intended to answer the following research question:

How do companies gain competitive advantage after privatization by examining dynamic capabilities?

After I explained the methodology of the conducted research, I presented the results regarding dynamic capabilities for each company. For both companies, open coding has been guided by elements from Grounded Theory mentioned in the previous chapter, namely resources that allow for competitive advantage as well as for quick adaptation to changing business environments; causal conditions

influencing the respective resources or their deployment; variables moderating the need to find the respective resources; variables mediating the causal condition that influences discovery; and actions taken by the management to gather the necessary information and to deploy the respective variables.

However, the elements listed above have been assigned to categories identified in the course of the theoretical considerations in Chapter 4. These categories are capital endowments (human, social, relational); resources (tangible and intangible assets, knowledge); proceedings linking demands of the market with the firm's capitals and resources; structures determining the amount of change a firm can take, and hence, the amount of adaptation it is able to perform; and management skill, the ability to link capital, resources, and market demand, while taking structures and processes into consideration.

With respect to these categories, the open coding used in this thesis has produced a number of insights that could be condensed into the categories of human capital and resources; processes, learning capabilities, knowledge, and experience; and process integration.

In summary, the empirical research provided different results for DPAG and DTAG, which originated from the same parent company, regarding dynamic capabilities. Although both inherited the same problems, they addressed those problems differently. DPAG emphasized the importance of human capital and adapting to changing business environments by providing a culture of innovation that allows for trial-and-error, while DTAG emphasized the importance of technology and sees adaptation as a function of investment, that is, the more the investment, the better the adaptation. Consequently, at DTAG, human capital only plays a minor part.

Still, the results of this empirical study should be carefully taken into consideration. As mentioned above, three problems call the scientific soundness of the dynamic capabilities framework into question. These three problems are generalization, falsification, and feasibility. In my opinion, dynamic capabilities currently lack the required ingredients in order to become accepted as a theoretical framework. This limitation needs to be solved by future research. Referring to my review of the related literature in the earlier chapters, it would help if the majority of the

mentioned researchers could agree on specific characteristics of dynamic capabilities, as it is still unclear whether dynamic capabilities can be found in nature (i.e., are tangible resources), in men's minds (i.e., are intangible resources), or in both. Nevertheless, the dynamic capabilities framework qualifies as a heuristic that provides managers with cues about how to deal with changing environments. In contrast, it does not provide a blueprint for successful management of change.

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