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Jörg Freiling*

A Competence-based Theory of the Firm**

The research question of the article is: Does the competence-based view, representing a theory of sustaining competitive advantage, offer simultaneously a comprehensive theory of the firm? In order to develop an answer, it appears to be necessary to elaborate the theoretical basis of the competence-based view by delimitating this perspective from the resource-based one. The scrutiny suggests that the competence-based view represents a theory of the firm with other answers than current theories of the firm in use. Moreover, not all the answers of the competence-based view as to the theory of the firm are convincing. Therefore, fundamental weaknesses and shortcomings, which can be dispelled, are pointed out.

Key words: Competence-based view, resource-based view, theory of the firm, isolating mechanisms, open system view

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1. Introduction

The competence movement, developed among others by Hamel/Prahalad (1994), Sanchez et al. (1996), Teece et al. (1997), offers undoubtedly a promising theory of sustaining competitive advantage and a quite dominant framework in strategic management (i.e. Bresser et al. 2000; Barney 2002). Moreover the competence discussion, addressed by the competence-based view, became a theoretical perspective independent from the resource-based view, although the latter can be regarded as the origin of the former. While offering management theory a framework of high relevance in order to explain the roots of corporate success, the contributions to organization theory are still to be analyzed the comprehensive way. In particular answers are required how far the competence-based view offers a comprehensive theory of the firm. In this respect there are already a few publications (Conner 1991; Kogut/Zander 1992 & 1996; Conner/Prahalad 1996; Madhok 1996; Barney 1996; Foss 1996a & 1996b; Grant 1996; Langlois/Foss 1999; Osterloh et al. 1999; Dosi/Marengo 2000; Foss 2001; Madhok 2002). They deal with some particular aspects of the theory of the firm which refer either to the resource- or the competence- respectively knowledge-based view. The competence-based view can offer a real alternative to other theories in use, such as the more static transaction cost approach which focuses on contractual issues in order to explain the nature of the firm. However, a comprehensive competence-based assessment is still missing which addresses the following questions of a theory of the firm (Coase 1937, Holmström/Tirole 1989: 65, Foss 1993, Langlois/Robertson 1995: 7, Foss 1996a: 470):

- Why do firms exist?
- How do firms emerge and change over time?
- Why do firms collapse and what are the driving forces?
- What are the drivers explaining the run of the boundaries of the firm?
- How is it possible to explain the internal organization of companies which are made up of more than one person?

The main purpose of this paper is to outline the explanatory power of the competence-based view regarding the respective questions and, accordingly, to deliver an assessment how far the approach is able to represent an alternate theory of the firm. As no comprehensive publications on this topic exist, the paper intends to fill this gap. In order to do so, it is necessary to combine available findings with some new proposals. Frame-giving in this respect is the impression that the explanatory power of the cause/effect structures of the competence-based view is not fully exploited, yet. Making some progress by addressing these causal elements, is therefore another element to add value to the subject.

The scrutiny is organized as follows: As there are different approaches regarding the constitutive elements of a “competence-based perspective”, it is necessary to prepare a brief “common ground” of this view in the follow-up chapter of this paper. This step includes a statement how far the competence movement is independent from the resource-based view. Afterwards a competence-based theory of the firm is developed by referring to the questions mentioned above. Whereas chapter 3 is about

some basic remarks in this respect, the chapters 4 up to 7 intend to answer the specific questions of a theory of the firm one by one. The last chapter represents a critical assessment of the explanatory power of the competence-based perspective compared to other theoretical frameworks in use.

2. The Nature of Competence-based View in Comparison to the Resource-based Perspective

The Competence-based View and the Explanation Goals

The question arises whether it is necessary to point out the basics of the competence-based view, facing the fact that numerous contributions have tackled this issue before. However, a thorough analysis of the common ground of competence-based research is required maybe even more than ever before. The reason why is a considerable heterogeneity of thoughts concerning the definition of terms, the cause/effect structures, and the fundamental view of the relationship between the firm and the environment (determinism versus voluntarism). It is argued that a good deal of confusion is caused by the fact that too often the explanandum and the explanans of the competence-based view are not taken into account. However, without a clear statement about these fundamental aspects an adequate terminology can hardly be developed.

Generally, a theoretical approach can be characterized by the respective *explanandum*, representing the phenomenon to be explained, and the *explanans*, made up of regularities and antecedents. The primary and in past research dominating explanandum of the competence-based approach is to explain performance differences among firms (even if they belong to the same market or the same strategic group, see e.g. Rumelt 1991). The corresponding explanans of the competence-based view, consisting of a core hypothesis and a system of supporting rules, can be derived by referring to the resource-based perspective (Seisreiner 1999). The resource-based view suggests that a firm A is more successful than firm B if A controls more effective and/or efficient resources than B (Barney 1991; Hunt 2000). The competence-based view, instead, goes one step further: Firm A can only be more successful than B if A is in a position to make use of the available resources more effectively and/or efficiently than B. This goes along with the availability and the usage of competences which cannot quickly be imitated respectively substituted by rivals (Teece et al. 1997: 524). In this article another explanandum will play a central role: to explain the emergence, the development, the boundaries, and the internal organization of firms. The follow-up chapters give an impression about the explanans.

Terminology

Analyzing the explanandum and explanans is frame-giving for terminological discussions: E.g. a resource cannot be “(...) anything which could be thought of as a strength or weakness of a given firm” (Wernerfelt 1984: 172). Instead, a resource has to explain why a firm is more successful than another. Therefore resources are drivers of a single firm’s heterogeneity and are heterogeneous by themselves. The same holds true for the definition of competences. Assets, however, can be of the homogeneous kind and represent starting points of the refinement processes of the firm. Notably, such a terminology is different from the terms used in economics.

In order to avoid a too extensive discussion, table 1 gives an overview of a terminology corresponding to the fundamental objectives of explanation as to the competence-based view (Sanchez et al. 1996, Schneider 1997, Freiling 2001). It is worth mentioning that for the purpose of this paper it is not necessary to differentiate between capabilities and competences. For a more fine-grained terminological debate in this respect and a distinction between the competence-based and the capability view see Sanchez et al. (1996) and Sanchez (2001).

Table 1: Definitions of Central Terms

asset	homogeneous external or internal factors, serving the firm as input for value-added processes
resource	result of successful asset refinement processes, producing sustainable heterogeneity of the owning firm in competition and enabling the firm to withstand competitive forces
competence	organizational, repeatable, learning-based and therefore non-random ability to sustain the coordinated deployment of assets and resources enabling the firm to reach and defend the state of competitiveness and to achieve the goals

Resource- and Competence-based View: Commonalities

It is worth mentioning that there are more commonalities between the resource- and the competence-based view than only sharing the same roots by explaining the *uniqueness* of the single firm and *stressing corporate strengths*. Both perspectives are *dynamic* in nature (although in different ways) and rely to a large extent on the same antecedents as they are:

- uncertainty in making economic decisions,
- an asymmetrical dispersion of resources and motivation among economic actors (Barney 1991: 105),
- a certain kind of “bounded rationality” regarding decision-making,
- the notion that the organizational environment is not given but can be shaped by proactive behaviour of firms which indicates that a *moderate voluntarism* (Etzioni 1968, Astley/Van de Ven 1983, Ringlstetter 1988) instead of determinism is preferred.

Despite the specific emphasis in the respective approach, resources can be regarded as the root of firm’s survival, competitiveness, and performance (in terms of sustaining competitive advantage respectively profitability). Close to the work of Penrose (1959), the firm itself is regarded as nothing else but an individual bundle of resources. The resources are developed over time, following the principle of path dependence. “History matters” (Teece et al. 1994), is only one consequence in this respect, lock-in and lock-out effects (Ghemawat 1991) another.

Due to its economic nature, explaining the behaviour of economic decision-makers is a matter of rationality. Keeping in mind that an asymmetrical dispersion of motivation among economic actors is assumed, it is necessary and useful to look out for a corresponding construct. Different protagonists of resource- and competence-based thinking (Mosakowski 1993; Conner/Prahalad 1996; Madhok 1996) deal with

Simon's notion of bounded rationality (Simon 1976). Due to the very nature of the two views it is desirable to use a construct considering path dependence and learning in organizations as well as different levels of motivation. The notion of a "variable rationality", proposed by Amit/Schoemaker (1993) and Schoemaker (1990), could be appropriate in this sense. The reason why is that the variable rationality can be regarded as a more specific, concrete and dynamic mode of the "bounded rationality" discussion. Unfortunately, the authors did not specify this construct in detail. Extending the discussion for the purpose of this paper, a variable rationality implies that striving to make rational decisions is a matter of learning in the past and the present situation of the decider. In detail, there are individual *rationales* of decision-makers which are subject to *changes over time*. These changes are caused by new information and personal experiences of the decision-maker and depend on learning as well as the individual constellation of deciders. Accordingly, a variable rationality implies *intra- and inter-personal differences in decision-making* over time. Fitting to the common reference point of bounded rationality, a variable rationality implies that making perfectly rational decisions is problematic due to restrictions as to information, knowledge, and motivation.

Resource- and Competence-based View: Differences

A key difference between the resource- and competence-based view is the chain of causality: Whereas the resource-based view concludes that superior resources will cause performance differences among firms, the competence-based view prefers a more subtle reasoning. Homogeneous assets and heterogeneous resources are the starting point of the chain. However, the resource endowment is not enough in order to explain performance differences. The firm itself has to be in a position to make use of these resources in a goal- and market-oriented way. This is only possible in case of available action-related competences. They unfold the potential of resources and enable the firm to adapt to the requirements in target markets instantly in a non-random manner. Competences fill the explanatory gap between idiosyncratic resources and performance by considering both "asset flows" (Dierickx/Cool 1989) and activities.

Following Hunt (2000), there is another reason why the competence-based perspective goes beyond the resource-based view by closing an explanatory gap of the latter. The causal extension of the resource-based view resides in the explanation that it takes competences in order to build resources by asset refinement processes. All in all, compared with the resource-based view the competence perspective offers new conceptual dimensions which capture more aspects of the complex and dynamic interplay of assets, resources, and competences (Sanchez 2001).

Regarding the relationship between the market and the firm, the views differ slightly. The resource-based view is sometimes (mis-)understood as an inside-out approach. Barney's (2002) VRIO framework clearly suggests that resources can only be of strategic importance if they are able to produce value which is only possible in case of market orientation. Although *planning* starts with identifying the strengths of the corporation, the *way of thinking* follows the other way round. The same holds true for the competence-based view with the single exception that market-oriented thinking plays a more prominent role: Competences are the important means in order to bridge

potential gaps between the market and the firm. Moreover, firm-specific competences do not necessarily refer to internal resources. Oppositely, the competence-based logic acknowledges the phenomenon of open boundaries (Madhok 2002: 544) by touching on the necessity to combine firm-addressable and firm-specific resources in order to attain the goals (Sanchez/Heene 1997). This gives rise to the impression that sustaining competitive advantages very often rest on the assets of a network of firms and, even more, on blending own capabilities with the ones of partner firms (Lorenzoni/Lipparini 1999). Such a “relational view” of competitive advantage (Dyer/Singh 1998) is simultaneously relevant in order to build a competence-based theory of the firm. Resource-based thinking, however, is very much more focused on the single firm.

In order to prove the outside-in character of the competence-based view, the framework of the (path dependent) “three phases of competition for the future” (Hamel/Prahalad 1994) is useful. The authors suggest that being successful in the (present) competition for market share depends on successful behaviour in the earlier competition for intellectual leadership and management of the migration paths. Dominating the fundamental and frame-giving competition for intellectual leadership implies to probe deeply into the drivers of the market development and in particular to understand customer’s problems and wishes in the distant future. Developing a creative view about new solutions, matching market needs later on, and designing the market interface the customer-oriented way are first steps of pro-active competence-based management. Figuring out promising core competences and arranging networks to build them over time comes next. This clearly indicates the strong touch of outside-in orientation which is a characteristic feature of the competence-based view. By the way, the pro-active way of market orientation goes along with the desirable opportunity to shape the market and the environment (moderate voluntarism).

All these differentiating features indicate that – unlike several alternate theories of the firm – the competence-based view does not follow the thinking in terms of the market equilibrium. Instead, a fundamental strategic goal is to develop innovative strategic architectures by ‘industrial foresight’ (Hamel/Prahalad 1994), ‘creatively destructing’ current market situations close to the meaning of Schumpeter (1934). Moreover, competence-based thinking implies to identify undiscovered market opportunities as well as to take the respective chances, the market process offers. The competence-based view differs from the resource-based one by the fundamental perspective. Sanchez and Heene (1997) call the competence perspective a systemic, cognitive, holistic, and dynamic one. Although the competence-based perspective prefers an economic reasoning, it is open for cognitive elements, such as learning. All in all, the findings suggest that we should no longer speak of a resource-based view which encompasses the competence-based view (Hoopes et al. 2003). If we would do so, we would ignore some considerable differences regarding the conceptual basis.

3. Basics of Developing a Competence-based View of the Firm

The discussion above points out that the competence-based view is different from and goes beyond the resource-based view. In particular, this holds true concerning the questions a theory of the firm has to answer. This will be outlined in detail in the fol-

lowing chapter. Problematic at this point is the fact that competence research is focused upon delivering a theory of competitive advantage, not a theory of the firm. There is, in fact, a fundamental difference between a sustaining competitive advantage of the firm and the competitiveness respectively survivability of such an organization. Nevertheless, by defining what competitiveness really implies, it turns out that the two constructs are connected.

Although meaningful definitions of competitiveness are absolutely thin on the ground, the approach developed by Schneider (1997) appears to be useful in this context. Schneider uses two major building blocks of competitiveness:

1. A firm can only be competitive if the *ability* is given *to prove oneself in market processes* with customers respectively suppliers (vertical level).
2. The competitiveness of the firm depends, furthermore, on the *ability to withstand competitive forces* of rivals in the market (horizontal level) *respectively menacing forces of the market environment*.

Competitiveness in this understanding is a key to understand the on-going existence of a firm after its foundation. Although competitiveness does not necessarily imply any kind of competitive advantage, it represents the minimum conditions in order to remain in the market. Fulfilled conditions prepare the ground for building competitive advantages. Such a definition of competitiveness is imperative for a theory of the firm. Notably, the discussion indicates that *competitiveness* is, by definition, *made up of competences*. Thus the definition of competitiveness and the theoretical background of this paper are aligned. According to that, the next chapter will deal with the competitiveness pervasively.

Madhok (2002) points to the fact that the potential of the resource-based view to create an alternate theory of the (*specific*) firm is under-estimated. We share this point of view which holds true even in the context of the competence-based perspective by emphasizing that the focus of analysis has to be shifted from competitive advantage to competitiveness.

Theoretical alternatives as e.g. the transaction cost approach offer some meaningful insights into a theory of the firm, although focusing on some specific elements being relevant in this context. By stressing the threats of opportunistic behaviour and selecting alternate transaction designs in order to minimize transaction costs, other important aspects are neglected. Madhok (2002: 539-543) is right by pointing out that the resource-based view represents a perspective acknowledging both *transactional and transformational aspects* (similarly Langlois/Foss 1999). This integrated perspective, going along with a more comprehensive understanding of external and internal conditions of the firm, is also part of competence-based thinking. It makes sure that both cost and benefit effects can be taken into account.

In order to develop a comprehensive theory of the firm, the competence-based approach offers unlike alternative non-evolutionary theories of the firm the chance to analyze institutional affairs the *dynamic* and not the comparative-static way. This is one more reason to assess the possibilities of the competence movement to create a competence-based theory of the firm a little bit more in detail. Based on this, a compe-

tence-based response to the basic questions of a theory of the firm, initially mentioned, can be given in the next sections.

All in all, the profile of a competence-based theory of the firm is:

- dynamic,
- focused upon delivering a theory of the uniqueness of the firm,
- oriented towards explaining both transaction and transformation costs and benefits,
- delivering an explanation which is at least partly independent from opportunism and the contractual point of view.

4. The Emergence of the (Multi-Person) Firm

Basic Considerations

The fundamental question about the nature of the firm (e.g. Coase 1937; Williamson 1991 in a transaction cost theoretical context) is already partly scrutinized in resource- and competence-based research (Conner 1991; Conner/Prahalad 1996; Madhok 1996; Osterloh et al. 1999; Madhok 2002). In particular Conner and Prahalad (1996) develop their point of view by a comparison to the – in their point of view complementary – transaction cost approach. Madhok (2002: 537-539) follows a somewhat similar path by referring to various publications of Coase and giving a resource-based interpretation of selected subjects addressed by Coase. In this section we refer to the previous resource-based contributions which is possible due to the compatibility of the resource- and competence-based view as mentioned above. Even more important, we intend to develop a competence-based explanation independent from the transaction cost approach and going beyond the resource-based view. By doing so, we acknowledge Foss' argument that opportunistic behaviour and institutional arrangements play a role even in case of a resource- and competence-based theory of the firm (Foss 1996a, 1996b)¹. However, the point made is, that it is not the only reason why firms emerge.

The emergence of a firm can be regarded as a try to make use of the opportunities, a division of work offers. Individuals are equipped with specific knowledge, skills, and motivation in an inter-personal comparison. They will pool their inputs by making use of the firm as an institution if they perceive the chance to overcome certain constraints they cannot overcome by their own. In competence-based terms, competences are nothing else but inter-personal patterns of action which rest upon the division of work and which support a goal-oriented social interaction of persons in a non-random manner. Accordingly, the development of competences requires a specific organizational environment which fosters asset refinement processes. The firm is – among others – one solution as to this problem. A firm will be created if (1) a group

¹ Foss (1996a: 473-474) points out that a superiority of the firm as an institution can only be explained by referring to opportunism and according contractual agreements. He concludes that the approaches by Kogut and Zander 1992 & 1996, pointing out 'higher order organizing principles' of the firm, and Conner 1991 do not offer a stand-alone explanation (Foss 1996a, 1996b).

of persons individually comes to the conclusion that working together in a firm would improve the individual situation in economic terms and if (2) there is no alternate organizational mode to create a better solution. Whereas the former antecedent is a necessary one, the latter is of the sufficient kind. The firm in this understanding implies pooling individual assets of the respective persons on a constitutional basis.

In the following sections the specific organizational environment, a firm offers, is analyzed. It is argued that the scrutiny can easily be backed up by referring to the discussion of the so-called 'isolating mechanisms' (e.g. Rumelt 1984; Yao 1988; Dierickx/Cool 1989; Mahoney/Pandian 1992). Although the isolation mechanisms have already been subject of several publications, their explanatory power is still not fully utilized. Moreover, the conceptualization of isolating mechanisms is not convincing. Subsuming both asset mass efficiencies and time compression diseconomies under the isolating mechanisms (Dierickx/Cool 1989), illustrates the problem: The former mechanisms explain how firms can outpace their rivals by active behaviour (i.e., by accumulating R&D knowledge via a well-aligned interplay of different researchers for many projects, triggering off synergies although having idiosyncratic backgrounds). The latter refer to a certain protection in case of competitors' attacks. They rest on rivals' problems to accumulate resources (i.e., reputation, brand equity, customer base) faster than the first-moving firm in order to catch up with this supplier. It should not be denied that the two facets are in certain way concerned with isolating the firm or its resources and competences. However, it would be a useful clarification to differentiate between 'protective' and 'outpacing' factors which will be done below in this chapter.

The isolating mechanisms of the two kinds can be triggered and are able to work in case of a stable entity. The firm represents such an entity. This holds true because the firm is temporally an unlimited agreement to pool individual assets in order to trigger refinement processes more effectively respectively efficiently. These refinement processes allow to turn assets to resources and to develop competences. Obviously, the explanation is different from those focused on opportunistic behaviour and finding corresponding institutional arrangements. This opens the avenue to some progress as to a competence-based theory of the firm. In this regard, the firm offers an 'ambiente', consisting of stability, reliability, and tight asset and resource couplings, nurturing competence building and leveraging.

The Specific Organizational Environment of the Firm: Outpacing Forces

The firm offers a stable (not static) background, composed of different institutional elements, such as: contracts including the distribution of property rights, similar agreements, trust and commitment. This environment allows and nurtures the development of inter-personal routines (Nelson/Winter 1982; Pentland/Rueter 1994). Routines represent pre-structured grammars of action, enabling a group of people to adapt to tasks in a goal-directed way due to the underlying knowledge the routines refer to². However, these routines will not lead to situations of determined input/output

² Routines can be understood in many different ways. Whereas Nelson & Winter (1982) point out the character of routines to represent automatic responses, the protagonists of

relations according to a 'given' production function. The reason why is the singularity of situations, the groups are facing, and the 'trial and error' processes which will be triggered in case of adapting to the specific situation. Such routines improve the co-operation of the individuals, work as storages of knowledge, and structure available assets in a goal-directed way. Compared to more loosely coupled or even uncoupled modes of inter-personal co-operation, these institutional elements allow higher levels of effectiveness and/or efficiency. In fact, they play a predominant role if the emergence of firms is to be explained in competence-based terms. They can be regarded as an *isolating element on the meta-level*, as outlined below. In order to point it out, it is necessary to refer to other isolating mechanisms and their interplay within a given firm in order to understand what drives individuals to found a multi-person firm.

Regarding firms as a combination of different resources, fostered and utilized by making use of competences, points to the importance of the interconnectedness of assets. Interconnections go along with activities of bundling and re-bundling. They enable the firm to respond to market challenges the more effective and/or efficient way. As these bundling activities are a costly matter, a quite stable environment is necessary in order to make sure that these 'investments' pay off. The firm is among the variety of institutional solutions the mode with the highest degree of stability and reliability over time. This does not exclude that co-operative designs might be very close to the firm.

Moreover, the resource ties are steered by persons who make use of other kind of assets and who interact with other persons within the firm. The corresponding structure is in literature subsumed under the term "social complexity" (Barney 1991). It indicates that persons from outside the firm (i.e. rivals) are not in a position to recognize and understand the different kinds of relationships completely. Thinking in internal terms, interconnectedness with persons as 'hubs' leads in social regards to a growing mutual understanding. Moreover, common rules and conventions can be established as well as values created. At this point motivational issues come into play.

All these aspects indicate the possibility to trigger asset mass efficiencies in many ways. First of all, the closer different assets are coupled, the better the chances to generate and store knowledge. The reason why is a higher degree of familiarity with surrounding assets and awareness of the persons involved in these networks. For the same reason there are better opportunities to convert knowledge and to create tacit knowledge. These processes, however, depend on the development of routines as a core outpacing factor. By its very nature, tacit knowledge, which is deeply rooted in routines, enables the firm to use knowledge more efficiently. Moreover, socially complex resource networks – backed up by routines – enable the respective persons to identify and integrate important external assets the easier way. They constitute an "absorptive capacity" (Cohen/Levinthal 1990) and facilitate the development over time. As a consequence, resource deficiencies and bottlenecks can be compensated which supports the outpacing effect within a firm.

i.e. structuration theory develop another point of view. Giddens (1984) regards routines as effortful accomplishments, by pointing out that routines are not completely determined. Pentland & Rueter (1994) prefer an intermediate position.

One can argue that all these aspects mentioned are already part of resource-based reasoning. By taking a closer look, this appears to be only a half-truth. The reason why is that it takes important constructs from the competence-based view in order to understand how far these processes really work. At this point the meta-function of routines comes into play again. If persons learn (and accept) to align their activities adapted to the overall goals, then it is possible to create the pre-structured grammars, routines are made of (Pentland/Rueter 1994). Those grammars represent the glue between the different assets of a resource network and are basic in order to explain how asset mass efficiencies can develop. As 'ingredients' of competences³, it takes the competence-based view in order to build a comprehensive argument.

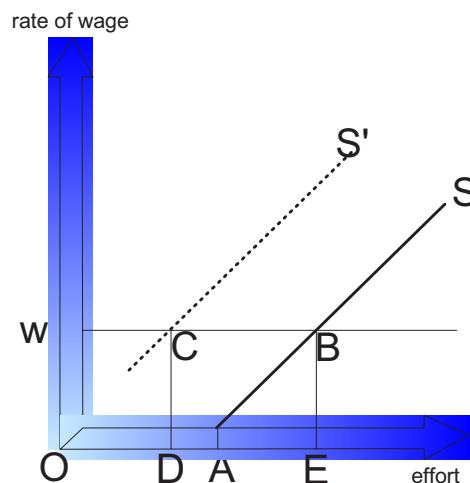
Such a reasoning is simultaneously basic in order to explain why firms can be a preferred institutional mode. The institutional background of a firm offers due to routines, common rules, and maybe even an emerging organizational culture a rich potential of coordination. This holds true regardless the fact that in particular very strong cultures can sometimes be disadvantageous for resource and competence building due to a 'framing' and inertia causing nature. The rich potential of coordination is superior compared to alternate modes (Osterloh et al. 1999), such as the market or even close co-operations. One can argue that in case of close inter-firm co-operation similar effects might be observed. This, however, holds true only to a certain degree. In case of inter-firm co-operation the problem of building inter-organizational routines arises which can be a delicate matter in the face of different goals the respective firms will pursue. Conflicts between the parties, resulting from i.e. a lower degree of goal consistency or a less developed culture in the inter-organizational case, go along with lower levels of coordination efficiency – and maybe even lower motivational efficiency. Moreover, the stability of the organizational arrangement is affected by these actual respectively potential conflicts. The more or less stable environment of the firm, instead, prepares the ground for a more fertile resource and competence building.

Going along with the aforementioned considerations, firms offer an environment fostering organizational learning which is broadly acknowledged in literature (e.g. Teece 1990; Kogut/Zander 1992; Grant 1996; Madhok 1996; Osterloh et al. 1999). Addressing respective motivational considerations is possible in competence-based reasoning because an asymmetrical dispersion of motivation among economic actors is assumed. Dealing with motivation in this context is necessary in order to understand knowledge-related processes within the firm and resulting effectiveness and efficiency advantages: In contrast to other organizational modes *the firm-specific environment fosters both extrinsic and intrinsic motivation*, as findings from motivation psychology suggest. Whereas extrinsic motivation seeks to contribute to goal attainment indirectly via the "pay for performance" principle, intrinsic motivation of members of the organization, based on shared values, leads to goal attainment directly (Osterloh et al. 1999: 1252). Every individual is intrinsically motivated to a certain, inter-personally differing degree. However, the level of intrinsic motivation can be compensated by extrinsic motivation which appears due to the fact that extrinsic motivation makes use of price

³ Similarly, Baden-Fuller & Volberda (1997: 96) point out: "A competence therefore draws on several routines which have been refined, stored and codified, or socialized."

effects. The higher the price, the more input of the individual can be expected within certain limits. As there are *two different effects of rewards*, the *monitoring* and the *informing aspect* (Frey 1997), the monitoring component allows to assign the performance of an activity to the responsible person. In these cases former intrinsic motivation will be replaced by extrinsic motivation. This replacement effect demonstrates that such kinds of payments go along with hidden costs of rewards. Accordingly, the price effect of motivation has to be compared with the replacement effect. As illustrated in figure 1, the replacement effect can outweigh the price effect. Formally speaking, the curve S represents the effort of an individual offered, depending on alternate levels of compensation. The distance between O and A represents the basic level of intrinsic motivation which will be reduced in case of additional extrinsic incentives. Accordingly, if the rate of pay will be increased from O to w, S' is the new curve of individual effort and the distance between O and D represents the new level of intrinsic motivation which can be significantly lower than before. In figure 1, the replacement effect (effort difference between D and E) outweighs the price effect (effort difference between A and E) by the effort difference between D and A due to a considerable shift from S to S'.

Figure 1: Price and Compensation Effect of Increasing the Extrinsic Motivation (according to Osterloh et al. 1999: 1252)



The illustration suggests that it is necessary to regard the net effect of increased extrinsic motivation, taking into account the interdependencies between intrinsic and extrinsic motivation. Osterloh et al. (1999: 1253) point out the empirical evidence of these two effects which are relevant in the context of a theory of the firm because in markets intrinsic motivation *can* play a role but is not required in order to make markets work. Intrinsic motivation, instead, is required in order to run the internal activities of a firm effectively and/or efficiently. In particular, intrinsic motivation is necessary in case of complex activities, the outputs of which can hardly be measured. If people only do what they are measured to do (Schwartz 1990), no desired outcomes would be produced without intrinsic motivation. Even more important in the context of a the-

ory of the firm: Monitoring systems and incentives, characterizing hierarchical coordination in terms of the New Institutional Economics (transaction cost approach, agency theory), might cause additional opportunistic action of the persons being monitored. Accordingly, monitoring systems might increase the problems of opportunism they originally should fix (Ghoshal/Moran 1996; Osterloh/Frost 2000). Keeping this argument in mind, the point made by Foss (1996a: 473), that the “(...) argument from the contractual approach would be that because hierarchy can more successfully control opportunism/moral hazard, higher order organizing principles would emerge”, appears in new light: In case of transferring tacit knowledge, the transfer will fail without any intrinsic motivation of the persons involved (Osterloh et al. 1999: 1254). *It is simply impossible to transfer implicit knowledge by making use of the price mechanism due to lacking measures.* Accordingly, the motivation system varies significantly between the firm and e.g. the market. In case of complex activities with problems of measuring the output, the firm offers a superior environment which is, after all, indispensable in case of transferring and using tacit knowledge as a core outpacing factor. The efficient and goal-oriented transfer of complex knowledge itself is a prerequisite of competence building and usage, favouring the option “firm” even compared to close inter-organizational coordination.

The Specific Organizational Environment of the Firm: Protection Forces

Protection forces in the context of isolating mechanisms intend to make sure that the status of core resources and competences can be protected for a longer time. In contrast to the outpacing factors the protectors play a more passive role. They rest upon competitors’ inability to imitate or substitute critical resources and competences. The firm as an institution is chosen if resources respectively capabilities can be protected within a firm in a better way compared to the institutional alternatives. This raises the question what such protecting forces are made of in competence-based terms.

Keeping in mind that the competence-based view regards the firm as an institution with open boundaries, the question is brought up how protection forces might work. In this context an important distinction is necessary: Markets and co-operative arrangements are characterized by the fact that assets and sometimes even resources can easily be transferred between economic actors. Thus, as long as boundaries between institutions can be identified, we can speak of a state of “*permeability*”. In competence-based terms firms are regarded as systems with somewhat open boundaries, too. However, this view is to be qualified: Due to the fact that firms strive for protecting critical resources and competences in competition in order to attain their goals, a special kind of *semi-permeability* is arranged. The semi-permeability implies the integration of firm-addressable resources from outside the firm as well as the (partial or complete) transfer of firm-specific resources to other organizations. However, the asset and resource exchange processes are strategically controlled by the respective firm in order to avoid the diffusion of critical resources and/or competences. Consequently the firm is an institution with open but strategically monitored boundaries.. Compared to institutional alternatives, the boundaries of the firm are better controllable and help to avoid critical resource diffusion processes. This is one reason why it is

often so hard to build strategic networks in those areas where critical resources and competences are to be pooled. One example among others is the strategic cooperation of automotive suppliers in the area of R&D in order to create innovative electronic and computerized system solutions. Developing a real collective strategy often fails due to the fact that resource and competence diffusion processes might get out of control respectively are uncontrollable.

Such a reasoning brings up the question what this semi-permeability of the firm's boundaries, different from other institutions, is about. The answer can be given by referring to the isolating mechanisms once again. In legal respect, the firm offers a background in order to define property rights in a way safeguarding semi-permeability. Property rights arrangements in co-operations often go along with problems of joint ownership respectively restricted rights to use critical resources. This holds true in particular in case of jointly developed resources. It can be argued that co-operations enable the partner firms to develop resources and competences which cannot be created by one firm alone. However, unfavourably defined bundles of property rights to resources (from one firm's point of view) work the other way round and can lead to an overall disadvantageous situation (of the network). Such legal considerations, based upon better defined and more comprehensive respectively exclusive property rights, favour the firm as an institutional mode.

Semi-permeability also plays a role in case of causally ambiguous resources and competences. Causal ambiguity refers to the state that cause-and-effect relationships as to the use of resources and competences are difficult to recognize (Rumelt 1984). Persons from outside the firm and even internal deciders are not in a position to explain the roots of a firm's performance undoubtedly. Again, a differentiation is necessary: 'Insiders' are usually much better informed about the resource networks and the competences in use than persons from outside the firm. This can be explained in the face of the fact that internal persons are part of the resource networks which generate the performance to be explained. Due to this fact they are able to gather more knowledge and to interpret the internal structures and processes more thoroughly – regardless the fact that comprehensive explanations are often impossible. Accordingly, a state of *internal opacity* regarding cause/effect structures exists. However, the *external opacity* of outside persons outweighs the internal non-transparency. This helps to explain why protection forces work and why semi-permeability occurs.

Finally, a protection also takes place due to the fact that transferring resources and competences among boundaries is a costly matter. Pooling resources of different firms goes along with misfits and resource adaptations. The respective economic problems cause a de-facto protection.

Results

A summarizing reply to the criticism voiced by Foss (1996a; 1996b) is still required. What does the firm offer which cannot be given by (close) co-operative arrangements? It cannot be ignored that many and important parts of the competence-based explanation of the emergence of the firm are at least indirectly related to the problem of opportunistic behaviour. Nevertheless, there are some important aspects in the explanation which stem from considerations of partitioning the work. The stand-alone char-

acter of a competence-based theory of the firm is, firstly, based on these arguments. Secondly, the whole set of drivers of the emergence of firms, is a specific feature of this theoretical movement. Thanks to the use of the isolating mechanisms, competence-based theory is in a better position to address the questions of a theory of the firm. The considerations presented here are first steps in this regard.

5. Development and Breakdown of Firms

Competitiveness and the Development of the Firm

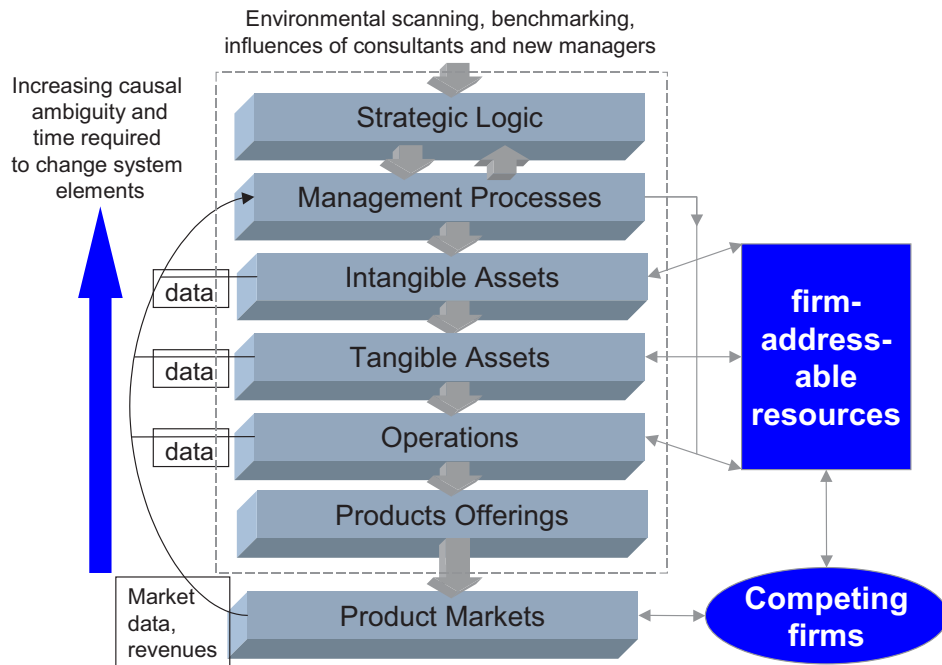
In order to analyze the development and the survival of the firm over time, it is necessary to refer to the construct of competitiveness as mentioned above. If a firm is able to prove itself in market processes with the respective exchange partners and if the firm is successful as to withstanding menacing forces of rivals and the market environment, then the status of survivability can be maintained. According to the fact that not only in turbulent environments the presumptions of competitiveness change almost all the time, there is a strong need to develop and reconfigure permanently the firm's resource and competence endowment (Teece et al. 1997). The competence-based view acknowledges this requirement as well as the threat Leonard-Barton (1992) touched on, when she referred to core rigidities. Starting refinement processes and activating isolating mechanisms is therefore a direct response to this problem.

A situation menacing the survival of the firm is given, if the available (not necessarily owned) resources and competences cannot be utilized in a way keeping the firm's competitiveness. This implies situations where the resource and competence development was – due to wrong specifications respectively extraordinary inertia – misleading regarding the development of the markets and the environment (vertical level of competitiveness). Defective isolating mechanisms, including the modes of legal protection (e.g. by trademarks), are another reason for a lost competitiveness (horizontal level of competitiveness). In such cases rivals are able to outpace even former market leaders and to put in question the firm's existence. The competence-based view offers a framework to structure the manifold factors having impact on the competitiveness and explaining changes of the firm over time as well as the eventual breakdown. This framework is the so-called open system view, developed by Sanchez and Heene (1996; 1997) and illustrated in figure 2.

An Open System View on Organizational Development

The open system view is useful to address the aspects, a theory of the firm is concerned with, in many ways. It emphasizes the interface between the firm and its environment, it allows to address any kind of change of the firm by scrutinizing alterations of the system elements, and it opens the avenue to understand critical resource- and competence-based bottlenecks threatening the firm as an institution. According to this view, the firm represents an idiosyncratic entity, characterized by (1) specific system elements and (2) boundaries which are open and semi-permeable, as scrutinized above.

Figure 2: The „Open System View“ of the Firm (Sanchez/Heene 1997: 17)



The firm is directed by the so-called “strategic logic” which is defined and characterized by Sanchez et al. (1996: 10) as follows:

“Strategic logic refers to the rationale(s) employed (explicitly or implicitly) by decision makers in the firm as to how specific deployments of resources are expected to result in an acceptable level of attainment of the firm’s goals. All employees within a firm have at least some degree of discretion in the allocation of resources. (...) Thus, the strategic logic of the firm is not an exclusive creation of top managers. (...) Subsequent interpretations by other employees (...) require the adoption by each decision maker of a rationale for deciding (...). (...) the firm’s strategic logic (...) resides at all levels of the firm, and for this reason, a firm’s strategic logic may be subject to inconsistencies across the various activities of the firm.”

The strategic logic is frame-giving for decisions made by both individuals and groups within firms. Sometimes the situation occurs that the strategic logic is not adequate in order to keep the state of competitiveness due to certain constraints of the decision-makers who are not responding to changes in the marketplace respectively intelligent moves of rivals. Such a problem can be fixed in various ways. Sanchez and Heene (1996: 56) suggest:

“Managers may try to overcome the constraints of their cognitive limits by hiring consultants or other advisers to tell them about new models for competing (...). Managers may seek to hire new managers from other firms or other industries to bring new perspectives that can provide new assessments of the firm’s current strategic logic (...).”

Obviously, the strategic logic will be influenced permanently by (1) external benchmarks and (2) internal feedbacks. Such an internal feedback is stimulated in particular by the recursive relationship between the strategic logic and the management processes taking place within the firm. However, this does not mean anything regarding the flexibility respectively plasticity of the strategic logic which can be inert if managers do not perceive the need to change or are unable to arrange any kind of adaptation. The closeness to the Argyris/Schön model (1978) of single- and double-loop learning is evident: Quite often, especially in case of former success, managers learn the single-loop way, not questioning the basic governing variables who might create the biggest portion of misfit. Thus, inertia as to this framing element of strategic management, steering in a certain way all the other system elements at least indirectly, might create a system breakdown due to lacking resource- and competence-based competitiveness. The problem can be overcome within certain limits by changing the governance variables. This is often only possible in case of external support. However, the degree to which the firm is open for external support largely depends on the strategic logic itself and the open-mindedness of the managing persons. Although in many cases inert, the strategic logic underlies certain changes over time. This goes along with changing the managing persons (not necessarily only the formally authorized managers) and their perceptions, experiences and values. Moreover, the organizational values and the corporate culture influence the plasticity of the strategic logic substantially.

The management processes according to figure 2 play in a similar way a key role regarding the changes of a firm over time. These management processes should provide a strategic frame for all the “follow-up” system elements, as they are: intangible assets, tangible assets, operations, products, and even the appearance in the product market. Scrutinizing these system elements in close connection with the management processes in a path dependent manner is useful in order to understand macro and micro changes of the firm as well as system breakdowns. Notably, according to the open system view such a scrutiny acknowledges the embeddedness of the firm in the market and the business environment. The dynamic interplay between the firm and the overall external environment can be analyzed along three different arenas drawing in particular on resources and competences.

(1) Regarding the *right hand side* of figure 2, a firm interacts with its external environment in order to fill resource gaps and to overcome weaknesses as to the operations actually and potentially. In order to nurture competence building and leveraging (e.g. Sanchez et al. 1996), co-operation with external parties is often indispensable in order to access the so-called “firm addressable resources” (Sanchez et al. 1996). Competence-based thinking goes along with the notion that a reliable and effective access to critical resources is more important than the question of property, stressed within the New Institutional Economics. Accordingly, the absorptive capacity as to external knowledge as well as regarding other kinds of external assets is brought up. According to Cohen/Levinthal (1990), accessing firm-addressable resources effectively depends on (a) the identification of promising assets potentially increasing the competitiveness of the firm, (b) the ability to integrate these external assets and to combine them with the resource networks in use, and (c) the effective usage respectively exploitation of the accessed assets, in particular regarding future resource and competence building.

The absorptive capacity is cumulative and requires an alignment of the three above-mentioned sub-capacities. Moreover, the effective absorption requires the willingness of external parties to co-operate with the firm – which is in no way a matter of course. Exchanges have to be prepared going along with bilateral asset transfers between the parties. Thus the integration of external assets is only one part of a change relevant to the resource endowment. The flow into the opposite direction has to be considered, too, in order to understand the change of the institution comprehensively. Consortia in international projects represent one example where intensive resource pooling and transfer processes take place. Having finished a project, the firm's situation in terms of resource endowment and competitiveness very often has changed considerably. Whereas it is easy to understand macro and micro changes of the firm over time by making use of the open system view, it is worth mentioning that a breakdown of the firm will occur in case of lost competitiveness due to an asset mass below the critical line. This can be induced by an insufficient resource building, an under-developed absorptive capacity, by missing responses to menacing forces caused by rivals, and/or unfavourable exchanges the firm is involved in.

(2) Regarding the *bottom* section of figure 2, the firm's participation in market processes can be scrutinized. The firm's role in the market process is similar to the understanding of the Modern Austrian Economics (Mises 1940; Kirzner 1973). Firms participate in market processes with offerings, based on available resources and in particular knowledge about the market. How far an offering matches the demand is open and subject to a process of trial and error. Without an adaptation to the product market, a firm will be outpaced by rivals due to lacking closeness to the customer. As a consequence, the firm will lose its competitiveness. Close to Mises (1940), misleading adaptations will cause a breakdown of the firm, finally. Referring to the position of moderate voluntarism, instead, there is still much room for creative ideas and alert action of entrepreneurs. Anticipating up-and-coming needs, building the required resources and competences, and creating new solutions in particular in co-operation with lead users (Hippel 1986) indicates the possibility to shape markets actively. This contributes to the firm's ability to prove itself in the market in the long-run and not only in the short-run. Notably, every participation in the market processes goes along with at least minor changes due to the production of new knowledge. Receiving important information from the customer can be the impulse for major changes following-up. The competitiveness of the firm and the survivability depend on resource- and competence-based alignments to actual and future market's needs.

(3) The knowledge gathered while taking part in market processes is the input in order to analyze changes and breakdown reasons according to the *left hand side* of figure 2. New knowledge about the market has to be integrated, affecting the whole value-added system of the firm, as represented in figure 2 by the grey-dotted area. The interaction between the customer and the firm as a supplier, which occurs in every market process, triggers a feedback process inducing major or minor changes. At first, the intangible assets are affected by the new knowledge gathered in the market process. This new knowledge may be contradictory to parts of the current stock of knowledge. Besides that, also the tangible assets and the operations will be subject to respective changes. Even more fundamental is the feedback arrow from the product market

to the management processes which are connected with the strategic logic: The more powerful the market impulses are, the more fundamental the resulting changes as to these important system elements will be. However, as indicated in figure 2, the inertial forces at these deeply rooted system elements can make rapid changes unlikely respectively impossible. Thus the problem is that *inertia* at all the respective system elements might create a *misfit* between the firm and the market which menaces the existence of the firm: The ability to prove oneself in market processes with customers will be shrinking. Self-reinforcing effects such as lost customer relationships, causing a situation of mistrust and connected with spill-over effects, might destroy brand reputation and trigger new processes of terminating customer relationships.

All in all, such a competence-based analysis referring to the open system view offers a meaningful framework in order to understand the very nature of organizational changes in terms of resource building and erosion more in detail. Simultaneously, it illustrates the openness of the firm – in contrast to the resource-based view. Resource and competence building obviously requires both alertness and openness which already leads to the next question of defining the boundaries of the firm.

6. The Boundaries of the Firm

Boundaries are to be regarded in a path dependent way. It is worth mentioning that even in this regard the competence-based view offers insights apart from ‘mainstream’ theories of the firm. In order to develop a complete view, it is necessary to dwell on the following aspects:

- defining the horizontal boundaries of the firm (scope of the business),
- defining the vertical boundaries,
- analyzing the permeability of the boundaries.

As the discussion about open and semi-permeable boundaries already took place, only the first two aspects are subject to this chapter.

Business Scope

In the context of *extending respectively focussing the scope of the business* numerous studies have been published. An overview of some selected findings as to diversification as a strategic option is given by Barney (2002). The most important results are as follows:

- In most cases, related diversification outperforms unrelated diversification.
- Relatedness can be meant in at least two different ways: relatedness to current business units and relatedness to the available resource endowment. Modes of unrelated diversification without any substantial connection to the actual business are problematic due to the threat of considerable resource and competence gaps.
- In general, diversification does not increase the performance. In many surveys exactly the opposite is true.

Shifting the boundaries is recommendable, as long as the allocation can be improved by resource and competence leveraging (Hamel/Prahalad 1993; Sanchez et al. 1996) in terms of effectiveness and/or efficiency. Assuming uncertainty, as mentioned above, the allocation at a given point in time can only be optimal by accident. Thus a leveraging, based on the ability of replication (Teece et al. 1997) and independent from the

“excess capacity” discussion of general management, can prepare the ground for an improved performance. However, this does not necessarily mean that a pure extension of the scope of the firm is recommendable. Oppositely, in many cases the allocation will go along with a competence-based portfolio restructuring, implying to drop certain business units, formerly belonging to the “core business”. The reason why is that such scope-related decisions have to take into account actual and future resource and competence gaps which cannot be closed in a satisfactory way. The path dependent perspective, encompassing lock in and lock out effects, as suggested by Ghemawat (1991), makes sure that focussing the activities becomes a more prominent option in strategic decision-making. In case of entering new businesses, the competence-based perspective stresses the necessity to co-operate with other parties in order to make best use of the available mass of resources and competences and to fill resource gaps immediately.

Vertical Integration

In case of *vertical integration (and vice versa)* the reasoning is similar (Bettis et al. 1992; Foss 1993). Integration is, at first glance, a matter of monitoring core resources and competences. An integration is required in case of those resources which represent the roots of a firm’s competitive advantage. However, defining the boundaries in such a manner would be, by far, too myopic. The reason why is that many of those core resources and competences are embedded in resource networks. Separating them from the accompanying resource endowment would weaken the performance of the resources. Thus defining the vertical boundaries becomes a subtle matter, even by facing the fact that causal ambiguity appears. Accordingly, it is hard for managers to identify the real roots of success and those resources which need to be integrated respectively which can be subject to an outsourcing. Moreover, one has to put into consideration that there are core resources and competences which constitute a competitive advantage of a strategic network and not of a single firm. In those cases integration is only one solution among others and maybe not the most adequate one.

Keeping this background in mind, the following conclusions can be drawn:

- In a “networked” economy it is hard to give a definite answer to the integration question. Access to resources becomes more important than “pure” kinds of ownership of resources.
- Argyres (1996) points out that relative competence positions are decisive in case of making vertical integration decisions. Thus it is not enough to analyze a situation only by regarding the firm’s asset endowment and the actual respectively future demand. According to the understanding of competitiveness it is necessary to take suppliers, competitors, and customers into account. Integration is in particular a matter of the competitive situation, encompassing the likely resource building and leveraging of actual and potential rivals. This point of view differs significantly from the transaction cost approach.
- The status of a core resource or competence might change all the time, in particular in turbulent markets. Resource and competence building activities have to be considered as well as asset erosion processes. Knowledge accumulated in trial and error processes and embedded in the firm helps to increase the likelihood of suc-

cess in case of refinement processes. It comes out that all kinds of integration decisions (and the other way round) have to be regarded in a path dependence context, acknowledging potential irreversible lock out effects.

- Assets supporting the performance of core resources and competences need to be controlled. This holds in particular true in cases where core and “non-core” resource are interwoven and can go along with the necessity of vertical integration.

7. Internal Organization of the Firm

Derived from the discussion above, the internal organization of firms is to be described in terms of the system elements according to the open system view. These idiosyncratic system elements of a given firm are closely intertwined. This interconnectedness of the system elements which is frame-giving for the individual internal organization depends on the firm’s managerial compromise between an ‘inside out’ and ‘outside in’ orientation. Accordingly, the internal organization is not at all independent from the external environment. The external impact on the internal organization, however, varies significantly between alternate firms.

To speak of an alignment between internal potentials and external requirements, as indicated above, seems to be meaningless unless there are elements characterizing the internal organization and representing an interface between the system elements mentioned above. The routines respond to this problem: Having activated available assets, their main function is about “bringing the potential down to the market” – and to make corresponding adaptations according to market needs. A basic management problem is that routines are hard to be identified as elements of the internal organization and accordingly difficult to be monitored. This, however, should not lead to neglecting them when tackling issues of the internal organization. Beside routines, there are other elements representing the *informal* internal organization of the firm, as they are: rules, norms, fundamental values, and the corporate culture. All those informal elements are useful in order to improve the ability of gaining orientation and to motivate the internal members. One can say that addressing these ‘soft’ elements of internal organization is in other theories under-emphasized. In the face of their relevance to the competitiveness of the firm, the competence-based view is useful to shift the attention.

In an “age of decentralization” the competence-based view does not tend into the opposite direction. However, the roots of competitive advantage as well as competitiveness need to be identified and managed by the general management of the firm, abstracting from certain wishes of decentralized operational units. This abstraction, however, does not mean that strategic management turns considerably into the centralized direction. Instead of this, the alert compromise between the two facets represents a core of competence-based thinking.

8. Conclusions and Outlook

Does the competence-based view offer an alternate theory of the firm? Based on the findings of this paper, we can confirm such a status – but not without any reservations. Most important, the competence-based approach gives answers to the questions connected with a theory of the firm, in particular a *theory of the unique firm*. Notably,

these answers differ sometimes significantly from those of other theories in use and are relevant to an understanding of the respective issues. To point it out and to continue an actual debate, was the main intention of this contribution. The main findings of this article are briefly summarized in table 2. Due to the summarizing character we can abstain from a detailed comment on the respective items representing a competence-based theory of the firm.

Table 2: Competence-based Contributions to a Theory of the Firm

Questions of a theory of the firm	Competence-based point of view
emergence of the (multi-person) firm	<ul style="list-style-type: none"> • explaining not only the firm in general but also the uniqueness of the single firm • higher order organizing principles of the firm due to outpacing factors • higher order organizing principles of the firm due to protection forces creating semi-permeable boundaries
development and breakdown of firms	<ul style="list-style-type: none"> • changes caused by: <ol style="list-style-type: none"> 1. cooperative resource transaction processes: integrating firm-addressable resources, transferring firm-specific resources 2. participating in market processes with customers (including both transaction and according transformation) 3. learning in the market and adapting the firm's system elements • breakdown in case of: <ol style="list-style-type: none"> 1. inability to prove oneself in market processes and/or 2. inability to withstand threats caused by competitors respectively the business environment
kind of boundaries	<ul style="list-style-type: none"> • open boundaries • principle of semi-permeability
"horizontal boundaries" of the firm (business scope)	<ul style="list-style-type: none"> • depending on: <ul style="list-style-type: none"> • the availability of critical resources and competence as to a given application (avoidance of resource & competence gaps in competition) • the effective use of an available resource and competence endowment (synergies, relatedness) • resource refinement paths and corresponding business opportunities
"vertical boundaries" of the firm (vertical integration)	depending on: <ul style="list-style-type: none"> • existing relations to external parties • the relative resource/competence position in competition • lock ins/lock outs
internal organization of the firm	dependent on conditions of the external environment of the firm <ul style="list-style-type: none"> • characterized by system elements according to the open system view • core element of internal organization: routines, rules, norms, values, culture

Regarding the explanandum and explanans discussion (Foss/Foss 2000) it is necessary to distinguish between different aspects which have to be explained. Assuming to explain the existence, the development and the breakdown of firms as well as modifications as to the boundaries, a firm A will survive respectively modify its boundaries de-

pending on the competitiveness of the individual firm. As the competitiveness encompasses both the ability to prove oneself in the market and to withstand menacing forces from rivals and from the business environment, the proposal by Foss/Foss (2000) to use an explanans, consisting of asset characteristics, bounded rationality, and learning, can be modified as follows: All the characteristics of resources and competences can be related to the competitiveness construct as used in this article. Accordingly and related to the survivability over time: If a firm A is in a position to develop competitive resources and competences in a dynamic, path dependent way by fulfilling the following requirements, then firm A will survive: (1) making resources available and ready to use in a market-oriented way *and* developing mechanisms to avoid resource erosion (vertical level), (2) developing powerful mechanisms in order to avoid resource undermining by rivals respectively business environment forces (horizontal level). Learning is a construct lying behind the competitiveness of the different asset categories because without learning the required adaptations to markets and business environments will not take place. The bounded rationality discussion can be neglected here due to the antecedents mentioned above.

Keeping alternate theories of the firm in mind, one cannot abstain from the logic, the transaction cost approach offers. In particular, Williamson's (1991) organizational failures framework, stressing opportunistic behaviour, demonstrates that opportunism is under-estimated in competence-based thinking. Under-estimated does not mean that opportunistic behaviour is completely neglected. A strategic alliance, intending a 'hit and run' in order to access critical know-how of the partner and afterwards dropping the relationship, is in any way opportunistic behaviour. However, the hold-up situations, well-known from the New Institutional Economics, cannot be addressed in a similar manner. Notably, as these phenomena are relevant to reality, the explanatory power of the competence-based view is limited in this specific regard. Unlike the New Institutional Economics, the competence-based view focuses very much more on the *chances* going along with uncertainty compared to the risks. Accordingly, the safeguards, the competence-based view offers in the face of opportunism, are far away from being comprehensive.

Does it really matter so much that the competence-based view is not in a promising position to address opportunism? Some researchers put the importance of opportunism into doubt and point out that according to a strategic point of view other things are worth stressing (e.g. Hunt 2000: 101). In order to understand the nature of the firm comprehensively this argument lacks a little bit power. In the face of uncertainty the threat of opportunism does play a considerable role in real economic life. Accordingly, it has to be acknowledged that opportunism and its consequences are, apart from the debate about the isolating mechanisms, deficiencies of a competence-based theory of the firm.

Another problem, closely connected with the former one, is the organizational paucity of solutions offered by competence-based discussions. Addressing the firm, co-operations, and the market as alternate institutions is possible. However, the enormous variety of different transaction designs of the transaction cost approach, enabling the firm to arrange a (more or less static) fit between the firm and the environment, is not part of scope of the competence-based view.

As already indicated, the competence-based view is on the way to a perspective taking competitive advantage of the single firm as well as the organizational network into account (Dyer/Singh 1998, Duschek 2002). This shift is not only useful: It is absolutely necessary in order to understand the emergence of both competitive advantages as well as firm's competitiveness comprehensively. In other words, the former focus on the firm itself was a misleading development. A modification is already in progress.

As to the nature of human behaviour the competence-based view offers some insights which are useful to a theory of the firm. In particular the construct of a variable rationality is useful in order to address institutional dynamics. However, there is still some more fundamental work to be done in order to prepare a solid theoretical ground. Despite the weaknesses of the perspective (see additionally Priem/Butler 2001), it is a main conclusion of this article to demonstrate that the competence-based view represents, all in all, an interesting and useful branch of the theory of the firm.

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