Why a management concept fails to support managers' work: The case of the 'core competence of a corporation'

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With respect to teaching there is no more important topic than the question of the way in which genuine concepts are formed. John Dewey[1]

Abstract

Management concepts are both products and instruments of abstractive thinking. This conceptual paper discusses the relationship between different forms of abstraction and the practical relevance of management concepts. It focuses on the difference between empirical and theoretical abstractions. The former serves categorization while the latter serves explaining and constructing. We argue that this distinction can partly explain the difficulties managers face when using the management concepts researchers have introduced. To substantiate our claim, we analyse the creation and use of the concept of a corporation's core competence. The analysis shows how, in this case, a theoretical abstraction of a novel strategic principle turned into an empirical abstraction, which in practice has triggered unproductive attempts to categorize existing competencies rather than create new ones.

Introduction

M3: *'Well... First of all, we've all, at some point in our history* [in top management], *probably participated in defining core competence. And I was a chairman in one of these groups in our previous organization* [structure]*, and we wrote a hell of a lot of papers. And what have we learned? At some point we defined project management and contract negotiations as our core competencies, and now Kate and John have outlined yet another list for this, and Peter already wanted some changes to its wordings.'*

In the excerpt above, the manager of a large road building company is making critical observations on the management team's effort to create a competence strategy for the firm. The managers had chosen to use the concept of core competence as an instrument in this endeavour, but were not too happy with the result. The motivation for this conceptual paper arose from observing the frustration of the managers, who tried to apply the concept and felt that their attempts amounted to nothing but futile piles of paper.

In recent years, scholars have intensively debated the relevance of management research for practice (Ghoshal, 2005; Hodgkinson et al., 2001; Mohrman et al., 2001; Nicolai and Seidl, 2010; Rynes et al., 2007; Starkey and Madan, 2001; Syed et al., 2009). It has been suggested that the lack of collaboration between researchers and practitioners may partly explain the deficient practical relevance (Boyer, 1990; Van de Ven, 2007). Argyris (1980) has argued that the norms of rigour of 'normal science' prevent

researchers from performing emancipatory searches for new alternatives that practitioners would need. Ghoshal (2005) argues that management theories that are reductionist and partial are not only irrelevant, but detrimental to good management practices. In this article, we argue, partly following Ghoshal's line of thought, that the practical value of the management concepts that researchers present depends on the nature of the abstraction and generalization processes through which the concepts have been produced. To analyse these we apply Ilyenkov's (1982) and Davydov's (1990) theory of two fundamentally different forms of abstracting and generalizing. This theory argues that concepts are generalized representations of reality, which are produced through certain epistemic actions of abstracting and generalizing. When created, they can be used as instruments for carrying out similar epistemic actions in various contexts. The theory further holds that the epistemic actions of empirical abstraction differ fundamentally from those of theoretical abstraction, and produce representations of reality with remarkably different value as instruments. To demonstrate this, we analyse the evolution and use of the concept of the core competence of a corporation, presented by Prahalad and Hamel (1990) [2], from the point of view of the actions of abstracting used in its creation and application.

We will first explain this theory and then use it to examine the development and use of the concept of the core competence of a corporation. We will first shortly describe the history of the concept and its place in strategy theory. Then we will analyse the processes of abstraction that are visible in: 1) the strategy processes of the firms that Prahalad and

Hamel used as case examples, 2) Prahalad and Hamel's explanation of their theory and their recommendations for managers, and 3) the further elaborations of the concept within management literature. Then we will present a review of the literature on the practical uses of the concept, and show an example of how managers use it in a company. At the end, we will discuss the implications of the observations for the debate on the practical relevance of management knowledge.

Two forms of abstraction and generalization: empirical and theoretical

A concept can be understood as a generalized representation (be it internal and mental or external and material) of some aspect or part of reality produced through a sequence of the epistemic actions of abstracting and generalizing. When created, the concept functions as a resource and instrument for carrying out similar operations of abstracting and generalizing in new contexts (Leontyev, 1990: IV). There are, however, qualitatively different methods of abstracting and generalizing that produce qualitatively different kinds of generalized representations, that is, different kinds of concepts with varying functionalities as intellectual instruments. Davydov (1990: 86-109) highlights the difference between empirical abstraction that produces formal, classificatory concepts, and theoretical abstraction that produces models or principles that allow one to mentally reproduce the interacting phenomena that make up a holistic system. We explain this difference in the following.

In a study of the ways in which people think, the psychologist A. Luria (1976: 55) presented a picture of an axe, a tree, and a saw to the experimental participants in a remote, unindustrialized area in Uzbekistan and asked them which two of the objects belong together. Most of the participants who had attended school answered that the axe and the saw go together because they are both tools. They compared the objects and found a feature that was common to the two but which the third lacked. An uneducated peasant, Rakmat, however, answered: You need all of them, you need a saw and an axe to cut a tree. Instead of categorizing objects on the basis of similar features, he focused on the functional connections between the objects in a peasant's typical work action. Such functional connections between the qualities of objects can, however, only be found in their mutual interactions in practical activity or in experiments. According to Davydov (1990: 88-89), identifying such functional connections is the first, rudimentary form of theoretical abstraction that establishes relationships between qualities of objects, which cannot immediately be perceived, but appear in their interaction within a system.

The philosopher Spinoza (1677) was the first to point out this difference between forms of abstraction when he discussed the proper way of defining a concept. According to Spinoza, the fundamental properties of things are not understood as long as their essence, that is, the principle of their evolution or production is not known. If this is the case... 'there is necessarily a perversion of the succession of ideas, which should reflect the succession of nature, and we go far astray from our object.' (Spinoza, 1677: 2. part,

2. Chapter) He continues: 'For instance, a circle should, according to this rule, be defined as follows: the figure described by any line whereof one end is fixed and the other free.' That is to say, a pair of compasses denotes the proper definition of a circle because it provides *the principle of producing* circles of any sizes and quality; also circles never created before.

Empirical abstractions are names of sets of objects or phenomena. They provide the criteria for subsuming objects into specific sets on the basis of their externally observable similarities and differences. The concepts based on such abstraction typically form a hierarchy of sets with an increasing scope and a decreasing amount of specifications. In this form of abstraction, objects are viewed in their givenness as independent entities, with fixed qualities in a specific time and place, without paying attention to the systemic relationships of interaction and the processes of their emergence and change. This view has been criticized by Whitehead (1997: 51) as a fallacy of misplaced concreteness, as the abstractions – the names of objects – are confounded with concrete reality that actually consists of processes rather than static entities. Theoretical abstractions, on the other hand, focus on the systemic relationships of interaction between diverse objects in which individual objects manifest properties that they do not have outside the system. (Ilyenkov, 1982; Davydov 1990: 90-91). Such system-forming relationships of interplay and complementarity are revealed through historical analysis and practical experimentation. Rather than verbal definitions, theoretical concepts exist

as methods and models that are used as intellectual instruments in special kinds of thinking actions. According to Davydov (1990: 91) "to have a [theoretical] concept of a given object means to be able to mentally reproduce its content – to construct it". In other words, it means an ability to reproduce the development of an object or phenomenon that the concept denotes in all its systemic and functional interconnections. Theoretical abstractions are generative in the sense that they enable moving mentally in time from the here and now to the past and to the possibilities of the further evolution and change of the system by revealing the principle of its functioning and development. These principles can be applied in various contexts as instruments of design, experimentation, and learning.

The process of theoretical abstraction that leads to a theoretical concept starts from a contradictory situation, which forces one to question a prevalent belief or practice. Such a situation emerges when the development of some element of a complex system lags behind the development of the other elements, creating an inner contradiction within the system. A new theoretical concept can be understood as a principle of resolving such a contradiction through a new way of mediating the interplay between the opposites of the contradiction (Ilyenkov, 2007). Such a new structure emerges typically as a local solution to a general problem. As Ilyenkov (1982: 83-84, emphases in original) notes:

> 'Any new improvement of labour, every new mode of man's action in production, before becoming generally accepted and recognised, first

emerges as a certain deviation from previously accepted and codified norms. Having emerged as an *individual exception* from the rule in the labour of one or several men, the new form is then taken over by others, becoming in time a new *universal norm.* If the new norm did not originally appear in this exact manner, it would never become a really universal form, but would exist merely in fantasy, in wishful thinking.'

The concept of the core competence of a corporation can be seen as such a new way of mediating between contradictory requirements, developed first as a local solution to a historically evolved, increasingly general systemic problem. However, it can also be used as a way to categorize existing competencies. In the following, we will analyse the evolution of this concept, using the distinction between empirical and theoretical abstraction. After this, we will use the result of the analysis to explain the difficulties mangers have in using the concept as an instrument in strategic planning.

Forms of abstraction and generalization involved in the creation and use of the concept of the core competence of a corporation

Core competence: an appealing but difficult notion

Prahalad and Hamel's (1990) theory of competence-based corporate strategy was brought to widespread public attention in their article 'The Core Competence of the Corporation' (Prahalad and Hamel, 1990). It offered an appealing strategy tool to implement the

resource-based view (RBV) of the firm in strategy-making (Peteraf, 1993; Priem and Butler, 2001; Wernerfelt, 1984). Prahalad and Hamel defined core competencies as 'the collective learning in the organization, especially how to coordinate diverse production skills and integrate streams of technologies' (1990: 81). The concept is still one of the most used managerial tools in strategy-making (Nicolai and Dautwiz, 2010; Rigby and Bilodeau, 2015). It 'arrived at a time when executives in large corporates were aware that many of the traditional portfolio approaches were inadequate and it offered a compelling rationale for corporate strategy decisions, resource allocation and competition.' (Clark, 2000: 115) However, despite numerous post-hoc accounts of successful firms' core competencies, studies have shown that attempts to apply the concept in strategy-making tend to result in lists of competencies with no clear idea of what is 'distinctive' or 'core' about them (Clark, 2000; Javidan, 1998).

The emergence of the new integrative strategy concept

The history of the concept of the core competence of a corporation began in the strategy processes of a number of progressive firms that had focused their developmental efforts on a few broadly applicable competencies. Prahalad and Hamel paid attention to the success of these firms and studied their strategies. No first-hand data is generally available from the actual abstraction and generalization processes involved in the firms' strategy-making, through which these firms defined the competencies they decided to develop and

concentrate on, but Prahalad and Hamel's presentation of them allows us to infer some features of these processes.

According to Prahalad and Hamel (1990: 80), the top management of the Japanese company NEC, for instance, conducted a careful analysis of developments in the information technology sector in the early 1970s. They saw that: 1) computing would evolve from large mainframes to distributed processing, 2) components would evolve from simple integrated circuits into very large scale integration, and 3) communications would evolve from mechanical cross-bar exchange to complex digital systems [integrated services digital network ISDN]. Thus computing, communications, and component businesses would overlap, presenting enormous opportunities for companies that had the competencies to serve all three markets. Thus the managers concluded that semiconductors would be NEC's most important 'core product', and that the firm's success would hinge upon the competencies of producing semiconductors and integrating systems.

Prahalad and Hamel (1990) also found other similar cases, in which firms concentrated their developmental resources on the competencies that they saw as the core of their future business by coalescing relevant partial competencies from the corporation's various units. These firms also entered into strategic alliances in order to build competencies rapidly and at low costs, and accelerated the learning and refinement of the core competencies by

increasing the diversity of their market experience through OEM (original equipment manufacturer) relationships.

The descriptions of these cases highlight three features of the processes of abstracting and generalizing in the firms' strategic planning. Firstly, the firms' managers had carried out thorough analyses of the ongoing changes in and the probable future of the activities of their potential clients, as well as of the relevant markets and technologies. Through these analyses, they had identified *an emerging general problem or need*, which for instance in NEC's case, manifested itself as a contradiction between the rising need for integrating technologies and the predominant firm structure of independent business units. Secondly, they had developed an idea of *a general principle of how to solve the problem* and meet the need, which NEC concretized in the development of a new core product – semiconductors – and the related competencies, which integrated the existing technologies and competencies of separate units of the corporation and its partner firms. Finally, they had created processes of refining the core competence, and learned how to apply it in varying contexts by creating a network of OEM relationships, thus recreating the system of relationships, within which the chosen core competencies could then develop and flourish. Through these processes, the firms had abstracted the constellation of basic functional relationships that defined their future business: the firm's theoretical strategy concept. We see here the hallmarks of theoretical abstraction: the focus is on systemic relationships between diverse objects, and the historical change in these

relationships. The way in which Prahalad and Hamel highlight, for example, the importance of hybrid solutions and a strategic architecture, hints at a further hallmark of theoretical thinking; the construction of an object or process that unites contradictory processes.

Prahalad and Hamel's abstraction and generalization process and the creation of the core competence concept

It can be argued that the model of core competence-based competition that Prahalad and Hamel (1990: 82) present, based on their analysis of the strategies of the innovative and successful case firms, is a theoretical abstraction of a general principle of resolving the historically evolved contradiction between the prevalent business unit-based strategic thinking and the increasing pressure for investment in technology and product development in the rapid evolution of technologies and markets in globalized competition. Prahalad and Hamel support their argument by giving examples of firms that had missed essential opportunities by holding on to the prevailing strategy approach.

However, when discussing, in their article, how firms can create a core competence-based strategy, Prahalad and Hamel shift the focus from an analysis of emerging general problems and their local solution principles to the identification of core competencies among a firm's existing competencies. They advise managers to look for competencies that (a) 'provide potential access to a wide variety of markets', (b) 'make a significant contribution to the customer benefits of the end product', and (c) 'are difficult for

competitors to imitate' (1990:83). It is important to notice what happens here from the point of view of generalizing. The list still hints at the theoretical strategy concepts that the case firms had created, but these attributes of 'coreness' are, however, presented as if they were fixed qualities of some separate competencies and *could exist and be determined by focusing on competencies as such* without an analysis of the relationships between evolving new constellations of technologies and markets and the firm's resources. This is a case of the 'fallacy of misplaced concretes', as a complex set of relationships and a temporal process is presented as fixed properties of isolated objects – the competencies.

Prahalad and Hamel's model abstracts the general features of the *outcomes* of the abstraction and generalization processes carried out by the case firms instead of the *method* and *process* of the firms' strategy-making. Therefore, their theory serves the selection of core competencies from a set of existing competencies rather than the creation of a new, broadly applicable competence. The essential content of a core competence of a corporation can, however, only be determined as a solution to an aggravating contradiction within the system of relationships that form the context of a corporation's business activity. Thus, this form of empirical generalization, objectified in a verbal definition, paradoxically turns managers' attention away from the changing constellation of actual relationships in their business context and moves it towards building abstract taxonomies of competencies. What Prahalad and Hamel fail to abstract and generalize

from their case data are the methods for identifying the 'great variety of markets' relevant to a corporation's business, the methods for determining 'customer benefit', and the methods for creating 'difficult-to-imitate' competencies. Therefore, the concept they have created does not help managers identify a strategic problem in their business situation which a new, broadly applicable competence would solve. In empirical abstraction, 'every property can become a basis for generalization and a means of distinguishing appropriate groups of objects – that is, any purely external properties can become the *content* of a concept.' (Davydov, 1990: 24). Thus, we argue that this feature of empirical abstraction explains the difficulties that managers who follow Prahalad and Hamel's advice have in reaching an agreement on the essential core competencies of their firm.

The use of the core competence concept as an instrument in practice

According to studies on the use of the core competence concept in practice, Prahalad & Hamel's theory has led firms to try to identify and list their core competencies. However, instead of discovering 'hard-to-imitate' competencies, many organizations find it difficult to distinguish their lists of potential core competencies from similar lists that they imagine their competitors might construct (Eden & Ackerman, 2000: 15). Nicolai and Dautwiz (2010) studied the use of the core competence concept in a large German company that operates in over 50 countries and can be regarded as a 'heavy adopter' of the approach. The 44 interviews with the company's top managers, who were familiar with the concept and had used it actively, generated a total of 112 references to different core

competencies, the majority of which was mentioned only once by a single manager. Even more interestingly, 77% of the core competencies mentioned gave no indication of the company's industry.

In the literature, the problems of applying the idea of core competence are usually traced back to the definition of the concept (Clark, 2000; Ljungquist, 2008, 2013; Nicolai and Dautwiz, 2010). Thus, attempts have been made to more accurately verbally define the concept of core competence and to advise how to better distinguish or identify core competence in practice (see e.g. Hafees et al., 2002; Javidan, 1998; Zubac et el., 2010). For example, Javidan (1998) suggests a set of questions with a progressively sharpening focus (i.e. what do we know how to do excellently; are we any better than our competitors in what we do well; how durable is our advantage; and so forth). The process continues as managers' joint contemplation, in which the identified competencies are listed and categorized. Javidan has tried to add dynamism to the process by also including future-oriented questions, which does not, however, alter the basic classificatory approach.

Thus it can be argued that the attempts to solve the problems in the application of core competence theory have focused on strengthening the empirical character of the abstraction and generalization process rather than questioning it. There is little reference to the problem that the core competence concept was initially created to solve, nor of how the local managers could/should analyse their business situation and its complexities in order to come to a diagnosis before planning the cure (as an attempt to address the latter

question see, e.g., De Leo 1994). Without such an analysis, there is little basis for reaching an agreement on what competencies constitute the core of the firm's future business. This is also obvious in the following example of the difficulties the managers of a Finnish road building firm encountered when trying to apply the core competence concept in their strategy process.

An example of problems in applying the concept of core competence

The discussion of this example took place in a senior management's one-day seminar, during which the managers jointly tried to define the core competencies of their firm in order to create a new competence strategy. The discussion was recorded and transcribed. It lasted for 1.5 hours and consisted of 262 speech turns by the eight participants (M1, M2,…). The leader of the competence development team and one member of the top management team had prepared a one-sheet draft of the strategy for the discussion.

The starting point was not to create a competence-based business strategy for the firm, but a strategy of developing competencies. This reflects the traditional functional division of labour in the firm, which already delineates competencies as a separate area of responsibility. In addition, the task of creating a competence strategy was already in the draft paper, presented as a task of defining the core competencies. First we examined how the managers conceptualized 'competence' and the task of defining the firm's core competencies. Then we looked at the main content and topics of the discussion. The

features that strike one's attention at an early stage in this data are the managers' difficulty in drawing conclusions, and their lack of a clear working method.

In the discussion, the managers listed and discussed competencies as if they were specific objects, with no particular reference to how the challenges of their business could be met through developing new competencies. The competencies the managers labelled as 'core' were so general and void of specific content (e.g. 'innovation of services'), that they seemed to cover almost all the activities and business areas of the organization. This is a typical difficulty in empirical generalization: general applicability of the strategy can only be increased by distancing the competence descriptions from concrete application situations and eliminating the specific and local features of the business substance from the descriptions. The managers also realized this themselves:

M3: *'…Just think, look at the list, the only thing missing is the support functions!'*

M2: *'Yes, it's very comprehensive…'*

We identified three main topics in the discussion: (1) The level of concreteness of the competence strategy (in order to gain applicability; 62 speech turns); (2) The definitions of the concepts used (e.g. of core competence; 23 speech turns); and (3) The 'names' of specific core competencies, and the division of responsibility for developing them (121 speech turns). Nine of the analysed speech turns were linked to two categories. Sixty-five turns were left uncategorized, as they contained only co-coordinative talk or joking.

The talk concerning the level of concreteness of the competence strategy (Category 1) concentrated on two issues. First, the managers discussed how concrete the instructions for strengthening a selected competence should be in the strategy paper. The managers called for concrete guidelines for actions, but they also argued that some of the responsibility should be left for the business units to make their own concrete plans. They argued that by giving more precise guidelines for proper implementation, they could enhance the applicability of the strategy, but then faced difficulties in deciding what kind of description is sufficiently accurate. Here as well, we see how the prevalent business unit-based organization and strategy, the problems of which the core competence concept was introduced to solve in the first place, interfered with the managers' thinking of core competencies. Secondly, the managers discussed the hierarchical relations between the different strategies in the firm, which also reflects the traditional view of strategy rather than Prahalad and Hamel's idea of a strategic architecture. As the managers saw strategy-making as a process of descending from general choice decisions to more specific ones, which is a typical characteristic of the creation of empirical taxonomies, the lack of decisions concerning the main strategies was claimed to be one cause of the problems in creating the competence strategy.

M8: *'This is just so difficult, because it's connected to all the other decisions to be made, and we don't have these decisions yet.'*

In the discussion on the definition of the core competence concept (Category 2), the managers commended the approach in the strategy draft for being right 'if we look at theory and literature', but noticed that it was still suggesting that the organization does 'everything for everyone'. All in all, what the 'core' in core competence actually means, was not explicitly discussed. One conceptualization that emerged in several speech turns was that core competencies are those competencies that the firm has to keep in its own hands for competitive advantage.

M3: *'...after all, the majority of our people don't know what core competence means, even if it's defined. It means that we keep it to ourselves, we do it ourselves.'*

The managers unanimously agreed with this idea. However, from the point of view of generalizing it is yet another feature that does not suggest anything about the content or the developmental logic of a unique core competence.

In the episodes of defining the specific core competencies and organizing their development (Category 3), the participants first attempted to reformulate the wordings of the suggested core competencies in the draft paper, and later proposed an appendix, which would list all the activities concerning competence development in the organization to ease the task of defining the core ones. The first attempt ran into the lack of criteria for deciding on the choice of words, and the latter faced the difficulty of setting boundaries.

M8: '…*there are quite a few [competencies], when you start to collect them like that.* [It's hard to say] *where the limits are.'*

The talk about defining specific competencies brought the customer into the discussion for the first time. However, the idea of looking at the customer needs, to decide what competencies are required and relevant, was soon reduced to a question of division of responsibility in developing these, again reflecting the existing unit and project structure of the firm:

M1: '… *I mean, we should start looking [at this] from the point of view of the customer, and divide the responsibility according to whom each competence belongs to…'*

At the end of the discussion, the managers returned to the idea of core competence as one that should be kept in the organization's own hands. This time the discussion led to a dead end, when the managers realized how much collaboration they had with external actors.

M3: '…*we take care of the tendering processes ourselves. Innovativeness we manage ourselves. These kinds of expressions…*

M1: ## '…*but we have a lot of consultants involved in it at this very moment.'*

M8: *'Yes, that's true.'*

M3 [contradicting himself]: *'Yeah, we can get help from them with everything, we have consultants in strategy work too...'*

M1: ## *'...like in the City Road [project], alone we would be lost... ...And in these kinds of projects we are definitely not alone.'*

The salient features in this discussion were its here-and-now-in-our-firm approach, and the lack of discussion on the developments in the relevant markets and technologies or in clients' activities and needs. Another feature was the urge to find the general core competence immediately, without analysing or discussing the problem that could thereby be solved, or the method for generating the solution. Determining and defining the core competencies was taken uncritically as the task. It is interesting and probably also symptomatic of the reception of the core competence theory, and perhaps of other management theories, that the managers wanted to apply the concept within their business unit structure and current way of understanding the strategy without questioning it or paying attention to Prahalad and Hamel's original view of surpassing the limits of the prevailing structure. The concept, however, loses its meaning when abstracted from the problem that it was originally created to solve.

Discussion

Already in the 1970s, Mintzberg et al. (1976: 257) pondered the fact that the majority of the literature on the strategic decision-making process focused on the *evaluation-choice*

routine, which seemed to be far less significant than *diagnosis or design* in many of the decision processes they had studied. This observation is important for our argument: the evaluation-choice routine is based on empirical abstraction, whereas diagnosis and design call for theoretical abstraction concerning relationships of interplay in a system. Prahalad and Hamel (1990) presented their theory in the context of the new conditions of global competition and rapid technological development as a way in which to resolve the contradiction between the need for increased investment in development and the dispersion of development resources in the business unit-based strategy. They found a solution in the strategies of a number of progressive firms they had studied. The case firms had developed their core competence-based strategies through thorough analyses of foreseeable developments in the relationships between technologies, clients' needs and markets. Through a process of analysis and experimentation, each firm had abstracted an emerging new constellation of relationships in their business contexts and a possible new position for their firms within that constellation. Thus they had developed their idea of the core competencies of their corporation as a theoretical abstraction of a general solution principle that enabled them to meet a great variety of specific needs in various markets in an expanded business context. Such a process of theoretical abstraction is not an armchair exercise, but rather a sustained process of analysis, development, experimentation, and learning in an expanding network of collaboration and business relationships.

However, when abstracting the basic structure and logic of a core competence-based strategy, Prahalad and Hamel focused attention on a snapshot picture of the basic elements of the outcome of the case firms' strategy work rather than on the method the firms had applied in it. This was a step from the theoretical abstraction processes that the case firms had carried out towards an empirical abstraction concerning the external features of competencies that could be classified as the firm's core competence. Although the case firms' processes of theoretical abstraction can partly be traced in the Prahalad and Hamel's presentation, the way in which the authors present the criteria of identifying a firm's core competencies implies empirical abstraction and generalization. This was further amplified in the subsequent management research on how to make the formal definition of the concept more precise. Thus in the knowledge transfer process, the case firm's problems of diagnosing their strategic situation, designing a strategic architecture, and developing a set of generally applicable new competencies to meet the foreseeable business challenges turned into an 'evaluation-choice routine' of identifying the core competencies of the firm's existing competencies. This, however, has turned out to be impossible in the lack of the criteria for the 'coreness' of competencies, which a historical and systemic analysis of the firm's business situation would provide.

A theoretical abstraction of a competence-based strategy would comprise a general method for carrying out the necessary epistemic actions to reach a theoretical abstraction of a new strategy principle. Lacking such an intellectual tool for questioning and revising

their current strategy practices, managers tend to take a new management science concept, such as the core competence of a corporation, out of the contexts of its creation as a solution to a contradictory situation and try to apply it as a universal solution in terms of their current understanding within their existing management structure. This is evident in our empirical example, in which the managers tried to apply the core competence concept as a separate task of pointing out and defining the core competencies within the limits of their predominant business unit structure, without questioning it.

Conclusions

We claim that the difference between theoretical and empirical abstraction partly explains the practical relevance, or the lack of it, of the management theory concepts. The analysis of the development and application of the concept of the core competence of a corporation (Prahalad and Hamel, 1990) revealed that in the management theory discussion, and also in practice, the original case firms' theoretical abstractions concerning the evolution of the system of technologies, markets and user needs that led them to develop new, broadly applicable competencies, were turned into empirical abstractions that triggered unproductive categorization of existing competencies. This happened partly because the management researchers abstracted some general features from the progressive case firms' strategies rather than the methods and principles of strategy-making that they had

applied. Thus they did not provide practising managers with a method or solution principle for creating a core competence-based strategy for their firm.

Management theory has a long tradition of abstracting the external features of successful firms (Mintzberg et al. 1976), in a 'search for excellence', and providing them as models to be copied, without providing theoretical generalizations concerning the systemic roots of the problems they have solved. Our analysis brings forth the important difference between the nature of generality in empirical and theoretical abstraction. The generality of a theoretical abstraction means generativity, a generally applicable principle of solving problems of a certain kind. Instead of a here-and-now empirical generality, generative generality manifests itself in the capacity to produce an increasing variety of branches of new solutions through the application of the principle inherent in it. Just as one can create an endless variety of circles with a pair of compasses, one can create a great variety of products and applications with a theoretical abstraction of a core competence. Such a theoretical abstraction of a principle is an instrument of redesign and learning. In this sense, 'there is nothing so practical as a good theory' (Lewin, 1952, 169).

However, a concept does not, as such, reveal the epistemic actions through which it was created, nor those of its adequate application. A theoretical abstraction can be interpreted and applied as an empirical one. That is what happened with the case firms' original strategy concepts. The problems of applying the core competence concept are thus not only created by Prahalad and Hamel's text, which also provides material for a

more theoretical interpretation of the case descriptions, but also by the empirical way of thinking of the managers who apply the concept. The practical relevance of a management science concept is not a fixed feature of the concept as such, but a feature that emerges in the broader system of societal problem-solving. The analysis of the forms of abstraction and generalization within this system is a fruitful way to study the possibilities of increasing the practical relevance of management research and of shifting researchers and practitioners' attention from the evaluation and choice of available solutions to the diagnostic analysis of the problems to be solved.

Notes

1. (1933) How we think, p. 154

2. We use Prahalad and Hamel's 1990 article as our main source to analyse the premises of the theory of core competence-based competition, as it is the first and most crystallized presentation of its main ideas.

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