

The suitability of the configuration approach in entrepreneurship research

Rainer Harms^{a*}, Sascha Kraus^b and Erich Schwarz^c

^aDutch Institute for Knowledge Intensive Entrepreneurship, Twente University, The Netherlands; ^bHelsinki University of Technology, Finland and University of Lichtenstein and Utrecht University, The Netherlands; ^cDepartment of Innovation Management and Entrepreneurship, Klagenfurt University, Austria

The aim of this paper is to discuss the configuration approach as applied in the context of new ventures. A key topic in entrepreneurship research is the analysis of new venture performance (NVP) and change. Taking into account variations in the population of new ventures and considering the complex nature of NVP and development, the configuration approach may be helpful for these analyses. The configuration approach seeks to identify firm types and explicitly considers interrelations between personal, structural, strategic, and environmental factors pertaining to new ventures. In doing this, refined modelling of NVP and an integration of theoretical approaches in entrepreneurship research may be achieved. However, the configuration approach may not be applied without a prior discussion of its suitability to the research context of new ventures. Any time a research approach is applied in a (new) research context, key aspects of this approach may be violated, which could lead to questionable results. We discuss key assumptions of the configuration approach, the concepts of fit, of equifinality, of reductive mechanisms, and of configuration changes, and find that these building blocks also apply in the context of new ventures. Then, we argue that a specific emphasis on the founder and on the environment and the consideration of unique variable patterns are elements of a configuration approach for new ventures.

Keywords: configuration approach; entrepreneurship research; new venture performance; change

1. Introduction

In entrepreneurship research, one of the key topics is the identification of factors that pertain to new venture performance (NVP) and the analysis of new venture development (Saravathy 2004). Under this umbrella, many potential ‘success factors’ have been analysed, with the implicit goal of developing models of NVP (Bamford, Dean, and Douglas 2004, 901).

Models of NVP can be differentiated according to the nature of the connections that are assumed to exist between the factors of influence and NVP. The most basic model, the universal effects approach, assumes independent effects of the success

*Corresponding author. Email: r.harms@utwente.nl

factors on NVP. Somewhat more elaborated, the contingency approach assumes that the strength and direction of the relationship between one factor and NVP can be influenced by another factor. Even more complex, the configuration approach is based on the idea that firm types can be identified consisting of clusters of similar personal, structural, strategic, and external characteristics (conceptual domains) that must be analysed as a whole (Miller 1996).

Compared to universal effects approaches (that assume that a certain strategy increases performance) or contingency approaches (that assume the strength and direction of the relationship between a strategy and performance can be influenced by the intra-organisational and extra-organisational context), the configuration approach has several advantages. First, researchers will have the chance to study relationships between the domains and NVP in samples that are theoretically sound and empirically tested, as opposed to having been created on an ad hoc basis. Second, the holistic perspective on configuration domains calls the attention of the researcher to an analysis of the *interaction* of multiple potential success factors. This perspective supports more focussed theory development to better explain and predict NVP, while at the same time integrating various theoretical approaches in entrepreneurship research (Low 2001, 17).

In addition, the configuration approach explicitly recognises that there is a significant degree of variation in the population of new ventures. For example, high-tech start-ups in the IT sector might be very different from the newly founded coffee shop in your neighbourhood, and strategies that are developed for high-tech ventures might even have a negative performance impact when applied to ventures that were founded to simply provide income for the founder. Based on this observation, Gartner, Mitchell, and Vesper (1989) argue that entrepreneurship research can benefit from an explicit study of diversity among new ventures.

There is a small, but growing body of literature in which the configuration approach, which was originally introduced to business studies by Miller and Friesen (1977, 694) is applied in the context of entrepreneurship research. A number of researchers try to detect firm types (Gartner, Mitchell, and Vesper 1989; Borch, Huse, and Senneseth 1999; Frank and Lueger 2002; Korunka and Kessler 2005), and others try to validate typologies (for a recent example see Hill and Birkinshaw 2008). However, the configuration approach may not be applied without a prior discussion of its suitability to the research context of new ventures. Key assumptions of this approach may be violated by specific characteristics of new ventures, which could lead to questionable findings (Zahra 2007) and could undermine the validity of previous and future configuration-based research on new ventures. Next to safeguarding, a theoretical discussion can lead to new insights that can be used to improve the application of the configuration approach in this research context.

So far, existing research has neglected to discuss the suitability of this approach in the context of new ventures on a theoretical basis. Following this introduction, we discuss the potential contributions of the configuration approach and potential pitfalls of the research context of entrepreneurship (section 2). Then, we analyse whether key assumptions of the configuration approach apply to new ventures (section 3) and discuss in what way the configuration approach could be specified to suit the particular research context (section 4). We conclude this paper with implications for research and practice.

2. Development of the configuration approach

2.1. *The contingency approach*

According to the contingency approach, the strength and direction of the influence of an independent variable on a dependent variable can vary under different circumstances. Taking an example from entrepreneurship research, Sandberg and Hofer (1987) showed that the positive relationship between market entry breadth (strategy) and NVP was stronger in early-stage markets (environment) than in later-stage markets, since a narrow strategy in early-stage markets may prematurely limit the scope of the firm. Also a broad strategy in a later-stage market is not a viable option because incumbents have had some time to establish their market power.

A formal expression for this type of relationship (McDougall and Robinson 1990) can be expressed in the following way: $NVP = f(E, S, I, S*I)$, which is that NVP is a function of the entrepreneur (E), the strategy (S), the industry (I), and the fit between strategy and industry (S*I). A common method for analysing contingency relationships is the moderated regression analysis. In addition to the single independent terms, a multiplicative term is introduced. When the product term significantly increases the explanatory power of the regression, it can be deduced that a fit between the factors (in this example between strategy and industry structure) is a key contributor to NVP (see Aiken and West 1991 for the methodological issues of the moderated regression analysis).

The example by Sandberg and Hofer (1987) shows that proponents of the contingency approach do not assume an exclusive 'best way' of managing, but 'one best way' of managing in each context. This point of view is more differentiated than the universal effects perspective which posits that performance results from a set of independent relationships between success factors and NVP (March and Sutton 1997), but may still compromise predictive accuracy.

While universal effects and contingency analyses have contributed significantly to our understanding of NPV, these approaches can lead to inconsistent results. This will be illustrated with a recent study by Harms (2007). Using an example that analyses intra-organisational contingencies (Donaldson 1987), he shows that bivariate comparisons between groups of normal growth firms and rapid growth firms reveal that young firms and firms that cover a market completely instead of focusing on a niche are more likely to grow rapidly than older firms and firms that focus on market niches. Note that these results suggest that the market entry strategy may be chosen independent of age. However, what would happen if all young firms would try to cover their markets completely? Some would grow, since aggressive and broad market entry can lead to a high market share (Biggadike 1976), while others would fail because of the liabilities of newness and size (Aldrich and Auster 1986).

In universal effects or simple contingency analyses, these interdependencies are not accounted for. Suggestions drawn from these analyses may include combinations of success factors that are unlikely to be applied in reality. Or worse, combinations of success factors that can even negatively impact performance (Hambrick and Mason 1984) may be supported.

This example illustrates that the contingency approach may be too simplistic to provide a degree of predictive accuracy that is sufficient for future theory development and for practitioners. Moreover, contingent and universal effects

relationships are usually assumed to be linear (Schoonhoven 1981), while in reality, non-linear relationships such as the reverse U-shaped relationship between founder age and NVP may occur (Preisendörfer and Voss 1990). In addition to these shortcomings, the contingency approach does not consider dynamic aspects of NVP and development, since it does not account for changes in the assumed relationships and contingencies.

2.2. The configuration approach

According to Dess, Newport, and Rasheed (1993, 776), 'a configuration contains relationships among elements or items representing multiple domains'. By analysing more than two domains (relating to person, structure, strategy, and environment) simultaneously, the configuration approach is able to draw more detailed models than the contingency approach, which is restricted to the analysis of the interaction between two domains.

Each domain contains variables that are contextually related to that domain. Configurations are specific patterns of the variables that make up the domains. In such a profile, the elements must not necessarily be linked in a linear way (Reeves, Duncan, and Ginter 2003). As a consequence, the configuration approach extends the contingency approach in that it is able to model not only dependencies, but interdependencies as well.

A key idea of the configuration approach is that there is a limited number of firm types that can be equally successful (equifinality). Also, such a phenomenon would be difficult to model using universal effects or contingency approaches. Moreover, configurations are dynamic, that is they can change in a process that can be described as a punctuated equilibrium (Miller 1982). Dynamics are also difficult to model with conventional models. In sum, the configuration approach provides more detail, incorporates interdependencies, and acknowledges the ideas of equifinality and dynamics.

Despite these advantages of the configuration approach with respect to universal effects or contingency approaches, theoretical and methodological challenges must not be neglected. On a theoretical level, we point out that in order for the configuration approach to work, a number of assumptions (equifinality, fit, reductive mechanisms, and configuration change) need to hold. However, in the literature, these concepts are still being clarified. Another theoretical issue that needs to be resolved is the number and the type of variables that ought to be selected. Ketchen et al. (1997) identify the essentialist approach that is based on a few, narrowly defined variables, and the empiricist approach that suggests using a broad range of variables for classification. Each of the approaches could be based on an inductive (explorative) or a deductive (theory based) perspective. The debate on the chances and risks of these approaches to variable selection has not been resolved yet. What is clear though is that the construction and analysis of configurations draws on a large number of variables, each of which can have a different theoretical background. The analysis of diverse variables and multiple possible interdependencies between them is a demanding task for researchers and/or groups of researchers.

On a methodological level, the particular challenges depend on the approach to configurations chosen. A way to derive configurations is empirically by detecting real types, or taxonomies, via quantitative and qualitative methods

(Scherer and Beyer 1998). For example, reputed representatives of the taxonomic approach are Miller and Friesen (1977, adaptive firm under moderate/extreme dynamism, dominant firm, giant under fire, entrepreneurial firm, lucky innovator, impulsive firm, stagnant bureaucracy, headless giant, swimming upstream). In taxonomic analyses, along with measurement issues (validity, reliability), the analytical methods themselves may be a source of error. For example, a common method for identifying firm types via quantitative methods is cluster analysis (Ketchen et al. 1997), by which firms are divided into groups that are internally homogenous and, with regard to other groups, externally heterogeneous. However, cluster analyses rely on researcher judgement in the selection of variables, the particular algorithm chosen, the determination of the number of clusters, and on determining the validity of the solution (Ketchen and Shook 1996). A potential solution to the issue of methodological validity would be to use methodological triangulation (Jack and Raturi 2006). In addition to measurement and analytical methods, sample sizes need to be large enough to be able to detect small effects (Ferguson and Ketchen 1999) and to provide hold-out samples that are needed to assess the robustness of the findings.

A second way to derive configurations is analytically by developing ideal types and, respectively, typologies, via theoretical reasoning. Well-known strategy typologies were developed by, for example, Miles and Snow (1978, prospector, analyser, defender, and reactor), Mintzberg (1979, machine bureaucracy, professional organisation, entrepreneurial start-up or simple firm, adhocracy) or Porter (1985, cost leader, differentiator). Pure typologies focus on a theoretical explanation of the interaction between their elements. Here, the methodological issues are rooted in the difficulties of theory making (Sutton and Staw 1995 for additional literature). For example, Hambrick (1984, 28) criticises pure typologies 'since they are largely the product of rather personal insight [and] may not accurately reflect reality'. Therefore, only limited explanatory or predictive power can be ascribed to typologies. The theoretical challenges, namely the selection and interpretation of variables and their relationships, each with a potentially different theoretical background, remain.

Weighing the pros and cons of the configuration approach, it seems to be neither the 'silver bullet' nor a dead end in business research (Wolf 2000). This approach seems to have a great potential for business research, while at the same time requiring high theoretical and methodological effort.

2.3. The configuration approach in the context of entrepreneurship research

Having argued that the configuration approach could be beneficial for management research in general, we argue that it might be a promising approach in entrepreneurship research in particular. An important topic in entrepreneurship research is the analysis of NVP and change (Sarasvathy 2004, 716). In this respect, we argued that universal effects or contingency approaches can lead to questionable results. However, these approaches are still widely used in entrepreneurship research. On a methodological level, Bouckennooghe et al. (2004) establish that about 60% of the empirical literature in leading entrepreneurship journals between 1999–2003 used multivariate dependent statistic techniques, such as regression analyses, that are associated with universal effects and contingency approaches. On a theoretical level,

Sarasvathy (2004) explains that entrepreneurship research tends to analyse the performance impact of the inner environment (person, firm), and the outer environment (industry) *separately*, drawing from different scientific disciplines. She continues: 'In doing so, we completely ignore what is really interesting about entrepreneurship – and this is the interface between [inner and outer environment]' (Sarasvathy 2004, 714).

The analysis of this 'interface', that is, the area where the inner and outer environment meet and influence each other, is the particular strength of the configuration approach (Dess, Newport, and Rasheed 1993, 776). In particular, it is the analysis of *mutual interaction* between personal, structural, strategy, and environmental variables that is the focus of the configuration approach.¹ A quote from Miller (1996, 507) illustrates the importance of these interactions: 'Since configurations are about organizational wholes, more should be done to discover their thematic and systemic aspects – to probe into just why and how their elements interrelate and complement each other to produce the driving character of an enterprise'. This quote describes the position of the configuration approach with respect to research that is devoted to the analysis single domains (for example, in universal effects studies). Single domain studies, for example on the performance implication of the entrepreneur and the environment, can provide valuable results that can be incorporated in configuration studies. However, these studies tend to neglect the analysis of interdependencies between the domains, which is the particular strength of the configuration approach.

By analysing the *connection* between person, structure, strategy, and environment, not only can consistent models of NVP and change be developed. The analysis of interdependencies might also be a central element in future entrepreneurship research. According to Low, fragmentation of entrepreneurship research, which he describes as a potpourri of weakly related research questions and theories, weakens the field, for example by impairing theory development or by being the cause for the low reputation of the field in the social science research community (Low 2001, 17). We concur, as we have argued, that a blind acceptance of results from universal effects studies may lead to inconclusive results.

While it remains unclear in which direction the field of entrepreneurship research is developing, be it in the direction of the creation of a distinctive domain (Low 2001) or by explicitly cultivating a status of an 'in between' (Steyaert 2005, 7–12), the issue of integration, that is of simultaneously acknowledging different theories on a common phenomenon, resound. In this respect, the configuration approach, which explicitly acknowledges interrelations between personal, structural, strategic, and environmental factors, might be an approach for dealing with the task of integration.

Recognising the weaknesses of universal effects and contingency approaches and striving to integrate theoretical approaches in entrepreneurship research, many entrepreneurship scholars try to empirically detect firm types (Harms, Kraus, and Reschke 2007). These endeavours can be structured by a three-staged approach (Mugler 1998), whose stages deal with different research questions. Research in the first stage is confined to the identification of configurations based on selected domains. In the second stage, the performance implications of configurations are also analysed. The development of firm types from one configuration to another becomes the focus of research in the third stage.

An example of stage I research is the work by Heirmann and Clarysse (2004) who identify four types of research-based start-ups (RBSU), based on different

configurations of technological, financial, and human resources. For instance, ‘VC-backed start-ups’ have considerable financial and human resources but their technology is at an early stage, and ‘product start-ups’ are characterised by experienced founders and a late-stage technology. Heirmann and Clarysse (2004) show that the resource configuration is systematically related to motivational and environmental factors, which gives rise to a comprehensive taxonomy of RBSU. Having established different types of RBSU, they argue that in order to assist these firms, support must address their specific strengths and weaknesses.

In an example of stage II research, Unger and Frese (2005) analyse psychological action strategies (Frese and de Kruif 2000), financial and social capital, and characteristics of the environment. One component of psychological action strategies is the approach to planning. Firms may employ comprehensive planning (which may be linked conceptually to a causation logic), and critical point planning (which may be associated with an effectuation logic, see Sarasvathy 2001). One result of the Unger and Frese (2005) study was that firms emphasising critical point planning have fewer financial and social resources than firms that use a comprehensive planning approach. Both firm types may be equally successful, given a friendly environment.

Based on the idea that the initial founding conditions can have a lasting impact on the development of the venture (for the imprinting hypothesis see Stinchcombe 1965; Boeker 1988), it would be particularly interesting to investigate the development of new venture configurations over time. However, the literature review reveals no examples of configuration research in stage III. While there are studies that highlight the changing relevance of success factors in the founding process (Rotefoss and Kolvereid 2005) and new venture development (Schwarz, Harms, and Breitenacker 2006), most of these studies are based on universal effects of contingency approaches. Studies that track the development of firm types over time, mostly based on the life-cycle analogy, focus on the firm’s structure and thus do not constitute comprehensive configurations (Hanks et al. 1993; Ferreira 2000; McMahon 2001). The analysis of comprehensive new venture configurations is a research gap that provides opportunities for future entrepreneurship research.

However, stage III studies are very demanding, both empirically and theoretically. Firm types must be identified to begin with, and followed over time to detect if and when changes from one firm type to another occurred, which is empirically demanding and costly. In the course of firm development, the particular variables that might distinguish one firm type from the other may change. So far, there is little theoretical guidance, apart from organisation life-cycle models, from which variables can be considered.

2.4. *Potential challenges in the application of the configuration approach in the context of new ventures*

In spite of these first, promising applications, Zahra (2007) expresses words of caution. In a discussion of the links between research phenomena and theory, he argues that researchers that apply an established theory from other fields (that is, the configuration approach) to an established research question in entrepreneurship research (that is, NVP and change) often neglect to discuss whether such a link is appropriate. Each theory has its assumptions, and a violation of these assumptions, for example in a novel research context, can lead to questionable findings

(Zahra 2007, 5). Moreover, a discussion of the applicability of theory in a particular research setting can lead to creative adaptations of theory and to additional research questions (Zahra 2007, 6).

The novel research context results from the particular characteristics of start-ups and new ventures. Compared to large and established firms, new ventures tend to be dominated by the owner-manager, with the entrepreneur having a strong influence on all internal and external aspects of the firm (Mugler 1998). As a consequence, new ventures may be centralised and can have a simple structure (Mintzberg 1979). In a research scenario where all new ventures have simple structures, it may be difficult to identify different types of small firms with regard to structure. A second consequence of the dominant influence of the owner is that new ventures are accredited with a large degree of flexibility (Wiklund 1999). Flexibility is the ability to act and to react quickly with regard to opportunities, threats and changes in the environment (Volberda 1996). Firms that are very flexible have unique variable patterns. On the one hand, this may aggravate the identification of similar firm types, for example, taxonomies. On the other hand, the analysis of unique variable patterns may lead to new insights in entrepreneurship research.

In addition to the dominant influence of the owner, new ventures tend to be affected by the liability of newness (Stinchcombe 1965; Brüderl and Schüssler 1990). Internal and external relationships may not yet be stable. If roles, structures, and relationships are not stable but emerging, it may be difficult to identify them. As a consequence, identification of homogenous groups of firms may be difficult. Furthermore, new ventures may be affected by the liability of smallness. They are particularly low on financial and personnel resources (Aldrich and Auster 1986). This impacts resource use. According to Hannan and Freeman (1977), firms of similar size will use resources in a similar way. As such, there may be little variation in the way new ventures employ resources, which may also aggravate the identification of different firm types.

Taken together, the research context of new ventures can pose some challenges for application of the configuration approach. To discuss whether the configuration approach can be applied in entrepreneurship research, it must first be analysed if key assumptions of the configuration approach apply in the context of new ventures. We discuss four key assumptions of the configuration approach in section 3: the concept of equifinality; the concept of fit; the concept of reductive mechanisms; and the concept of change. To perform configuration analyses in the context of new ventures, the particular research context must be taken into account. In a discussion on how to specify the configuration approach to allow for accurate description and prediction in the context of new ventures (section 4), we focus in section 4 on the treatment of particular domains and on the issue of unique variable patterns that may be particularly relevant in this context.

3. Key assumptions of the configuration approach and their suitability in the context of new ventures

3.1. *The concept of equifinality*

The configuration approach posits that there may be different groups of firms that can perform equally well. A first condition for the existence of different types of new

ventures is that they must be different from one another and that there must be more than one way to achieve performance, that is equifinality.

Based on the idea of structural functionalism, it can be argued that even firms with simple structures can differ. According to structural functionalism, the same organisation structures can perform various tasks (Merton 1967, 1995; as cited by Wolf 2000). For example, managers in simple firms emphasize different functions when organising their daily schedule (O'Gorman, Bourke, and Murray 2005). Accordingly, it is possible to distinguish firm types along the lines of functions that the entrepreneurs perform. Even without endorsing the notion of structural functionalism, structures can be heterogeneous in new ventures. For example, Meijaard, Maryse, and Mosselman (2002) detected 10 types of small businesses which differed along the lines of departmentalisation, specialisation, decentralisation, and type of coordination. Therefore, Meijaard, Maryse, and Mosselman (2002) demonstrated that it is possible to distinguish different types of new ventures also along structural lines.

Earlier research on new venture strategy argues that only niche strategies are viable for new ventures because the firm may be too small to serve a larger market or to combat incumbents (for literature and a critical assessment see Cooper, Willard, and Woo 1986). If this were the case, new ventures would be homogenous in the domain of strategy. However, in contrast to the arguments in favour of a niche strategy, Biggadike (1976) suggested that an aggressive and broad market entry can lead to high performance, even for new ventures. The idea behind this recommendation is that an aggressive entry increases market share, which leads to scale benefits and ultimately to a high return on investment (Microsoft and Dell are two such firms as discussed in McDougall and Robinson 1990). Other researchers acknowledged that there are even more viable strategies for new ventures (Cooper, Willard, and Woo 1986). McDougall and Robinson (1990), for example, distinguished eight archetypes of new venture entry strategies. Among these strategic archetypes, firms that are especially aggressive can achieve entry in both broad and narrow markets which can lead to rapid firm growth. An additional example is provided by Carter et al. (1994) who empirically detected six distinct new venture strategy types along the lines of the breadth of market exposure and product versus marketing emphasis. The authors also found that several of their strategic types were positively associated with NVP.

Based on the idea of equifinality, different structures and strategies may be equally effective (Wolf 2000). A certain operational function may be equally well performed by various structures, for instance. More specifically, in the absence of consumer preferences for a certain type of customer contact, firms using a direct sales force and firms depending on indirect sales may be equally successful. Equifinality is a necessary condition for the existence of various firm types (in our example, firms with direct and indirect sales), since without various possibilities to be effective, economic forces (see section 3) tend to eliminate ineffective firm types.

Gresov and Drazin (1997) discuss the concept of equifinality in more detail. They posit that firms differ with regard to the degree of conflict between the functional demands that they are facing (conflict of objectives), and with regard to the options that they have in order to deal with these functional demands. Each case (high/low conflict, high/low latitude) results in different types of equifinality. Using the example

of trade-off equifinality, it will be illustrated that equifinality also applies to new ventures.

In a situation of a low degree of conflict (that is, when a dominant functional demand exists) and a high degree of latitude (multiple structural options), a firm has a variety of structural options to fulfil that dominant demand. For example, firms are confronted with the demand of innovating, but at the same they ought to produce efficiently. In an early stage of the product life cycle, the demand to innovate will be dominant (Gresov and Drazin 1997). In the early stage of the product life cycle, costs from inefficient production can be offset partially by a price premium that early adopters of the innovation are willing to pay. In this case, a new venture faces a low degree of conflict. Likewise, new ventures are said to have a wide variety of structural options to be innovative (Gresov and Drazin 1997). For example, innovation can be driven by the entrepreneur (Miller 1983) or by employees working in flat hierarchies (Stevenson and Jarillo 1990). A dominant task and a variety of ways to achieve this task can result in equifinality.

3.2. The concept of fit

According to the concept of fit, performance results from the alignment of multiple domains pertaining to the firm (internal fit, Venkatraman and Camillus 1984) and the environment (integrated fit). The concept of fit is central to the configuration approach since it is through the alignment of internal factors with one another and with external demands that the multitude of potential variable patterns is reduced to a few 'fitting' firm types (Miller 1992).

Fit can be defined as the degree of consistency between multiple domains (Nadler and Tushman 1979, 451). For example, theory posits that there are positive performance implications of a fit between entrepreneurship and environmental turbulence. The higher the turbulence, the higher should be the 'desired' level of entrepreneurship (Naman and Slevin 1993). Misalignment would be inefficient: a high degree of entrepreneurship in a stable environment may induce firms to explore new opportunities, while current investments may not have been fully exploited. A low degree of entrepreneurship in turbulent environments may induce firms to hold on to their current product portfolio even though new opportunities that arise may be more promising.

In the configuration approach, fit results from the interaction of not only two, but three or more domains, thereby going beyond the contingency approach. For example, flat hierarchies, a permissive culture, a performance-based reward system and a strong orientation towards growth mutually reinforce each other and lead to entrepreneurial firm behaviour (Stevenson and Jarillo 1990), which may, especially under hostile (Covin and Slevin 1989) and turbulent (Naman and Slevin 1993) environmental conditions, increase firm performance.

In entrepreneurship research, the performance implications and the correlates of a large number of variables have been analysed. This suggests that multiple domains, on their own and simultaneously, can influence NVP. Timmons (1999) argues that a fit between founding team, resources, and opportunity influences the success of the new venture creation process. After start-up, the structure can play a role in a configuration (Hienerth 2004). Therefore, there are also multiple domains of interest in new ventures, which is a condition for the configuration approach.

The positive relation between fit and effectiveness results from the interaction between specific elements of a particular firm type (see section 2) and is, therefore, difficult to discuss on a general level. Many potential functions between configuration elements exist that have their particular theoretical foundation (Schoonhoven 1981). One potential reason for the relationship between fit and performance is the concept of scarcity. As new ventures are confronted with scarcity, they may want to eliminate waste (too much of a resource in relation to others) or bottlenecks (too little of a resource in relation to others) when dealing with their functional demands. Fit as a state of neither waste nor bottlenecks is associated with performance. Assuming that scarcity is a pervasive phenomenon, it also applies to new ventures, which highlights the relation between fit and performance in these firms.

3.3. *The concept of reductive mechanisms*

As discussed above, there are multiple roads to performance (section 3). However, a number of economic, institutional, and technical forces reduce the quantity of conceivable organisational forms and strategy options to a small number of existing configurations (Wolf 2000). The assumption of a limited number of firm types accompanies the concept of equifinality, insofar that it highlights the notion that equifinality is not to be confused with arbitrariness.

Economic forces that reduce the number of organisational forms and strategy options can be divided into three possible sources: market, management, and economics of change. Organisation ecology theory posits that market-driven selection processes eliminate firms that do not adapt to the environment (Miller 1981). New ventures are directly exposed to the environment, since they are typically low on excess resources ('slack') that serve as a buffer between the firm and the environment (Brüderl and Schüssler 1990). Higher mortality rates of new ventures and higher insolvency rates for smaller firms show that the selection process is effective. In contrast to the idea of market-driven selection processes, proponents of the structural-functionalist view emphasise management-induced adaptation processes. Brüderl and Schüssler (1990) posit that managers do not wait passively for their firms to go bankrupt (Miller 1981). Instead, managers are able to (re-)align their firms with the demands of the environment. In new ventures, the founder has a very influential position, which facilitates realignment. The last group of arguments highlights the role of economic rationality in limiting the number of organisational forms and in exacerbating changes. According to the concept of fit, partial changes in one domain may lead to a poor fit in and/or with other domains, so that managers may be hesitant to change the one parameter in the first place (Wolf 2000). Larger changes could entail sunk costs by having to abandon current structures, markets and so forth. Managers will often be reluctant to incur sunk costs (Arkes and Blumer 1985). New ventures can be especially low on slack and will find it difficult to stem additional investments and may, therefore, stick to their current configuration (Freeman, Carroll, and Hannan 1983).

In addition to economic forces, firms are also subject to institutional forces that limit the number of existing organisational forms and exacerbate change. Coercive forces, mimetic processes, and normative pressures can be identified as institutional forces (DiMaggio and Powell 1983). The organisation structure and strategies are

influenced by coercive, legal pressures. Labour contracts are regulated, for example, and certain advertising strategies are precluded by law, which constrains the number of characteristics. Mimetic processes are based on human action in the face of uncertainty. In such circumstances, entrepreneurs are inclined to copy successful role models. For example, most entrepreneurs have previous work experience in other firms (Bhidé 2000). In setting up their own firms, they tend to copy organisational structures and strategies that have proved effective in the former firm. Therefore, the new ventures will share some organisational aspects with the previous firm. Normative pressures that originate from the social network of the founder influence the way firms are structured and which strategies are executed. People in social networks share social, educational, or professional backgrounds which define socially acceptable behaviour (Giddens 1997). This also limits the number of viable organisational and strategic options.

Moreover, technical aspects limit the number of organisational and strategic options. Some variables have discrete characteristics, such as being listed on a stock exchange (yes/no) or operating in international markets (yes/no). With discrete variables, there is no grey area. Therefore, the number of possible combinations, and thus also of possible configurations, is reduced.

The forces that reduce the number of possible organisational designs and strategies are also at work in new ventures, which seem to be particularly sensitive to economic forces (Miller 1987). This is why in the context of new ventures, the number of conceivable configurations may be reduced to a small number of existing firm types. Thus, the configuration approach can be applied to these firms as well.

3.4. *The concept of configuration changes*

A central idea of the configuration approach is that organisations do not change incrementally but in so-called ‘quantum jumps’, that is, in fundamental transformations of the whole configuration that take place in a relatively small amount of time and which do not happen very often (Miller, Friesen, and Mintzberg 1984). As such, the development of a firm can be described as a punctuated equilibrium process. The idea of fundamental changes is important for creating taxonomies, since firms in a transformation period may exhibit blurred variable patterns, so that frequent fundamental changes would exacerbate classification.

In case of a poor fit between organisation, strategy and environment, firms can adapt to regain fit. However, Miller (1982) argues that the costs of fundamental transformations may be considerable, and changing only one element in a configuration can lead to internal poor fits. When the costs of an improper fit with the environment become larger than the costs of changing the organisation, a fundamental transformation will take place.

It can be assumed that new ventures may incur low costs when changing their configuration since, due to their small size and the dominant position of the founder, there is less structural inertia than may exist in established firms (Hannan and Freeman 1977). Thus, it might be that even fundamental changes can be frequent in new ventures. According to Nicholls-Nixon, Cooper, and Woo (2000), a more differentiated perspective seems merited. The authors argue that new ventures do change, but that change is more likely in peripheral features (marketing strategy, time allocation of the founder) than in core features (product scope and team

composition). It is rather costly to change the firm's core products and services, since they are closely related to the founder's knowledge, previous experiences, and social and professional contacts. Also, changes in the new venture team composition may be rather costly, since those changes can entail changes in ownership and in the allocation of decision rights, as well as a change in the fundamental focus of the new venture.

Nicholls-Nixon, Cooper, and Woo (2000) argue that in a situation of poor fit, new venture management may try to experiment first in less costly areas, that is in the 'periphery'. In case severe performance problems persist, founders may also experiment with core features, which may lead to a fundamental transformation of the venture (Nicholls-Nixon, Cooper, and Woo 2000; Frank and Lueger 2002). Based on the arguments of strategic experimentation, punctuated equilibrium development processes can also be expected for new ventures.

4. Specifications of the configuration approach in the context of new ventures

4.1. Making sense of configuration domains

To enable accurate descriptions and predictions, characteristics that are specific to new ventures must be captured. If the search for specific characteristics is guided by theory, the chance to find configurations that are not merely statistical artefacts but are able to be of prescriptive relevance can be increased (Ketchen, Thomas, and Snow 1993). In this regard, Miller (1987) argues that identifying configurations starts from identifying domains, that is conceptually related groups of variables that are recognised as important issues in a number of disciplines in organisation science, and have been empirically shown to influence each other and impact firm performance.

In entrepreneurship research, a survey of integrative frameworks (Gartner 1985; Storey 1994; Chrisman and Bauerschmidt 1998; Mugler 1998; Sarasvathy 2004) suggests that the domains 'individual', 'resources/structure', 'strategy', and 'environment' are relevant for describing new ventures. This categorisation is similar to Miller (1987) who proposes the domains 'leadership', 'structure', 'strategy', and 'environment', but may be better suited to capture the particular characteristics of new ventures.

It is recognised that domains have a different importance in different types of firms. More specifically, Miller (1987, 694) argues that that the domains 'leadership' and 'environment' are central in shaping the configurations of new ventures. These key domains, which he calls 'imperatives', and the specific elements that are associated with them must be given special attention for capturing the particular characteristics of this population.

4.1.1. Focussing on the individual

Entrepreneurship research recognises that characteristics of the entrepreneur play a particularly strong role in new venture creation. In independent new ventures, the entrepreneur is the focal point of attention as he/she uses his/her personal traits, aspiration, imagination, and abilities to start up the venture. In this respect, Miller (1987, 694) states that '... evidence suggests that the leadership imperative will apply more to organisations that are small and highly centralized... or young and run by owner-managers'.

The case of the traits approach illustrates that it might be important to study a domain not only in isolation but in relation to other domains. Baum, Locke, and Smith (2001) noted that despite the importance that is ascribed to traits such as ‘need for achievement’ and ‘locus of control’, universal effects studies discovered only weak relationships with NVP. They argue that it might be that: (a) traits are not important, or (b) that they do not work in isolation from other factors (Baum, Locke, and Smith 2001, 292). Their empirical analysis reveals that traits are indeed important, in that they influence the development of skills and motivation, which again impacts both strategy and NVP. Note that single universal effects studies would have dismissed the personal traits as a success factor.

A second example for analysing aspects of the individual is provided by Unger and Frese (2005), who build on different decision-making styles and show how they relate to strategy, market selection, and performance. In a similar vein, Sarasvathy (2001) argues that there may be two distinct types of decision-making: causation and effectuation. Causation starts with the ends (for example: entering a specific market) and focuses on the means to that end (for example: selecting appropriate resources for entry in that particular market), while effectuation starts with the means (a firm’s particular resources), and focuses on a selection of possible ends (that is, markets that can be entered with these resources). It can be assumed, for example, that effectuators have firms with less centralised structures (Sarasvathy 2001, 261), and may be more likely to enter markets that demand little up-front investment.

Drawing on these examples, future configuration studies may incorporate other factors that pertain to the person of the entrepreneurs such as human capital, cognitive biases, or previous experiences and show how these factors interact with other domains to drive NVP.

4.1.2. *Focussing on the environment*

The environment impacts structure and strategy by providing or withholding resources and business opportunities, and by constituting a space in which strategies are executed (Rotefoss and Kolvereid 2005). The influence of the environment is particularly strong ‘(…) when firms are small relative to competitors and when they have few slack resources’ (Miller 1987, 689), which is characteristic for new ventures. Due to the importance of the environment, and of the impact it may have on new ventures, this domain must be included in a configuration analysis of new ventures.

Characteristics of the environment, for example, may influence strategic and personal variables. In munificent environments (which are characterised by a high growth rate), growth strategies may be possible for new ventures, since incumbents will be less likely to retaliate than in stagnating environments (Timmons 1999, 89). There might also be congruence with industry selection for market entry and the personal traits of the entrepreneur. For example, entrepreneurs with a high need for achievement may be more inclined to enter dynamic industries (internet technology) than stable industries (mining and farming), based on the consideration that there might be more opportunities for satisfying the need for achievement.

While characteristics of the market have been given attention in a large number of previous configuration studies, a more differentiated view of the ‘environment’ may be warranted. For example, ‘environment’ may be classified along the lines of the source of origin (institutional, task), of range (international, national,

regional, local), and of the target (firm, individual). Each combination of the levels may be described by characteristics such as uncertainty, dynamism, hostility or others (Dess and Beard 1984), and impact NVP and development.

A recurring theme in entrepreneurship research is the impact of the social environment of the founder. Friends and family provide emotional support (Van Auken and Werbel 2006), role models (Scherer, Adams, and Wiebe 1989), cheap labour (Brüderl and Preisendörfer 1998), and other resources (Starr and Macmillan 1990). It may be deduced that new ventures that can draw from a stable and munificent personal environment are less confronted with liabilities of smallness. For example, Kessler and Hienert (2002) establish in a configuration study that a group of 'successful entrepreneurs' is characterised by a higher degree of emotional support and the existence of more positive role models than a group of 'failed entrepreneurs'.

4.1.3. *Adapting the domains of strategy and structure*

The notion of imperatives does not mean that the configuration domains of strategy and structure should be neglected. Rather, these domains ought to be adapted to capture the characteristics of new ventures.

Based on the imprinting hypothesis (Stinchcombe 1965; Boeker 1988), NVP is influenced to a large degree by the conditions at the time of the founding (for a more differentiated view see Eisenhardt and Schoonhoven 1990; Bamford, Dean, and McDougall 2000; Geroski, Mata, and Portugal 2002; Schwarz, Harms, and Breitenacker 2006). These conditions partly emerge from activities that the founder undertakes prior to beginning the business, that is in the prelaunch or start-up phase (Carter, Garther, and Reynolds 1996). When strategy is interpreted as a consistent sequence of activities (Mintzberg 1987), prelaunch activities and early development activities can be analysed under a strategic perspective.

Korunka and Kessler (2005) establish that a prelaunch strategy of commitment, more specifically the pursuit of income substitution rather than income supplementation, can enhance the chance to successfully complete the new venture creation process. Likewise, a positive evaluation of the prelaunch process that can be gained from feedback processes can also enhance the chance of founding (Korunka and Kessler 2005). Other tasks that the founder deals with within the start-up process such as identifying opportunities (Stevenson and Jarillo 1990), acquiring resources (Winborg and Landström 2001), building the organisation (Katz and Gartner 1988), and gaining legitimacy (Delmar 2004) could be analysed under a configuration perspective.

The early development phase starts with entering the market. Then, market entry strategies (Vesper 1980), product-market strategies (see section 3) and general strategic orientations such as the entrepreneurial orientation (Miller and Friesen 1977; Lumpkin and Dess 1996; Lumpkin 1998) may be relevant in a configuration analysis of new ventures.

Pertaining to structure, some new ventures may be coordinated by the entrepreneur who is the keeper of centralized decision rights. In other ventures, notably team foundings, decision rights may be distributed (Fama and Jensen 1983; Ensley et al. 1999). Also, decision rights may be shared with share- or stakeholders such as venture capital firms (Sapienza, Manigard, and Vermeir 1996), or decisions may be influenced by an advisory board (Fried, Bruton, and Hisrich 1998). Thus, the

analysis of the consequences of the distribution of decision rights on other configuration domains may be an interesting field of study.

Even though there may be little formal differentiation in new ventures, as most tasks are performed by the entrepreneur, it could be valuable to introduce the tasks themselves as an object of configuration analysis. This suggestion is based on the idea that an emphasis on a different function (research, marketing, networking and others) reflects a strategic orientation of the firm as evidenced by a pattern of activities (Mintzberg 1987).

4.2. Dealing with unique variable patterns

Even though forces exist that can reduce the variety of variable patterns to a few existing configurations (see section 3), truly innovative and entrepreneurial firms may be qualitatively different from other firms. Take, for example, Google's business model that introduced a completely different category of search engines (Mostafa 2005), or Wachtell's exceptional success as a law firm (Starbuck 1993). These firms with unique variable patterns may be problematic in the context of quantitative taxonomies, that is the empirical identification of groups of firms with similar characteristics. Note that unique firms are not problematic for typologies, since it is not even necessary for ideal types that one real firm matches the ideal type completely (Doty and Glick 1994). Also, for qualitative analysis of real types, unique variable patterns are not problematic either. We identify four situations that are associated with unique variable patterns: novel resource combinations, superior performance, deliberate poor fit, and configuration changes.

Rooted in the ideas of Schumpeter (1912), truly *entrepreneurial firms* are those who combine resources in a novel way to create or exploit new opportunities (Eliasson, Wiklund, and Davidsson 2002). Entrepreneurial firms may employ novel strategies, and may even create new markets. Such firms will exhibit unique variable patterns and will therefore be dissimilar to other firms.

According to the resource-based view and the market-based view of strategic management, *superior performance* mainly stems from uniqueness, that is from superior market positions or valuable, rare, inimitable, and non-substitutionable resource combinations (Barney 1991). The most successful firms are those which breach current ways of doing things and which develop a new competitive advantage. Because these firms are unique, they will exhibit unique variable patterns and will be dissimilar to other firms as well.

For entrepreneurs and managers of new ventures, adaptability and flexibility are of prime importance to secure firm survival in the face of limited slack and considerable environmental uncertainty (Bhidé 2000). Since a tight fit can lead to inertia, that is to an insufficient ability to respond to environmental changes (see section 3), some firms may want to *actively create a poor fit* at the current point in time to remain flexible. Some growth firms, for example, may proactively establish structures that are suited for larger organisations (Roberts 1999). This would imply an improper fit between size and structure today but may assist the firm in having the 'fitting' structures already in place when it needs them. From the perspective of the configuration approach, firms that actively create a poor fit today may have variable patterns that deviate from those of stable configurations and may be unique.

Also, firms which are in a period of *transition* may have variable patterns that in part reflect the old configuration, in part the new configuration and, in part, transient characteristics. Since new venture development is often characterised as a dynamic process (Roberts 1999; Korunka et al. 2003), which implies a prevalence of transition periods over periods of stability, unique variable patterns may emerge.

How, then, can the issue of unique variable patterns be dealt with? First of all we would like to point out that highly entrepreneurial firms and high performers are rare in real life. Storey (1994) reports that only 4% of a founding cohort have grown so fast that they contribute to 50% of the overall employment created by that cohort, within one decade. Even though this is a rather crude measure of performance, we believe that it serves to illustrate the finding that only a few firms will be high performers.

In the same vein, new ventures do not seem to be completely dynamic. In a study of 608 start-ups, Schwarz, Ehrmann, and Breitenecker (2005) detected major strategic changes (firms which indicated that they changed their strategy since start-up) in 104 of 608 firms (17.1%) over a period of three years. Even in highly entrepreneurial firms, evidence indicates that fundamental changes are the exception rather than the rule. In a case study following three growth-oriented firms over a period of 9 to 12 months, Lichtenstein and Brush (2001) detected that only 20% of all change incidents (2 out of 10 incidents, in one firm) could be labelled as 'quantum' changes. Even in firms which were subject to hyper-competition (Yahoo! and Excite are two such firms that are discussed by Rindova and Kotha 2001), only three fundamental changes in 'strategic thrust', that is changes the dominant strategy enacted to respond to changing environmental conditions, were identified in a period of more than five years (Rindova and Kotha 2001).

However, since entrepreneurship research is concerned with firms that upset equilibrium by engaging in creative destruction (Chrisman 2005), the difficulty in grouping highly entrepreneurial firms may limit the suitability of quantitative taxonomies in entrepreneurship research.

A strategy to deal with this issue may be to group firms not based on their particular resource combinations or their particular product/market innovations, which may indeed be very unique. Rather, a configuration analysis can be based on underlying factors that may cause entrepreneurial behaviour. An example of this approach can be found in the Miller and Friesen (1977) study. The authors use the constructs 'proactiveness' and 'risk-taking' to denote the proclivity to engage in these activities, while at the same time, they were not concerned with the specific resource combinations and innovations that may emerge from such a proclivity. Also, Miller and Friesen (1997) use constructs such as 'dynamism' to characterise the environment, without being concerned about which specific changes are taking place in a dynamic environment. However, such an approach abstracts away specific characteristics, which limits prescriptive relevance.

A second solution to the issue of unique variable patterns is to treat them as a chance, not as a peril to the configuration approach. If a taxonomic analysis identifies outliers, firms that do not belong to a group of comparable firms, it could be that this firm belongs to a fundamentally new configuration or that it is a firm that is continuously changing with regard to the variables under investigation (Rindova and Kotha 2001). Ensuing indepth qualitative analyses and theoretical reasoning may lead to specific and deep insights into the interrelations of the

domains of such firms. The discovery of new relationships, by qualitative research (Eisenhardt 1989) for example, may advance entrepreneurship research.

5. Conclusion

The configuration approach, that is the analysis of ‘organizational wholes’ and the interrelations of their elements (Miller 1996, 507) could be a theoretically and methodologically demanding, yet promising research strategy in entrepreneurship research. By using this approach, the holistic nature of new ventures could be captured, inconsistent results that are derived from universal effects of contingency analyses can be avoided, and better models of NVP and development could be developed. However, the configuration approach was not originally developed for the context of new ventures. Since an uncritical application of an established theory to a new research context can lead to questionable results, we discussed whether and how the configuration approach can be applied in the context of new ventures.

First, we discussed whether conceptual building blocks of the configuration approach, that is, the concepts of equifinality, fit, reductive mechanisms and of configuration change also apply in the context of new ventures (section 3). Based on theoretical arguments and empirical evidence, we argue that on this general level, the configuration approach may be applied to new ventures as well.

Second, we argued that the configuration approach ought to be specified so that it can capture the particular characteristics of the firms under discussion (in section 4). We argue that the domains of ‘person’ and ‘environment’ should be emphasised because they are ‘imperatives’ in the context of new ventures, and that all domains ought to contain variables that capture particular characteristics of new ventures. Regarding the domain of ‘person’, it could be interesting to analyse traits, motives, functions, and decision-making styles. Regarding the domain of ‘environment’, its ability to provide or withhold resources and business opportunities may be emphasised. In the context of new ventures, the analysis of the social environment, drawing on the concept of social capital, may also be promising. ‘Strategy’ could also include pre-launch and market entry strategies, and the ‘structure’ may also contain relationships in founding teams and governance structures.

Finally, we argued that in the case of new ventures, there may be firms with unique variable patters that eschew classification (in section 4). Reasons for such patterns could be truly entrepreneurial firms, superior performance, active creation of poor fit, and firms that are in transition. First, we argue that even though these phenomena may occur, they tend to be infrequent. If unique variable patterns occur, they could possibly be sidestepped by choosing variables on a more abstract level, or be analysed by indepth qualitative techniques.

Implications for research are extensive. First, we argue that the research context of new ventures does not violate the assumptions of the configuration approach. As a consequence, it can be assumed that the results of previous configuration studies rest on solid foundations. Second, the theoretical discussion revealed that special emphasis should be given to the domains of ‘person’ and ‘environment’. Thereby, it might be possible to identify firm types that reflect the critical attributes of new ventures. Third, the configuration approach could lead entrepreneurship research beyond an ad-hoc classification (for example, in ‘need-based’ and ‘opportunity-based’ ventures). Instead, theoretically sound and empirically tested types of new

ventures can be the foundation of future research. Finally, we argued that the configuration approach might be able to integrate various streams of research. Instead of analysing universal or simple contingency effects, the interrelations of domains pertaining to a firm can become the focus of research.

Practitioners can profit from the application of the configuration approach in entrepreneurship research in many ways. Entrepreneurs tend to copy successful role models when setting up their venture (DiMaggio and Powell 1983). Successful new venture types that are described in a taxonomy can serve as design guidelines for new venture creation (Doty and Glick 1994). For example, Payne (2006) reports in a study on the medical group industry that mimicking configurations of successful firms can lead to high firm performance. Nevertheless, he cautions that this is not to say that firms ought to copy exactly the same products and services or target the same customers, as this may deteriorate performance by increasing competition. Instead, general aspects of structure, strategy, and environment can be the focus of mimicry.

For entrepreneurs in existing new ventures, a taxonomy can serve as tool for self-assessment (Unger and Frese 2005). Entrepreneurs can compare their firm to successful new venture types and identify actions that may increase the performance of their venture. If they are trapped in an unsuccessful new venture type, changes at the core may be needed to increase performance, even though they will be more costly. In an instance where their venture resembles a successful new venture type, changes at the periphery may suffice.

However, personal and environmental aspects can limit the degree to which entrepreneurs are free to design their new venture configuration. For example, if the entrepreneur's knowledge predisposes her/him to a venture creation in a specific industry, and if that industry is regulated (for example by chambers of commerce and trade), only a few viable types of ventures may exist. The results of taxonomic studies may sensitise entrepreneurs to these varying degrees of freedom.

If specific new venture types can be identified, public support agencies, consultants, and educators can tailor their efforts and, thereby, provide effective stimulation. Taking the example of the start-up process configurations (Korunka et al. 2003), stimulating activities for 'would-be' entrepreneurs may have to focus on providing access to financial capital, while 'entrepreneurs against their will' may have to be motivated to complete the founding process in the first place. If it is true that personal, structural, strategic, and environmental factors are interrelated, knowledge of one factor can be used to predict other factors. In the context of pre-start-up, the personal characteristics of the entrepreneur may be the only observable factors. As a consequence, configuration research that focuses on the entrepreneur may provide tools to assist new venture support agencies (Lafuente and Salas 1989).

Despite the advantages and the positive implications of the configuration approach, their methodological and theoretical challenges should not be neglected. Theoretical issues such as strengthening the assumptions of the configuration approach in general and the selection of the type and number of variables, as well as the theoretical complexity in particular must be addressed. Also, methodological challenges in the application of quantitative methods and of sound theory making ought to be tackled as well.

The approach outlined in this study should be applied in analyses of new venture configurations to capture the characteristics of this research context and to model

interrelations between personal, structural, strategic, and environmental variables. By clarifying the applicability and by highlighting specific aspects that need to be considered in the research context of new ventures, we hope to have provided a foundation for future research. The application of the configuration approach in the context of new ventures will be a challenging task for future research, and we are looking forward to interesting results.

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Note

1. Following the definition of ‘interface’ in the Longman dictionary, it consists of ‘a place or area where different things meet and have an effect on each other’. Thus, an interface consists of the ‘things that meet’ and the interactions that take place between them. Since strategy is a way a firm influences the environment, and strategy is by itself influenced by the firm and the environment, we count strategy as a part of that interface as well.

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