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Looking for synergy in organizations: The role of the concept of configuration in contemporary theory

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LOOKING FOR SYNERGY IN ORGANIZATIONS: THE ROLE OF THE CONCEPT OF CONFIGURATION IN CONTEMPORARY THEORY

Abstract

The aim of this article is to add to organization theory by exploring the theoretical concept of organizational configuration and identifying its added value. Why is it used and what possibilities does it offer for organizational theorists? We will examine the underlying assumptions and try to produce a sound definition of configuration. This article is based on 77 articles and books from which we identified 6 authors as being the main theorists for configuration theory.

JEL Codes: B31, D21, D23, D29, O33, O39
Keywords: organization theory, configurations, strategic management

Introduction

Herbert Simon stated that "*everyone designs who devises courses of action aimed at changing existing situations into preferred ones*" (Ehn 1988 p. 157, Simon cit. p. 54). The process Simon is referring to here is fundamental for organizations trying to stay ahead of their competitors. Unfortunately, despite a wide range of theoretical approaches, the underlying mechanisms and logic responsible for success in organizations remain largely inexplicable. Lately, the concept of 'organizational configuration' has been increasingly used in publications on the performance of companies. Although promising in this context, the study of organizational configurations encompasses a variety of research streams (Ketchen 1997 p. 224; Ferguson 1999 p. 385). Common agreement on what configurations are and how they are to be used is practically lacking. Porter, for instance, uses 'configuration' to explain the redesign of organizations to achieve competitive advantage (Porter 1996). Miller on the other hand argues that 'configurations' are about social entities which derive their meaning from the whole (Miller 1987). These are only two examples of how the concept is used. For these, but also for the other authors discussed in this article, it is apparently tempting to use this concept because it is a vehicle to describe certain characteristics or dynamics of organizations. The aim of this article is to add to organization theory by exploring the theoretical concept of organizational configuration and identifying its added value: Why is it used and what possibilities does it offer for organizational scientists?

According to Sutton and Staw (Sutton 1995 p. 372), the process of building theory is full of internal conflicts and contradictions. This could be a possible reason for the confusion in theoretical streams and concepts that we found to be characteristic of articles on organizational configurations. In 27 out of the 77 articles we have read, the authors fail to give a definition of configuration at all; 26 authors cite other authors and use them as a basis for their work; 24 develop their own definition, which is sometimes based on the work of others, but to a larger extent deviates from existing definitions. To

help authors construct good theories, Sutton and Staw (Sutton 1995 p. 372) made a list of five features of scholarly articles that do not constitute theory but, instead, are references, data, lists of variables or constructs, diagrams and hypotheses. Although each of these features has vestiges of good theory, the key to this list lies in the context (Weick 1995 p. 389). When referring to Sutton and Staw, Weick (Weick 1995 p. 389) argues that if prior and subsequent steps in theorizing are merely more of the same, then the theorizing is less robust and promising. Theorists should be moving away from one of the five, through a second of the five, on to a third of the five. Kaplan and Merton (Sutton 1995 p. 378) state that theory is the answer to questions of why. Strong theory delves into the underlying processes so as to understand the systematic reasons for a particular occurrence or non-occurrence (Sutton 1995 p. 378). In the majority of the articles studied, the authors do not meet the criteria of good theory described above.

According to Morgan (Morgan 1980 p. 605), organization theorists, similar to scientists from other disciplines, often approach their subject from a frame of reference based on assumptions that are taken for granted. A widely used vehicle for this custom is a metaphor. The process of metaphorical conception is a basic mode of symbolism, central to the way in which humans forge their experience and knowledge of the world in which they live (Morgan 1980 p. 610). We agree with Morgan that a metaphor is a creative form that produces its effect through a crossing of images. Using metaphors, meaning is transferred from one situation to another: new words and meanings are created as root meanings are used metaphorically to capture new applications (Morgan 1980 p. 610). Morgan states that one of the major metaphors in organization theory is that of the organism which is used to refer to "*any system of mutually connected and dependent parts constituted to share a common life*" (Morgan 1980 p. 614). Logically, different metaphors can constitute and capture the nature of organizational life in different ways, each generating powerful, distinctive, but essentially partial kinds of insight (Morgan 1980 p. 612).

In our opinion the concept of the organization as a configuration is a metaphor, just like the organization that is described as being an organism. During their quest for insight into how things in organizations function and interact, organization scientists use this concept of configuration, which evokes associations with information technology and computer science. In different dictionaries we found the following descriptions of configuration:

1 Arrangement of parts or elements

Computer science:

1 The way in which a computer system is set up: *changed the configuration by resetting the parameters.*

2 The set of constituent components, such as memory, a hard disk, a monitor, and an operating system, that make the computer system.

3 The way that the components of a computer network are connected.

(A.H.D. 2000)

2 Form, as depending on the relative disposition of the parts of a thing' shape; figure (Webster's 1996)

3 An arrangement of parts or elements; "*the outcome depends on the configuration of influences at the time"* [syn. Constellation] (WordNet 1997)

4 The arrangement of the parts of something [from Late Latin *configuratio* a similar formation, from *configurare* to model on something] (Collins' 1982)

It is not only because of the increasing use of the concept, but mainly because of this apparent usability in getting closer to the truth as to how things in organizations happen, that this concept deserves to be explored. This article tries to give an overview of how the concept is used and to identify the stage of development of the theory. We will examine the underlying assumptions, look for the added value for organization scientists, and try to produce a sound definition of configuration.

Methodology

This article is based on the 77 articles and books listed in table 1. We started our literature search by scanning the electronic indexes of 13 scientific journals. Randomly ordered, the titles of the journals are: Harvard Business Review, Strategic Management Journal, Administrative Science Quarterly, Academy of Management Journal, Journal of Management, Academy of Management Review, Management Science, Scandinavian Journal of Management, International Business Review, Organization Science, Organization Studies, Journal of Management Studies, International Studies of Management and Organizations.

The literature search is characterized by three phases. First, while scanning the electronic indexes, we explicitly looked for the word 'configuration' in the titles of the articles, published between January 1995 and March 2002. Second, while reading the

articles, we paid attention to the references. Although not always explicitly related to configurations, references we came across repeatedly were also included in our analysis, which explains the presence of books. Finally, we also had an automatic search running on Elsevier Science Direct. Our query comprised the word configuration in the abstract, title and keywords for all journals.

To answer our central question – what is the added value for organization scientists of using the concept of organizational configuration? – we looked at the definitions of configuration given by the various authors. Because the number of authors and different definitions were quite large, we used two strategies to imply a certain structure. The first was a scan of all article references and a search for a pattern in articles that where cited most. We plotted down how often different authors make references to what we thought of as the major theoretical works in configuration studies. On the basis of this first strategy we were able to draw two conclusions. First, some authors make no reference to those we considered the most important for configuration theory. Second, some authors developed their own definition of organizational configurations, which is largely deficient from those we conceived as most important. Following on from these two conclusions, the second strategy was to look for common elements in all definitions. In this manner we hoped to exceed the major theoretical works and take into account all authors.

When discussing the different authors we thought of as most important for the theory on organizational configurations, we do so in alphabetical order for two reasons. The first is that we found it impossible to rank the authors according to the extent to which their contributions were of influence to others. Thus, we chose not to order the authors by the year of publication, hoping to avoid any suggestion of a kind of natural evolution in configuration theory. We will see that different authors were working on similar matters at different places and different times.

The second reason is that some authors wrote several contributions on the subject. In those cases, we chose to group their different contributions, thus including their multiple works while not adding to the complexity of this article with a chronological overview of the evolution of one author's work. As a consequence, the definitions, characteristics and terminology discussed in relation to these authors stem from their different works taken together. We try to give an idea of what a certain theorist stands for in theory on organizational configuration in general, not what he stands for at a specific moment in time.

After presenting the results of our literature study and the subsequent conclusions, we introduce two case studies: VEBA-Wohnen (Tuma 1998) and Palm Inc. (Yoffie 2001). These two case studies illustrate how the conclusions and theoretical concepts from the literature study can be recognized in everyday organizations. This section will conclude with a practical translation of the conclusions we gained from theoretical concepts in our literature survey.

Auteur	Reference	Year
Lawrence, R.P., Lorch, J.W.	Boek: The structure of organizations	1977
Miles, R.E, Snow, C.C	Book: Organizational strategy, structure and process	1978
Ranson, S., Hinings, B., Greenwood, R.	Administrative Science Quarterly vol 25 pp 1-17	1980
Miller, D., Friesen, P.	Administrative Science Quarterly Vol 25 pp 268-299	1980
Child, J.	Book: organization, a guide to problems and practice	1984
Pettigrew, A. M.	Journal of Management studies 24:6, 1987	1987
Miller, D.	Academy of Management Review Vol 12 no 4 pp 686-701	1987
Mintzberg, H.	California Management Review pp 11-24	1987
Mintzberg, H.	California Management Review pp 25-32	1987
Miller, A.	Strategic Management Journal Vol 9, pp 239-254	1988
Greenwood, R., Hinings, C.R.	Organization Studies 9/3 293-316	1988
Prahalad, C.K., Hamel, G.	Harvard Business Review pp 79-91	1990
Meyer, A., Tsui, A., Hinings, C.	Academy of Management Journal vol 36 no 6, pp 1175-1195	1993
Ketchen, D.J., Thomas, J.B., Snow, C.C	Academy of management journal Vol 36 no 6, pp 1278-1313	1993
Greenwood, R., Hinings, C.R.	Academy of management journal vol 36 no 5 pp 1052-1081	1993
Dess, G.G., Newport, S., Rasheed, A.M.A.	Journal of management Vol 19 No 4 pp 775-795	1993
Miller, J.G., Roth. A. V.	Management Science, vol 40 no 3 pp 285-304	1994
Doty, H. D., Glick, W.H.	Academy of management review Vol 19 no 2, 230-251	1994
Bensaou, M., Venkatraman, N.	Management Science, Vol 41, no 9 pp 1471-1492	1995
Gemunden, H-G., Ritter, T., Heydebreck, P.	International Journal of Research in Marketing 13, pp 449-462	1996
Fowler, A.	International Journal of Project Management Vol 14 no 4, pp 221-230	1996
Miller, D	Strategic Management Journal, Vol 17 pp 505-512	1996
Porter, M.E.	Harvard Business Review pp 61- 78	1996
Delery, J.E., Doty, H.D.	Academy of management Journal vol 39 no 4 pp 802-835	1996
Becker, B., Gerhart, B.	Academy of management journal vol 39 no 4 pp 779-801	1996
Ward, P.T., Bickford, D.J., Leong, G.K.	Journal of management Vol 22 No 4 pp 597-626	1996
Allan, G.	International Journal of Project Management Vol 15, no 5, pp 321-330	1997
Dyck, B.	Journal of Management studies 34:5 pp 793-823	1997
Ketchen, D.J. et al.	Academy of management journal Vol 40, no 1 pp 223-240	1997
Dess, G.G., Lumpkin, G.T., Covin, J.G.	Strategic management journal vol 18:9 pp 677-695	1997
Gresov, C., Drazin, R.	Academy of management review vol 22 no 2 pp 403- 428	1997
Bozarth, C., McDermott, C.	Journal of Operations Management 16, pp 427-439	1998
Tuma, A.	International Journal of Production Economics 56-57, pp 641-648	1998
Bantel, K-A.	Journal of Business Venturing 13, pp 205-230	1998
Stabell, C. B., Ostein, D. Fjeldstad	Strategic Management Journal vol 19 pp 413-437	1998
Taggart, J.H.	British Journal of management, vol 9 pp 237-339	1998
Bédard, M.G., Tereraho, M., Bernier, L.	Annals of public and cooperative economics 69:1 pp 33-66	1998
Law, K.S., Wong, C.S., Mobley, W.H.	Academy of management review Vol 23, No 4, pp 741-755	1998
Venkatraman, N., Henderson, J.C.	Sloan management review pp 33-48	1998
Wateridge, J.	International Journal of Project Management vol 17, no 4, pp 237-241	1999
Gassmann, O., von Zedtwitz, M.	Research Policy 28 pp 231-250	1999
Majumdar, S.K.	Journal of Business Venturing 15 pp 59-78	1999
Volberda, H.W., Rutges, A.	Decision Support Systems 26 pp 99-123	1999
Sabourin, V.	Journal of Engineering and Technology Management 16 pp 271-293	1999
Ferguson, T.D., Ketchen, D.J. Jr.	Strategic management journal 20 pp 385-395	1999
Claycomb, C., Germain, R., Dröge, C.	Industrial Marketing Management 29, pp 219-234	2000
O'Malley, P.	Economy and Society, Vol 29 no 4, pp 457-459	2000
Duray, R., Ward, P., Milligan, G., Berry, W.	Journal of Operations Management 18, pp 605-625	2000
Verma, R., Young, S.	Journal of Operations Management 18, pp 643-661	2000
Porter, M.	Concurrentievoordeel, Uitgeverij business contact Antwerpen pp 201-228	2000
Sheppeck, M-A., Militello, J.	Human Resource Management Vol 39, No 1 pp 5-16	2000
McLoughlin, I., Badham, R., Couchman, P.	Technology analysis and strategic management vol 12, no 1 pp 17-37	2000
Kathuria, R.	Journal of Operations Management 18 pp 627-641	2000
Jonsson, P.	Journal of Operations Management 18 pp 701-718	2000
Sweet, P.	International Journal of Service Industry Management vol 12 no 1, pp 70-83	2001
Mintzberg, H., Ahlstrand, B., Lampel, J.	Op strategiesafari, scriptum management, Schiedam	2001
Frohlich, M.T., Dixon, J.R.	Journal of operations management 19 pp 541-558	2001
King, W. R., Sethi, V.	Information and management 38 pp 201-215	2001
Moores, K., Yuen, S.	Accounting, Organizations and Society 26 pp 351-389	2001
Dahlgren, J., Soderlund, J.	International Business Review 10 pp 305-322	2001
Ravasi, D., Verona, G.	Scandinavian Journal of Management 17pp 41-66	2001
Huang, J	Harvard Business Review pp 149-158	2001
Rutes, W.A., Penner, R.H., Adams, L.	Cornell Hotel and Restaurant Administration Quarterly pp 77-88	2001
Normann, R.	Book: Reframing Business, John Wiley and Sons LTD	2001
Mitchell, T.R., James, L.R.	Academy of management review vol 26 no 4 pp 530-547	2001
Heijltjes, M., Witteloostuijn, A.	Scandinavian journal of management 33 pages, uncorrected proof	2001

Amit, R., Zott, C.	Strategic management journal 22 pp 493-520	2001
Porter, M.E.	Harvard Business Review pp 63-78	2001
Zotteri, G., Verganti, R.	International Journal of production economics 71 pp 221-233	2001
Newey, L.	Paper for 61e meeting academy of management 3-8 August id nr 30863	2001
Neergaard, P.	Scandinavian journal of management 18 pp 173-195	2002
Tarn, J.M., Wen, H.J.	International journal of information management 22 pp 3-26	2002
Forza, C., Salvador, F.	International journal of production economics 76 pp 87-98	2002
Buckley, P.J., Carter, M.J.	Journal of international management 8 pp 29-48	2002
Barros, A.G., Wirasinghe, S.C.	Journal of air transport management 8 pp 121- 127	2002
Tidd, J., Hull, F.	SPRU Electronic Working paper series paper 77	2002
Hameri, A.P., Nitter, P	International Journal of project management 20 pp 375-384	2002

Table 1 References ordered by year of publication

Literature study

In the introduction we pointed out that the majority of the authors studied do not meet the criteria of good theory described by Sutton and Staw (Sutton 1995). As we have seen previously, one of the reasons for scientists to use the concept of organizational configuration is because it is a metaphor. This is in line with Morgan (Morgan 1980 p. 605), who states that scientists from different disciplines approach their subject from of a frame of reference based on assumptions that are taken for granted. To justify these claims, but also to provide a background for our conclusions in relation to the characteristics of organizational configurations and the reasons for the different authors to use it, we will now present our empirical findings.

In the introduction, we reported that 27 authors fail to give a definition whatsoever while 26 cite and use others as a basis for their work, and 24 develop their own definition. To structure this variety, we plotted down how often different authors make references to others. This exercise enabled us to single out 6 authors or author pairs that may be considered as main theorists for configuration theory (the cited references come from the contributions we have read):

- Lawrence and Lorch (Lawrence 1977)
- Miller, Danny (Miller 1980; Miller 1987; Miller 1996)
- Mintzberg, Henry (Mintzberg 1987; Mintzberg 2001)
- Porter, Michael (Porter 1996; Porter 2000; Porter 2001)
- Meyer (Meyer 1993)
- Miles and Snow (Miles 1978)

Table 2 presents the complete overview of the works in which these authors were cited.

Lawrence and Lorch	**Meyer**	**Miles and Snow**	**Miller, D.**	**Mintzberg**	**Porter**
Miller, Roth	Frohlich	Bozarth	Miller, Roth	Miller, Roth	Frohlich
Ketchen, Thomas, Snow	Ketchen, Thomas, Snow	Bantel	Frohlich	Ketchen, Thomas, Snow	Miller, Roth
Stabell	Sheppeck	Miller, A.	Ketchen, Thomas, Snow	Stabell	Taggart
Miller, D.	Meyer, Tsui, Hinings	Meyer, Tsui, Hinings	Miller, D.	Miller, D.	Ketchen, Thomas, Snow
Bantel	Bantel	Sheppeck	Pettigrew	Miller, D. 2	Stabell
Bozarth	Bozarth	Miller, D.	Sheppeck	Pettigrew	Miller, D.
Claycomb	Moores	Miller, D 2	Meyer, Tsui, Hinings	Sheppeck	Sheppeck
Volberda	Dyck	Ketchen, Thomas, Snow	Miller, A.	Meyer, Tsui, Hinings	Miller, A.
Dess	Gresov	Miller, J.	Verma	Duray	Bantel
Gresov	Ketchen, Combs	Dess	Duray	Bozarth	Bozarth
Ketchen, Combs	Delery	Drazin	Bantel	Bedard	Claycomb
Miller, Friesen	Ranson	Moores	Bozarth	Volberda	Sabourin
Greenwood, Hinings	Becker, Gerhard	Dyck	Claycomb	Ravasi	Volberda
Ranson	Dess, Newport, Rasheed	Ketchen, Combs	Moores	Moores	Kathuria
Child	Newey	Bensaou	Dyck	Dyck	King
Neergaard		Doty	Dess	Dess	Dess
Normann		Delery	Gresov	Gresov	Ketchen, Combs
Ward		Greenwood, Hinings	Ketchen, Combs	Doty	Doty
Newey		Greenwood Hinings 2	Bensaou	Miller, Friesen	Greenwood, Hinings
Tidd, Hull		Heijltjes	Doty	Greenwood, Hinings	Tarn
Dess, Newport, Rasheed		Ferguson	Delery	Greenwood, Hinings 2	Neergaard
		Mintzberg	Miller, Friesen	Neergaard	Amit, Zott
		Dess, Newport, Rasheed	Greenwood, Hinings	Normann	Heijltjes
		Newey	Greenwood, Hinings 2	Ward	Mintzberg
			Child	Tidd, Hull	Normann
			Heijltjes	Miles, Snow	Ward
			Ferguson	Mintzberg 1987 a	Newey
			Mintzberg	Mintzberg 1987 b	Mintzberg 1987 a
			Ward	Dess, Newport, Rasheed	Dess, Newport, Rasheed
			Dess, Newport, Rasheed		
			Newey		
			Tidd, Hull		
21	15	24	32	29	29

Table 2 Overview of authors citing the six main theorists of configuration theory

This overview only illustrates which authors cite the six main theorists. It is impossible to conclude from this table which author had the largest influence, because references are related to all the works included in our review. A reason for this could be that the importance or indirect influence of the six authors mentioned is large to the extent that others use them in their conceptualizing while not explicitly using the terminology of the latter mentioned authors. This is why we arranged them alphabetically. Some of the articles were written by multiple authors, but we chose to mention the main authors only.

The six main theorists / perspectives of configuration theory: An overview

To obtain insight into the perspectives these main theorists represent, we will present their definition of configuration and characteristics, the terminology they use and their eventual goal. This overview leads us to certain conclusions on the internal and external characteristics of configurations. Subsequently, we will look for common elements and formulate general conclusions. In some cases we have included multiple works by the same author; their insights are based on their different works taken together.

1 Differentiation and Integration

Although Lawrence and Lorch do not use the notion of 'configuration', they did describe some of the fundamental notions of configuration theory. In their book *The structure of organizations*, (Lawrence 1977), which was cited 21 times by other authors, they describe different types of organizations and develop a typology based on the technical and economical circumstances of companies. Very important is the interaction between elements that are external and internal to organizations. To make this interaction comprehensible, Lawrence and Lorch (Lawrence 1977) develop a systems theory, whose central concepts are differentiation and integration. Differentiation is defined as the differences in cognitive and emotional orientation between executive officials in different functional departments. Integration, on the other hand, is the quality of the collaboration between departments they are expected to exert based on the requirements coming from the environment. For example, for Lawrence and Lorch (Lawrence 1977) the environment of companies is important to the way integration is achieved.

The authors aim to explain a certain dynamics, which results in more effective organizations under certain economic circumstances. In other words, they would like to gain insight into complex interrelations between internal forms of organizations and

external demands from the environment. It is the dynamics of integration and differentiation which will later in this article be demonstrated as being fundamental for the concept of configurations. Keywords in their work include system theory, differentation, integration, interaction between internal forms of organization and external demands from the environment.

2 Equifinality

Allan Meyer uses the term organization-configuration as a label for *'every multi-dimensional constellation of diverse conceptual characteristics which appear simultaneously'* (Meyer 1993 p. 1175). Configurations, archetypes or gestalts are used as synonyms: they can be presented both in conceptually developed typologies and in empirically deduced taxonomies. A fundamental characteristic is that patterns are discernable in the features of organizations. To be more precise, configurations are about social entities that derive their meaning from the whole: they cannot be understood separately. In addition, this author acknowledges an amalgam of factors that can be of influence. Another fundamental principle is that there is no one best way for organizations to be successful: the author supports the principle of 'equifinality'. According to his own arguments this author goes beyond contingency theory, which in his view is reductionistic, one-sided and limited by the context of the moment. Meyer's (Meyer 1993) approach is holistic and non-linear, and it recognizes equifinality.

To Meyer, trying to *explain* how order in organizations comes about is more important than trying to *design* order. In the formulation of theories Meyer (1993) wants to take into account the amalgam of factors that are of influence. In his theorizing he takes the problem as the starting point and tries to look for solutions. Starting from the problem, there never is only one best solution. In this manner, Meyer (1993) avoids reductionism. Terms characteristic of this theorist include: patterns, equifinality, holism, amalgam, typology, taxonomy, archetypes, gestalts, explain how order in organizations comes about.

3 Archetypes

According to this author pair, organizations can be classified into four strategic types: defender, analyser, prospector and reactor. Each of these types is characterized by a specific strategy to react to the environment and each has its separate configuration of technology, structure and processes consistent with that strategy. In other words,

configuration is the structure of an organization in one of the four types. Miles and Snow (Miles 1978) use a typology because they argue that organizations change in an adaptive cycle which is determined by three interdependent problems: the entrepreneurial problem, the administrative problem, and the engineering problem. In their movement throughout the adaptive cycle organizations have a specific configuration. As such every organization belongs to one of the four types. The authors use the term archetype as a synonym for type. Organizations arranged in accordance with the typology will for a certain period in time be competitive in their industry.

The main concern of Miles and Snow (1978) is the question why organizations in one industry differ in structure, processes and strategy. To find an answer, the authors arrange organizations according to their strategic direction and subsequently predict structural characteristics associated with the strategy followed. This codification process leads to a certain degree of predictability. Miles and Snow (1978) describe existing conducts of organizations and identify which of these can be used to prescribe alternatives based on the predictability of belonging to a strategic direction. Terms characteristic of this theory are typology, archetype, structure, pattern, describe and diagnose, interdependent problems.

4 Orchestration

'*Configurations are complex systems of interdependency which come about by central orchestrating themes*'. (Miller 1996 p. 506) Another word for 'central orchestrating themes' is imperatives, which include environment, structure of the organization, leadership and strategy. The imperatives are the cause, configurations the consequence. Organizations receive their characteristics from the imperatives. Based on their characteristics, organizations can be divided into a taxonomy of nine archetypes: fragmentation, entrepreneurial revitalization, consolidation, toward stagnation, centralization, boldness and abandon initiation by fire, maturation, troubleshooting, formalization and stability. The larger the number of interdependent elements, the larger the degree of configuration in an organization. Firms with a large degree of configuration are characterized by synergy, common vision, difficulty to imitate for others, distinguishable competencies, commitment, speed and shared insights.

Miller (Miller 1980) tries to gain insight into some of the fundamental patterns which emerge when organizations change. He wants to do justice to the reality of changes in organizations and acknowledge the multiplex, dynamic and contingent nature

of transition processes. The author argues that the degree of configuration is a source of a company's competitive advantage because a high degree of configuration is dependent on its environment. In fact, the author is trying to link configuration to strategy. Terms characteristic of Miller (Miller 1980; Miller 1987; Miller 1996) include: taxonomy, archetypes, interdependence, synergy, strategy, changes in organizations.

5 Simplification

According to Mintzberg (Mintzberg 2001), configuration is the form or structure organizations take during a certain period in time. This form is in line with a specific context, which is responsible for how organizations behave. Stated differently, a configuration is a period of stability in organizations. Sometimes these periods of stability are interrupted by periods of transformation. In stable periods, organizations have a system of strategies to maintain or achieve their stability. Mintzberg (Mintzberg 2001) distinguishes 7 categories: entrepreneurial, machine, professional, adhocratic, diversified, policionary and missionary. These characteristics are determined by the organization's structure and represent spheres of influence.

Mintzberg (Mintzberg 1987) is interested in how things in organizations go together and can be used to achieve a goal. In fact, he builds a typology starting from the conception that all characteristics in organizations are interrelated. Using configurations, reality is simplified but there is still room for complexity and nuance. Thus, Mintzberg (Mintzberg 1987) argues that it is possible to move an entire organization into a certain direction. Mintzberg (Mintzberg 1987; Mintzberg 2001) focuses on strategy, seeing that it offers consistency and collectivity, decreases uncertainty, and increases efficiency. This involves a simplification of reality as to achieving the goals in the best possible way. Terms characterizing Mintzberg (Mintzberg 1987; Mintzberg 2001) include strategy, simplification, complexity, nuance, stability, consistency, moving organizations into a direction.

6 Mutual reinforcement

Porter's main interest (Porter 1996; Porter 2000; Porter 2001) is strategy, which is to be used to achieve or preserve competitive advantage. While taking into account general trends, to achieve competitive advantage organizations have to try to be unique in the way they offer their services and products. According to Porter (1996; 2000; 2001) there are two interlinked possibilities: strategic positioning and operational effectiveness. In

this context, configuration or reconfiguration is to be seen as a redesign of organizations so as to realize the above-mentioned goals. Porter (1996) also uses the notion 'fit' to point to simple consistency, reinforcement of activities, and optimization of effort. Activities must be combined so as to mutually reinforce and achieve competitive advantage. In fact, rather than being interested in the notion 'configuration' or its usage, he focuses on competitive advantage. To achieve or retain this, a suitable design of organizations is needed. Porter (1996) moves in the field of tension of generally applicable strengths and strengths characterized by uniqueness, where the concept of configuration is extremely useful because it is associated with fit: the combination of different elements that interact and mutually reinforce one another.

As stated above, Porter's (1996; 2000; 2001) main concern is to gain and retain competitive advantage. Porter evolves with the general trends in the economy and, in his articles, considers different ways to obtain competitive advantage. He is always faithful to his claim that competitive advantage is achieved by positioning and organizational effectiveness. This becomes clear from his article 'Strategy and the internet', where he states that we *'forgot to see how the internet is the same'*. (Porter 2001 p. 78) Terms typical of Porter (1996; 2000; 2001) are: design of organizations, structure, fit, consistency, reinforcement.

The six main theorists of configuration theory: Conclusions

Following the overview of the main perspectives on the configuration theory we will now try to reach some conclusions. As we argued previously in this paper, different authors use configuration theory to reach different goals. Even among what we referred to as the main theorists, there exist noticeable differences. Lawrence and Lorch (Lawrence 1977) examine which different types of organizations are effective under certain economic circumstances, while Meyer (Meyer 1993) aims to understand how order in organizations is achieved. Miles and Snow (Miles 1978) focus on the question why organizations in the same industry differ in structure, processes and strategy. Miller (Miller 1980; Miller 1987; Miller 1996) wants to gain insight into some of the fundamental patterns that appear when organizations are changing, Mintzberg (Mintzberg 1987; Mintzberg 2001) investigates how things in organizations work together and can be used to move the organization as a whole to achieve a certain goal. Porter's (Porter 1996; Porter 2000; Porter 2001) work focuses on achieving or maintaining competitive advantage.

While the various authors share some of the terms, other terms are used differently. Lawrence and Lorch use systems theory, differentiation, integration, interaction between internal forms of organization, and external demands of environment. Meyer uses patterns, equifinality, holism, amalgam, typology, taxonomy, archetypes and gestalts. Miles and Snow use typology, archetype, interrelatedness, structure, pattern. Miller talks about taxonomy, archetypes, interdependence, synergy, strategy. Mintzberg uses strategy, complexity, nuance, stability and consistency. Porter talks about strategy, design of organizations, structure, fit, consistency and reinforcement.

Common elements

Since no clear definition can be derived from the main theories nor from the respective aims and discussions, we will move on to what we introduced as our second strategy: to look for common elements throughout preferably all six theories. Later we will try to see if our findings hold up when considering all contributions.

We itemize different phrases of the six authors, which called our attention because of their similarity:

1. **Lawrence and Lorch** (1977) talk about the interaction between external and internal elements of organizations and put this in a systems theory. They want to gain insight into the complex interrelations between external and internal elements for organizations. The authors study which types of organizations are effective under certain specific economic circumstances.
2. **Meyer** (1993) argues that all configurations are multidimensional constellations of diverse conceptual characteristics which appear simultaneously. The author pays attention to the amalgam of factors which is at play in organizations and which derive their meaning from the whole. They cannot be understood separately. In addition, Meyer subscribes to the viewpoint of equifinality.
3. **Miles and Snow** (1978) develop four types of organizations characterized by a specific strategy to react to the environment, each having a separate configuration of technology, structure and processes consistent with the strategy. Technology, structure and processes are interdependent. According to the authors, organizations arranged in accordance with the typology will for a certain period of time be competitive in their industry.
4. **Miller** (1980; 1987; 1996) argues that configurations are complex systems of interdependency which come about by imperatives. The larger the number of

interdependent elements, the larger the degree of configuration. A large degree of configuration is characterized by synergy, common visions, difficulty to imitate others, shared insights. For the author, the degree of configuration is a source of competitive advantage.

5. **Mintzberg** (1987; 2001) argues that configuration is the form or structure organizations take during a certain period in time in line with a specific context. Characteristics of organizations are determined by the structure in the organization and present spheres of influence. The author is interested in how things in organizations go together and can be used to achieve a goal. Strategy offers consistency and collectivity.
6. **Porter** (1996; 2000; 2001) argues that organizations have to take into account general trends, but yet have to try to be unique in the way they offer their services and products. Configuration is to be viewed as a redesign of organizations. Porter also uses the notion of fit to point to simple consistency, reinforcement of activities and optimization of effort. Activities have to be combined to mutually reinforce each other and thus contribute to gaining competitive advantage for the firm.

Common elements: Conclusions

This overview leads to our conclusion that organizational configurations involve a unique combination of different elements which appear simultaneously. This combination is characterized by the specific external and internal context in which the configuration of an organization operates. In addition, the different elements in organizational configurations interact with each other. They are interrelated and mutually dependent and reinforcing. To put it differently, the different elements form a synergy in configurations.

A time dimension is involved because configuration is labeled as a strategy, a system or a situation. Different factors interact in a company so as to achieve a certain desired situation. Configurations are about organizations in action. The principle of uniqueness, however, does not exclude the principle of ‘equifinality’. A unique combination of different elements involves a unique combination in the sense that it is determined by many internal as well as external elements. This does not mean that there is only one (ideal) possible combination; the combinations can change.

Common elements versus the other authors

The next step in our analysis is to find out whether these insights are still viable after being confronted with the remaining authors. We prepared a table in which we categorized the authors by the origin of their definition of configuration, using the same three categories we introduced when reporting the number of authors:

1) *Authors not giving a definition*. These authors only use the concept and concentrate on the case they are trying to make. In the table, Porter and Mintzberg are mentioned as being authors not providing a definition while we labeled them as main theorists for configuration theory. This is because the table lists *all* contributions. In some of their contributions, these authors do not repeat their own definition.

2) *Authors citing other authors' definitions*. These authors mainly cite others, but this does not mean they did not make any adaptations or additions to existing definitions. They mainly use the definition in question as a theoretical framework for their argumentation.

3) *Authors developing their own definition*. Although the definitions of the majority of authors are based on other authors' definitions, they are to a larger extent different. This column lists all six main theorists, because they are the ones who made the largest contributions to the theoretical framework.

The next step was to check for each author whether they cited one or more of what we called the six main theorists. The authors who did are marked with + after their name. After each name we also mentioned (between round brackets), the focus of their work and, where applicable, to whom they refer to [between square brackets].

No own definition	Ref	Definition cited	Ref	Own definition	Ref
Pettigrew (contexts)	+	Frohlich [Miller, Roth] (taxonomy)	+	Mc Loughlin (contingency)	
Verma (competitive priorities)	+	Taggart [Porter] (configuration-coordination)	+	Gassmann (typology)	
Duray (typology of archetypes)	+	Ketchen, Thomas, Snow [Miller, Mintzberg] (strategic groups)	+	Miller, Roth (taxonomy)	+
Sweet (value configurations)		Stabell [Porter] (typology)	+	Miller, D. (configuration)	+
Wateridge (change management)		Sheppeck [Meyer, Tsui, Hinings, Miller] (systems approach)	+	Miller, D. 2 (configuration)	+
Fowler (project management)		Miller, A. [Miles, Snow] (typology of gestalts)	+	Meyer, Tsui, Hinings (configuration)	+
O'Malley (configurations of risk)		Bantel [Porter, Ketchen, Snow, Thomas, Meyer, Miller] (contingency)	+	Allan (components of computers systems)	
Gemunden (typology of		Bozarth [Miller, Friesen,	+	Claycomb	+

network configurations)		Meyer, Miles, Porter] (contingency)		(characteristics of design of organizations)	
Jonson (taxonomy of maintenance configurations)		Bedard [Mintzberg] (strategic configurations)	+	King (taxonomy of transnational IS strategy)	+
Volberda (typology of flexibility)	+	Sabourin [Porter] (configurations of strategic groups)	+	Law, Wong, Mobley (taxonomy of multi dimensional constructs)	
Kathuria (taxonomy of manufacturing strategies)	+	Moores [Miller, Friesen] (archetypes of configurations in accordance with life stages of firms)	+	Bensaou (configuration of inter organizational relations)	+
Ravasi (configuration of patterns in firms)	+	Dyck [Meyer, Greenwood, Hinings, Miller, Friesen, Mintzberg, Miles, Snow] (configurations)	+	Doty (typology)	+
Dahlgren (systems theory of networks of companies)		Dess [Miller, Friesen, Mintzberg, Miles, Snow] (configurations based on entrepreneurial strategy making)	+	Miller, Friesen (archetypes of change, taxonomy)	+
Majumdar (characteristics of strategy)		Gresov [Mintzberg, Miles, Snow] (contingency)	+	Porter (configuration of activities of firms)	+
Mitchell (time in causal relations)		Ketchen, Combs [Meyer, Tsui, Hinings, Mintzberg, Miller] (relation configuration and performance)	+	Greenwood, Hinings (archetypes)	+
Rutes, Penner, Adams (configurations of hotel buildings)		Delery [Meyer, Tsui, Hinings, Miller, Friesen] (difference between universalism, contingency and configuration)	+	Greenwood, Hinings 2 (design archetypes)	+
Barros, Wirasinghe (airside configurations)		Ranson [Lawrence, Lorch] (patterns of change)	+	Huang (business architecture)	
Buckley (knowledge configurations)		Neergaard [Porter, Mintzberg, Lawrence, Lorch] (contingency)	+	Lawrence, Lorch (systems theory)	+
Hamel, Prahalad (core competencies of firms)		Amit, Zott [Porter] (strategic networks)	+	Child (contingency)	+
Vekatraman (structure of organizations)		Heijltjes [Porter, Miller, Miles, Snow] (typology of manufacturing technology and HRM)	+	Forza (product configurations)	
Tarn (configuration of systems of communication)	+	Ferguson [Miller, Miles, Snow, Ketchen] (research on strategy in configurations)	+	Porter (configuration of market share and competence)	+
Hameri, Nitter (structure of systems of information management)		Becker, Gerhard [Meyer, Tsui, Hinings] (HRM configurations)	+	Mintzberg (types of organizations)	+
Porter 2001 (combination of powers in value creation of firms)	+	Dess, Newport, Rasheed [Miller, Mintzberg, Friesen] (presentation of an overview of theoretical and methodological aspects of configurations)	+	Normann (creation of value by density)	+
Mintzberg 1987 a (strategy as plan, scheme, pattern, position, perspective)	+	Tidd, Hull [Child, Dess, Lawrence, Lorch, Miller] (applying concept of typology on service	+	Miles, Snow (patterns of behaviour)	+

		sector)			
Mintzberg 1987 b (strategy as plan, scheme, pattern, position, perspective)	+	Ward, Bickford, Leong [Miller, Friesen, Mintzberg] (integration of business and manufacturing strategy)	+		
Zotteri, Verganti (dealing with uncertainty)		Newey [Dess, Doty, Ketchen, Miller, Meyer, Friesen] (ideal types of configurations for occurring high tech firms)	+		
Tuma (virtual networks of production)					
27	**10**	**26**	**26**	**24**	**18**

Table 3 Origin of definitions

Common elements versus the other authors: Conclusions

A comparison of this table with table 2, which lists references to the main theorists, tells us that 10 out of the 27 authors that do not literally cite other definitions are acquainted with the work of the main theorists. In the second column, 26 authors cite and base their arguments on other authors. In the third column, 24 authors are mentioned that develop their own theoretical framework, yet 18 of them are marked with a "+" sign behind their name. This suggests they are at least acquainted with the other theorists. We would like to focus attention to the fact that we have categorized the six main theorists in this third column of authors that develop their own definition.

From this comparison we conclude that 54 out of 77 authors are acquainted with the work of the main theorists. This leaves us with the remaining 23 articles in which no actual definition of configuration is given or in which the authors have developed a largely deficient one. When looking back at the respective articles, the majority of the cases use the concepts of fine-tuning, interrelatedness, multi-dimensionality, unicity, context-dependency. Another indication of this is the fact that although these authors, like all others, have specific objectives in using the concept of configuration, they are yet highly similar to the others[1]. Below we will present the goals of the various authors using the concept of configuration. This overview illustrates the similarity in objectives with other authors. Taking these arguments into account, we are convinced that our conclusions apply to all 77 articles studied.

[1] Readers which are interested in a more detailed overview of the 77 authors, their definitions and a description of what they use configurations for, can get insight after sending an email to r.sluismans@merit.unimaas.nl

Overview of the goals of authors using the concept of configuration

When building our argument that some questions about organizational configurations remain unanswered, we stated this to be a consequence of the nature of the different contributions. We have made the following structural overview of the goals the different authors had in mind.[2]

77 Contributions	
Theoretical motives 58	Practical motives 19
Offering insight by explaining/predicting 26 Structuring 14 Testing 9 Pioneering 9	Management of organizations 10 Production in organizations 9

When taking this one step further than the individual goals in the majority of the articles, a supposed consequence is that when the authors succeed in what they are striving for, things become better for organizations. Focusing on the specific goals of the subsequent authors, 'making things better' is to be generalized by gaining more control over the organization. In the context of this article, control is to be defined as:

- Managing the company in an effective and efficient manner;
- Mastering the processes involved in production or delivering services;
- Direct and indirect influence on the activities (strategy) of competitors;
- Long-term collaboration with customers and suppliers.

More should become clear from going into the actual use of configurations. In general, the different forms of application is grouped around three themes:

- organizations and their design (37);
- management of organizations (33);

[2] Readers which are interested in a more detailed overview, can get insight after sending an email to r.sluismans@merit.unimaas.nl

- organizations and their surroundings (7).

After grouping each article under one of the three broad themes, we tried to abstract and label what the authors described as to what they were doing. As shown in the table, some authors are very specific while others describe general trends or disciplines in firms. Where this division was possible, this is visualized by the labels 'general' (g) and 'specific' (s). When no division is made, all applications fall into the 'general' category.

Theme			Number
Organizations and their design			
	Organizations in broad sense		8
	Design of organizations		3
		design of production and systems of production (g)	4
		characteristics of organizations (g)	2
		small manufacturing companies (s)	1
		construction and furnishing of hotels (s)	1
		construction and furnishing of airports (s)	1
		multinationals (s)	1
		virtual work environment (s)	1
		rising high-tech companies (s)	1
		companies based on technology (s)	1
		low-contact services (s)	1
		International R&D organizations (s)	1
		maintenance in manufacturing industry (s)	1
	Structure of organizations		3
	Performance of organizations		1
	Development of organizations		2
	Networking of organizations		4
Management of organizations			
	Strategy		
		strategic marketing (g)	1
		manufacturing strategy (g)	2
		strategy performance relationship (g)	3
		strategy for competing (g)	8
		strategic groups (g)	1
		strategy of suppliers (s)	1
	Creation of value		
		in general (g)	1
		facilities (g)	1
		e-business (s)	1
	HRM		
		in general (g)	2
		HRM-strategies (g)	1
	Risk		1
	Knowledge management		2
	Total Quality Management		1
	Management of projects		1
	Change management		2
	Management of information		1
	Core competencies		1
	Management accounting systems		1
	Management of resources		1
Organizations and their environment			
	Market		1
	Branches of industry		1
	Mass consumers/ mass consumption		1

	Facilities for organizations	
	Computers (s)	2
	Influence of time	1
	Contexts and processes	1
	Total	**77**

Table 4 Configuration and its applications

Overview of the goals of authors using the concept of configuration: Conclusions

Remarkably, the majority of the authors use configuration for general phenomena that are typical of organizations. A large number of modern management principles are represented in the table. If we focus on the specific matters configuration is used for, they are all about complex themes characteristic of organizations. To name just a few: development of organizations, value creation, risk, change management, market, and so on.

Taking into account the complexity and multi-dimensionality of the applications, we find support for our earlier conclusion that configurations are used because they involve a way to enlarge the degree of control in organizations. They contribute to increasing the manageability of organizations. In spite of this variety in the specific goals of different authors, what they have in common is the application of the notion of organizational configurations. We see this as a reinforcement of our earlier conclusions in relation to the reasons for using the concept:

- 'configuration' is a metaphor that evokes associations with IT, which combines and recombines elements to ultimately form a best performing configuration;
- as a result of the specific interaction between characteristics of organizations things in organizations run more smoothly;
- while defining a total organization, the notion leaves room for discerning the enclosed peculiarities or characteristics. In other words, configuration is a vehicle which permits to label different elements of organizations while leaving space for their peculiarities and the way in which they interrelate and mutually reinforce each other;
- the presence of a diversity in elements is stressed;
- different configurations can lead to comparable performance of organizations.

Cases

We will now illustrate how the concept of configurations is applied in actual organizations. The cases described below serve two purposes: first, to show a practical illustration, and second, to find out whether our conclusions from the literature study hold up after a confrontation with practice.

Case 1: VEBA Wohnen (Tuma 1998)

VEBA-Wohnen, a subsidiary of VEBA AG, is a German company involved in the construction and administration of a total of 140,000 houses and flats. The company handles around 5,000 messages of different defects daily. In fact, VEBA-Wohnen is a virtual enterprise combining core competencies of single partners. The aim is to be a "best-in-everything" organization that is able to perform business projects to a maximum level of customer satisfaction. The strategy to reach this is by dividing projects into subtasks. In accordance with the requirements of this dynamically changing market, a maximum amount of flexibility is guaranteed while skills and services are brought into action in a cost-optimal manner.

In case of a malfunction, the owner sends a message to the central computer of the VEBA-Wohnen, where the message is translated into a job offer for the affiliate craftsmen companies. Specified tasks like type of problem, customer location and calculated costs are sent via electronic mail to about 400 affiliate companies which are free to accept or reject the job. Upon acceptance of an offer, the coordination unit will adapt the global database. After finishing the job, the processing company sends an invoice of tasks carried out to the central database. Then the computer system prompts the customer for a reconfirmation and initializes payment.

In our opinion, VEBA is an example of a configuration because it is a virtual organization combining core competencies of partners. For each defect, a different combination can be used. Besides this, the specific procedures prove effective in making sure complaints are handled effectively. Although the front end of VEBA is one company, it is in fact a conglomerate of 400 affiliate companies. Therefore, while each defect can be solved by a different company, in the end the result will be the same. In the next section we will describe the argumentation in more detail.

Case 2: Palm Inc. (Yoffie 2001)

Palm Inc. was founded in 1992 as Palm computers and went from strength to strength despite competition from the most powerful software company in the world. Founder John Hawkins and his CEO Donna Dubinsky succeeded by combining three principles: movement, balance and leverage. Because the first goal is to stay in the game, they kept low profile and tried to look inoffensive by not defining their product as a platform but as a piece of hardware. At the same time they took advantage of the weaknesses of Microsoft and changed the criteria by which hand-held computers were judged. Simplicity, usability and elegance were characteristic of the new design philosophy instead of continuously adding more features. Using cross-functional teams, Palm integrated software and hardware design under the same roof, making them form a cohesive whole. The company constantly pushed the product forward, while simultaneously building a massive installed base. Rather than spend scarce time and resources developing non-core capabilities in-house, it subcontracted these to outside partners. Another element at stake in Palm building of an extraordinary share of mind and market without provoking fatal attack was to quietly court early adopters. Palm positioned itself alongside competitors while maintaining its focus on the product and designing internal processes for speed. Within five years after the first introduction into the market, by mid 1998, Palm held close to 80% of the hand-held computer market.

Practice versus theory

In this section we will go into more detail of the characteristics for configurations. Are the characteristics we derived from the literature study also viable when confronting them with our two cases? We produced the following list:

- Organizational configurations involve a unique combination of different elements that appear simultaneously.
- The combination is characterized by the specific external and internal context in which the configuration of an organization operates.
- The different elements in organizational configurations interact with one another. They are interrelated, and mutually dependent and reinforcing: the different elements form a synergy.
- Because configuration is labelled as a strategy, system or situation, a time-dimension is involved. Different factors interact in a company so as to reach a certain desired situation over time.

- Configurations are about organizations in action.
- The principle of uniqueness, however, does not exclude the principle of 'equifinality'. The combination is unique in the sense that it is determined by a lot of internal as well as external elements. This does not mean there is only one (ideal) combination possible; combinations can change.

When focusing on the peculiarities of the cases, a first striking point is the involvement of different factors at the same time. At VEBA-Wohnen (Tuma 1998) 140,000 housing units generate 5,000 complaints daily, which have to be solved by about 400 affiliate subcontractors. To organize this process effectively, different interactions and activities have to be performed in a well-organized manner. Also, different factors are involved in the Palm case (Yoffie 2001). Palm's aim was to look harmless to competitors while changing the criteria by which hand-held computers were judged. This firm used cross-functional teams, integrated software and hardware design and subcontracted non-core capabilities. At the same time it increased its market share by quietly courting early adopters and a policy of moderate prices.

It is almost self-evident that a lot of different factors are involved simultaneously. However, what is more important is that these elements are determined by both the internal and the external context of the organizations. As such, these elements can be different in nature.

A third characteristic, closely related to the first two, is the existence of a time dimension. The organizations are in action: the factors involved have to take place simultaneously or in a certain sequence. In the VEBA-Wohnen case, reporting a defect and the subsequent formulation of a job offer follow each other closely. After one subcontractor agrees to take the job, the coordination team adjusts the central database while the subcontracting firm starts carrying out the activities it engaged itself to. Also, when the job is finished a customer-billing procedure is initiated. At Palm, the founder and his CEO stressed the strategy to work on a variety of things at the same time, which was an important factor contributing to its success. They have labeled this as 'movement, balance and leverage' (Yoffie 2001 p. 56).

In fact, and this is the fourth characteristic, this specific combination of movement, balance and leverage has proven to be quite effective for Palm. The combination was unique because no other company was able to achieve the same success using the same products. VEBA, too, is unique in the way it handles the repair of defects.

The fifth characteristic is that the elements or activities in the configuration interact with one another. To reach a certain pre-specified goal, different factors have to be used in combination because they are interdependent. Ultimately they form a synergy and mutually reinforce one another. When one of the parties at VEBA-Wohnen fails to perform a task in the sequence, the total system of quickly and efficiently solving the complaints will fail. Also, at Palm the combination of different activities have led to success, but who knows what would have happened if they had failed to look inoffensive to Microsoft?

The sixth characteristic is that the configuration is equifinal. In the case of VEBA-Wohnen, this becomes visible at a superficial level: for one single repair a large number of affiliate companies receive the request to tender for the job. Although only one actually gets the job, another company might have ended up obtaining it. Yet the end result is always the same. This illustrates that a defect can be solved in one way, but could be solved equally effectively in another. In the Palm case, the equifinality is harder to demonstrate because the combination of movement, balance and leverage proved to be effective. Their success is to be explained by this unique combination. As such it is impossible to make any comments on alternative ways in which this firm could have been equally successful, although other possible routes to its success are not to be ruled out.

At this point, some additional comments should be made. In fact, for companies not yet having an effective organizational configuration, the concept involves a promise of a prosperous future. The success of VEBA-Wohnen relies on adequate control of the virtual organization. As we pointed out previously, the total system is dependent on every party performing his task in the process well. If so, the company is not only managed effectively and efficiently (also in relation to the cost efficiency mentioned), but the process of delivering services is also mastered well. It may seem evident that when one of the affiliate companies fails to perform its tasks to everyone's satisfaction, the collaboration will come to an end. As regards the direct and indirect influence on the strategy of competitors, this case does not produce any insight. The Palm case, however, does. By sticking to its strategy, this firm was able to change the criteria by which hand-held computers were judged. Therefore it was able to continue to play its own game and leave Microsoft behind while acquiring 80% market share of the hand-held computer market by 1998. The three other characteristics of control are also illustrated in the Palm case. Starting as a small company, it used cross-functional teams to develop its product.

It constantly pushed the product forward, while simultaneously building a massive installed base. This shows that its management effectively and efficiently ran the firm. In relation to mastering the process of production, it integrated software and hardware design under the same roof, making them a cohesive whole. Non-core capabilities were subcontracted to external partners rather than developed in-house, which would have involved scarce time and resources. In terms of long-term collaboration with customers and suppliers, the market share (in 1998) is illustrative of the effectiveness of this firm's strategy of courting early adopters to create share of mind and market. Again, similar to VEBA-Wohnen, it is conceivable that if the subcontractors appreciated working for Palm, they better make sure they meet its expectations.

Theory versus practice: Conclusions

Although the preceding characteristics are indicative of what configurations are, they are not all-embracing. It would be too easy to explain the success of an organization by listing these five characteristics. The two cases we presented were not only helpful in explaining the characteristics of organizational configurations but they also showed that components can vary. In accordance with the feature of uniqueness, this seems logical, but does this also mean that there is only one best – most successful – configuration for an organization? If we want to go beyond a retrospective reconstruction of the success of an organization, we must gain insight into how the dynamics of configuration works and if there are preconditions for the mechanism to function optimally. Is it possible to design organizational configurations? How does one design a unique organization in which the elements involved interact in a certain way to form a synergy that leads to a successful organization? In our opinion an organizational configuration does not come about until after a long process of trial-and-error; additionally, we cannot provide a sufficient answer to all of these questions, even after looking at the 77 contributions and their specific goals. This is due to the nature of the different contributions: the majority of the authors (58 out of 77) had theoretical motives.

An example representative of how the concept of 'organizational configuration' is currently used, is Porters article "Strategy and the Internet", where he argues that "*in our quest to see how the internet is different, we have failed to see how the internet is the same.*" (Porter 2001 p. 78). The message Porter is trying to convey is that although Internet technology opened up new possibilities for companies, such as reducing communication costs or new ways to find information, this actually is not the core employability of the Internet.

The five underlying forces of competition – the intensity of rivalry among existing competitors, the barriers to entry for new competitors, the threat of substitute products or services, the bargaining power of suppliers, and the bargaining power of buyers – still determine both old and new industries (Porter 2001 p. 66). Thus, operational effectiveness and strategic positioning are still the underlying principles to achieving sustainable competitive advantage (Porter 2001 p. 70). Porter elaborates his point by arguing that strategy "*involves the configuration of a tailored value chain (…) that enables a company to offer unique value. To be defensible, moreover, the value chain must be highly integrated. When a company's activities fit together as a self-reinforcing system, any competitor wishing to imitate a strategy must replicate the whole system (…)*" (Porter 2001 p. 72). Essentially, this means that "*established companies will be most successful when they deploy internet technology to reconfigure traditional activities or when they find new combinations of internet and traditional approaches*" (Porter 2001 p. 78).

What we can conclude from this article is that, for Porter, the concept of 'configuration' is apparently a fundamental tool to explain his conception of the role of the Internet. Nevertheless, he does not explicitly explain the concept. It is only by interpreting Porter's description of "*a tailored value chain*" (Porter 2001 p. 72) that we can derive at least some characteristics. For the majority of the authors studied as to their use of the concept of 'organizational configuration', it is an important vehicle in their argumentation, but only a minority focuses on the notion as such.

From our review of the 77 contributions, we are led to conclude that the notion of 'organizational configuration' is commonly used because of multiple reasons. First, configurations are related to entireties, including a total organization with all its elements and peculiarities. In addition, but also partly because of the encasing of the different properties of organizations, the notion of organizational configuration is an approach which leaves room for discerning the specific characteristics of the individual organizations. While organizations are included in their entirety, at the same time the importance of uniqueness – characterized by the presence of different elements – is stressed. Put differently, the unique character of organizations is described in another way. From the work of the authors using the notion of organizational configurations, but also partly consistent with contingency theory which subscribes to the principle of fit, we are led to conclude that they agree there has to be a simultaneous, complex interaction between a variety of interdependent variables (Bozarth 1998 p. 428). The difference with contingency theory, however, is that different combinations (interactions) can lead to the

situation of fit without having to substitute one contingency with another. Organizational configurations are not driven by gearing internal variation to the external setting (Bozarth 1998 p. 428), as contingencies tend to. In our opinion, the hallmark of a configuration is the magic released in the combination of different elements in organizations. As a consequence of the specific interaction between the constituent elements, things in organizations suddenly run more smoothly. In a lot of (scientific) disciplines, we can think of situations in which one knows the problem at issue, and in which different solutions seem possible, yet one produces a better result than the other without directly demonstrable causes. Viewed from this perspective, dealing with organizations evokes associations with Information Technology. Interviews with IT professionals have shown us that the same situation often occurs in IT. In the introduction, when we used different dictionaries to summarize the meanings of configuration, we already pointed out that the word is used in computer science. There we cited The American Heritage Dictionary as follows: "*The set of constituents components, such as memory, a hard disk, a monitor and an operating system, that make up the computer system*" and "*the way that the components of a computer network are connected*" (A.H.D. 2000). Because of this analogy of 'constituent components that make up the system' and 'the way they are connected', the concept of organizational configuration evokes a workable picture for scientists in different disciplines. As we stated in the introduction, the notion of 'organizational configuration' is a metaphor.

In this paper we have illustrated that the concept of configuration is a vehicle that enables us to deal with a variety of issues in organizations. The literature study and the presentation of two cases led us to a list of six characteristics of configurations. Two of them, however, require further investigation:

- organizational configurations involve a unique combination of different elements which appear simultaneously;
- the different elements are interrelated, and mutually dependent and reinforcing: they form a synergy.

How the mechanism of accomplishing a unique combination of elements works is something that deserves further research. On the other hand, we would like to gain insight into what makes the elements mutually dependent and reinforcing. In our opinion a clear understanding of these mechanisms could lead to added value for the practice of (re)designing organizations.

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