NYENRODE
BUSINESS UNIVERSITEIT
Nyenrode Research and Innovation Institute

SPATIAL ORGANIZATIONS

Frank Lekanne Deprez

René Tissen

SPATIAL ORGANIZATIONS

Frank Lekanne Deprez
René Tissen

Abstract
The purpose of this paper is to explore and develop the concept of space in organizational design theory. Traditional research in this field generally indicates the absense of space in design. Space is mostly taken for granted or, at best, treated implicitly as an organizational limitation instead of an opportunity. By making the *'case for space'* we aim to indicate the emergence of a spatial theory of organizations*,* which markedly breaks with the resource-based ('place bound') view of the firm, common in today's organizational theory and practice. Instead the knowledge-based ('space bound') view of organizations allows for the realistic introduction of new organizational forms. The emergence of such new forms is generally seen as important with a view on the systematic instead of opportunistic enhancement of the performance potential and capacities of companies, increasingly operating in a knowledge-based economic environment. We argue that spatial organizations predominantly take the form of 'arrangements' (modular, cellular, circular and constellar), shaped around the natural ability of people to work with some types of knowledge better then with others.

Keywords
Knowledge Based View of the Firm, Spatial Organization Theory, Spatial Arrangements, Spatial Design.

Address of correspondence
Frank R.E. Lekanne Deprez
Nyenrode Business University
P.O.Box 130, 3620 AC Breukelen, The Netherlands
E-mail: f.lekannedeprez@nyenrode .nl
Phone: (+31) 346 – 291288

René J. Tissen
Nyenrode Business University
P.O.Box 130, 3620 AC Breukelen, The Netherlands
E-mail: r.tissen@nyenrode.nl
Phone: (+31) 346 – 291288

1. Introduction

Organizational space is commonly divided into three separate but finite spaces: physical, virtual and mental (Lefebvre 1991; Kerckhove 2001; Tissen & Lekanne Deprez 2008). However, the most common managerial understanding of space is that of a mere extension of place': *place equals physical space* (offices, buildings). Furthermore space is often regarded as *invisible emptiness*. Space usually 'forms' itself around the absence of things, as well as being (by definition) in between things. On the other hand space is never 'empty' as it always seems to represent diverse meanings (room to move, degrees of freedom, geographical constraints, etc). In organizational research space is mostly taken for granted or, at best, treated implicitly (Sydow 2002). Currently a rising interest in space is becoming noticable (Tissen & Lekanne Deprez 2008), both in terms of a yet to be discovered and 'exploited' economic asset – similar to the business discovery of knowledge in the recent past - as well as a hitherto forgotten mental 'tool' to achieve key organizational goals. Because space is not a fixed entity due to a number of interfering and overlapping dimensions - space is complex, multidimensional, fluid and evolving - the notion of space in an organizational context can only be explored effectively under what is commonly known as the knowledge based view of the firm. Adopting this view can even lead to space becoming a key design principle of modern organizatizations.

Most 'space' resides in the heads of people in organizations and although invisible and fluid by form, this way of looking at space allows for an entirely new type of organization, in this article referred to as the spatial organization. Spatial organizations can be defined as deliberate mental constructs of how workers can and should put the knowledge they possess to best practice, alone as well as together with like minded co-workers, in and with the help of organizational 'arrangements' of knowledge, technology and people.

Spatial organizations represent 'mindful' forms of organizing, which arise and become relevant to practice as a result of most knowledge work evolving into mental work. Spatial organizations are designed for mental 'connectivity' and 'brain value' instead of being functional hierarchies of work. Spatial organizations are in sharp contrast, but not contradictory to conventionally structured, often 'boundary-fixed' (Santos and Eisenhardt 2005) and even 'bounded' organizational forms (Hernes 2004), such as the pyramid-shaped organizational structure. Spatial organizations capture the minds of people in a different way then traditional organizations are capable of doing. Signals indicating that the effectiveness of traditional organizational structures and existing management practices are currently reaching their limits, continue to surface within both academic and practice based literature (Pfeffer and Sutton 2006; Bryan and Joyce 2007; Hamel and Breen 2007; Palmer, Benveniste and Dunford 2007; Birkinshaw, Hamel and Mol, 2008; Hamel, 2009) gradually raising the attention and awareness of managers for new organizational forms. All suggest that the end of the organizations as we know them and the way we commonly organize, is coming nearer. So far, however, organizing and managing in the twenty-first century appears in practice not to be much different from the twentieth century, in which organizations exist far more stable in 'form' and 'performance' than theory, ideology and managerial behavior suggest.

1.1 Why organize?

To assert that an organization exists implies that it is possible to distinguish it from its context and to agree about its properties. However, drawing boundaries is not a neutral act. In the process, one has to include and thus exclude, join and still separate, draw lines of demarcation and yet homogenise all that '*which is within*' (Dale and Burrell 2008). It is generally difficult to distinguish the boundaries of an organization. Some of its constituent components seemingly internal on some dimensions can be peripheral or even external on other dimensions. This ambiguity in organizational boundary setting was already evident some 30 years ago (Starbuck

1976). Since then organizational boundaries have grown even more obscure as subsequent changes in technologies such as digitization have led to a "flattening" of the world (Fungi, Fung and Wind 2007) and to the exponential rise of organizational phenomena such as teleworking, virtual working, social computing, off shoring and short-term contracting (Malone 2004; Heckscher 2007; Van Gorp 2008), all intended to enable people to collaborate and compete with one another "anytime, anywhere, anyhow" (Davis 1987). On the other hand, boundaries have also become more solid and strict due to intensifying regulatory frameworks most firms are confronted with, following patterns of increased public control of business performance. As a result, many organizations are now confronted with less, rather than more space to compete, to innovate and to perform 'as they see fit'.

1.2 Organizing for performance

This article starts by examining space and its meaning -in the absence of an unambiguous definition - not only to get a better understanding of space from an organizational point of view, but also to identify this ambiguity as being essential to organizing 'in' space. The next section argues that organizational space should predominantly be seen as 'mental space', which allows for better organizing (instead of managing) from a knowledge-based perspective, as opposed to the resource-based view of the firm. The latter allows for better managing instead of better organizing. The section thereafter describes the potential of space for managers to (more) actively involve themselves in organizational design, as spatial organizing can lead managers to re-model their organizations to strenghten the generally weak relationship between traditional organizational practices and modern 'performance' requirements. Designing in space allows for a portfolio of different organizational forms instead of the usual *one size fits all* structures, common in today's organizational practice. Finally, we introduce a number of spatial organizational forms to formulate the essential differences between organizations as 'structures' versus 'arrangements' and as 'single forms' versus 'portfolio's of forms'.

1.3 The Emergence of Space

According to Berquist (1999), during the last thirty-forty years, cultural studies in general and philosophy in particular, have paid increasing attention to space. Although the historical foundations of the term 'space' are difficult to grasp, or - as Berquist (1999) so eloquently deliberates - are difficult for us to recognize as we seem to endure "a long history of not seeing space":

"Space is an odd term about which to write a history. Throughout most of the history of western thought, few persons have recognized that space is historical; that is, space has generally been understood as a given, not as a category about which there could be variation. History existed within space (and time); there was no possible history of space, because history required variation and space was neutral and beyond change. Tracing the transformation of this static view of space can proceed only with difficulty, but one might profitably point first to the Einsteinian notions that understand space, time, mass, and energy as functions of each other. The interrelationship between such realities requires us to rethink all of them and to change at fundamental levels our approach to space. But the ramifications of such notions have been slow at best. Only in the 1960s can one readily perceive further changes, or at least easily trace the movement of such ideas outside of physics (Berquist 1999: 1)."

Current literature on space (Crains, McInnes & Roberts, 2003; Dobers 2006) routinely nods to Michel Foucault's famous 1967 lecture, "Of Other Spaces", as the first time that space began to have a discernable history, or at least a possibility for a history, as it connected with the genealogical projects of Foucault's critical historical work (Foucault 1986). The first difficulty in sketching a history of space is that such a history would have to begin with *a defence of itself as an acceptable reality*. Next, the spatial historian would need to interrogate sources from the ancient and modern worlds, even though those sources were convinced that space had *no potential history*. Nevertheless, for the last three and a half decades, philosophers and other academics have gained "ground" in the sense that space is seen to be an important and necessary category of discourse,

even a historical discourse (Clark, 1992; Casey 1997). Space has a genealogy and a history; it exists as a constructed category within the framework of human history. Space is something we make, create, produce, shape, reshape, form, inform, deform, and transform. All these human activities are operations upon space, leaving traces that mark its history.

If a defined history of space does not exist, other conventions call for definitions to capture its meaning. A *definition of space*, however, always remains an approximation, as the field of study has not yet built its rightful boundaries. We propose – following Berquist (1999) - to use the terms 'space' and 'spatiality' as aspects of reality which *involve concepts of distance, height, width, breadth, orientation, and direction, and also human perceptions, constructions, and uses of these aspects* (Berquist 1999: 2). From an organizational perspective we see space as being 'in the minds of people', i.e. as mental space which can be utilized though the organization of knowledge, rather than through its management.

1.4 Time and Space

Typically researchers and managers draw boundaries not just through space but also through time and space. Once space is mentioned, time is on the horizon. From an organizational perspective, both time and space serve as implicit design criteria because they constitute a fundamental dimension of human creation, of organizational life and of managerial decision making and action. Yet, according to Goodman et al. (2001) time equally suffers from a lack of attention as space does. Time only seemed to be of organizational design importance during the early stages of the industrial revolution of the 20th century:

"…. *despite the pervasiveness of time in all aspects of our lives, it has not been a central theme in organizational research. There is no well – developed set of theories or empirical studies* (Goodman et al. 2001: 509)."

Not withstanding the still-emergent state of research on time in modern organizations (Clark 1985; Hassard 1991; Crossan et al 2005), the practice-based management lexicon is generally

swamped with references to time: cycle time, real time, virtual time, clock time, downtime, just-in-time, slack time, slow time, fast time[1] time-to-market, time-wasters and reaction time. Time does seem to matter, particularly as something to fight against. Most managers and employees are for example convinced of the value of "slack-time[2]" (Lawson 2001; Hamel and Breen 2007) or "social" time in organizations, but they find it nearly impossible to act on that belief. Some managers seem to regard time to talk, get together and exchange thoughts and ideas as an "unaffordable luxury".

The emerging focus on *space – time connections,* arising from the potential many new technologies hold with regard to global connectivity, is reflected in organization and management research in a particular way (Jones, McClean and Quattrone 2004; Waistell 2006; Carr and Hancock 2006; Clegg and Kornberger 2006; Taylor and Spicer 2007), namely as twin notions that may be treated separately, may be intertwined with one another, form part of one another, "*but cannot do without one other* (Hernes 2004: 143)".

---

[1] Fast time happens when people multitask, or use a short period when they have nothing to do (in that they are not at that particular moment engaged in an activity) to carry out another activity rather than simply relax. Harvey (1989) neatly refers to these developments as time-space compression. (Towers et al. 2006: 598)

[2] Slack can be thought of as resources – e.g. time – available to an organization in excess of a minimum level required to produce a degree of organizational output (Geiger & Makri 2006). Organizational slack can be seen as a cushion of actual or potential resources which allow an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy as well as to initiate changes in strategy with respect to the external environment (Lawson 2001).

2. Space and Boundaries

The use of space in organizational theory was until recently regarded as no more than an idea with ideological 'appeal', but with little practical relevance:

"*In terms of more classical academic foundations, space has long been an implicit concern of organization theory* (Kornberger and Clegg 2004: 1996)".

Given the ease in which space can be discarded as vague, intangible and managerially unpractical it would not be too difficult to metaphorize and even set aside space as just another way to categorize new organizational forms, without acting on them through deliberate design. Whenever new organizational forms are concerned a wide range of 'labels' is commonly used, specifically with a view on metaphorizing their 'newness'. Many alternative organizational shapes almost exclusively exist in metaphorized form, such as 'brains' (Garud and Kotha 1994) as 'machines' (Morgan 1986; Morgan 1998), 'garbage cans' (Cohen, March and Olson 1972), 'jazz' (Hatch 1999; Zack 2000), 'theatres' (Schreyögg and Höpfl 2004), 'landscapes' (Oliver and Roos 2000), 'morphings' (Rindova and Kotha, 2001; Kauffman, Miller and Wang 2002), 'sponges' (Rodriguez, Ponti and Ayuso 2006) 'hypermodern' (Roberts and Armitage 2006) and as 'platforms' (Ciborra 1996; Ciborra 1997; Baldwin and Woodard 2008). Nevertheless, these metaphors are useful as they can provide a cognitive bridge between otherwise separate worlds; worlds that may be distinctly different or only blurred, but not yet crossed or united. They can even bridge such domains of the mind, which *would normally not be interlinked*, e.g. 'space' and 'organization'.

To move the notion of '*organizing' for space* outside the realm of metaphors and into the managerial mindset, a proper understanding is required of why, where and how space(s) should and can be defined, constructed, implemented, controlled and optimized. Already back in 1991, Lefebvre

introduced a spatial typology, now almost common to everyone, but as yet not leading to the identification and implementation of new organizational forms:

- *Physical space* refers to tangible structures created principally in order to regulate work and interaction. Examples within an organizational context are structures in organizations, budgets and work schedules.

- *Social space* evolves from interactions that form relations of a more predictabe nature. Social space is a network of relations where norms of behaviour regulate much of what is going on. For example, human presence. This need not to be physical and it may just as well be virtual, imagined or contingent.

- *Mental space* is basically the space of thought. It consists of, for example, knowledge, learning and sensemaking (Hernes 2004).

Due to the rapid advance and penetration of Internet-based new technologies, the concept *virtual space* has pointed out as both offering seemingly unrestricted business potential as well as a means to bringing likeminded people in touch with each other ('connectivity') with the purpose to jointly develop, share and capitalize on knowledge. The rapid advance of 'communities' in organizations of varying kinds (e.g. communities of 'interest', communities of 'practice', communities of 'purpose') can be seen as a direct organizational result of these new technologies, leading to more awareness of the organizational potential many new technologies hold. Soja (1996) extended Lefebvre's model into what he calls 'the trialectics of spatiality', in which he introduces three separate identifications of space. These may as well be seen as subsets of Lefevbre's mental space:

- *First space* ('Perceived' space) is concerned with the physical reality;

- *Second space* ('Conceived' space) is the mental/cognitive representation of space;

- *Third space* ('Lived' space) is the lived experience. Lived space embodies the real and imagined lifeworld of experiences, emotions, events, and political choices. Third space is a mode of thinking about space that draws upon both the material and the mental spaces of perceived space and conceived space, but *extends* well beyond them in scope, substance, and meaning. It is simultaneously real and imagined and more.

According to Hernes (2004) the *perceived*, *conceived*, and *lived* are Lefebvre's epistemological dimensions of how people (can) mentally position themselves in relation to space. Our everyday actions are embedded in spaces that we *perceive*. Organizational reality is a *spatial practice* that reproduces itself through many different means. Meetings are spatial practices that reproduce themselves through social action. *Conceived spaces* are tied to the imageries created by people in power as the 'producers' of space (e.g architects, managers). An organization chart represents an example of a *representation of space*. *Lived spaces* evolve from our historical past. They consist of subtle nonverbal signs and codes through which we make sense of what goes on around us (this is why we *live* these spaces rather than just *perceive* them). For Lefebvre (1991), space is something which is the product of three specific and continuous *struggles*. These are the everyday struggles around *spatial practices*, the carefully planned *representations of space* and the *imagined representational space* (Spicer and Taylor 2006: 11). Interestingly - and apparently paradoxical - *space only makes sense in the presence of boundaries* (Hernes 2004: 84). Characteristics of boundaries are likely to influence, not only how people behave in relation to spaces, but also how spaces interact when brought into contact with another. In essence boundaries reflect the substance of space. Hernes (2004) distinguishes between three ways in which boundaries regulate what goes on inside space:

- *Boundaries as ordering devices*

  o Boundaries act as tolerance limits for human actions and interactions, which means that most of the time, most of the people will stay within the boundaries,

which again creates some stability of expectations. We expect that people and units generally stay within the limits, which makes it possible for others to plan and to achieve what they set out to do. Crossing the ordering boundary implies violating organizational arrangements, such as by breaking formal rules (in relation to physical boundaries), violating social norms (in relation to social boundaries) or practicing heresay (in relation to mental boundaries).

- *Boundaries as distinctions*

  o Boundaries are markers of identity serving to convey distinct physical, social and mental features by which a space is distinguished from the environment. As spaces are formed through the drawing of distinctions between themselves and the external environment,over time distinctions are continuously redrawn.

- *Boundaries as thresholds*

  o Boundaries act as thresholds to import and export of resources such as people, ideas and materials. Boundaries are "permeable" or "leaky". Very high thresholds signify that space is strictly regulated. Low thresholds, on the other hand, signifies a higher degree of exchange with the external environment and has as main consequence a higher degree of malleability, because people may easily move in and out of space.

In view of the emergence of a spatial organizational theory, bounderies are seen as both 'blocking' mechanisms as well as 'enabling' mechanisms in the minds of people which have an impact on their ability to concentrate and focus on performance needs, expectations and performance improvement. Boundaries are in this respect useful as ordering devices, aimed to mentally enable people to recognize and set opportunities and priorities.

3. The Knowledge Based View of The Firm

The adoption of space in organization design and the emergence of a *spatial organization theory* originates from the continuous need for modern organizations to find better ways to perform 'in the best possible way' both *within* as well as *beyond* existing boundaries and limits, whether perceived or real and whether structural or incidental. However, the actual rise of spatial thinking in organizational design theory comes from a perceived - and therefore yet to be proven - managerial paradigm shift which turns away from the resource-based ('placebound') view of the firm dominant in most organizations today, to the knowledge-based ('spacebound') view of the firm. The latter arising from the potential for development and growth inherently associated with the knowledge-based economy. It must be noted that the actual paradigm shift has as yet not taken place and may not take place at all, mostly because of a lack of innovation in managerial thinking and action (Birkinshaw, Hamel and Mol, 2008; Grant 2008). Whereas the future of management as a value-adding profession lies in the adoption of forward looking new ways of working, actual practice shows many management principles and practices to be 'founded on a hopelessly obsolete management paradigm' (Cloke and Goldsmith 2002; Ghoshal 2005; Hamel and Breen 2007; Hamel, 2009).

An actual paradigm shift towards knowledge occurs when knowledge is not 'simply' regarded as a subordinate element or a subset of the resource-based view, but as a dominant – perhaps even overriding - perspective of unique managerial advantage, equal to any strategic and/or competitive advantage a firm might have (Kaplan et al 2001; Von Krogh and Grand 2002; Nonaka, Von Krogh and Voelpel 2006; Kapoor and Lim 2007). For this to occur Grant (2002: 135-136) rightfully argues that the knowledge – based view of the firm should be, but as yet is not, a theory in the formal sense of the word. Recently, Felin and Hesterly (2007) believe that

"…despite the recent proliferation of research into knowledge based arguments, a number of fundamental constructs and questions have yet to be clearly defined and explored (Felin and Hesterly 2007: 195)."

Currently, the knowledge-based view is more a set of ideas about the existence and nature of those firms emphasizing the role of knowledge (Nonaka, Von Krogh and Voelpoel 2006; Sillince 2006; Nonaka and Toyama 2007; Felin and Hesterly 2007; Kapoor and Lim 2007). For example, a critical, but unsettled debate underlying most knowledge-based work is whether the individual or the collective is the source of new value, or put differently, what the locus of knowledge is regarding different levels of value creation (Felin and Hesterly 2007). Key to this debate are Osterloh, Frost and Frey (2002) who believe that the knowledge-based view implicitly assumes that no conflicts of interest exists. According to these authors, firm members engage voluntary in a course of collective action and contribute to firm specific 'pool resources' that can only be generated in the body of an organized group of individuals.

"The assumption of no interest conflicts is problematic: selfish individuals want to maintain their monopolostic position of holders of idiosyncratic knowledge (Osterloh, Frost and Frey 2002: 66). "

Both Nonaka, Von Krogh and Voelpel (2006) and Nonaka and Toyama (2007) question the knowledge-based view with respect to company difference. People create new organizations to pursue goals that are *not already being achieved*. That is, organizations are supposed to differ from each other (Starbuck 2007), also because they want and strive to differ, and:

> *"… first and foremost, because they cannot escape the idiosyncrasy of organizational knowledge creation. Organizational knowledge creation theory proposes concepts and relationships regarding organizational enabling conditions and organizational forms ("ba"), as well as leadership that explain the conundrum of firm differences, and hence provide the building blocks of a knowledge – based theory of the firm. Due to the intersubjective nature of knowledge, firms differ because organizational knowledge creation gives rise to*

At the core of the knowledge–based view lies the notion that knowledge can better be organized then managed towards value creation, because of a number of commonalities in the nature of knowledge and the role knowledge plays in the production of results. These observations may ultimately lead to a unified theory, while already allowing for some degree of organizational experimentation. The knowledge-based view implicitly involves: (1) an overall focus on what goes on *inside* a firm or organization (2) a general agreement on the value (or "advantage") derived from 'things' that a firm can do, variously labelled as routines, competencies, or capabilities—that are not easily managed, imitated or purchased, because they are '*in the minds of people instead of their brains[3]*', (3) a joint recognition that these routines, competencies or capabilities are *based on knowledge*, which is distributed across individuals and must - and can - be assembled and reconfigured in various ways by means of both management as well as organization (Baldwin 2007: 9).

The key to the effective deployment of knowledge lies in an organizations' ability to connect people, knowledge and technology to create 'moments of value'. In traditional structures, such value-moments insufficiently occur as they are largely left to chance, i.e. to the intrinsic capabilities and motivational drive of individuals and teams to perform 'as required' as well as beyond that. Traditional organizational structures tend to stabilize performance instead of moving it forward, the latter being regarded as a management challenge rather then an organizational design parameter. In traditional structures knowledge is seen as inherently enabling performance, but without actually being a 'driver' which can be organized in addition to being

---

[3] Here the word brain refers to its cognitive function.

managed. Grant (2002) argues that an important implication of the assumptions underlying knowledge as a dominant factor of organizational design, is a dichotomy that occurs between two types of knowledge-based activity in the economy. On the one hand, there are those activities that are concerned with increasing the stock of knowledge - what March (1991) refers to as "exploration," and Spender (1992) calls "knowledge generation". On the other hand there are those activities concerned with deploying knowledge in order to produce goods and services - what March (1991) refers to as "exploitation," and Spender (1992) calls "knowledge application". Reconciling the dichotomy between knowledge creating and knowledge applying activities represents a key challenge for organizations: knowledge creation requires specialization, while knowledge application requires diversity of knowledge. Given the limited transferability of knowledge , this presents considerable difficulty for the institutions of production.

The solution appears to lie in some process of knowledge diversification that permits individuals to apply their specialized knowledge to the production of ideas, decisions, goods and services, while preserving the efficiencies of specialization in knowledge acquisition (Tissen et al, 2008). To a degree such diversification of knowledge already exists in practice, where a distinction is made in three types of knowledge and 'matching' types of knowledge professionals, which is not based on formal education and/or training, i.e. not based on the *content* of knowledge work, but on the *nature* of knowledge. Three types of knowledge and knowledge work exist: 1) routine knowledge, 2) learning knowledge and 3) innovative knowledge. The application of routine knowledge generally allows for high levels of knowledge productivity, similar to labor productivity in the industrial based economy. Learning knowledge refers to all new knowledge generated to improve both individual and systemic performance, but only insofar this knowledge remains within predefined thresholds, boundaries and limits. Innovative knowledge concerns all 'boundaryless' knowledge relevant to the development and exploitation of new products and services and new ways of working. Interestingly, once the nature of knowledge work is connected to the

'*mentalization*' of work (Amelie and Kramer 2007) - i.e. to the nature and way people employ their minds towards the best use of knowledge - distinct 'spaces' can be identified, organized and utilized aimed at enabling people to better focus their attention and concentration on what needs to be done better in a foreward looking manner.

"It is not our feet that move us along – it is our minds" (Ancient Chinese proverb, Naisbitt 2006)

In other words, organizational spaces can be identified and used to connect (static) *knowledge* to (dynamic) *thinking*, in such a way that workers can add better value 'simply' because the nature of knowledge fits - maybe even 'naturally' fits - their individual (mental) way of working. Such spaces can be organized by means of '*spatial arrangements*' in which work is no longer devided through the *structuring of functions, tasks and activities*, but brought together and connected in the best possible context – of knowledge and technology- for people to work in, more specifically to 'put their minds to'. Such arrangements can be defined as:

> *"intelligent combinations of like-minded people, shared knowledge and dedicated technology, brought to value by means of distinctly separate but connected organizational forms, which direct, guide, and support the focus, attention and concentration of knowledge workers towards the optimal use of their minds with regard to performance and performance improvement ('moments of value')".*

Following this line of reasoning organizations as umbrella's of business performance can also be redefind, namely as 'portfolio's of arrangements' instead of 'one size fits all' structures. These portfolios serve to act as *inner* reflection of outside markets of organizations. Whereas many business environments are traditionally structured around Product/Market Combinations (PMC's), spatial arrangements serve as Knowledge/Service Combinations or KSC's in a mirroring fashion, i.e. as two sides of the same coin. A service can in this way be defined as the value-adding result of an arrangement, specific to the outcome of the collective minds of (distinct types of) knowledge workers. Thus, depending on the type of knowledge that needs to be

deployed in order to serve markets in the best possible way, different organizations -consisting of different portfolio's of arrangements - can exist and compete with each other, all on the basis of the strength of mind of the people working in such organizationally diversified forms.

4. Towards Spatial Organizations: From Design to Form

According to Jackson (2000: 15) modern organizational design is to the knowledge era what the steam engine was to the industrial revolution and the computer was to the information age. Excellence in organization design, in the full sense of the word, is ecpected to be an essential skill of management for success, as it is unlikely that there will be one form of organization that is right for all situations at all times. The key is therefore not to find the right organization but to master the art of organization design (Jackson, 2000). Other authors also recognise the need to better leverage the power of organizational design across all aspects of an organization, to establish and sustain a companies' unique position and increase its inherent vitality (Pettigrew et al. 2003; O'Reilly III and Tushman 2004; Joyce 2005; Neilson and Pasternack 2005; Dunbar, Romme and Starbuck 2008):

> "*Managers need to redesign not simply restructure', which is why it is not a good idea to simply redraw the organization chart, put people in their new places and expect performance improvements* (Stanford 2005: 8)".

Managers commonly treat design as a complex and messy affair, easily getting out of control once implementation is envisaged. On the other hand they regard design as a simple extension of regular – day to day - managerial work, more specifically as something 'we can all do if only we put in the time'. Frank Nuovo, one of the world's best-known industrial designers, supports the view that most design is unconscious design as "*design in its simplist form …[is] something that everyone does every day* (Pink 2005: 75)". Dunbar, Romme and Starbuck (2008) do not believe that today's managers are very capable of organizational redesign. Managers are often out of touch with the changing realities their organizations need to react to:

> "*Although contemporary management texts create an impression that the search for design principles is active and ongoing, this professed interest is in fact more symbolic than real. Most often, management texts*

refer to descriptive research on organizational structures and designs carried out from the 1950's through the 1970's (Daft 2006) and teachers and consultants present this material as established, accepted truth. However, many new kinds of organizations have appeared since the 1970's, shifting the focus of design projects to issues that were not important and to organizational properties that were not possible when researchers carried out these earlier studies. For example, current organizational designs must take account of how information and communication technologies have revolutionized organizing processes, how globalization has changed organizational identities, and how staff educational levels, abilities and expectations have risen rapidly and changed work (Dunbar, Romme and Starbuck 2008: 555)."

One issue not commonly addressed in organizational design theory and practice involves the lack of an established methodology to guide managers from one organizational form to another. Such methodology does exist in traditional organizational design aimed at creating well-defined, boundary-fixed and stable new structures, which hold a persuasive logic. Standard methodologies exist to create product-, geographical-, functional- and even process-based organizations, which promise (by virtue of their 'standardization') to comply with a manager's best estimate of how to serve markets and customers effectively. Most existing methodologies rely heavily on one principle, i.e. on the need to always design organizations from the 'outside in', i.e. based on what happens and/or is anticipated in the marketplace. Instead, organizing from the 'inside-out', based on the inherent qualities and strengths of an organization, is seen to present a weakness in terms of a perceived lack of anticipatory openness, as well as a lack in the 'rapid reaction' capacity modern organizations are expected to possess. The internal view of organizations generally suffers from varying degrees of uncertainty of managers as to the extent in which their organizations are equipped to meet the challenges envisaged by management, while turning a blind eye towards their inherent potential and performance. However, some of the renewed interest in the development of critical organizational design principles (e.g. Joyce, Nohria and Robertson 2003; Roberts 2004; Neilson and Pasternack 2005; Bryan and Joyce 2007) can be traced back to the growing awareness of managers to (further) enhance organizational

performance by more fully exploring, developing and exploiting internal potential and more aggressively pursuing new opportunities (March 1991; Benner and Tushman 2003; Gupta, Smith and Shalley 2006). Garud, Jain and Tuertscher (2008) even view design:

> "... *as continually evolving and essentially incomplete. Within such an approach, boundaries between designers and users become blurred, heterogeneous user preferences emerge in use, tasks remain partially partitioned and the goals of the design emerge through interaction. Such an approach to design acknowledges the partial nature of knowledge possessed by any one individual and focuses on the means by which distributed knowledge can be harnessed. In summary, while the scientific approach views incompleteness as a threat, a pragmatic approach harnesses its value. Eventually, a pragmatic approach involves the fusing together of two meanings of design – that is, as both process and as outcome. Any outcome is but an intermediate step in an ongoing journey, representing both the completion of a process as well as its beginning. Whereas the scientific approach emphasizes the need to crystallize designs, the pragmatic approach highlights the value of retaining fluidity* (Garud, Jain and Tuertscher 2008: 367)."

Differences in form emphasize the 'framing[4]' effect organizations have on performance and performance improvement. According to Kaplan, "frames shape how individual actors see the the world and perceive their own interests. Actors make choices and act from within that understanding. By corollary, framing also allows people to suggest what is going on to others. This process is not necessarily seamless and inevitable. People have multiple frames[5] from which

---

[4] Frames are 'schemata of interpretation' that actors use to affect the interpretation of events, looking at these through multiple lenses. Frames simplify and condense 'the world out there' by *selectively* punctuating and encoding events in order to render them meaning, keeping some elements in view while hiding others (Fiss & Zajac 2006).
[5] Fairhurst (2005) notes that a large number of managers struggle to comprehend what framing means in practice. In 1996 Fairhurst and Sarr produced an influential book "The Art of Framing: Managing the Language of Leadership". Based on research she identified three reasons why most managers fail to implement framing in their managerial practice. Within this context, one reason is that many managers experience insecurity because framing challenges the commonly held belief of an objective and stable reality: "If managers adopt the idea of framing reality, it means that they become *reality makers* rather than reality discoverers (to discover how reality is and act on the facts discovered). Due to the strong belief in an objective and stable reality, most managers feel highly insecure about abandoning their

they can draw in any one moment (Kaplan 2008: 732)". Framing requires the ability to see patterns, to parse the important information from the less important information, and to create models that yield insights that can be shared across individuals, teams and organizations. It often recquires the art of 'reframing': moving it away from its original perception of what the issue is all about to a new focus (Beckman and Barry 2007). For example, in their classic publication "Reframing Organizations", Bolman and Deal (1991) use four 'lenses' – four frames - to establish a more direct relationship between form and performance (the 'structural', 'human resources', 'political' and the 'symbolic' frame). It is indeed for this very reason that many new alternative organizational design options have in the recent past emerged, specifically because of the introduction of new ways of working, resulting from a structural shift in the nature of work. Work itself is becoming knowledge-based (Wolff 2005; Sinha and Van de Ven 2005; Davenport 2005; Chan, Beckman and Lawrence 2007; Heckscher 2007), with knowledge-based work increasingly being regarded as 'mindful' work, i.e. as cognitively embedded, intense, passionate, time pressured, and collaborative. Following Levinthal and Rerup (2006), mindfulness is conceived as involving attentiveness as well as the ability to respond agile to contextual instead of factual cues. By contrast, less mindful work involves fewer cognitive processes and greater reliance on previous routines. Such 'mindful' work requires a kind of framing which captures and focusses the attention and concentration of workers, as opposed to distracting them.

When taking knowledge as the central point of departure for strategic organizational design, modern organizations will be less likely to reflect a 'pyramid-shape structure' and more likely resemble 'platforms' (Ciborra 1996, 1997; Sanchez 2004; Baldwin and Woodward 2008) or 'membership organizations' (Seiling 1997), i.e. forms which by virtue of their design are 'intelligent' (Quinn 1992; Pinchot and Pinchot 1996) as well as 'mindful' (Albrecht 2003; Levinthal and Rerup 2006). This is predominantly so because of the need to *organize* horizontal knowledge flows, in addition to *managing* vertical ones, in order to bring the two together as

current role as reality discoverers and instead adopting the role of reality creators (Sandberg & Targama, 2007, p.17)".

'moments of value'. All of these forms can take the shape of (portfolio's) of spatial arrangements, which purposefully serve to differentiate knowledge *and* concentrate the minds of managers and workers - by virtue of their form - to improve performance on the basis of 'like minded' work and 'mentally connected' know - how. Spatial arrangements should therefore be seen as 'distinct' forms and existing in their own right, specifically because of the framing effect they are expected to have with regard to the minds of knowledge workers. Such framing is achieved by differentiating knowledge into three separate mainstreams of value creation (routine knowledge, learning and innovation) for which matching spatial forms can be constructed, such as the *modular* arrangement (Aurik,Jonk and Willen 2002), the *circular* arrangement (Ackoff 1989; Hesselbein 1997) and the *cellular* arrangement (Miles et al 1997).

A *modular arrangement* assumes that each module constitutes only one dominant – "single minded"- way of working with knowledge. The focus of managers in modular arrangements is to create a 'natural' context in which knowledge workers, with a 'routine mentality' become better at what they think and do through focus and concentration. This process leads to higher degrees of knowledge productivity, while ultimately leading to the mass production of knowledge . A critical success factor of modular arrangements involves the encapsulating of people and knowledge by firmly tying them to information and communication technology. In modular arrangements the role of technology is first and foremost to direct the attention of workers towards what needs to be thought of and what not. This is called 'mental prioritizing' enabled by technology.

Circular arrangements serve to purposefully bring together those knowledge workers who are – by nature - inclined to share what they know with others and who are good at generating meaningful knowledge by and for the organization, by means of knowledge transfer (Ackoff 1989; Romme 1997). The circular organizational design, pioneered by Gerard Endenburg (Romme and Endenburg 2006), aims at the identifiable and structured creation of learning at the organizational

level as well as at group and individual levels (Romme 2003: 565). This type of formalized learning transcends individual learning as it is deliberately fed back and forward into the organization, either to further improve knowledge productivity or stimulate innovation. Information and Communication Technology will contribute to the development of circular arrangements by providing tools and platforms for teams, communities and networks to jointly design new products, processes and services. An ICT – based coordination and/or collaboration mechanism (e.g social networks, wiki's) connects knowledge and people to each other, opens up opportunities to improved decision making and knowledge creation, and increases the reach and richness of the organization's knowledge flows.

Cellular organizations generally fit well into the publicly accepted profile of future organizations (i.e. being perceived as dynamic, responsive, fluid, customer - oriented, technology driven and virtual). These forms have over the years been regarded and discussed as ideally suited for the purpose of innovation, i.e. of creating and generating new knowledge-based products and services (Miles et al 1997), essentially because they are seen to operate at arms length of the parent organization or financiers. The concept as such has been around since the early 1960s (Miles et al 1997: p.19), but has never achieved mainstream status, primarily because of its 'free flowing' image. A cellular organization is made up of cells (self-managing teams, autonomous business units) that can operate alone and in interaction with others. It is this combination of independence and interdependence that allows a *cellular arrangement* to generate and share the know-how that produces continuous innovation. Chowdhury, Endres & Endres (2000) present a *revised* cellular organization that is not only ideal for knowledge creation and innovation, but also able to ensure proper maintenance and utlilization of existing knowledge.

Within this context, companies often forget things that have long been embedded in its organizational memory. 'Organizational memory decay' (Scalzo 2006) occurs when organizations are merged or (temporary) 'lose' people because of redundancy, retirement or natural turnover.

On the other hand, when knowledge is no longer valuable – or products and business functions are in decay and/or disappearing - retaining memory can be counterproductive and /or too costly. Often organizations resist the destruction of available knowledge because of the investments that were made to put the 'old' knowledge into value in the first place. Information and Communication Technology will contribute to the development of cellular arrangements by enable employees to work where, when and how it makes the most sense – both from an individual's, team's and organizational perspective. With the new technologies employees stay connected with colleagues and customers, anywhere, anyway and anyhow.

Recently a fourth spatial arrangement – that of the '*constellar*' form - has surfaced which combines the previous arrangements into a 'mingled organization'. Different spatial arrangements operate in a connected fashion towards each other - by virtue of management deliberately selecting and matching different arrangements into a 'portfolio of forms' or a 'platform organization' as introduced by Ciborra (Ciborra 1996; Ciborra 1997). On the surface such a platform looks like a stable pool of different organizational forms – e.g. modular, cellular, circular - and hardly organized according to efficiency, control and risk management criteria. At a deeper level the platform is a collective 'frame' that allows managers and employees to improvise effectively That is, relentlessly deploying a mix of spatial arrangements in order to anticipate and adapt to complex, chaotic and crisis contexts.

.

6. Conclusions

Organizing from an industrial tradition essentially involves the 'placebound' concentration of labour, capital and raw materials in a demand driven, timely, low cost and efficient manner. Industrial organizations manage and integrate these 'resources' in *'places'* (factories and offices) and 'over *time*' (working hours). This "mix' has given rise to the *'resource-based'* view of the firm. The key to successful organizations in the knowledge based economy seems more to lie in the 'spacebound' concentration of the mental qualities of people, within the framework of like - minded knowledge and with the help of human-centred technology which directs and guides the minds of people to what is important and needs to be adressed and/or solved. In te placebound view of the firm, organizations exists of both formal as well as informal *'structures'*. In the spacebound view organizations exist as *'arrangements'*. In traditional organizational structures work is meant to create *results*, often in a focussed manner. In modern organizational arrangements, work is meant to create singular but successive *'moments of value'* through the concentration of minds. For this purpose four spatial arrangements (modular, circular, cellular and constellar) were discussed in this paper.

Literature

Ackoff, R.L.
1989 'The circular organization'. *Academy of Management Executive* 3:11-16.

Albrecht,K.
2003 *The power of minds at work*. New York: Amacom

Amabile, T.M., and S.J. Kramer
2007 'Inner work life: Understanding the subtext of business performance'. *Harvard Business Review* 85:72 – 83.

Aurik, J.C., Jonk, and G.J.,Willen, R.E.
2002 *Rebuilding the corporate genome*. New York: Wiley

Baldwin, C.Y.
2007 'Modularity, transactions, and the boundaries of firms: A synthesis'. Harvard Business School, Working Paper 08-013, Harvard Business School. Boston, MA, 02163.

Baldwin, C.Y., and C.J. Woodward
2008 'The architecture of platforms'. Harvard Business University, Working Paper 09-034, Harvard Business School. Boston, MA, 02163.

Beckman, S.L., and M. Barry
2007 'Innovation as a learning process. embedding design thinking.' *California Management Review* 50: 25 – 56.

Berquist, J.L.
1999 'Theories of space and construction of the ancient world'. Paper presented at the AAR/SBL Annual Meeting, Constructs of the social and cultural worlds of antiquity group, November 20.

Benner, M.J., and M.L.Tushman
2003 'Exploitation, exploration, and process management: The productivity drama revisited.' *Academy of Management Review* 28: 238 – 256.

Birkinshaw, J., G. Hamel, and M.J.Mol
2008 'Management innovation'. *Academy of Management Review* 33: 825 – 845.

Bolman, L.G., and T.E. Deal
1991 *Reframing organizations: Artisty, choice and leadership*. San Francisco: Jossey Bass.

Bryan, L.L., and C.I. Joyce
2007 'Better strategy through organizational design'. *McKinsey Quarterly*: May 21 – 29.

Cairns, G., P. McInnes, and P. Roberts
2003 'Organizational space/time: From imperfect panoptical to heteretopian understanding'. *Ephemera* 3:126 – 139.

Carr, A. N., and P. Hancock
2006 'Space and time in organizational change management'. *Journal of Organizational Change Management* 19: 545 – 557.

Casey, E.S.
1997 *The fate of place: A philosophical history.* Berkeley, California: University of California Press.

Chan, J.K., S.L. Beckman, and P.G. Lawrence
2007 'Workplace design: A new managerial imperative'. *California Management Review* 49: 6 – 22.

Chanlat, J.
2006 'Space, organization and management thinking: A socio – historical perspective' in Clegg, S.R. and M . Kornberger (eds), *Space, organization and management theory*, Advances in organization studies, Copenhagen: Liber & Copenhagen Business School.

Chowdhury, S., M.L. Endres, and S.P. Endres
2000 'Knowledge in cellular forms of twenty first century organizations'. , *Proceedings of 31st Annual Meeting of the Decision Sciences Institute* November 18 – 21, Orlando, Florida, .

Ciborra, C.U.
1996 'The platform organization: Recombining strategies, structures, and surprise'. *Organization Science* 7:103 – 118.

Ciborra, C.U.
1997 'Improvising in the shapeless organization of the future.' In: C. Sauer, and P.W. Yetton, *Steps into the future*, San Francisco: Jossey Bass.

Clark, G.
1992 *Space, time and man: A prehistorian's view.* Cambridge: Cambridge University Press.

Clark, P.
1985 'A Review of theories of time and structure for organizational sociology' in S.B. Bacharach, and S.M. Mitchell (eds) *Research in the sociology of organizations*, vol. 4, Greenwich, CT: JAI Press.

Clegg, S.R. and M . Kornberger (eds)
2006 *Space, organization and management theory.* Advances in Organization Studies, Copenhagen: Liber & Copenhagen Business School.

Cloke, K. and Goldsmith, J.
2005 *The end of management and the rise organizational democracy.* San Francisco: Jossey Bass.

Cohen, M., J. March, J. Olson
1972 'A garbage can model of organization choice'. *Administrative Science Quarterly* 17: 1 – 25

Collopy F., R.J. Boland and G.K. VanPatter
2005 'Managing is designing?' *NextD*, issue eight, www.nextd.org.

Crossan et al.
2005 'Time and organizational improvisation'. *Academy of Management Review* 30: 129 – 145.

Daft, R.L.
2006 *Organization theory and design*, Minneapolis/St Paul, MI: West Publishing.

Dale, K., and G. Burrell
2008*The spaces of organization and the organization of spaces. Power, identity and materiality at work.* Hampshire: Palgrave/MacMillan.

Davenport, T.H.
2005 *Thinking for a living*. Boston: Harvard Business School Press.

Davis, S.
1987 *Future perfect*. London: Addison – Wesley Publishing Company.

Demsetz, H.
1991 'The theory of the firm revisited in *The nature of the firm*, New York: Oxford University Press.

Dobers, P.
2006 'Empty spaces or illusionary images? Stockholm as a mobile valley'. in Clegg, S.R. & and M. Kornberger (eds), *Space, organization and management theory*. Advances in Organization Studies, Copenhagen: Liber & Copenhagen Business School.

Dunbar, R.L.M., A.G.L. Romme, and W.L. Starbuck
2008 'Creating better understandings of organizations while building better organizations'. In: D. Barry, H. Hansen, *The Sage handbook of new approaches in management and organization*. Los Angeles: Sage.

Felin, T., and W.S. Hesterly
2007 'The knowledge - based view, nested heterogeneity, and the new value creation: Philosophical considerations on the locus of knowledge'. *Academy of Management Review* 32: 195 – 218.

Fiss, P.C., E.J. Zajac
2006 'The symbolic management of strategic change: Sensegiving via framing and decoupling'. *Academy of Management Journal* 49: 1173 – 1193.

Foucault, M.
1986 'Of other spaces'. *Dialectics* 16: 22 – 27.

Fung, V.K., W.K. Fung, and Y. Wind
2007 *Competing in a flat world. Building enterprises for a borderless world.* New Jersey: Wharton School Publishing.

Garud, R. , and S. Kotha
1994 'Using the brain as a metaphor to model flexible productive units'. *Academy of Management Review* 19: 671 - 698.

Garud, R., S. Jain, and P. Tuertscher
2008 'Incomplete by design and designing for incompleteness'. *Organization Studies* 29: 351 – 371.

Geiger, S.W., and M. Makri
2006 'Exploration and exploitation innovation processes: The role of organization slack in R&D intensive firms'. *Journal of High Technology Management Research* 17: 97 – 108.

Ghoshal, S.
2005 'Bad management theories are destroying good management practices'. *Academy of Management Learning and Education* 4: 75 – 91.

Goodman, P.S. et al
2001 'Special topic forum on time and organizational research'. *Academy of Management Review*, 26: 507 – 511.

Gorp, van D.
2008 *Offshoring in the service sector. An empirical investigation on the offshoring behaviour of service firms and its influence on their foreign entry mode choice.* Thesis, Nyenrode Business University, October 10, Breukelen.

Grant, R.M.
2002 'The knowledge-based view of the firm' in N. Bontis and C.W. Choo (editors), *The Strategic Management of Intellectual Capital and Organizational Knowledge.* London: Oxford University Press.

Grant, R.M.
2008 'The future of management, where is Gary Hamel leading us'? *Long Range Planning* 41: 469 - 482.

Gupta, A.K., K.G. Smith, and C.E.Shalley
2006 'The interplay between exploration and exploitation'. *Academy of Management Journal*, 49: 693 - 706.

Hamel, G., and B. Breen
2007 *The future of management.* Boston: Harvard Business School Press.

Hamel, G.
2009 'Moon shots for management'. *Harvard Business Review*, 87: 91 – 98.

Harvey, D.

1989 *The conditions of postmodernity*. Oxford: Basil Blackwell.

Hassard, J.

1991 'Aspects of time in organization'. *Human Relations*, 44: 105 – 125.

Hatch, M.J.

1999 'Exploring the empty spaces of organizing: How improvisational jazz helps redescribe organizational structure'. *Organization Studies* 20:75 – 100.

Heckscher, C.

2007 *The collaborative enterprise. Managing speed and complexity in knowledge based business*. New Haven: Yale University Press.

Hernes, T.

2004 *The spatial construction of organizations*. Amsterdam: John Benjamins Publishing Company.

Hesselbein, F.

1997 'The circular organization'. in F. Hesselbein, M. Goldsmith and R. Beckard, *The organization of the future*. San Francisco: Jossey Bass.

Jackson, D.

2000 *Becoming dynamic. Creating and sustaining dynamic organizations*. London: MacMillan Business.

Jones, G., C. McLean, and P. Quatrone

2004 'Spacing and timing". *Organization* 11: 723 – 741.

Joyce, W., N. Nohria, and B. Roberson

2003 *What really works: The 4 + 2 formula for sustained business success*. New York: Harper Business.

Joyce, W.

2005 'What really works: Building the 4 + 2 organization'. *Organizational Dynamics* 34: 118 – 129.

Kaplan, S. et al

2001 *'Knowledge-based theories of the firm in strategic management: A review and extension'*. MIT Sloan Working Paper #4216-01, February.

Kaplan, S.

2008 'Framing contests: Strategy making under uncertainty'. *Organization Science* 19: 729 – 752.

Kapoor, R., and K. Lim

2007 'The impact of acquisitions on the productiviy of inventors at semiconductor firms: A synthesis of knowledge – based and incentive based perspectives'. *Academy of Management Journal*, 50: 1133 – 1155.

Kauffman, R.J., T. Miller, and B. Wang
2002 'When internet companies morph: Understanding organizational strategy changes in the 'new' new economy'. *First Monday*, 7 (www.firstmonday.com).

Kerckhove, D. De
2001 *The architecture of intelligence*. Basel: Birkhäuser.

Kornberger, M., and S.R. Clegg
2004 'Bringing space back in'. organizing the generative building'. *Organization Studies* 25: 1095 - 1114.

Kornberger, M.
2008 'Spatial organization'. in S.R. Clegg, and J.R.Bailey,(eds) *International Encyclopedia of Organization Studies*. Part 4, Los Angeles: Sage.

Lawson, M.B.
2001 'In praise of slack: Time is of the essence'*Academy of Management Executive* 15: 125 – 135.

Lefebvre, H.
1991 *The production of space*. Oxford: Blackwell.

Levinthal, D., and C. Rerup
2006 'Crossing an apparent chasm: Bridging mindful and less – mindful perspectives on organizational learning. *Organization Science* 17: 502 – 513.

Malone, T.W.
2004 *The future of work*. Boston: Harvard Business School Press.

March, J.G.
1991 'Exploration and exploitation in organizational learning. *Organization Science* 2: 71-87.

Miles, R.E., Snow, C.C., Matthews, J.A. Miles, G., and Coleman, H.J.
1997 'Organizing in the knowledge era: Anticpating the cellular form'. *Academy of Management Executive* 11: 7 – 20.

Morgan, G.
1986 *Images of organization*. Thousand Oaks: Sage.

Morgan, G.
1998 *Images of organization. The Executive Edition*. Thousand Oaks: Sage.

Naisbitt, J.
2006 *Mindset!* New York: Harper Collins Publishers.

Neilson, G.L., and B.A. Pasternack
2005 *Results*. New York: Crown Business

Nickerson, J.A. and T.R. Zenger
2004 'A knowledge – based theory of the firm - The problem - solving perspective'. *Organization Science* 15: 617 – 632.

Nonaka, I., G. von Krogh, and S. Voelpel
2006 'Organizational knowledge creation theory: Evolutionary paths and future advances'. *Organization Studies* 27: 1179 – 1207.

Nonaka, I., and R. Toyama
2007 'Why Do Firms Differ? The Theory of the Knowledge Creating Firm' in Ichijo, K., and I. Nonaka (eds) *Knowledge creation and management*. London: Oxford University Press.

O'Reilly III, C.A., and M. L. Tushman
2004 'The ambidextrous organization'. *Harvard Business Review* 82: 74 – 81.

Oliver, D., and J. Roos
2000 *Striking balance: complexity and knowledge landscapes*. Maidenhead: McGraw Hill.

Osterloh, M., J. Frost, and B.S. Frey
2002 'The dynamics of motivation in new organizational forms'. *International Journal of the Economics in Business* 9: 61 – 77.

Palmer, I., J. Benveniste, and R.Dunford
2007 'New organizational forms; Toward a generative dialogue'. *Organization Studies* 28: 1829 – 1847.

Pettigrew, A.M. et al
2003 *Innovative forms of organizing. International perspectives*. London: Sage Publications.

Pfeffer, J., and R.I. Sutton
2006 *Hard facts, dangerous half truths, and total nonsense. Profiting from evidence-based management*. Boston: Harvard Business School Press.

Pink, D.
2005 *A whole new mind*. New York: Riverhead Books.

Pinchot, G., and E. Pinchot
1996 *The intelligent organization*. San Francisco: Berret – Koehler.

Quinn, J.B.
1992 *The intelligent enterprise*. New York: The Free Press.

Rindova, V.P., and S. Kotha
2001 'Continuous "morphing": Competing through dynamic capabilities, form, and function'. *Academy of Management Journal* 44: 1263 – 1280.

Roberts, J.
2004 *The modern firm. Organizational design for performance and growth*. Oxford: Oxford University Press.

Roberts, J., and J. Armitage
2006 'From organization to hypermodern organization'. *Journal of Organizational Change Management* 19: 558 – 577.

Rodriguez, M.A., F. Ponti, and S. Ayuso
2006 *The 'sponge' organization: A creativity – based reflection of the innovative and sustainable firm*, Center for Business in Society, University of Navarra, Working paper no. 616, Spain.

Romme, A.G.L.
1997 'Work, authority and participation: The scenario of circular organizing'. *Journal of Organizational Change Management* 10: 156 – 166.

Romme, A.G.L.
2003 'Making a difference: Organization as design'. *Organization Science* 14: 558 – 573.

Romme, A.G.L. and Endenburg, G.
2006 'Construction principles and design rules in case of circular design'. *Organization Science* 17: 287 – 297.

Sanchez, R.
2004 'Creating modular platforms for strategic flexibility'. *Design Management Review* 15: 58 – 67.

Santos, F.M., and K.M. Eisenhardt
2005 Organizational boundaries and theories of organization'. *Organization Science* 16: 491 – 508.

Scalzo, N.J.
2006 'Memory loss? Corporate knowledge and radical change', *Journal of Business Strategy* 27: 60 - 69.

Schreyögg, G., and H. Höpfl
2004 'Theatre and organization: Editorial introduction'. *Organization Studies* 25: 691 - 704.

Seiling, J.G.
1997*The membership organization*. Palo Alto: Davis-Black Publishers.

Sillince, J.A.A.
2006 The effect of rhetoric on competitive advantage: Knowledge, rhetoric and resource – based theory' In S.R. Clegg et al (eds), *The Sage Handbook of Organizational Studies*. London: Sage Publications (second edition).

Sinha, K.K., A.H. Van de Ven
2005 'Designing work within and between organizations'. *Organization Science* 16: 389 – 408.

Soja, E.W.
1996 *Thirdspace: Expanding the geographical imagination*. Massachusetts: Blackwell Publishing Ltd.

Spender, J.C.
1992 'Limits to learning from the west: How western management advice may prove limited in Eastern Europe'. *International Executive*, 34: 389 - 410.

Spicer, A., and S. Taylor
2006 'The struggle for organizational space' (Submitted to : *Journal of Management Inquiry*).

Starbuck, W.H.
1976 'Organizations and their environments' in M.D.Dunette (ed.), *Handbook of Industrial and Organizational Psychology*. Chicago: Rand McNally.

Starbuck, W.H.
2007 'Living in Mythical Spaces'. *Organization Studies* 28: 21 – 25.

Sydow, J.
2002 'Towards a spatial turn in organization science'. SECONS Discussion Forum Contribution No. 8, http://www.giub.uni-bonn.de/grabher/extra/t_discussion.html.

Taylor, S. and A. Spicer
2007 'Time for space: A narrative review of research in organizational spaces'. *International Journal of Management Reviews* 9: 325 - 346.

Tissen, René J., Daniel Andriessen, and Frank R.E. Lekanne Deprez
2000 *The knowledge dividend: Creating high performance companies through value-based knowledge management*. London: Financial Times/Prentice Hall.

Tissen, René J., and Frank Lekanne Deprez, 2008
Towards a apatial theory of organizations. Creating new organizational forms to improve business performance, NRG Working Paper, no. 08-04, February, Nyenrode Business University, The Netherlands.

Tissen, R., F. Lekanne Deprez, R. Burgers and F. Halmans
2008, *Geef ze de ruimte*, Den Haag, SDU Uitgevers (in Dutch).

Towers, I. et al
2006 'Time thieves and space invaders: Technology, work and the organization'. *Journal of Organizational Change Management* 19: 593 – 618.

Von Krogh, G., and S. Grand
2002 'From economic theory toward a knowledge – based theory of the firm: Conceptual building blocks in N. Bontis and C.W. Choo (editors), *The Strategic Management of Intellectual Capital and Organizational Knowledge*. London: Oxford University Press.

Waistell, J.
2006 'Metaphorical mediation of organizational change across space and time'. *Journal of Organizational Change Management* 19: 640 – 654.

Wolff, E.N.
2005 'The growth of information workers in the U.S. economy'. *Communications of the ACM* 48: 37 – 42.

Zack, H.Z.
2000 'Jazz improvisation and organizing: Once more from the top'. *Organization Science* 11: 227 – 234.