

“Innovative leadership in organizations: The road to innovation performance”

AUTHORS	Jon-Arild Johannessen Hugo Skaalsvik
ARTICLE INFO	Jon-Arild Johannessen and Hugo Skaalsvik (2014). Innovative leadership in organizations: The road to innovation performance. <i>Problems and Perspectives in Management</i> , 12(2-1)
RELEASED ON	Friday, 20 June 2014
JOURNAL	"Problems and Perspectives in Management"
FOUNDER	LLC "Consulting Publishing Company "Business Perspectives"



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

© The author(s) 2024. This publication is an open access article.

SECTION 2. Management in firms and organizations

Jon-Arild Johannessen (Norway), Hugo Skaalsvik (Norway)

Innovative leadership in organizations: the road to innovation performance

Abstract

In order to figuratively portray the development of organizations over the last hundred years, we may say that there has been an evolution from stable organizations, which we might call “frozen pyramids”, to the emergence of what we may perceive as “small portable tents”. These small portable tents may be related to the emerging Lego-like structures which may be observed in the contours of the present global knowledge economy. This is the general trend confronting organizations today. The problem statement we examine here is: What should organizations do in order to compete in the global knowledge economy? The answer we present is threefold: Firstly, organizations need to take into account that a change is taking place from hierarchical management structures to organizations based on a front-line focus. Secondly, organizations must also understand that the relevance of experiences collapses in light of the technological changes and new value creation processes which are emerging in the knowledge economy. Last, but not least, organizations need to develop a system to “see” where innovations will emerge in order to make superior profits. These three requirements trigger separately and jointly the need for innovative leadership in organizations.

Keywords: front-line focus, new value creation processes, lego-like organization, info-structure, innovative leadership, emerging innovations.

JEL Classification: O31.

Introduction

Innovative leaders engage in leadership roles in order to develop micro-innovation fields, i.e. creative energy fields (Gratton, 2007) in organizations and thereby stimulate enthusiasm and energy in other employees which may result in innovation. Metaphorically speaking, innovative leaders may be said to be the spark plugs in such micro-innovation fields, triggering explosions and driving the system towards innovation and organizational entrepreneurship. The innovative leaders ignite change processes which Gratton (2007) terms as “hot spots”; Taylor & La Barre (2007) talk of the importance of “mavericks” and Collins (2001) uses the analogy of a “flywheel”.

There are some indications that the classical organizational hierarchy is crumbling and *is* being replaced by the importance of competence networks, locally, regionally and globally. These competence networks are taking over the design, manufacture and distribution of products and services. It also seems to be the case that decision-making processes are being significantly shortened and that, in many cases, decision-making will henceforth be carried out on the “front line”, i.e. by those who are closest to the customers (Johannessen et al., 1999). In a front-line organization, an organization’s decisions are centralized at the front line. Ideally, there will be complete interactivity between the competence of those working on an organization’s front line and its customers. Such a development will, in all probability, lead to the value and relevance of an organization’s

own experiences collapsing. The question is: What happens when the importance and relevance of many of our basic and fundamental experiences collapse? Perhaps our ideas and expectations will be given more room to flourish in our everyday lives.

Innovation and the application of various forms of new technology make the development of agile organizations possible, illustrated metaphorically by the small portable tents that can be quickly moved around in the global knowledge economy. When the value of our basic experiences has been eroded, it is reasonable to assume that, at the level of the individual, a feeling of chaos and a loss of footing will prevail and also possibly a growing sense of meaninglessness will develop (Sennet, 1998, 2004, 2006). More and more people will realize that they have to find an answer to the question: “What do I need to learn so that I can decide where to go next?” (Drucker, 1995, p. 5). Although the “frozen pyramid” organizations of the twentieth century may have melted down, theoretically making everything possible, the resulting “freedom” for individuals may become overwhelming, frustrating and anxiety-creating (Sennett, 2006; Bauman, 1996, 2000).

It is reasonable to assume that the employee’s feeling of solidarity with, and confidence in, organizations will evaporate in such a situation (Sennet, 2006, pp. 122-130); and although the frozen pyramids have characterized much of the 20th century, it now seems as if “migration is the icon of the global age, moving on rather than settling in” (Sennet, 2006, p. 2). The social atomization which this development leads to, will affect all levels of society. However, there are several factors that indicate that this will also lead to

“greater economic inequality as well as social instability” (op. cit.). When the value of basic experiences collapse, new value creation processes will be real and new ways of organizing will develop. Sennet (2006, p. 4) notes that at the individual level, there are three challenges that will be important to deal with:

1. How are you to deal with temporary employment relations?
2. How do you develop new skills when you do not know what will be in demand tomorrow?
3. How do you cope with the future given the collapse of the relevance of your basic experiences?

If you fail to respond satisfactorily to these questions, then resignation, passivity, uncertainty and the fear of being made redundant by the ongoing radical changes could easily be the result (Sennett, 2006; 2008).

One of the consequences which Sennet (2006) points out is that individuals must take greater responsibility for their own careers and futures. We believe this creates more optimal conditions for entrepreneurial action, creating what is new, which would not have been created if someone had not actively taken part in the creative development process. The entrepreneurial action includes both what the academic literature terms innovation and corporate entrepreneurship (in turn also sometimes called corporate venturing), as well as independent entrepreneurship (Shane & Venkataraman, 2000; Stalk & Lachenauer, 2004).

Another consequence of the collapse of the relevance of our basic experiences may be that the authority and status of the leader of the hierarchical organization will crumble. It is reasonable to imagine that authority, status and titles are likely to mean less as mobility increases. Gaining control of one's own career development, social competence (Goleman, 2006) and

emotional competence (Drucker, 1995, p. 7) will come to be just as important as professional competence. An important point is that all three domains of competence can be developed and improved.

Drucker (1996, p. 13) suggests a trend towards front-line organization in the following way: “changing an organization from the flow of things to the flow of information”. As societies, businesses and positions become increasingly impermanent (see Bennis & Slatter, 1968), knowledge of this information flow will become critically important, because the changes will be so pervasive and fundamental. It is the needs, wishes and preferences of customers, users, patients, students, etc. that will largely constitute the stock of critical information which it will be important to have knowledge of. This will lead, amongst other things, to new value creation processes emerging and innovations emerging in conjunction with these new value creation processes.

This critical information can be developed into products and services. A continuous interaction and interplay of ideas, production and marketing creates a disciplining of the innovation process whereby the customers' needs, wants and preferences are in focus the whole time, not only their present needs (Annunzio, 2004; Audretsch, 2006). An important point is to make the distinction between, demand on the one hand, and customers' needs and preferences on the other. This distinction develops flexibility, because adjustments can always be made between the existing market and the future market. In practice, the consequence may be that the time from idea to invoice will be greatly reduced.

The question examined here is: What should leaders do with their organizations in order to compete in the global knowledge economy?

The following model summarizes this introduction and shows how the article is organized.

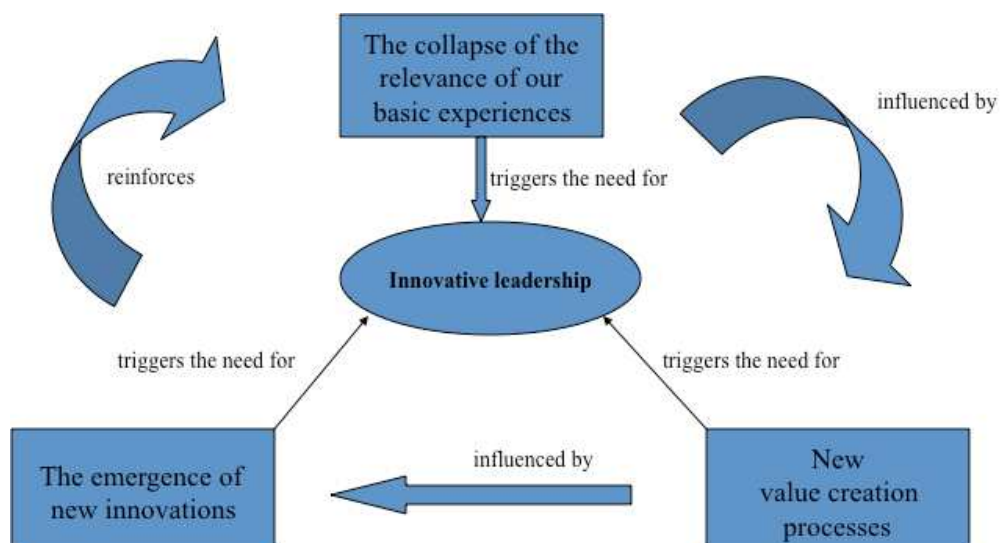


Fig. 1. Innovative leadership

1. The collapse of our fundamental experiences

We plan our everyday lives on the basis of our past experiences which applies to both the level of the individual, and the organizational level. Csikszentmihaly (1978, p. 339) expresses this as follows: "Only those items which I notice shape my mind". What happens when we can no longer use past history and experiences as a foundation for our future plans and actions? It is this question – which relates to the sub-heading above, "The collapse of our fundamental experiences" – which we will reflect on here. We will examine how the collapse of the relevance of our basic and fundamental experiences affects the organization of successful enterprises and how it affects our way of thinking.

When there is great stability and the pace of change is relatively small, what we experience and learn in the present may be applied to plans for the future. In such contexts, the passage of time does not have such a great power to erode the value of what we have learned or experienced. However, when change, complexity and turbulence are great, then what we have learned and experienced in the past will have less value in providing guidelines for future plans and actions. In such a situation, the importance of the present moment emerges as a social mechanism for organization and planning. To seize the opportunities that offer themselves in the present moment seems to be a key success factor when the relevance of basic and fundamental experiences collapses. Jack Welch, CEO of General Electric for twenty years, expressed a similar sentiment in 1999: "You can't predict anymore. But that doesn't matter. What is important is that you must be able to adapt and exploit; be agile enough to guess where the value is going ..." (cited in McGrath & MacMillan, 2000, pp. 302-303).

Welsh's being "agile", being able to turn around quickly, seize opportunities and act in the moment, seem to be characteristics that ensure success and will be important in the global knowledge economy. This applies also to large companies, when the pace of change increases. Here the explanation is that experiences and lessons learnt in the past will come to have less value, because they may not be used to the same extent as before when planning and predicting the future. Plans and

historical data will, at best, be de-emphasized as a management tool. Ideas and expectations will become more pronounced as relevant social catalysts of action. When beliefs and expectations become more important, we must increasingly learn to live with the creative chaos, seize opportunities that arise in the moment and design organizations that are agile and quick to turn around. It is therefore important to find connections in the so-called perceived chaos. This may be the hallmark of successful organizations in the knowledge society.

On the other hand, plans, historical data and analysis are important instruments when stability is great. When stability is great, management can then be achieved through strategic plans, predictions and a bureaucratic system that controls, checks and tests data and information against established knowledge, rules and procedures. This is the hallmark of successful organizations in the industrial society (Ackoff et al., 2006; Ackoff & Emery, 2007; Armstrong, 1980).

One explanation as to why industrial society's organization and management forms still exist in the knowledge society is the effect of the element of "time-lag" in history; in other words, that which was once functional tends to maintain and reinforce itself, even though the problems which the functions provide a solution to have long since disappeared or been altered. This may offer one explanation as to why there is a time lag between management and organizational forms that once were effective, and the rise of new management and organizational forms. History's "time-lag" may also provide an explanation as to why institutions try to perpetuate the problem which they see themselves as providing the solution to, even if the problem has ceased to be a "real" problem.

Although the pace of change is great, it will always be necessary to maintain a stable core, because without a stable core, even creative chaos will end in confusion and destruction. At the individual level, the stable core will most likely consist of a few fundamental relationships. At the organizational level, the stable core will constitute the purpose the organization was designed for (Ackoff & Emery, 2007; Beer, 1981; 1985; 1994). We have tried to figuratively illustrate the stable core in Figure 2.

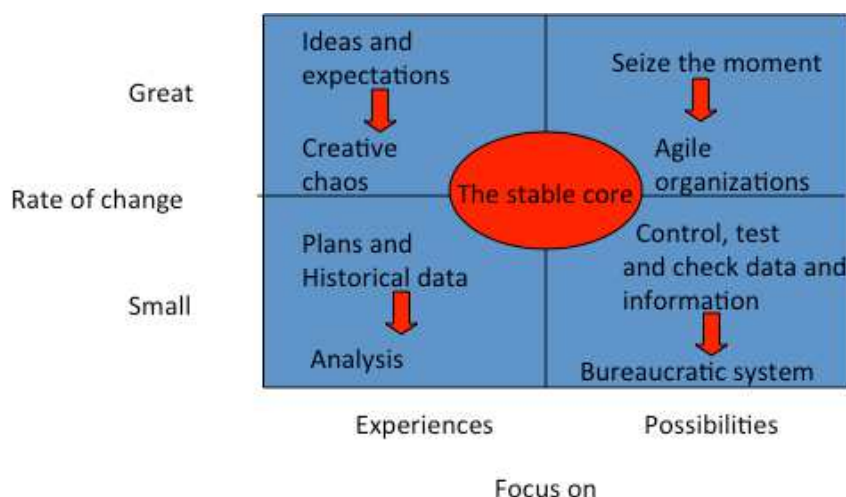


Fig. 2. The stable core

Sennet (1998) notes there is an erosion of character at the level of the individual. Bauman (2000) argues at the social level, structures erode. On the organizational level, it is reasonable to assume that there is a transformation from hierarchical power structures to front-line organization in which power and decision-making are to a great extent transferred to the front line. The front line in an organization constitutes those employees who are in direct contact with customers, users, patients, students, etc. The front line consists also of those in the immediate vicinity of production (Morgan & Liker, 2006). However, it would be incorrect to assume that power disappears. It is rather the case that it moves from position to function. Similarly, it is reasonable to assume that the power of decision-making moves from the hierarchical structure to the front line.

Those who have tried to sail a boat in a storm know that the ballast is a necessary prerequisite for managing this manoeuvre. However, the ballast must be placed in the bottom of the boat, in the keel, as close as possible to the elements. This is analogous to an organization with a top-heavy hierarchy, which will quickly topple when the pace of change is tumultuous, and organizations are forced to steer through “permanent whitewater”. Therefore, as part of this process, we also see structural changes in organizations. This change may be described as a transition from a hierarchical structure, in which power was concentrated and centralized in the top of an organization, to increasing focus on processes, information, power and decision-making in the front line (Beer, 1985; Burt, 1995; Chesbrough, 2006). To continue the sailing analogy, this resembles aiming for the lowest possible center of gravity, when the storm is blowing at its worst, and organizations are forced to steer through a lengthy storm.

In the old order, rational bureaucracies superseded irrational feudal structures. In the new order we are entering a period characterized by the collapse of the relevance and value of our fundamental experiences. A transformation from rational hierarchies to agile, creative organizations with innovative leadership is taking place (Cheong et al., 2005; Christensen et al., 2004). The ideal is that the creative energy fields of such organizations will flourish on the front line and create value through direct interaction with customers, users, patients, students, etc.

The old order’s rational bureaucratic hierarchies were characterized by instrumental rationality (Stewart, 2006). In the new order, often referred to as the global knowledge economy, it is systemic rationality that is most prominent (Beer, 1994; Ackoff & Emery, 2007; Taylor & LaBarre, 2007). Systemic rationality is characterized by relationships, social and emotional skills, an understanding of patterns and a relationship between the parts and the whole. This involves a type of what we may call T-competence, where the vertical line of the letter T denotes analytical skills and the horizontal line denotes relationship expertise.

In the old era, the economic system also functioned as a model for other systems in society; the “economic” way of thinking penetrated all areas of society. In the new order, the economy remains important, but it must interact to a greater extent with political, cultural and social systems (Sennett, 2006; 2008). This is one of the reasons why companies employ anthropologists, social scientists, philologists, historians, etc to a greater extent than before. The economic system colonized every other system during the modern period. Analogously, it may be said that a de-colonization process is taking place as part of the transition to the new order. This is not because it is more “democratic”, but rather

because it functions as a more efficient system when the relevance and value of our fundamental experiences are collapsing.

Prigogine (1997) refers to the new order as “the end of certainty” where chaos is an important factor to consider. He also sees a transition from one type of rationality to another type of rationality, as characterizing the new order. Instrumental rationality tells us that an event is caused by a past event, so that “every event can be explained or predicted....” (Prigogine, 1997, p. 1). When the relevance of our fundamental experiences collapses or is reduced, then the power of the aforementioned explanatory model also collapses or is reduced. It is thus not possible, at least not to the same extent as before, to use the past, history, experiences¹, as an explanatory model for future actions. We have entered a new type of risk society, to borrow Beck’s (1992) concept.

The new explanatory model is perceived as being chaotic and fragmented. In reality it is only a shift from a focus on the past, history and experiences to ideas, expectations and an understanding of relations and patterns, i.e. a shift to a systemic explanatory model. Just as the past affects history, and history affects our experiences, so do our ideas affect our expectations. Expectations form in turn the foundation for our understanding of patterns (Bateson, 1972).

When the relevance of our fundamental experiences collapses, then we are only to a lesser extent able to use the past, history, and experiences as the basis for our strategic choices. Organizations need to a greater extent to use strategies based on ideas, expectations and understanding of patterns. This suggests that strategic thinking will change character. In practice this means that the focus will turn more towards creating the system’s future, and there will be a reduced focus on positioning by adapting to what others have created (see Ackoff et al., 2006).

When the value of our basic experiences collapses, we can no longer base our thinking on “the arrow of time” (Prigogine, 1997, p. 1). In the hierarchical bureaucratic system, order, stability and predictability are keywords. In agile organizations with a front-line focus, these concepts are laid to rest, because they are no longer relevant to value-creating processes; indeed, in the worst case, the application of them may even lead to insolvency, even if productivity is high until an organization’s final death throes (Suchman, 1995; Thakor, 2000). The explanation is that high productivity alone is not a guarantee for survival, when markets change quickly. High productivity is a

necessary but not sufficient condition for survival in the global knowledge economy. The sufficient factor is innovation and high-tech value creation is based on various types of innovation, including technological and organizational, and innovations involving markets, management and material (Drucker, 1999; 2007).

What we claim here is that if organizations and other social systems do not change their explanatory models and dominant logic, they risk becoming rigid systems. Rigid systems are characterized by the fact that they can easily break apart when even small innovations enter the market. Agile organizations, however, are organized around a stable core, so that their subsystems function in relation to a more creative and chaotic rationality and are only loosely connected to the stable core. They can be thought of as operating as an organization’s creative chaos, in which innovations and organizational entrepreneurship (corporate entrepreneurship and corporate ventures) make up the creative energy field of the company. This enables the establishment of both a culture of achievement in the stable core, and a culture of innovation in the creative energy fields within and outside the organization. When the relevance of basic experiences collapse and hierarchical and bureaucratic structures are nevertheless maintained, the result is “Zombie institutions, they are dead and still alive” (Beck ref. in Bauman, 2000, p. 6).

When the relevance of fundamental experiences collapse, more attention is focused on the outside world and comparisons are made to an increasing extent with those who are successful on the global scene (which may explain the increasing attention “benchmarking” has received). However, it is not certain that something which results in success for some will also result in success for others in different situations and contexts. To search for and utilize other people’s success stories may prove to result in the opposite of success. It is still possible to go to the wall with the highest productivity in the industry if the organization itself has not developed and used an energy field of creativity with attention focused on innovations. A good example of this phenomenon is the Swedish company FASIT. They had the highest productivity in the production of mechanical calculating machines, but ignored the new electronic calculating machines which entered the market. The end result was that FASIT went into liquidation even though they had had the market’s highest productivity.

When the relevance of basic experiences collapses, it appears that many organizations look towards “universal comparison” (Bauman, 2000, p. 7). One of the results of this universal “benchmarking” is greater

¹ There is a clear distinction between the past, history and experiences (see Koselleck, 2002).

similarity in the way organizations think and act. At a time when an important competitive advantage is uniqueness, acting on the basis of comparisons with other organizations is probably not the best success strategy.

When the relevance of basic experience collapses, and the examples that earlier led to success become less important, what are we left with? Ghandi provides perhaps an answer to this question: “Everyone thinks of *changing the world*, but no one thinks of *changing himself*”. Bauman (2000, p. 72) also has a ready solution: “what truly counts is staying in the race to the end”.

Another transformation that creates tension in the global knowledge society is the transition from a focus on production to a greater focus on consumption (see Bauman, 1996). When consumption becomes more important, it is no longer needs that control actions, but the desires and satisfaction of the moment. If the wishes of the moment are to govern much of behavior, then predicting changes will become a Sisyphean task. When the wishes of the moment govern consumption, then the individual’s identity becomes identical to his/her taste at the time, representing the emergence of a narcissistic culture (Lash, 1979).

In such a culture organizations will need to develop sensors that can provide signals about the small signs of change before they manifest themselves. Bauman (2000, p. 85) comments that, “one needs to guard one’s own flexibility and speed of readjustment to follow swiftly the changing patterns of the world out there”.

There is a transition from what may be designated “heavy” organizations to agile organizations. The heavy organizations are hierarchically structured and highly visible in the corporate landscape. The models

for these hierarchical organizations and the way their representatives think, have become the dominant logic, and permeates our way of thinking. The agile organizations are not that visible in the corporate landscape. They are almost invisible, and they are connected through various loose relationships. They are distributed throughout physical space, scattered across different time zones and hardly follow the dominant logic of the present day. The conditions for the development of these “invisible” agile organizations that follow a “Lego-logic” are, first and foremost, new technology and strategic and organizational changes. However, it must not be imagined that “size does not matter” with regard to these agile Lego organizations *as* size and power still mean a lot, of course. It is more that they assume a different kind of size and power. Bauman (2000, p. 121) comments that “Capital can travel fast and travel light and its lightness and mobility have turned into the paramount source of uncertainty for all of the rest”. To reiterate, agile Lego-like organizations must not be confused with a change towards smaller organizations; instead such organizations represent another way of being large, which does not necessarily manifest itself in physical space. Size in relation to agile Lego-like organizations relates rather to the network they operate in and not to the physical and architectural manifestations of space.

Figure 3 shows the transition from hierarchy to a front-line focus. Figure 3 is an ideal model for a type of organization where hierarchical structures are replaced by a focus on the front line. It is also an ideal model for a unit within the “Lego logic” universe. Lego logic involves the dispersal of the Lego-like parts of an organization in the global economy based on an extreme focus on costs, quality, expertise and innovation.

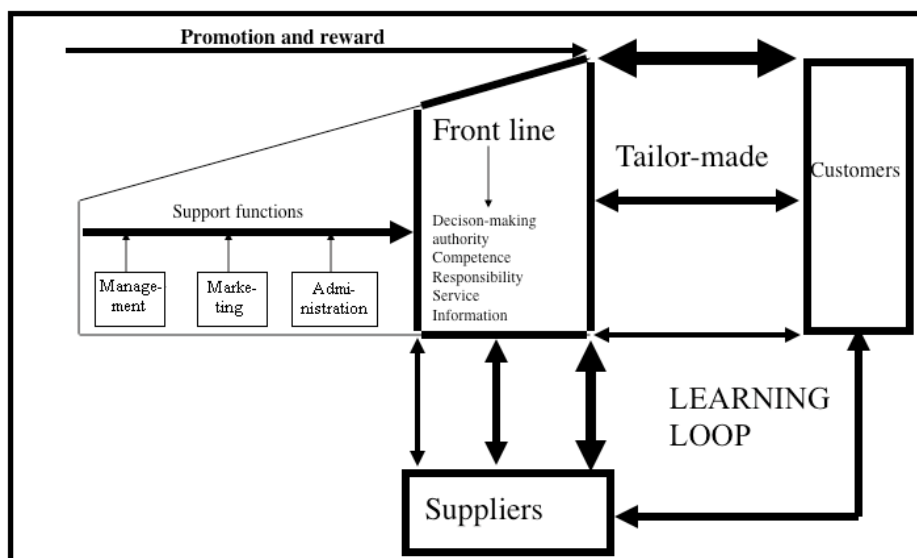


Fig. 3. Front-line organizing

2. New value creation processes

New technology enables us to produce, communicate, organize, distribute and consume in different ways than before, resulting in new forms of cooperation (Gratton, 2007; Hammel, 1998, 2007). The results of this process include the growth of new ways of working and new forms of management. Future networks will probably be intelligent network-connected systems. We call these networks and their connecting computers “informat¹”, which are a form of collective intelligence. We believe that this collective intelligence will provide the opportunity to bring social systems to a new level of organization, often termed the “systemic society” because it is interconnected at all levels.

Infrastructure relates to the transport of goods and energy, while the “info-structure”² relates to information, communication and knowledge pro-

cesses. The development of the info-structure means that distance and borders are reduced, geographically, psychologically, culturally and socially. The development of the info-structure has a direct impact on transactions within and between organizations, and consequently affects the organization of activities within and between organizations (Beer, 1995).

The info-structure concerns the processes that enable the development, transfer, analysis, storage, coordination and management of data, information and knowledge. The info-structure consists of ten generic processes (Miller, 1978)³. It forms the basis of communication processes, and thus also the development of knowledge. The info-structure also greatly contributes to the establishment of new collaborative networks on a global scale. It is precisely the development of a new info-structure that enables new cooperation networks and new organizational and management forms to emerge, such as the focus on the front line and Lego-structured organizations. While a developed infrastructure enables the transport of goods, services and energy, the development of the info-structure enables the coordination and integration of information resources on a global scale. Social interaction in the knowledge society develops through the new info-structure in the global space, for example through social networking and social media (Sennett, 2006; 2008).

We ask the following hypothetical question: If production and distribution could be 100% automated, which organizations would grow? The answer would obviously be high-tech organizations, which could allow such automatization. Obviously, this is only a hypothetical case; nevertheless, the consequences of a development in this direction would be enormous for individuals, organizations and society. The economic, cultural, political and relational sub-systems would be greatly affected and high-tech value creation bears some similarity to the hypothetical case mentioned here.

¹ Informat¹ are part of a holistic understanding of technology, in which technology is defined as: “the scientific study of the artificial” (Bunge, 1985, p. 231). In this context, artefacts are the research of technology. The development of artefacts “largely determines the history of mankind” (see Gehlen, 1980, p. 20). Artefacts are cultural products (see Mitcham, 1994; Ihde, 1990). On a deeper level, technological advances facilitate physical and mental processes, i.e. “the tendency toward facilitation” (Gehlen, 1980, p. 18). Gehlen’s (1980) classification of technology is: instruments, machines and automats; we add “informat¹” to Gehlen’s classification. The distinction between automats and informat¹ is in line with Zuboff’s (1988) argument that computers make it possible to both automate production and to use them in the information process to increase performance goals. In the following we define the four concepts: instrument, machine, automat and informat. Instrument: “Any object which can transform, applicate or transmit muscular energy to matter and perform work” (Gehlen, 1980, p. 8); for instance, screwdriver, pick, shovel, hammer, etc. Machine: Any object which is capable of transforming energy into movement (see Gehlen, 1980, p. 8); for example, water wheel, steam engine, car, plane etc. Automat: may be divided into two categories: (A) “Symbol controlling devices” (Gehlen, 1980). The focus is here is on observation and coordination; for instance, thermostats, electronic measuring instruments, etc. (B) “symbol manipulating and transformation devices” (Gehlen, 1980, p. 8); for instance, computers. Informat: Symbol transferring and symbolic connecting units. The focus here is on the structural links in a network. With regard to informat¹, the intelligence lies in the connective structures of the network, not in the individual nodes of the network; for instance, telephone, fax, television, e-mail, future multimedia systems, future integrated intelligent systems, etc. The human brain provides an analogy for an informat. The neurons and groups of neurons develop a network, which develop a mental model of a situation. This network consists of groups of neurons, in which each group represents a critical part of the whole. When all the groups are linked, a cognitive model manifests itself in its entirety. The individual nodes have little significance before they are connected in an overall structural network. This is our analogous representation of an informat. In other words, informat¹ and “info-structure” are closely related concepts. Informat¹ are artefacts that enable the info-structure to function. We stress here that informat¹ are basically in an evolutionary stage. However, we assume that the logic of information, communications and networks will result in social systems developing informat¹ to a greater degree, because this logic requires structural links. Informat¹ connect and coordinate knowledge and mobilize expertise where it is available, dependent on the logic of quality, expertise and costs. Collective knowledge structures can therefore be developed through interactions in the global space. Informat¹, “info-structure” and communication crystallize in the free knowledge space, which analogously may be compared to how the free market was originally crystallized through infrastructure and trade. However, the free knowledge space is not synonymous with zero costs. On the contrary, information and knowledge is not free and will always have a cost, because it costs to develop the codes we use to understand, explain and apply information and knowledge.

² Information structure is abbreviated to info-structure in order to suggest an analogy to infrastructure.

³ Information control, information channels and networks for communication, information collection, information analysis, information strategy, information structuring and systematization, information coordination, information storage and recovery, information culture and information transmission. The ten processes of the “info-structure” may be considered as nodes in a network at different system levels, which together maintain the totality of the info-structure. The purpose of the nodes is to coordinate information in the social systems and networks of social systems, so that social interaction is possible, and new knowledge can be developed. Each of these processes is of strategic importance to the social systems. The control of one or more of these processes results in guiding principles for the control of information, communication and network logic of social systems. Through control of the individual processes one has the opportunity to influence activities in other processes. The various processes have their relative importance in the various systems. At the same time, they are of different importance depending on the system level that is being focused on in the social systems.

High-tech value creation is the competitive response by companies in the West to the strategic challenge from low-cost countries. It is in this area that the West can compete with those countries with low labor costs and regulatory frameworks that reduce other costs.

In the hypothetical case above concerning automatization in an idealized organization, it is not the management of a company's employees that would be the key factor, but rather innovation, the organization of activities, the coordination of different functions internally in the company and with the outside world, and the integration of the knowledge processes that are used as inputs. In such a world, management will be more a question of understanding interactive processes and creative actions. In interactive processes one neither controls nor is controlled. The handling of complexity and chaos grows in such a situation; indeed, these emerge as key dimensions for dealing with the processes that create products and services. Value creation, however, would be equally important in the idealized production model. The point is that value creation shifts more from value-chain thinking to other forms of value creation.

In today's globally competitive environment such companies need leaders and employees with a focus on overall value creation processes. In practice, this means that organizations must employ, educate and cultivate people who focus on the dynamics that promote or impede value creation processes in organizations and for their customers. Value creation is understood here as something which is directly and indirectly connected to innovation, performance and results, which in turn are connected to the various goals that the company has set itself. In contrast, value creation in the industrial economy focused on economies of scale, logistics and organizational processes (Porter, 1980; 1985; 1990; 1996). Value creation processes in the knowledge economy are increasingly oriented towards knowledge development, transfer and integration, in which innovation is a crucial factor (Castells, 1996; Stehr, 1994). An important reason for this change is that while the industrial economy mainly focused on linear processes, such as the value chain, the focus of the knowledge economy aims at types of value creation processes beyond the value chain, such as value networks, workshops, communities and dialogues (Stabel & Fjellstad, 1998). These value creation processes are briefly described below.

In the academic literature on strategy there was a strong focus on the value chain in the 1980s and parts of the 1990s, especially through the position taken by Porter in two of his works (Porter, 1980; 1985).

These analyses of value chain thinking have focused on a linear and sequential understanding of value creation, for example consisting of inbound logistics, operations, outbound logistics, marketing and sales and service. At the level of industry, value chain thinking has been linked to a linear understanding related to the chain of supplier-customer-business. This approach has been increasingly criticized in recent years (e.g. Stabell & Fjellstad, 1998). The criticism was primarily aimed at the fact that value chain thinking is only suitable for describing and understanding traditional manufacturing companies and such criticism also objects that a linear interpretation is rarely valid. Consequently, there is now a stronger emphasis on prosumer (producer-consumer) systems (Toffler, 1980), where suppliers, organizations and customers are viewed as a holistic system. However, different types of companies will have different levels of emphasis on different types of value creation processes, while all the relevant processes will be found (or should be) in most companies. This means that the value chain is still important, but other value creation processes must also be focused on. While the value chain within traditional manufacturing companies is primarily focused on the transformation of material resources, the focus for most organizations in the knowledge economy relates to information and knowledge (Stewart, 2006; Miller, 1998). In a business world that is increasingly characterized by a Lego-like logic in relation to the value chain, information relating to the potential for outsourcing and in-sourcing is crucial. The value chain transforms this information to output consisting of components that can be assembled into solutions the customer has requested.

Within *the value network* there is a focus on communication and external relations. In the first instance this focus is on the customer, but also on suppliers, competitors, etc., and the values inherent in such connections. While the value chain itself focuses mainly on information, the value network focuses on communication. Like the value chain, the value network operates at the operational level. In order to create value for customers through communication, an important feature of the value network is the coordination and integration of information. Roughly speaking, one can say that the value network receives information about the elements of a potential solution from the value chain. This information is coordinated and integrated by the value network to provide value for the customer through customer solutions.

The *value workshop* operates at the management level and focuses on facilitating an efficient performance at operational level (Stabel & Fjellstad, 1998). First and foremost, this means ensuring that

the operational level has access to resources, and an organization that contributes to the efficient utilization of these resources. This concerns both material and intangible resources, but particularly the latter, primarily competence development (knowledge, skills and attitudes). Put simply, it can be argued that the value workshop receives information from the operational level, value chain and value network, and ensures that they have access to the necessary resources to ensure efficient operation (i.e. a focus on productivity).

The *value dialogue* is primarily concerned with focusing attention on creativity, innovation, new ideas etc. Success in this requires a focus on both information and communication.

The *value community* is based on an organization's need for dialogue with the outside world, reputation management and external legitimacy (Johannessen et al., 1999; Kanter, 2006; Kim & Mauborgne, 1993). This implies an emphasis on the value creation processes related to the values, norms and attitudes that are communicated externally. The value community is concerned with CSR (corporate social responsibility), the third bottom line, ethics etc.

The value creation processes described above are interactive or circular. To deal with such processes the organization needs to focus on human creativity, communication, expertise, social understanding and relationship management (Drucker, 1999). Although we have made an analytical distinction between these different processes, in practice, they will often be interlinked and in part performed by the same people or within a single team. For example, at the operational level the same individuals or teams could both collect and sort information in accordance with a value chain logic, while simultaneously coordinating and integrating this information within a value network logic.

From the discussion above, we claim that the five value creation processes may be found in any organization. Some organizations, however, will place greater emphasis on one or several of the five value creation processes. All five value creation processes must be fostered if an organization is to be viable in the global knowledge economy. The guideline here is that organizations must have a greater degree of variation internally than externally, which is a simplified rewriting of "the law of requisite variety" (Ashby, 1961). We have illustrated the five value creation processes in Figure 4.

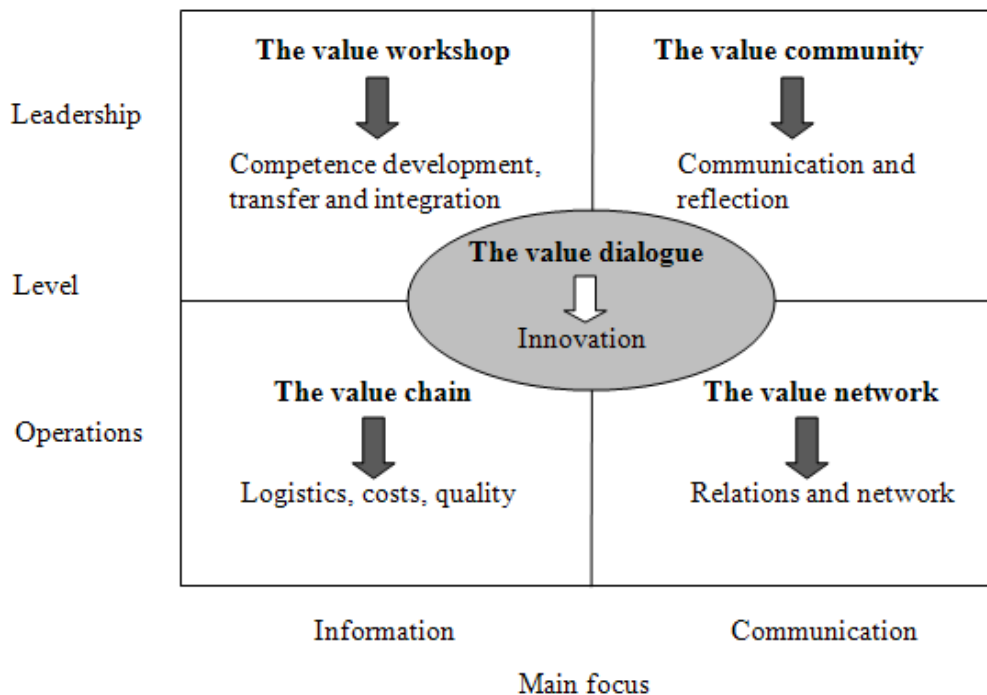


Fig. 4. The five value creation processes in the global knowledge economy

The five value creation processes may be summarized in the term high-tech value creation. High-tech value creation may be metaphorically understood as an emerging new continent. This new continent has been described by many authors, including Drucker (1999), Bauman (2000), Tofler

(2000), Sennett (2006; 2008), to name just a few. Although they use different names to designate this emerging new world, they are unanimous about one thing: What's emerging is truly emergent, in that it is something that has not existed before although some of what is new may resemble old wine in new bottles.

Those organizations that remain mired in old world ways of operating can only survive if they cut costs to the level of low-cost countries. In the new world, it is innovation that drives change and creates profits. Indeed, it is the price companies can demand before innovations are copied or imitated which provides the profits (or super profit) stemming from the creation of innovations. In the sphere of high-tech value creation it is continuous innovation that ensures value creation for individuals, organizations and society.

In the old world, everyone competed for survival. In the new world cooperation and competition are balanced in a completely different way. However, there are no permanent structures for cooperation; in some instances, there is cooperation and at other times competition. At times alliances will be entered into, while at other times contracts will be competed for on the basis of other alliances and associations. At times, organizations will function as suppliers and at other times contractors, etc. To a large extent, high-tech value creation pushes beyond physical, mental and national boundaries, and the new world has no metropolis or visible center.

The new world gets its raw materials and material supplies from the old world, similar to the way in which industrialized countries that received most of their raw materials from their colonies. However, the difference in this case is that those who supply the raw materials to the new world do not feel that they are “colonized”, because the new world is not a physical geographical entity, but an abstract one.

The old world had its physical boundaries, whereas the new world has no such physical boundaries. The new world is embedded in the old world and goes beyond national boundaries. High-tech value creation is, on the other hand, a necessary condition for value creation in the old world.

High-tech value creation is a necessary condition for survival in the global knowledge economy (Drucker, 1999; Norman, 2004; Sagasti, 2004). In the new world the conditions for value creation have changed completely, because growth without innovation has become impossible in the global knowledge economy.

Financial, transportation and telecommunications technologies, and the software side of IT, promote the leveraging of global demographic differences, as well as the existing disequilibrium in the global cost structures. This promotes, in turn, economic growth in both low-cost and high-cost countries.

Utilization of global demographic differences and differences in global cost structures in turn accelerates globalization, just as industrialization spread from one area to another and equalized cost differences in the last century. Globalization and increased value creation eventually lead to changes in power structures, globally, nationally and at the level of the individual organization. The driving forces behind these changes are institutional and economic innovations¹. The consequences of these innovations emerge, however, at all levels in the various social systems.

High-tech value creation results in just as much innovation within services, as it does in classic product-related innovation, because customers' needs, wishes and preferences will to a greater degree control value creation (Sasser et al., 1978; Schein, 2006). For the individual organization, it will no longer suffice to think globally and act locally. Organizations will need to operate in the global space, in global co-creation teams connected to global competence clusters. These knowledge clusters are distributed all over the globe, and the co-creation teams must therefore operate virtually and link up to the various global centres of expertise. Local production clusters belong to the industrial society's mindset. Global competence clusters are developed in the knowledge economy. The new world also functions metaphorically regarding global competence clusters. It is in these global competence clusters that new innovations emerge in the knowledge economy (Sennett, 2006; 2008; Simon et al., 2003).

3. The emergence of new innovations

The question we try to answer here is: Where will future innovations emerge?

If the relevance of our fundamental experiences collapses, we will experience problems when using the past in order to explain and understand what is going to happen in the future. Fortunately, we have adequately effective theories that provide us with insight into what may happen, such as Christensen's (1997) theory of disruptive innovations. Briefly stated, “disruptive innovations” involve “situations in which new organizations can use relatively simple, convenient, low-cost innovations to create growth and triumph over powerful incumbents” (Christensen et al., 2003, p. 15). This suggests that when costs are relatively high, it is reasonable to

¹ Institutional innovations include the following types: political, social and cultural innovations. Economic innovations include the following types: organizational, material (technology, product, process, raw material), service and marketing.

assume that low-cost innovations will occur. A direct analogy to this is that where real and relative quality decreases, the probability of emerging innovations increases.

To reveal how innovations will occur, Drucker (1994, p. 44) asks the following questions:

1. In which areas of economic life is the real and relative productivity in decline? The answer to the question gives an indication of where there will be major changes, because productivity is the measure of efficiency, and most of the social systems will seek to become more efficient in order to effectively use their resources.
2. Which new knowledge can be transformed into new technology to be used in a market to meet the needs, wishes and preferences of customers, users, patients, students, etc? The time lag between the development of new knowledge, the creation of new technology and the application of this technology in a market takes, on the basis of experience, somewhere

between 20-40 years, notes Drucker (1994, p. 46). The bottom line for companies is to take advantage of the time-lag before the technology is introduced as an innovation in a market.

3. How will the dispersal of innovations affect our market? The dispersal rate of innovation seems to have increased sharply in recent decades (op. cit.). Where the rate of diffusion of innovations increases, it is reasonable to assume that other types of innovations will occur. Among other things, this is because technological innovations in all probability will also foster both organizational and administrative innovations. New technological innovations will also lead to institutional innovations. Therefore it is important to know where and how quickly the increase in the dispersal rate of innovations will occur.

In Figure 5 we have illustrated where new innovations are most likely to emerge.

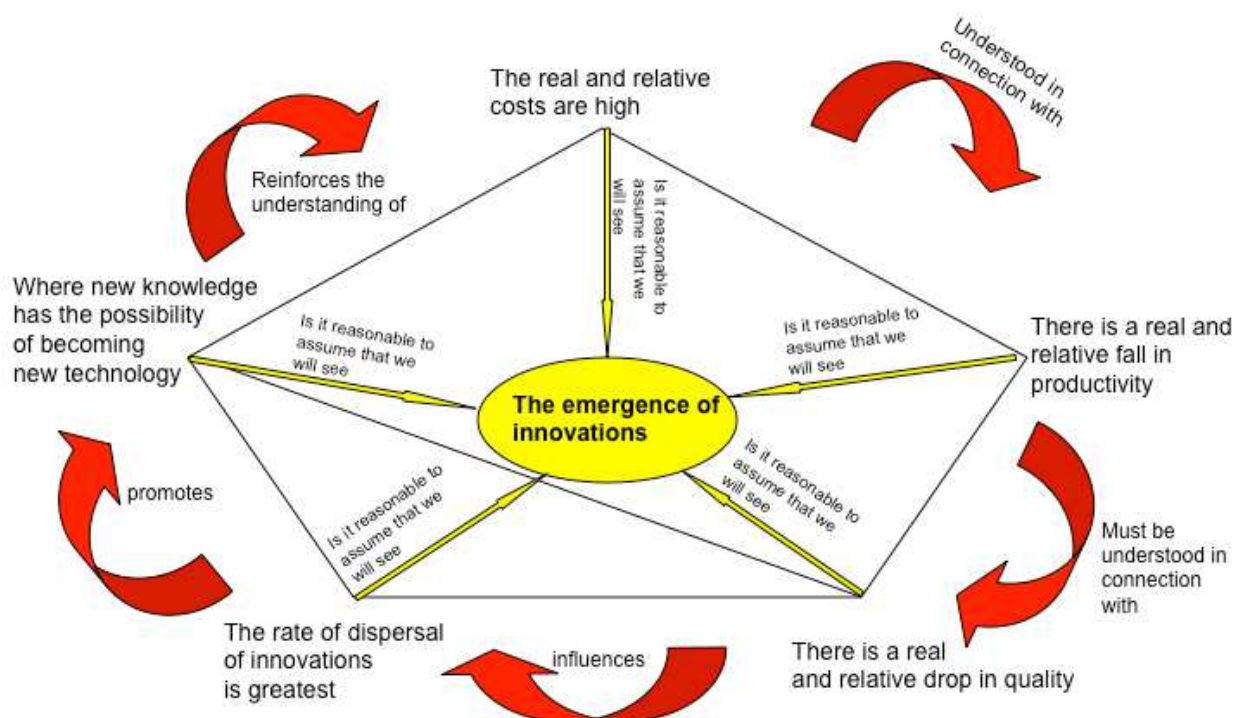


Fig. 5. The emergence of new innovations

Conclusion

Practical implications. Put simply, it may be said that innovations evolve in three stages: idea generation, commercialization and realization (Hamel, 1998; 2000). The realization phase is often the bottleneck in many projects, not the idea-generation and commercialization stages (Andrew & Sirkin, 2006, p. 5). Andrew & Sirkin (2006, p. 7) term the realization phase “payback”; this is when the organization starts making money on the

investments it made in the development of the innovation. The commercialization phase represents the first faltering steps into the market, which often does not reach much beyond the initial launch, rejection and loss.

The innovative leader should make sure to have as many ideas under development as grains of sand in the desert, in order to ensure that some of the ideas reach the market as innovations. The innovative leader should also reduce the time from idea to

invoice, and increase the “payback” in the realization phase. The reason that many fail to come into the realization phase, say Andrew & Sirkin (2006, pp. 8-9), is that they have not paid enough attention to the four S’s:

1. Start-up costs.
2. Speed to market.
3. Scale, or time to volume.
4. Support costs or post launch investment.

Depending on which processes the organization has in place, the innovative leader may choose among four main types of models to bring innovations to the realization phase (Andrew & Sirkin, 2006):

1. They may take control over the whole process, from idea generation to commercialization and realization.
2. They may take control over the whole process, but choose to employ different external actors in various parts of the process.
3. They may take control of idea generation and commercialization, but choose to license the realization phase.
4. They may choose an open solution for the whole process, involving customers, suppliers and academia.

The decision on the choice of model will depend on the organization’s capabilities, the product’s possibilities for rapid realization, and the market’s receptivity to innovation.

Theoretical implications. The scope of opportunities that open up at a time when the relevance of our fundamental experiences collapses may be formulated in the following question: How can we gain an understanding of future competitive challenges?

Christensen & Raynor (2003) have shown that by applying innovation theories it is possible to indicate the scope of future innovations with some probability. This in itself is a theoretical innovation because previously, to a large degree innovation was thought of as something that happened by chance, and at best as a result of R&D investment. The pattern that Christensen & Raynor (2003) revealed, among other things, was that businesses that become established “experience a strong incentive to improve, acquire more customers and migrate into high-profit tiers of their market” (see Christensen et al., 2004, p. 29). The result of this drive in the market is that competition increases among new entrants to the market, and between the

entrants and the established businesses. Our model in Figure 5 is a development of Christensen et al. (2004), and provides five clear indications of how the emergence of new innovations in the global knowledge economy will take place.

What is the basic driving force with regard to the emergence of innovations? Our answer is that the basic driving force is a shift in thinking. New mental models have emerged as a result of new opportunities provided by new technology. As a result of new ways of thinking and new technology, new business models have emerged. However, they have not emerged from any center, for example, Tokyo, Silicon Valley, South Paris, the Milan region, etc. There is no center, a Saint Peter’s Square, where one can go to in order to find the solution of the innovation puzzle. Nor is it the case that the periphery has replaced the center as the driving force in the knowledge society. Indications in the knowledge society suggest that the center-periphery distinction is no longer viable, because geographic boundaries mean less, and the only thing that sets limits is our mental perception.

The relative stability of technology seems to have disappeared. Innovations in every field have become commonplace. The businesses that are unable to develop innovations, or cannot quickly absorb and adapt to new innovations, will be mangled by global competitive forces. This means that innovation leads to continuous and discontinuous changes at all levels and in all areas of society. There are no unaffected areas. As early as 1968, Drucker (1994, p. 9) called this development “techno-economic catastrophes”. However, this is disaster on par with Schumpeter’s creative destruction, where something must be destroyed in order for new life to flourish.

Metaphorically, it may be said that innovation leaders are like Minerva’s owls: they turn, combine and apply existing knowledge for a market. Classic entrepreneurs can metaphorically be regarded as the parrots of an economy as they fill gaps in the market with existing products and services. Innovators may be metaphorically considered to be an economy’s cuckoo chicks who push aside what already exists. In this way the cuckoos represent creative destruction, which would not have existed if they had not been protected by those they would later come to harm.

References

1. Ackoff, R.L., Magidson, J. & Addison, H.J. (2006). *Idealized Design*, Wharton School Publishing, New Jersey.
2. Ackoff, R.L. & Emery, F.E. (2007). *On purposeful systems*, Aldine Transaction, London.
3. Andrew, J.P. & Sirkin, H.L. (2006). *Payback*, Harvard Business School Press, Boston.

4. Annunzio, S.L. (2004). *Contagious success*, Portfolio, New York.
5. Armstrong, J.S. (1980). The seer-sucker theory: The values of experts in forecasting, *Technology Review*, 83, pp. 16-24.
6. Ashby, W.R. (1961). *An Introduction to Cybernetics*, Chapman & Hall LTD, New York.
7. Audretsch, D.A. (2006). *Entrepreneurship, Innovation And Economic Growth*, Edward Elgar Publishing, New York.
8. Avgerou, C., Ciborra, C. & Land, F. (2004). *The Social Study of Information and Communication Technology: Innovation, Actors, and Contexts*, Oxford University Press, Oxford.
9. Bateson, G. (1972). *Steps to an Ecology of Mind*, Intex Books, London.
10. Bauman, Z. (1996). *Life in Fragments*, Polity Press, London.
11. Bauman, Z. (2000). *Liquid Modernity*, Polity Press, Cambridge, UK.
12. Beck, U. (1992). *Risk Society: Towards a New Modernity*, Sage, London.
13. Beer, S. (1981). *Brain of the firm*, John Wiley & Sons, New York.
14. Beer, S. (1985). *Diagnosing the System for Organizing*, Wiley, London.
15. Beer, S. (1994). *Beyond Dispute: The Invention of Team Syntegrity*, John Wiley, New York.
16. Bennis, W. & Slatter, W. (1968). *The Temporary Society*, Jossey-Bass, San Francisco.
17. Bunge, M. (2003). *Emergence and Convergence: Quality, Novelty and the Unity of Knowledge*, University of Toronto Press, Toronto.
18. Burrus, D. (1993). *Techno Trends*, Harper Business, New York.
19. Burt, R.S. (1995). *Structural holes: The social structure of competition*, Harvard University Press, Boston.
20. Castells, M. (1996). *The informational economy and the new international division of labor*, in Carnoy, M., Castells, M., Cohen, S.S. & Cardoso, F.H.: *The New Global Economy in the Information Age*, The Pennsylvania State University Press, University Park, Pennsylvania
21. Cheong, L.Y., Juma, C. & Sachs, J.D. (2005). *Innovation: Applying knowledge in development*, Earthscan Publications Ltd., New York.
22. Christensen, C.M. (2010). *Disrupting Class, Expanded Edition: How Disruptive Innovation Will Change the Way the World Learns*, MCGraw-Hill, New York.
23. Christensen, C.M., Anthony, S.D. & Roth, E.A. (2004). *Seeing What's Next: Using the Theories of Innovation to Predict Industry Change*, Harvard Business School Press, Boston.
24. Christensen, C.M. & Raynor, M.E. (2003). *The Innovators' Solution: Using Good Theory to Solve the Dilemmas of Growth*, Harvard Business School Press.
25. Collins, J.C. (2001). *Good to Great: Why some Companies make the Leap and Others Don't*, Harper Business, New York.
26. Csikszentmihaly, M. (1978). *Attention and the holistic approach to behavior*, in Pope, K.S. & Singer, J.L. (ed.), *The Stream of Consciousness*, Plenum, New York, pp. 335-358.
27. Drucker, P.F. (1993). *Post-Capitalist Society*, Butterworth Heinemann, New York.
28. Drucker, P.F. (1994). *The Age of Discontinuity*, Transaction Publishers, New York.
29. Drucker, P.F. (1999). Knowledge worker productivity: The biggest challenge, *California Management Review*, 41 (2), pp. 79-94.
30. Drucker, P.F. (2007). *Entrepreneurship and Innovation*.
31. Elbæk, U. (2003). *Kaospilot A-Z*, Narayana Press, Gylling, Danmark.
32. Goleman, D. (2006). *Social Intelligence*, Hutchinson, New York.
33. Gratton, L. (2007). *Hot Spot*, Prentice Hall, London.
34. Hamel, G. (1998). Opinion: Strategy innovation and the quest for value, *MIT Sloan Management Review*, 39 (2), p. 8.
35. Hamel, G. (2000). *Leading the Revolution*, Harvard Business School Press, Boston.
36. Hargadon, A. (2003). *How Breakthroughs Happen*, Harvard Business School Press, Boston.
37. Herbst, K. (2002). Enabling the poor to build housing: Cemex combines profit and social development, *Changemakers Journal*, September/October.
38. Hock, D. (1999). *Birth of the Chaordic Age*, Berrett-Koehler Publishers, Inc., San Francisco.
39. Johannessen, J.-A. & Olsen, B. (2009). *Strategi og organisering for fremtidens virksomhet*, Fagbokforlaget, Bergen.
40. Johannessen, J.-A. (1997). Aspects of causal processes, *Kybernetes*, 26 (1), pp. 30-52
41. Johannessen, J.-A., Olaisen, J. & Olsen, B. (1999). Aspects of innovation theory based on knowledge management, *International Journal of Information Management*, 19 (2), pp. 121-139.
42. Johannessen, J.-A., Olaisen, J. & Olsen, B. (2006). *Positivt lederskap*, Fagbokforlaget, Bergen.
43. Kanter, R.M. (2006). From cells to communities: Deconstructing the organization, In Gallos, J.V. (Red.). *Organization development*, Jossey Bass, San Francisco, pp. 858-888.
44. Kim, W.C. & Mauborgne, R. (1993). Value innovation: The strategic logic of high growth, *Harvard Business Review*, 75, pp. 102-112.
45. Kim, W.C. & Mauborgne, R. (2005). *Blue Ocean Strategy*, Harvard Business School Press, Boston MA.
46. Koselleck, R. (2002). *The Practice of Conceptual History*, Stanford University Press, Stanford, Cal.
47. Lash, C. (1979). *The Culture of Narcissism*, W.W. Norton, New York.
48. Luhman, N. (1995). *Social Systems*, Stanford University Press.

49. McGrath, R.M. & MacMillan, I. (2000). *The Entrepreneurial Mind*, Harvard Business School Press, Boston.
50. Minzberg, H. (2003). *The Strategy Process*, Financial Times Management, New York.
51. Morgan, J.M. & Liker, J.K. (2006). *The Toyota Product Development System*, Productivity Press, New York.
52. Normann, R. (2004). *Reframing Business: When the Map Changes the Landscape*, John Wiley & Sons, New York.
53. Porter, M.E. (1980). *Competitive Strategy*, The Free Press, New York.
54. Porter, M.E. (1985). *Competitive Advantage*, The Free Press, New York.
55. Porter, M. E. (1990). *The Competitive Advantage of Nations*, The Free Press, New York.
56. Porter, M.E. (1996). What is Strategy? *Harvard Business Review*, 74.
57. Porter, M.E. (2004). Chapters 2, 3, 4, 5 and 6 in Weller, C.D. *Unique Value: Competition Based on Innovation Creating Unique Value*, Innovation Press, LLC Publisher, Ashland OH, pp. 25-187.
58. Prahalad, C.K. & Hamel, G. (1990). The Core Competence of the Corporation, *Harvard Business Review*, 68 (3), pp. 79-91.
59. Prigogine, I. (1997). *The End of Certainty*, Free Press, New York.
60. Sagasti, F.R. (2004). *Knowledge and innovation for development: The Sisyphus challenge of the 21st century*, Edvard Elgar Publishing, London.
61. Sasser, E.W., Olsen, P.R. & Wykoff, D.D. (1978). *Management of service operations*, Allen & Bacon, Boston.
62. Schein, E.H. (2006). Foreword: Observations on the state of organizational development, in Gallos, J. (Red.). *Organization development*, Jossey-Bass, New York, pp. 15-19.
63. Sennet, R. (1998). *The Corrosion of Character*, Norton, New York.
64. Sennett, R. (2004). *Respect*, Norton, New York.
65. Sennett, R. (2006). *The Culture of the New Capitalism*, Yale University Press, London.
66. Sennett, R. (2008). *The craftsman*, Allen lane, New York.
67. Shane, S. & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research, *Academy of Management Review*, 25, pp. 217-226.
68. Simon, M., Houghton, S.M. & Savelli, S. (2003). Out of the frying pan? Why small business managers introduce high-risk products, *Journal of Business Venturing*, 18, pp. 419-440.
69. Stabell, C.B. & Ø.B. Fjeldstad (1998). Configuring value for competitive advantage: on chains, shops, and networks, *Strategic Management Journal*, 19, pp. 413-437.
70. Stalk, G. & Lachenauer, R. (2004). *Hardball: Are you playing to play or playing to win?* Harvard Business School Press, Boston.
71. Stehr, N. (1994). *Knowledge Societies*, Sage, London.
72. Stewart, T.A. (2006). Growth as a process, *Harvard Business Review*, Vol. 84 (6), pp. 60-70.
73. Stalk, G. & Lachenauer, R. (2004). *Hardball: Are you Playing to Play or Playing to Win?* Harvard Business School Press, Boston.
74. Suchman, M.C. (1995). Managing legitimacy: Strategic and institutional approaches, *Academy of Management Review*, 20, pp. 571-610.
75. Taylor, W.C & LaBarre, P.G. (2007). *Mavericks at work*, William Morrow, New York.
76. Thackara, J. (2003). Collaboration, in Elbæk, U., *Kaospilot A-Z*, Narayana Press, Gylling, pp. 148-149.
77. Thakor, A.J. (2000). *Becoming a better value creator*, Jossey Bass, San Francisco.
78. Thomas, W.I. & Znaniechi, F. (1918). *The Polish Peasant in Europe and America*, University of Chicago Press, Chicago.
79. Thurow, L. (1999). *Creating Wealth*, Nicolas Boealey, London.
80. Toffler, A. (1980). *The Third Wave*, William Morrow, New York.