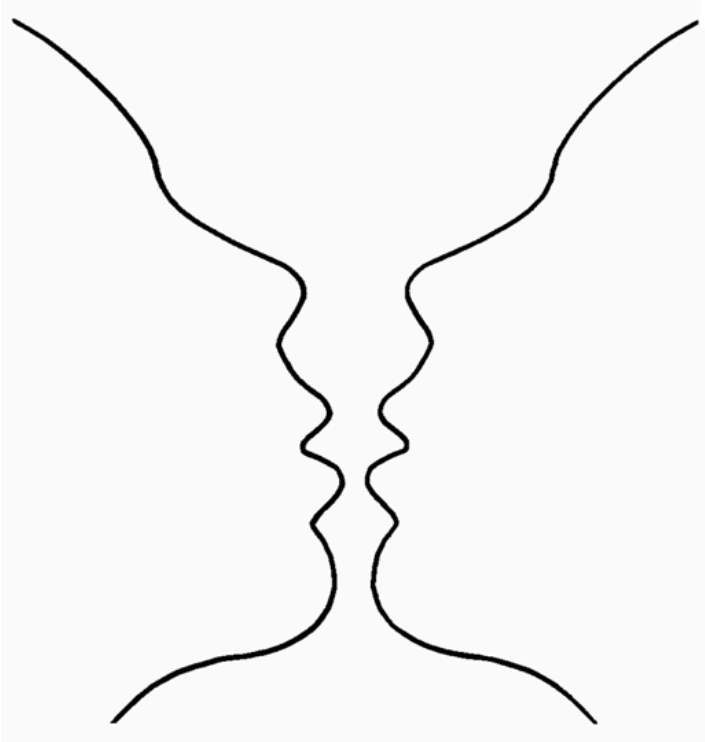
Copenhagen Business School

Perceptions in
Creativity and Innovation Management



- A Literature Review of Journal of Creativity and Innovation Management 2005-2010

By Anders Toustrup Darre
MSc Strategic Market Creation
Institut for Afsætningsøkonomi

Supervisor: Jesper Vej
Characters: 181.312 (79 pages)
March 2011

Making the simple complicated is commonplace;
making the complicated simple, that is creativity
- Charles Mingus

Abstract

In recent times there has been a growing interest for the ideas behind creativity and innovation and how to manage these processes. Even the Western part of the world has been labeled the Innovation Economy. In despite of this there is more than one approach to archive success in the field of innovation and creativity. The goal of this dissertation is to create an overview of these different perceptions.

Sir Isaac Newton once said that we stand on the shoulders of giants. With this in mind this dissertation sets out to examine prior research in order to comprehend a scientific domain through a literature review. With the use of the scientist Thomas Kuhn's ideas of the evolution of science and through his notions of paradigms and crisis this dissertation investigates the field of creativity and innovation management in recent times.

With the use of the paradigm funnel framework, a conceptual tool for literature analysis, this dissertation studies all the articles from the Journal of Creativity and Innovation Management from 2005-2010. The paradigm funnel focus on exploring, classifying and analyzing the composition and the dynamics of change within a body of scholarly literature.

The result of this investigation provides the reader with a complex view of the field of creativity and innovation management with many possible solutions to specific problems. In order to simplify the complexity and give the reader a deeper understanding of the trends within this field a framework has been developed. The framework contains three elements that form the different perceptions between the scholars within this field. First, certain 'paradigms' define what is taken for granted. Second, a defined 'perspective' tells us what the object for analysis is. Third, an 'approach' tells us which methods can be used. All these elements are interrelated and form the lens through which creativity and innovation management are perceived.

In total five paradigms, five perspectives and an unnumbered amount of approaches are found within the articles subject to analysis.

Table of content

Introduction

In the beginning of the 1990s Bogotá, the capital of Colombia was considered one of the worst cities on the planet. Drug cartels, poverty, murder and corruption affected every aspect of life for its citizens. However, in 1994 a political metamorphoses began that would turn the society upside down. At the national university the principal at the time, Antanas Mockus, was facing some severe problems. On a daily basis FARC rebels, anarchists and the likes would confront him, and one day he had finally had enough of it. In front of two thousand people at a big meeting Mockus felt powerless (Dalsgaard, 2009). All the students were booing him and suddenly Mockus opened up his trouser, took them down to his angles, turned his back to the audience and showed them his behind. The incident became a national scandal and the principal was forced to resign his position, but among the general public he became a symbol of honesty. This sudden popularity inspired him to run for mayor of Bogotá (Dalsgaard, 2009).

During the election campaign unorthodox methods were used in order to gain popularity. The campaign in itself was completely different than what had been seen before. Among other initiatives Mockus put on a super hero costume and ran around the city removing garbage. All this lead to Mockus being elected with the largest majority of voters ever in Bogotá.

According to Mockus, there was a disparity between law, culture and morality in Colombia at the time (Dalsgaard, 2009), and he wanted to change this by educating the people. He believed that a change in the citizens' behavior would lead to a transformation of the city itself (Dalsgaard, 2009). Furthermore, the changing of hearts and minds should not come through preaching, but through artistically creative strategies that employed the power of the individual (web 1).

One of the first things Mockus focused on after being elected was traffic fatalities. He believed that Colombians were more afraid of being ridiculed than being fined (web 2). He handed out plastic cards with a thumb-up on the front and a thumb-down on the back to Bogotá's citizens to show each other if they observed something that was either good or bad for traffic (Dalsgaard, 2009). Furthermore, he hired more than 400 mimes to make fun of traffic violators while educating them. Despite the weirdness in these initiatives they actually helped the citizens to start obeying the rules instead of breaking them.

After the focus on traffic fatalities Mockus started to fight corruption and, more importantly,

to find ways to reduce the death rates. In his opinion, the value of people was not a high enough priority at the time (Dalsgaard, 2009). Again, innovative initiatives were begun. Mockus and his fellow politicians passed a law named the Carrot Law (Dalsgaard, 2009). In Colombia, a carrot is slang for someone who does not drink and smoke. The idea behind the act was to close bars and restaurants at 1am in order to reduce the number of fights and drunk driving every night. Mockus would walk the streets at night with a big clock around his neck and talk to citizens about the need for this act to be carried out. The Carrot law was followed up with other initiatives which all focused on reducing violence. Children in schools were taught how to deal with violence, prisoners were educated on the subject and the entire police corps was sent on a conflict resolution course (Dalsgaard, 2009).

Besides the physical initiatives Mockus also used heavy symbolism to get his message across. In his terms, violence was *infecting* society and they needed to stop the *spread*. Mockus invented a physical-symbolic vaccine against violence, which was handed out to the public. On TV he poured the innocent liquid on the tongues of people and told them that they now had been immunized against violence (Dalsgaard, 2009.).

Mockus once elaborated on his leadership style (web 3): "If people know the rules, and are sensitized by art, humor, and creativity, they are much more likely to accept change." After his first term as mayor things started to go in the right direction in Bogotá. According to Colombian law a mayor can only hold his or her position for one term at a time. After Mockus' term, Enrique Peñalosa got the position and continued the change for a better society. From 1993-2003 the reduction in homicides fell from 80 homicides per 100.000 inhabitants to only 22 (ibid.). Furthermore, traffic fatalities fell with approximately 50%. Tax payments also raised. Compared to the state of the city in 1990, by 2002 the city collected more than three times the revenues.

The Need for Innovation

The introduction above shows the importance of an innovative behavior. The need for creativity is true in many different settings when facing severe problems. Today, creativity and innovation are seen as precursors for continuously growth; both in society, as well as in other institutions.

Presumably, many different scholars could give just as many answers to how the reformation of Bogotá became such a success. On the contrary, many scholars might hold a similar

formula and argue that these initiatives should be employed to other cities in the future in order to begin successful changes worldwide. These thoughts and reflections are the motive behind this dissertation.

From a business point of view, in the Western part of the world, society has moved to a post-industrial age. Due to globalization and automation of work processes manual work has declined, and a bigger demand for professional knowledge workers has occurred. Knowledge has become a valued form of capital and innovation the predominant engine for economic growth.

The focus of this dissertation is on creativity and innovation, since these are important factors for the companies' struggle for survival in today's society. Furthermore, the angle is seen from the management's point of view, which has great importance if companies are to be engaged in the right direction. However, much has been written about creativity and innovation management since Joseph Schumpeter popularized ideas about creative destruction and entrepreneurship nearly a century ago.

It is not my wish to go through all that has been said and done in regards to creativity and innovation management through all times. Nor, in this perspective, do I wish to look at the ways things were done in an undefined long time ago. Instead I wish to find order and investigate the different perceptions within this field as they appear in recent times. It is my hope this picture of how things are can help create a better understanding of the development in the field, and help managers today choose just the right strategy for them. This has led to the following research question.

Research question

What are the different perceptions, explained by different paradigms and perspectives, appearing in the journal 'Creativity and Innovation Management' in the period of time between 2005-2010?

Reading guidance

Before opening up for this subject I would like to provide you as a reader with some guidance on how to approach my dissertation. The Bogotá story in my introduction was merely a teaser in order to give an example of the need for creativity and innovation management; however, it exists in many forms.

In the next section I will elaborate on my methodology. The way my methodology differs from many other theses is that mine comes before my data collection. I could have chosen another approach, which would be quite the opposite. However, after the subject first caught my attention I began to read about the methodology, which inspired me to do this dissertation; and first thereafter I thought what kind of data would be needed to support and prove my dissertation. I acknowledge that the opposite could have been done as well.

Furthermore, my dissertation is not only based on the chosen researchers' methodology. In order to make a cogent dissertation I have taken their theory of science as a lens through which I study. This is also done in order to explain on a meta-level how this dissertation contributes to the evolution of science within this field. I will return to this matter collection in my delimitation. Finally, I will introduce readers to my analyses and findings.

It was my original hope that this dissertation could simplify the field of creativity and innovation management. This was my main motivation. However, the readers should be aware of the complexity in this domain and expect it to appear in the analyses. In order to give a coherent and adequate picture of the domain I will have to demonstrate this complexity also.

On the next page you will find a figure clarifying how the dissertation eventually will lead to findings within the subject of investigation. It is my hope that the figure, in some way, can be a help to you throughout the dissertation. The figure shows how a subject is narrowed down different levels through some sort of channel. The findings will appear at the lowest level, and are thus affected by the previous levels. The findings lead to an opening of the subject again, but we are now able to see it more clearly since it is better defined.

Alongside with the findings I will make sure to provide meta-texts so that the reader at all time is aware of what is happening, why it is happening and what it will all lead to. Let us begin.

Figure 1: The progress of this dissertation

Methodology

The aim of this dissertation is to make a status quo through existing literature from 2005-2010 in order to classify (a) certain paradigm (or paradigms) and perspectives within the creativity and innovation management field. This is done to give a better understanding of present research (2005-2010) by including the more implicit aspects of the subject of investigation. A definition of a field, I presume, is always good when you want to gain more insight within this specific field; and this goes for both scientists as well as managers, who are leading an innovative process. However, for obvious reasons, I need to use a proper tool for this. This section will look into my choice of methodology along with my theory of science. These are well connected and will be used throughout the rest of the dissertation.

The paradigm funnel – an introduction

Berthon et al. (2003) present a conceptual tool for literature analysis. They present the paradigm funnel as a research tool with a starting point in Kuhn's (1996) notion of paradigms. According to Berthon et al. (2003) a literature review can be seen as a central building block for any piece of academic research. The paradigm funnel focus on exploring, classifying and analyzing the composition and the dynamics of change within a body of scholarly literature. According to the authors many other literature review techniques unfortunately take the form of description, conscription, or of circumscription. The first ranges from brief catalogues of previous research to in-depth study-by-study, or article-by-article reports. Conscriptive literature reviews adds a little more insight to it: It comprises the opinion, proposition or finding from other available research to make a point of the researcher (Berthon et al., 2003). And finally a circumscriptive literature review introduces critical analysis and delimits what has gone before. All three ways of reviewing academic literature are of course useful, but Berthon et al. (2003) believe that it can be done even better. They argue (2003, p. 55) that reviews must "go beyond classification and criticism to provide a holistic overview of a body of literature and the assumptions that underpin it, from which hiatuses, paradoxes, and trends can be discerned." Berthon et al.'s (2003) technique, the paradigm funnel, also focuses on the deep assumptions of a particular research community. Therefore, the paradigm funnel can serve as a suitable methodology to apply in this dissertation.

Before going into depth with the methodology, I will take a look at the background or the core

assumptions of this view on science. As already stated, Berthon et al. (2003) base their theory on Kuhn's notion of paradigms. Kuhn's original book, *The Structure on Scientific Revolutions (*written in 1966, but I used the latest edition from 1996), is a theory of science. In order to establish coherence throughout the dissertation I will now explore the notion of Kuhn's worldview and use it as a lens for this dissertation before going further into depth with the paradigm funnel.

Theory of science: Kuhn

In 1962 Thomas Kuhn (1922-1996) presented a new concept to the philosophy of science, which has been widely used ever since. He argued that science does not progress via a linear accumulation of new knowledge, but undergoes periodic revolutions. Kuhn (1996) made the term 'paradigm' popular and presented a new view on scientific "truth". The reason for putting truth in quotation marks is in lack of a better word. Kuhn does not use the word truth, but through his notion of paradigms he describes how certain communities can agree on a view of how things are perceived. However, as Kuhn (1996) also describes how changes of paradigms bring scientists and their students closer to the truth, even though this is something that can never be found philosophically.

The Structure of Scientific Revolutions is not a prescription for how science ought to be practiced. Instead, the book has a descriptive focus, where Kuhn looks at the way knowledge has evolved within certain scientific disciplines (ibid.). Kuhn introduces Einstein's theory of relativity, Newton's law of universal gravitation and Copernicus' worldview among others to show evidence for this. Through an examination of these scientists' work he argues to have found coherence in the evolution of science.

One thing that is important to highlight is that Kuhn's book gives a look into the evolution of natural sciences (Kuhn, 1996). However, many scholars have used his definitions of paradigms in social sciences as well; especially after Burrell and Morgan popularized the term in 1979 with their book *Sociological Paradigms and Organizational Analysis*. I will now take a closer look at some of Kuhn's most important points since these affects the genesis of this dissertation.

Science as an incremental process

When dealing with science where does one begin? There are almost as many different views as there are people. Science originates from the Latin word for knowledge, so in that perspective science is equivalent to knowledge.

According to Kuhn (1996) science is interrelated with progress. It develops continually towards a higher understanding by a constant questioning the foundations of different competing schools. In order to understand this progress, I will sketch out the different phases.

In general, science is divided into three distinct phases. *Prescience*, which lacks a central paradigm, comes first. This is followed by *normal science*, which is when scientists attempt to enlarge the central paradigm. As anomalies build up science reaches a crisis at which point a new paradigm is accepted. This is termed *revolutionary science*. Now that I have presented the notion of paradigms I will explain these three stages and see how they affect this dissertation.

Paradigms

Before something can be classified as science someone needs to accept it. Through his explanations of paradigms Kuhn (1996) shows us how this is done. So to sum up, it is important that we understand the notion of paradigms, because first then are we able to understand science.

If you look up paradigm in the dictionary it is defined as "a set of forms all of which contain a particular element, esp. the set of all inflected forms based on a single stem or theme" (web 4). It derives from Greek and originally means pattern or model. A paradigm, according to Kuhn (1996), is not a rule, but can guide researchers in the absence of rules. Rules, Kuhn (1996) adds, derive from paradigms. Furthermore, paradigms guide researchers by direct modeling "as well as through abstracted rules" (Kuhn, 1996, p. 47). As Kuhn (1996, p. 47) notes: "normal science can proceed without rules only so long as the relevant scientific community accepts without question the particular problem-solutions already achieved". In other words, "A paradigm is what the members of a scientific community share" (Kuhn, 1996, p. 176). Even though it might sound simple paradigms are quite complex and determine larger areas of experience at the very same time. As Kuhn (1996, p. 128) exemplifies:

> The child who transfers the word 'mama' from all humans to all females and then to his mother is not just learning what 'mama' is or who his mother is. Simultaneously he is learning some of the differences between males and females as well as something about the ways in which all but one female will behave toward him. His reactions, expectations, and beliefs - indeed, much of his perceived world – change accordingly.

(Kuhn, 1996, p. 128)

In relation to science paradigms come in quite handy. Because researchers are working only for an audience of colleagues – an audience that shares his or her own values and beliefs – the scientist can take a single set of standards for granted, which are accepted within a paradigm. In this dissertation I will therefore look into a specific group of researchers within a specific topic and investigate what defines their paradigm. Thereby, the group is the starting point for my analysis. However, before I go deeper into this, I will provide the reader with a clarification of Kuhn's theory.

Prescience

As mentioned before the first of Kuhn's three phases of science is called prescience. This period is also classified as 'pre paradigm'. In this phase there is an ongoing debate about the definition of science. Normally, in this phase, there are almost as many different views on what science is within a certain community as there are experiments. Moreover, this period is characterized by frequent and deep debates over legitimate methods, problems to the standards of solution. This leads to a situation that creates the school characteristics of certain theories in the early stages in the development of a science, rather than anyone reaching some type of agreement. Before becoming a paradigm, a theory must appear better than its competitors, "but it need not, and in fact never does, explain all the facts with which it can be confronted" (Kuhn, 1996, p. 17). Furthermore, this process – with the emergence of a paradigm leading to normal science – affects the structure of the group that practices the field. The new paradigm implies a new and more rigid definition of the field, and those who do not accept that will have to isolate themselves or attach themselves to another group, another paradigm.

After the establishment of a paradigm science evolves within its boundaries. This leads us to

the next phase, which is characterized as *normal science*.

Normal science

In this phase, researchers work with observations, matching of facts and theory articulation. Their work does not always produce simple new information, but a more precise paradigm is obtained. All the data and information within a specific field is available; by analyzing it, hopefully, we can get a better understanding of the paradigm(s) in this specific scientific community.

Kuhn questions the fact that science is developed by the accumulation of individual discoveries and invention. Instead, he sees it as an incremental process where the synergy between the members of a specific scientific community leads to new revolutions. Kuhn (1996, p. 10) introduces the notion of *normal science*, which means "research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice." Moreover, normal science refers to the day-to-day work of scientists working within a paradigm. Furthermore, if these achievements share two specific characteristics, Kuhn (1996) refers to them as 'paradigms'. First of all, the achievements are sufficiently unprecedented, which means 'never before known or experienced', in order to attract a collective of adherents away from competing modes of scientific activity. Simultaneously, the achievements have to be sufficiently open-ended to leave all sorts of problems for the practitioners to resolve (ibid.).

Revolutionary science

At a certain point something occurs that questions the paradigm. Researchers find that a change in the 'rules' of the game can provide an alternative. This can either be because of diversity in the scientific field or because certain members specialize in that field and find that the paradigm cannot help them solve their problem (Kuhn, 1996). Often a paradigm developed for one set of phenomena is ambiguous in its application to other closely related ones. When scientists recognize that something has violated the paradigm-induced expectations it can lead to a scientific discovery (ibid.). In other words, it is an awareness of an anomaly within a certain paradigm that makes room for new discoveries. Quite often this is

related to a crisis, for instance when paradigms are under attack and thus subject to change. After a stabilized period of time an anomaly occurs and a researcher have to explore this. When the anomaly has become the expected within the research the paradigm theory is adjusted and a new paradigm is founded. Both are possible scenarios.

Philosophers of science have repeatedly demonstrated that more than one theoretical construction can be placed upon a given collection of data (Kuhn, 1996). Discoveries, in this perspective, most often does not occur when a question is appropriately asked (Kuhn, 1996). Therefore, discovery involves an extended, but not necessarily long, process of conceptual assimilation. In other words, the process of science and emerging paradigms become an iterative process with ongoing debates, research and crises. Novelty is what is needed in order to move forward, however, as Kuhn (1996, p. 64) notes: "In science (…) novelty only emerges with the difficulty, manifested by resistance against a background provided by expectation". Furthermore, where change of paradigms differs from change of theory is in its comparison; theory is compared with nature whereas paradigms are compared with each other (Kuhn, 1996).

Crisis leading the revolution

It is when scientists are confronted with anomaly or with crises that they change their attitudes towards existing paradigms (Kuhn, 1996). This also follows a change in the nature of their research. "The proliferation of competing articulations, the willingness to try anything, the expression of explicit discontent, the recourse to philosophy and to debate over fundamentals, all these are symptoms of a transition from normal to extraordinary research" (Kuhn, 1996, p. 91). This happens when revolutions occur and new paradigms take over. All crises, in Kuhn's (1996) perspective, begin with the blurring of a paradigm, as described above, and the consequent loosening of the 'rules' (Kuhn, 1996, p. 84). If this ends in a rejection of a paradigm, it must simultaneously lead to a decision to accept another (Kuhn, 1996). Therefore, a paradigm can only be declared invalid if an alternative is available to take its place. This means that a crisis in itself is not enough for a change of paradigm; a new proposal has to be headed in the right direction. This only applies to the evolution of paradigms and not to the evolution of science. Obviously, new knowledge can replace both ignorance and knowledge of any incompatible type without the destruction of any part of past

scientific practice.

Kuhn (1996) defines a change of paradigm as a revolution. This usually involves a significant shift in the criteria determining the legitimacy of both problems and of proposed solutions. As Kuhn (1996, p. 109) describes "paradigms provide scientists not only with a map but also with some of the directions essential for mapmaking. In learning a paradigm the scientist acquires theory, methods, and standards together, usually in an inextricable mixture". Within this crisis, Kuhn (1996) adds, there is a shift from the cognitive to the normative functions of a paradigm; from map to map-making.

In order to understand the process better I have made a figure that shows what happens in the different phases. At the top level of the model the different phases are described and under them I have shown the outcome of these three phases; all of it is seen through a time line.

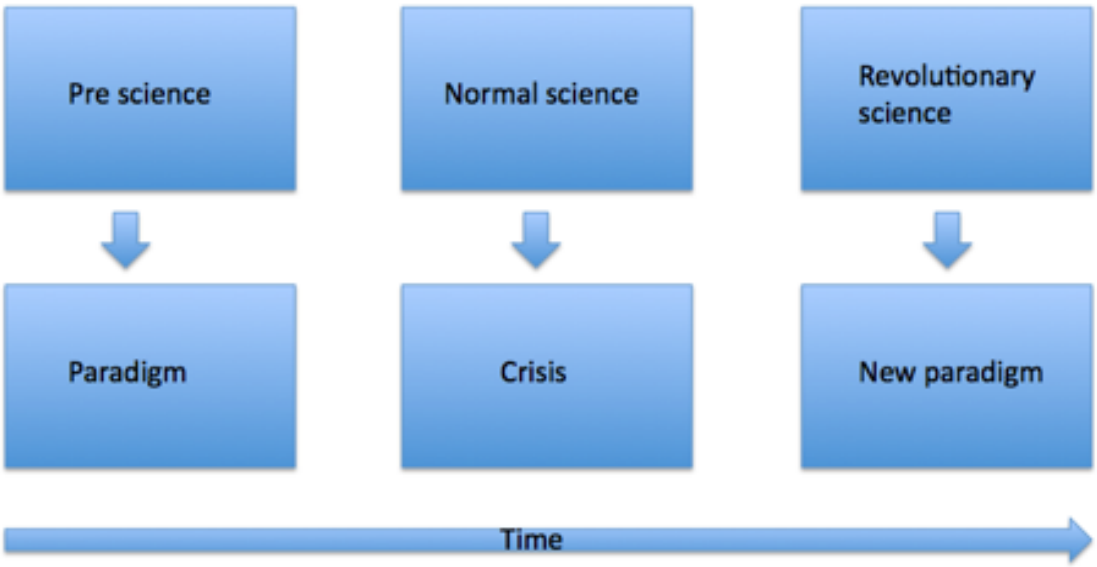


Figure 2(1): The evolution of science

According to Kuhn (1996) the study of paradigms is what mainly prepares a student for membership of a particular scientific community. But it can sometimes be difficult to look at the lens through which you do your studies. It is my hope that this dissertation can help members of a specific community gain awareness of this lens. It is sometimes necessary to step out of a group in order to observe it, because things are more complicated if you are standing in the middle of things. "Men whose research is based on shared paradigms are

committed to the same rules and standards for scientific practice" (Kuhn, 1996, p. 11). Therefore, I presume, it is sometimes good to question these beliefs and more importantly to be aware of them. In that perspective, this dissertation will help create a better understanding and articulation of a specific paradigm.

I have described Kuhn's phases of the evolution of science above. In the following I will go more into details with the previously mentioned paradigm funnel-methodology. I will make use of Berthon et al.'s (2003) methods, based on Kuhn's (1996) theory, in order to make an insightful literature review.

The Paradigm Funnel – continued

First of all, Berthon et al. (2003) suggest that the paradigm funnel should be used as a tool for both doctoral students and other researchers that are faced with a heterogeneous body of literature. They see literature reviews as a central building block for any piece of academic research, because new knowledge is built on the foundation of a review of existing literature. Furthermore, Berthon et al. (2003) define the paradigm funnel as an insightful literature review, since the methods go beyond classification and criticism to provide a "holistic overview of a body of literature and the assumptions that underpin it" (p. 55). The methods used in the paradigm funnel can help researchers confronted with a diversity of scientific papers ranging from mathematical models to qualitative studies and empirical experiments. Basically, the paradigm funnel is a tool that enables researchers to explore, classify and analyze the composition of and the dynamics of change within certain literature (Berthon et al., 2003). Berthon et al. (2003) explain further that in the social sciences in general the term paradigm is equal to the deep assumptions of a particular research community. According to Guba and Lincoln (1994) social scientists, in general, argue that:

> (1) a paradigm is a set of basic beliefs or assumptions, (2) that these beliefs are essentially metaphysical (and thus comprise fundamental ontological, epistemological, methodological and axiological assumptions), and (3) being metaphysical in nature, they are essentially articles of faith, for their ultimate veracity cannot be unequivocally established.

(in Berthon et al., 2003, p. 56).

However, the problem is that, according to Berthon et al. (2003), this perspective on paradigms has led to controversies within the social sciences, also known as the paradigm wars and reconciliations. What these discussions have been missing, according to Berthon et al. (2003), is the procedures where empirical observations are reconciled with existing theory. It is this reconciliation between the observed and the assumed that Berton et al. (2003) find important to highlight with their methodology.

A paradigm is more than just underlying assumptions. Kuhn (1996, p. 175) defines it with "the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community". Furthermore, it is in this entire constellation, from deep, implicit assumptions to explicit tools, practices and the selection of problems and facts that we find the dynamics within a paradigm that leads to its rejection and replacement. As Kuhn (1996) describes it in his conceptualization one paradigm is over time replaced by another. This revolution is brought by the disjunction of core assumptions and observed facts of nature. That is why this is an interesting place for analysis.

The four levels of analysis

In order to go more in depth with the paradigm funnel as a methodology, I will now look at the inspiration and definitions taken from Kuhn. First of all, Kuhn (1996, p. 25) identified three focus areas for scientific investigation:

1. The determination of significant fact
2. Matching of fact with theory
3. The articulation of theory

This is also the foundation of the paradigm funnel and distinct the four levels, which range from the explicit observable to the implicit unobservable (Figure 3, next page). The reconciliation between each level is similar to Kuhn's (1996) three focus areas. Moreover, the dynamics of a paradigm is a result of the ongoing interplay between deep assumptions and observational facts. And, as Berthon et al. (2003) explain, anomalies are not discovered only within the deep assumptions, but rather between the four levels. Anomalies on one level can potentially be resolved by recourse to a deeper level. If this fails, one has to resort to think

theory and eventually the deep assumptions underpinning it.

In order to use the paradigm funnel as a method the researcher first of all has to classify the chosen scientific articles into four levels (Berthon et al., 2003). The four levels starts with the empirical observations. These can be considered *explicit* facts. This level deals with what is observed in nature. The second level is the analytical methods. In other words the focus of this level is the ordering, structuring, and manipulation of data. The third level treats the specific theories. These can either be verified or explored. And finally, the fourth level questions the core assumptions of an existing theory; these can be ontological, epistemological, methodological and axiological assumptions. After the classifications are made the researcher has to find anomalies if there are any in order to examine if there is a paradigm shift (ibid.).

Underneath is a figure with the levels as presented by Berthon et al. (2003):

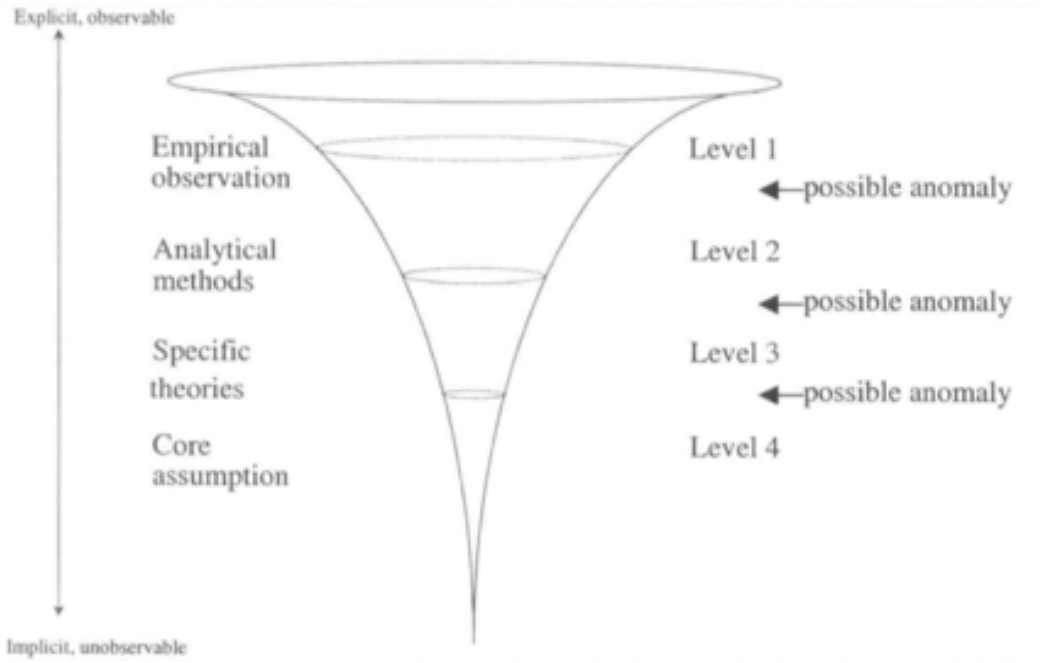


Figure 3: The paradigm funnel by Berthon et al. (2003)

After this presentation Berthon et al. (2003) do no present any more tools. It is now up to the specific researcher to carry out their research from the best of their knowledge and beliefs. Berthon et al. (2003) do not declare how to collect the specific data needed for an analysis, so

in the next section I will explore some of the other scientific papers that have used the paradigm funnel methods to see if they can help broaden the perspective on these two weak points.

Previous research with the paradigm funnel

In order better to understand the possibilities of the research method I have looked upon other researchers using it. Even though Berthon et al. (2003) address the need for using the paradigm funnel for doctoral research programs in general I only found three articles using the methods. I searched on various scientific databases including Business Source Complete, JSTOR, Scientific Direct, Sage Journals, SpringerLink, and Wiley Online Library. In this section I will briefly go through these articles, their data collection and findings. This descriptive part of the dissertation is needed in order to understand how to use the paradigm funnel framework more thoroughly.

'Marketing Segmentation' literature review

Berthon et al. (2003) describe how they used the paradigm funnel in a literature review for marketing segmentation during a ten-year period in the 1990s. To restrict the review they only went through articles "published in what are generally considered the most rigorous and thoughtful American and European journals" (Berthon et al., 2003, p. 58). This was their starting point, especially figuring out what data should be part of the analyses. Berthon et al. (2003) used a segmentation method with only the highest ranked marketing journals according to certain lists. This I can include in my data collection as well. Furthermore, in the interest of manageability it was decided to limit the time frame of only a decade. In total, a number of 37 articles were used in their study for "illustrative purposes" of the paradigm funnel method (Berthon et al., 2003, p. 60).

Bethon et al.'s (2003) data collection obviously affected their findings. After using the paradigm funnel (classified articles and moving forward level-by-level) the authors found that there was an unequal distribution of research between the levels. However, this is expected:

> In the course of normal science [cf. Kuhn], once a paradigm has become established one

> would expect the collective research endeavor to take place at the shallowest levels of the funnel, namely empirical observation (…) By corollary, one would expect a small proportion of work to be concerned with matching fact to theory and even smaller amounts of research devoted to theory building or deep assumptions.

(Berthon et al., 2003, p. 60)

Nevertheless, this was not quite the fact in their case. Surprisingly, there was a small amount of empirical work and a larger focus on mathematical tools and techniques. This, according to Berthon et al. (2003), could start considerations on whether this research signals a paradigm shift. Since empirical work fails to match with established theory there becomes a focus on articles on the more implicit levels within this scientific group of researchers. Nevertheless, in order to find out if this is true, researchers ought to examine the previous decades of the segmentation literature.

This was the first part of their analyses: to see how the articles divided themselves on each level of the funnel in order to find out what the primary objective of each paper is according to the four levels of the paradigm funnel. However, no conclusions could be made from that according to Berthon et al. (2003). A larger amount of data was necessary.

Next, Berthon et al. (2003) went to analyze the contribution made by specific journals to specific facets of a paradigm (p. 61): "This allows the researcher to assess the bias introduced into a body of literature by the contribution from specific journals or even specific authors." The findings showed that the US journals concentrate primarily on methods and theory while the European journals focused more on deep assumptions and empirical studies. In that perspective, the inclusion of a range of journals can be fruitful if you wish to see how science evolves differently around the globe. In other words, a wide collection of journals would increase chances of finding articles to each level of the funnel.

Finally, Berthon et al.'s (2003) results showed anomalies between observation and assumption, which is a shift in ontological direction within that research community. Two articles in their study did show that. The authors acknowledged two competing paradigms within the literature, one was considered to fall broadly within the definitions of positivism and another social constructivism. They went through all the other articles again and examined whether these – implicitly or explicitly – relied upon positivist or social constructionist assumptions. This led to their conclusions of competing paradigms within

marketing segmentation literature.

'Electronic Service Quality Management' literature review

Barrutia and Gilsanz (2009) describe how they through a literature review found research gaps and indicate possible routes for future investigation within their specific research community. The subject was Electronic Service Quality management (e-SQ) and the reason for doing their research was in order to "systematize and critically analyze e-SQ literature in order to facilitate, stimulate, and orientate future research into this topic" (Barrutia and Gilsanz, 2009, p. 30). In this perspective, the aim as such is not to define different paradigms, but to make a status quo within this community. In total 37 papers were selected for their analyses. However, unlike Berthon et al. (2003), Barrutia and Gilsanz (2009) had another method for data collection. They used a five-year period and mainly used Google Scholar to identify relevant research in the area. Also, the business and management journals included in the Social Citation Reports were specifically searched.

The outcome of Barrutia and Gilsanz's (2009) analyses is not described as thoroughly as with Berthon et al. (2003). The first conclusion is that e-SQ research often takes an exploratory, data-driven approach. A theoretical framework has rarely been used. This shows that much more research is needed within this subject on the second, third and fourth level of the paradigm funnel. It indicates a normative approach for using the funnel, which is quite different from Berthon et al. (2003). If no science is found on these three levels, scholars, according to Barrutia and Gilsanz (2009), are requested to focus on that in order to broaden up the field of research.

After the use of the paradigm funnel Barrutia and Gilsanz's (2009) critically considered criteria such as the number of quotations, methodological merit (e.g. buyer samples vs. student samples) and the degree of complementariness in relation to previous studies, in order to determine the relevance of each paper. After this process five papers were selected as representative of extant research within the e-SQ field. Furthermore, these five articles were put under more detailed investigation in order to define gaps or challenges for future studies for researchers (ibid.).

I do not want to go too much in depth with Barrutia and Gilsanz's (2009) findings, since these are not that well connected to the paradigm funnel. The paradigm funnel in their perspective

was meant as an eye opener for a relatively new scientific field before the use of another methodology. However, they did find that "theories developed in a specific geographical context should be subjected to validation in investigations in different contexts and cultures" (Barrutia and Gilsanz, 2009, p. 44). Furthermore, the authors acknowledged that a question to be investigated further is whether there is "one e-SQ scale that fits all or whether multiples scales should be developed" (ibid., p. 44). This could indicate that they through their paper have started a discussion regarding the deep assumptions within this field of marketing.

Nevertheless, they do not use Berthon et al.'s (2003) conceptions to describe this. In order to link it to Kuhn, the area of e-SQ could be described as a pre-science phase. No certain paradigm has been clarified, which the paradigm funnel method has helped with understanding. Their use of the method has been somewhat different than Berthon et al.'s (2003), however; it shows that the method can be applied in various ways and with various purposes.

'Brand management' literature review

Heding et al. (2008) have used the methodology in order to explore the statement 'what is a brand?' They went through two decades of literature within the field of brand management in order to define the different approaches. Over the 20-year period Heding et al. (2008) categorized the literature within brand management into seven clusters, representing fundamentally different perceptions of the brand, the nature of brand-consumer exchange and how brand equity is created and managed.

Heding et al. (2008) declare that three questions need to be answered when conducting a paradigm funnel analysis: What is the subject of interest? What is the time span? What are the most relevant publications within a specific field?

Like the two previous investigations mentioned above Heding et al. (2008, p. 32) chose "the most influential journals" within their field as their data, which was the three most influential marketing journals according to Hult et al. (1997) and Hackley (2001) (in Heding et al., 2008). However, in order to get a broader perspective Heding et al. (2008) also included a European journal. In total, 250 articles were used as empirical material.

Unlike, Berthon et al. (2003) and Barrutia and Gilsanz (2009), Heding et al. (2008) present a bit more hands-on guideline for how to conduct the actual analysis according to the paradigm funnel:

> Divide all the research articles into four piles reflecting the research levels; conduct a qualitative analysis of each pile; now compare the findings from each pile. You will now have a clear picture of the paradigmatic content of the scientific discipline in question (...) Beside gaining a varied, yet accurate, picture of the paradigmatic content of the discipline, you will also be able to detect discrepancies. Discrepancies in the scientific discipline will be revealed through a wide gap between "top" and "bottom" of the research articles.

(Heding et al., 2008, p. 36)

Furthermore, Heding et al. (2008) continued working with the paradigm funnel and took it one step further. Through some new research definitions, including the *dynamics* to the paradigm funnel, they analyzed periods of stability versus turbulence in order to find out exactly where the paradigmatic change occurred. This was done in order to find the drivers of the revolutionary science (cf. Kuhn). Their findings showed that groundbreaking theories were formulated at the peaks of paradigmatic turbulence; since this is the time where level-four articles were published questioning the deep assumptions (ibid.). According to Heding et al. (2008) this period comes as a reaction to the increasing level of turbulence. All of Heding et al.'s (2008) findings led to the discovery of two paradigms and seven groundbreaking theories, which they define as 'approaches'. Moreover, these approaches are defined as milestones in the paradigmatic development. The approaches are distinctly different, but at the same time able to coexist under the overriding paradigms.

As the three cases have showed us there are distinct ways to use the paradigm funnel. The methodology is somewhat abstract and has been used for different purposes since the initial examination was made. Presumably, one thing to keep in mind is that the studies of the three cases have somewhat different research questions even though they do have similarities. This is something to keep in mind when conducting my own analyses.

Methodological conclusions

The literature review method, the paradigm funnel, is based on Kuhn's notion of how we define science. Through three different stages paradigms provide scientists with essential directions for future research within a specific field. Basically, through a literature review the paradigm funnel divides the data into four categories whether it is dealing with empirical observations, analytical methods, specific theories or core assumptions. Furthermore, these categorizations can be used to locate anomalies between the data that helps us characterize the shared beliefs of this specific community. Through the use of the method in three different cases, we have seen that the method can be applied and used for different purposes. With this in mind, it is now my purpose to find a heterogeneous collection of data (literature) within a specific field of scientists (creativity and innovation management) and use the methods in order to answer my research question: *What are the different perceptions, explained by different paradigms and perspectives, appearing in the journal 'Creativity and Innovation Management' in the period of time between 2005-2010?*

Data collection

Data collection is simply how information is gathered. There are various methods of data collection such as personal interviewing, telephone, mail, or a search on the Internet. Depending on different assignments, these methods can be used separately or combined. Since this dissertation use a methodology based on literature reviews, I presume the data needed should be detailed literature representative for a specific research community.

According to Morris et al. (2009) finding a specific journal with exact articles for research can be a very complicated affair. Since the 1990s five noteworthy changes have occurred which have affected this process. The first and, according to Morris et al. (2009), the most significant has been an increase in the number of business academics and students. The second important change has been an increase in the number of academic journals published. A third change has been the transformation in the means of delivery; from analog to digital. In 1991 the number of journals electronically distributed was 27 and by 2006 the number had grown to more than 20,000 (ibid.). A fourth important change has been an increase in the average number of articles read by academic researchers. And the final and fifth important change has been an increase in the diversity in the content of publications. These reasons have made the search for the right articles very complicated (ibid.).

Today's society in the field of business management becomes broader and broader. This has led to more specialization and, presumably, to more paradigms, because these are attached to each specific field. Therefore, a narrow and precise community of study must be preferred.

As we have seen in the cases above the data collection starts with choosing the relevant journals containing the articles to use for the research. However, in order to be more precise in this specialized landscape, I start the gathering of my data collection by looking at several databases, before moving on to journals, and at last I look at articles. I have sketched this in the figure below in order to show the process. This illustrates the fragmented world science can be seen in, and emphasizes that my research has to be seen within a narrow field with many other different subjects surrounding it.

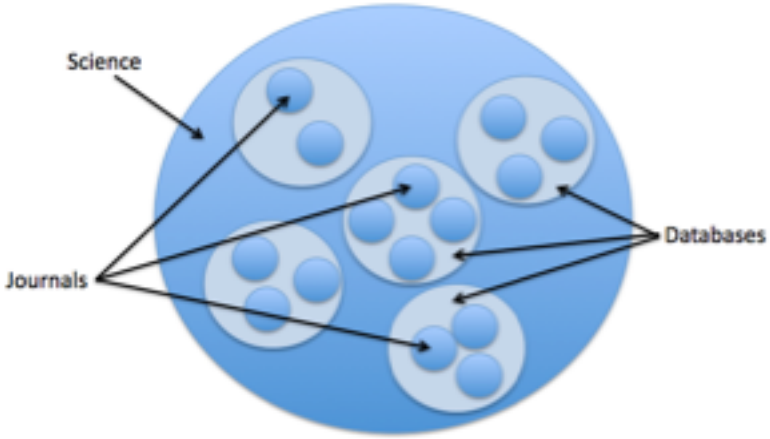


Figure 4: The fragmented world of science

Databases

My focus on creativity, innovation and management all together could take me in many directions. First I began to research more broadly in several of the big databases for scientific journals.

My first search was in Business Source Complete (web 5). The coverage offered by this collection of databases goes back as far as 1886. Furthermore, it contains more than 1,300 journals. Several journal-ranking studies (I will come back to those) reveal that Business Source Complete is the superior database for full text journals in all disciplines of business, including marketing, management, MIS, POM, accounting, finance and economics (Ibid.).

Science Direct is another search engine. With a quick search within the category of Business, Management and Accounting 974 titles for both books and journals were found (web 6). Like Business Source Complete, Science Direct explains a lot on their website, for instance why they are the leading database in the scientific world (web 7).

Continuing my research after this just made everything more complex. I also looked at JStor, Sage publications, SpringerLink, and Wiley-Blackwell Interscience. Through none of these searches did I find argumentation for choosing one over the other. All of them had interesting articles and journals related to my subject written by acknowledged and well-known professionals. However, I needed to delimit my subject and be specific with a research community.

I changed my tactics and went to read rankings and reviews of the different journals. Obviously, I have to argue academically why I include certain journals and not others.

Journal rankings: The ranking process

In order to choose the best journals for my studies I will first look at the ranking process. Evidently, the best possible solution for ranking would be to replicate the peer review process. However, given the time, resources and specialist knowledge needed to conduct these this is not a possibility. Therefore, according to Morris et al. (2009), it is common practice to use five methods to assess the quality of the journals. And as Morris et al. (2009: 1444) state: "none of which is without limitations or free from criticism". The five methods, described by Morris et al. (2009) are as follows:

- **Individual citation**. This is a measure of the number of times the work or author is referred to in articles from a select range of journals and occasionally other forms of publication.

- **Institutional lists**. This approach relies on an academic researcher, school or department to compile a list of journals and then rank them according to perceived quality and standing within the field.

- **Peer surveys**. Journal rankings in this category are typically derived from ratings made by members of a research society or network of scholars and most often the focus is on a single sub-field.

- **Citation studies**. The most favored method for assessing journal quality. The standard measure drawn from the reports is the journal citation impact factor, which refers to the mean number of citations for articles published in a particular journal in articles within other journals.

- **Derived lists**. These lists are drawn up using data originally intended for another purpose. High quality journals are high quality because a high proportion of the articles were contributed by authors from institutions rated as high quality by other means.

In accordance with these five ranking methods, Morris et al. (2009) argue, that there is a link

between what is hot now and what has the best score. One could ask if a specialized field has the possibility of being ranked high on citation studies, albeit them being front runners, if this field has little interest on other marketing and business fields. The same could be said for individual citation. Furthermore, one could question if some scientists are better at communicating their messages instead of doing the best research. Of course, these are rhetorical questions; however, my point is that rankings might not be the perfect way to choose journals from.

When I continued to try and find the best journals for my research I found myself in total confusion. I wanted to investigate if CBS had any institutional rankings, and in an ongoing debate, which can be read in the internal magazine INSIGHT at CBS, it is pinpointed that CBS does not have a journal ranking. Many other institutions have their own ranking system (Morris et al., 2009), but this is not the case at CBS. However, as Hansson (web 8) comments, there is a great diversity between the professional skills and capabilities at CBS. Therefore, CBS as a unit cannot conclude only one ranking for certain journals. However, what Hansson mentions is an advantage; it is positive with a variety of skills and can lead to a dynamic environment.

The Scientific Community

All in all what these rankings did was cause confusion. It was as Socrates once said: The more I learn, the more I learn how little I know. Today's business and management researchers draw on many different theoretical approaches, methodologies, and analytical methods (Morris et al., 2009). Within different disciplines of social sciences sub-disciplines emerge and coalesce around a set of ontological, epistemological and methodological norms. In other words, and as already stated, science is a fragmented and specialized world. Even though rankings of journals, institutional tests etc. define which journals are more recognized than others, it is still not the only reason to choose one journal over another within a specific field.

In order to continue my argument academically I return to Kuhn. As previously mentioned, a paradigm does not govern a subject matter, but rather a group of practitioners. As Kuhn (1996, p. 180) describes "Any study of paradigm-shattering research must begin by locating the responsible group or groups". This is where Berthon et al. (2003) somewhat differ from Kuhn (1996). The methods used in the examples in the previous section all begins with the

subject matter and *not* the group of practitioners. Furthermore, and in order to elucidate the difference between one journal and more journals, we can see the first as a defined group. After all, the difference is that we have one set of editors going though all the articles of only one journal, whereas we have many different editors going through all the other journals.

Creativity and Innovation Management

Kuhn (1996) describes how a man can be attracted to science for various reasons. He can be attracted to the desire of being useful, the excitement of exploring new territory, the drive to test established knowledge or the hope of finding order. This dissertation has its focus on the last point. It is my hope that I can acquire and communicate a better understanding of a certain community, which exists among a certain scientific group of practitioners, through the use of the paradigm funnel,

One journal that has caught my attention throughout my initial research was 'Journal of Creativity and Innovation Management' (hereafter CIM). Its name is identical with my exact subject of investigation and it deals with my area of interest:

> The journal's central consideration is how to challenge and facilitate creative potential, and how then to imbed this into result oriented innovative business development (...) Today, successful operations must go hand in hand with the ability to anticipate future opportunities. Therefore, a cultural focus and inspiring leadership are as crucial to an organization's success, as efficient structural arrangements and support facilities. This is reflected in the Journal's contents.

(web 9)

Even though this journal has my interest, it still has to live up to some academically standards before I can decide whether it represents a specific scientific group.

Rankings may not be the only reason for choosing a journal; however, it is a starting point to see if the journal fulfills the norms of the academic world. CIM does appear on several rankings (e.g. see Journal Quality List (web 10) with a list of 19 institutional rankings or, according to Morris et al. (2009), the most thorough list, ABS' Academic Journal Quality Guide (web 11). In these lists CIM is mainly ranked just below the middle. Nevertheless, this can have many reasons (cf. the last section).

Next, in order for me to determine if CIM is a reliable and professional journal I went through their editorial board (web 12). I acknowledge a few established names, which I have seen before in my time as a student. However, this is not enough. I wrote the three editors to ask them what made CIM a leading journal in the intersection between creativity and innovation management. Visscher (private email, 2010) explained that the review process is double-blind with normally two reviewers per paper. The rejection rate is 70-80%. Furthermore, the papers that do get accepted normally need two or more rounds of review and revision. The normal time from a first submission to actual publication is 9 months to a year. This, I believe, adds to the genuineness of the journal.

Kuhn (1996) mentions that heterogeneity within the studied group is important. Nevertheless, even though I include only one journal three things pinpoint the heterogeneity. First of all, the group of editors consists of three people. It is not just one person. Secondly, the contributors are a much wider group of 55 scientists from various parts of the world (web 13). Lastly, my research is based on a five-year period. Presumably, this scientific community develops throughout the years. Nonetheless, I acknowledge that the field might be more homogeneous when you only need to deal with one journal.

One journal of investigation

According to my findings, no other analyses, using the paradigm funnel, have included only one journal in the data collection. However, in order to be true to Kuhn's (1996) starting point of a paradigm (focusing on a group rather than a subject), this way of investigation can reveal a more precise use of the methods. I acknowledge that this might also have an impact on the analyses. On the other hand, it would also be interesting to question both Berthon et al. (2003), Barrutia and Gilsanz, (2009) & Heding et al. (2008) about their methods: How are they able to define who belongs to what community by collecting articles from an unnumbered amount of different journals? Many of the articles in the different journals might not even belong to the same group of practitioners. Reversely, as Berthon et al. (2003) describe, some journals have a larger amount of articles at some levels of the funnel (e.g. European journals focusing on empirical observations and core assumptions and American journals on the other two levels). It could turn out to be a problem for my dissertation, if none of the articles chosen discuss the core assumptions on level 4. However, this could still be the

case if I include more journals since I do not know which journals will contain these. However, statistically a larger amount of journals would minimize the risk of ending up in this situation. On the other side, sticking to one journal can provide a more precise view on one scientific group.

Data collection in CIM

By including only CIM, my data consists of all the articles within this journal from January 2005 – December 2009. The reason for choosing this time span is given the focus on 'recent' research. The journal is published every three months, which gives a total of 20 issues containing 169 articles. Because of limitations a longer time span has not been included.

Not everything is included from what is published in each journal. Besides the actual articles every issue contains a brief introduction (1-3 pages) to the articles within that specific journal. Sometimes this introduction also includes a short summery of what has been going on in the previous three months in the world of creativity and innovation management. I have not used any of the introductions as data, since my focus is on the articles themselves. I acknowledge that the introductions could contain some useful reflections from the editors. Nevertheless, I need to delimit the dissertation and therefore they will not be included. As the reader will experience in the analyses section the articles themselves contain much complexity.

Within the 20 issues there is another 19 book reviews (1-2 pages long). I have not incorporated these book reviews in my search either. Obviously, I could include them and see if there is a certain link between the chosen books and the articles in the journals. However, I think it is important for me to focus on my main subject, which is the ongoing debate between the practitioners of this community (hence the articles). By including these books I do not stick to my chosen data collection methodology. For example, I do not have any idea how the review process have been for the author(s) of any of the books, and the books have not had the same editorial board, which is a part of CIM.

Finally, an additional 5 conference reports are a part of the journals' 20 issues. All of them are less than 2 pages long and do not go into depth with any subject. They describe the key-topics of the discussion along with a presentation of data about where the conference was held and when the next conference will be held. Again, for the same reasons as above (delimitation and change of methodology) I have not included these reports as part of my data collection.

(Please see a document with all of the included articles in chronological order in accordance

with appearance in CIM on page 90)

Data collection conclusions

Data collection is how information is gathered. In prior research, using the paradigm funnel methodology, data collection has been the way to delimit the field subject to investigation. In prior studies the members of a specific field have been selected from the most recognized journals according to the individual scientist.

In this dissertation a focus on a more narrow community from the members of only one journal has been chosen. This has been done partly because a larger amount of scholars and a growing number of publications have done data collection a more complex matter than it was just 10 or 20 years ago. The inclusion of some journals over others, in this perspective, is a difficult matter to agree upon. Secondly, this has also been done because the journal CIM represents the core subject under investigation.

Before my analysis I will present a brief delimitation in order to make the remaining uncertainties clearer.

Delimitation

Before starting my analyses I need to clarify a few final aspects. This dissertation has a strictly theoretical focus. I do not want to add new empirical research to the theories nor will I question whether prior research is valid. Instead, I will try to get an understanding of how science is defined by the members of a specific community from 2005-2010. What are the different paradigms and perspectives? This is done through analyses and articulations of both implicit and explicit information by looking at research articles made by members of the community (contributors of the journal of CIM) as the only data collected. I do not include other data.

So far I have dealt with a concepts and definitions of creativity and innovation management. To get a better understanding of this dissertation I could have included a smaller section with definitions of how I perceive these aspects. However, this is not inline with this dissertation. Instead the outcome of the analyses will provide this understanding. In the previous sections I have tried to present my understanding of how I approach this community of practitioners, and thus the definitions will have to wait to be explained until the community has spoken.

Finally, an important point to make is that when you make a generalization about something, some parts of the whole will disappear. I acknowledge that my analyses cannot contain all the important points made by specific authors. The data that I base my analyses upon is only a small selection of the whole content, but in order to verify the outcome of my analyses I will explain my reasoning for every step I intend to make. This has also been the process so far through the dissertation. I have taken a qualitative research approach and thus I see my analyses within an interpretive-constructivist framework. I acknowledge that another researcher may end up with a different result. This is why I emphasize the necessity of presenting the reader with a detailed description of the entire research process. Moreover, I acknowledge that I cannot include all of the content from each article. It will be a selection made subjectively in accordance with the purpose of this dissertation.

Charles Mingus, a famous American jazz musician, once said that making the simple complicated is commonplace; making the complicated simple, that is creativity. This is the process that is about to unfold before you as a reader. I acknowledge that simplifying implies a reduction of the data and hence an interpretation of what is most important. Therefore, my

results have to be seen in this light. Other researchers may come to other conclusions; however, in line with an interpretive-constructivist paradigm, this is inevitable.

Analyses

Introduction

In the previous chapters I have described my approach to the subject, the data, the theory and methodologies. Now it is time to bring all these parts together. In order to provide the reader with an understanding of which direction this dissertation is heading, I will now present an overview of the analyses section.

In the first part of my analyses, the data is classified in accordance with Berthon et al.'s (2003) paradigm funnel framework into level 1, 2, 3, and 4. The articles have been clustered as to which level they belong to. This clustering serves the purpose of illustrating the process while presenting some of the themes in the articles.

Second, making a new cluster analysis on each level has made it possible to split the articles into sub-groups of relating articles. This is done with the different paradigms and perspectives as the focus center. The main objective with this part of the analyses is to give a clear picture of the content of each pile or level of the paradigm funnel. Especially this section is somewhat complex because this is where the 169 different articles will be presented more thoroughly.

The third part of the analyses section concludes on the cluster-findings and create a model to explain the different viewpoints. Furthermore, this section will define and look into the relationship between paradigms, perspectives and approaches.

Last, the findings from each pile of the paradigm funnel are compared in order to find out if any discrepancies occur between the levels, which reveal a gap between the top and bottom of the articles (cf. Berthon et al., 2003; Heding et al., 2008). This last part is also seen in relation to Kuhn in order to describe the major tendencies within the community of creativity and innovation management.

This analyses section should lead to the conclusion of my dissertation and a final answer to my research question:

What are the different perceptions, explained by different paradigms and perspectives, appearing in the journal 'Creativity and Innovation Management' in the period of time between 2005-2010?

Because of the complexity of the analyses here is a figure of the four steps of the analyses section. We proceed step-by-step until we can get an overview of the specific domain under investigation (at the top):

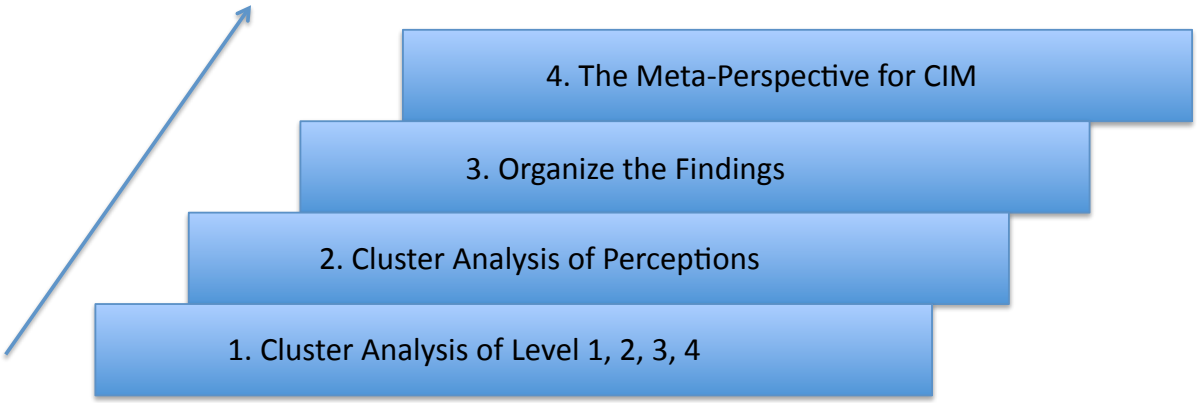


Figure 6: The Structure of the Analyses

Analysis - part 1

Getting familiar with data

When I first started to work on the dissertation I downloaded all of the 169 papers, which are part of my data collection. Prior to that, as you have read in the previous chapters, I had already begun investigating the journal of Creativity and Innovation Management in general. I read the articles one by one and underlined the important points. Furthermore, for every article I wrote half a page of summary with the main points plus additional comments in accordance with the article's theoretical framework, basic assumptions, underlining paradigms etc. Finally, I grouped the articles in accordance to Berthon et. al's (2003) paradigm funnel framework: Does the article belong to level 1, 2, 3, or 4: Is the primary objective of the article to collect and analyze data, to look at the methods by which the data has been collected, to change a specific theory, or to discuss the underlying ontology and epistemology? Basically, after reading each article I used Berthon et al's (2003, p. 57) questions posed by the researcher relating to each article. Each article was clustered in

accordance with the answer of the following questions:

> Level 1: What is observed "in nature?"
>
> Level 2: Are the mechanisms by which data is mapped to theory correct?
>
> Level 3: Are our theories correct?
>
> Level 4: Are our core metaphysical assumptions correct or appropriate?

Berthon et al (2003, p. 57)

When answering these questions I also had to decide the primary objective of each paper. After my initial reading and classification I went through all the articles once more. Not to read every page again, but to run through the abstract, my own comments, and skim the text in order to review some of the basic points. By doing so, I came to be more familiar with the data, but I also made sure that my initial classification was correct.

The classification of the articles in accordance with Berthon et al.'s (2003) framework is important, because the dynamics of a paradigm is a result of the ongoing interplay between the levels; the explicit, observable as well as the implicit, unobservable and between the surface facts and deep assumptions.

The next page contains an overview of all the articles on each level. I will now proceed to go through my findings and explain why certain articles are part of each level. This will illustrate the allocation procedure and afterwards I will discuss the important points from this process.

For a full classification of all the articles please see appendix on page 107.

Level 1: Empirical Observations

Most of the articles from CIM are classified on level 1 of the paradigm funnel. These deal with hands on analysis of what is observed in nature. In total 107 articles has the main objective to collect and analyze data. In general these articles start with an introduction to the subject of investigation. This can be the Organization Innovation Laboratory (Sundgren et al., 2005), Workers and their Willingness to Learn (Steijn and Tijdens, 2005), Does Networking Really Increase New Product Success (Ledwith and Coughlan, 2005) and much more. After an introduction to the subject a framework is most often laid out. Through what lens do the researchers perform their studies? Creativity and innovation management-literature has many inspirational sources: From a classical management point of view (Lassen et al., 2009), to

human resource theory (Jørgensen et al., 2007), network theory (Rose-Anderssen et al., 2008), and new process development literature (Buijs, 2008) just to name a few. Next, "what is being analyzed" or "what is the level for analysis" is presented. Is it organizations (Meer, 2007), partnerships (Bidault et al., 2007), individuals (Eikhof, and Haunschild, 2006), or countries (Dabhilkar et al., 2007)? Add to this a different approach of methodologies and slowly an idea emerges out of the big mix of articles with one common objective: Generation of data. I will go more in depth with these different views later in my analysis, but for now I will just acknowledge that they exist.

Level 2: Analytical Methods

When it comes to level 2 of the paradigm funnel only one article applies. This one article (Paleo and Wijnberg, 2008) deals with the ordering, structuring and manipulation of data (p. 3): "Different interpretations of innovation and innovativeness lead to different approaches and different methods to measure organizational output innovativeness". The main topic of discussion in the article deals with the concept of innovativeness and its affect on data analyzing. Innovativeness as a phrase can both be used to describe innovation as a product or an entire organization. These two opposing views of the concept are used to determine the importance of the innovation and therefore also provide two different measures of organizational output innovativeness. By doing a case description the authors outline the implications of the differences between the two methods, 'The Referent Innovativeness Index' and 'The Classification Innovativeness Index'. The case indicates that the mapping of the data in accordance with two different indicators of innovativeness give two different results.

Since none of the other articles deals with the way data is being processed, this demands some questioning. How can it be that only one article belongs to this level? Going through the other three cases, which I introduced in my methodology section, I find that Barrutia & Gilsanz (2009) in fact did not have any articles on level 2. However, it is probably worth mentioning that they only included 37 articles in their study. The reason for not having any articles on level 2, according to Barrutia & Gilsanz (2009), is simple enough, because electronic service quality management (their field of interest) research often takes an exploratory, data-driven approach and thus no real theoretical framework has ever been used. Moreover, in their case they only had a minimum of papers dealing with level 3 and 4 also.

Berthon et al. (2003) have also dealt with various reasons for explaining an unequal distribution of articles between the levels. In their view, this is expected (p. 60): "In the course of normal science, once a paradigm has become established one would expect the collective research endeavor to take place at the shallowest levels of the funnel, namely empirical observation". Furthermore, their study of the 'Market Segmentation Literature' showed a concentration of US journals dealing with method and theory, while the European journals were more concerned with the deep assumptions and empirical studies. Continuing this line of thought Berthon et al. (2003) also describe how single journals only has articles on some levels of the paradigm funnel and this is how they differentiate themselves from other journals.

There can be many reasons for only having one article on level 2. If I am to make an assumption, I find that there seems to be an agreement within this community of practitioners of which methods to use. In my own words and to my own experience the main subject in creativity and innovation management is about understanding human behavior (on many levels) and the reasons that govern such a behavior. It is my experience, after having gone through all the articles, that almost all of those dealing with empirical facts (level 1) have two things in common: They all investigate people, individuals or a group, and compare their specific behavior with the outcome of a specific process, which could be either a success or a failure. When the behavior or the precursor for a certain behavior has been analyzed, it is then compared to the outcome of a specific situation. Nonetheless, I acknowledge that only one article is part of level 2. Since this can be expected I will not go further into details with this.

Level 3: Specific Theories

At level 3 of the paradigm funnel the authors explicitly set out to investigate specific theories. This is the second largest pile of papers containing 52 articles. Like the diversity of level 1 articles level 3 has a big mix of subjects, levels of analysis etc.

One article presents a model of communicating user experiences to design teams (Visser et al., 2007), while another combines previous literature on champions and enthusiasm-creating systems in order to be able to analyze how enthusiasm is created and sustained in the Development of Radical Innovations (Sandberg, 2007). In the first article the aim is to find ways of presenting both information and inspiration, to give freedom of interpretation and provide direction and to stimulate ideation and argumentation in a design team. In the latter

case, their methodology was a combination of two theories, which broadens up for a new perspective. Again in a third article Brun and Sætre (2009) present a model by which ambiguity in New Product Development projects can be classified and managed. It is their assumption that managing ambiguity requires a constant harmonizing of the need for clarity and the need for novelty and flexibility, which is why they propose a new model. These are just a few examples included to illustrate the differences of the content of each article. Furthermore, many of the articles contained in level 3 incorporate some exploratory empirical research and/or propositions for other researchers to continue down the same path.

In line with Berthon et al's (2003) thoughts above a larger pile of articles on the lower levels (3-4) may indicate a lack of consensus between the members of the community. This is something I will investigate further in my analysis of anomalies between the different levels in the ending section of the analyses.

Level 4: Core Assumptions

8 articles are assigned to level 4 of the paradigm funnel. All of these articles are considered to focus on the deep assumptions made by the community members. Again for illustrative purposes I will include a few examples of the themes. Jeanes (2006) propose a Deleuzian perspective on creativity. According to Jeanes a mantra within this body of literature is 'create/innovate or die'. She proposes a different view, a different taken-for-granted truth. In line with these thoughts Styhre (2006) presents an empiricist image of novelty. And opposite those two articles Rehn & Vachhani (2006) represent an inquiry into the ontology of innovation: By juxtaposing the notions of novelty and copying, the article introduces the concept of 'post- originality' as a way to understand how time and reproductive acts can be understood in relation to the innovative. An important note to make here is that 4 out of the 8 articles on level 4 belong to a special issue of CIM focusing on 'Explorations as the New'. Three of these articles contain the same underlying deep assumptions, which is something I will look into in the next analyses part.

Analysis - part 1: sum-up

I have now been through the clustering process of the four different levels proposed by the paradigm funnel-framework. This is the first step out of four in my analyses section. However, there is one article that I have not classified: Rickards and Moger, 2006. This article

examines themes of the articles published from 1991-2000 in CIM. The study reveals nine overlapping themes where in each of which leadership plays a crucial role. Because the paper is an examination of previous studies in CIM this will not be included. After all, the themes are from a timeline previous to the one I am investigating.

But to return to the classification of the articles in accordance with the four paradigm funnel levels: The largest amount of articles assigned to level 1 indicates some coherence between the community members, according to Berthon et al. (2003). On the other hand, with a distribution of articles also on level 3 and 4 there is room for some conflict. Next, I will investigate the content of the articles before looking into this potential conflict.

Analysis - part 2

2. Cluster Analysis of Perceptions

Introduction

In this section, I will explore the deep assumptions of creativity and innovation management in order to gain a better understanding. By using the funnel taxonomy, so far it has been possible to isolate the articles into the four piles. Next, and like Berton et al. (2003), I will begin this analysis by taking a closer look at the content of each level of the paradigm funnel. Like Berthon et al. (2003), the starting point is level 4. Level 4 articles question the deep assumptions of the community, and by going into details with the 8 articles we can see if there are some big ontological, epistemological, methodological or axiological differences. Because only eight articles belong to level 4 the cluster analysis will only be part of the remaining levels of the paradigm funnel. Instead a more thorough study of the level 4 articles will be done one-by-one.

As we have already seen in the articles discussed in analysis part 1 the research within this community is very mixed. This has made it a difficult task to organize, divide and compare the articles with one another. My next classification of articles into paradigms will hopefully create a better overview and be the starting point for the organization of the rest of the articles.

I have included a summary of all the 8 articles that are a part of level 4. This descriptive part of the analysis is needed in order to gain an understanding of the content and the complexity of the domain on a deeper, assumptive level. Secondly, I have added arguments for and comments about the underlying deep assumptions in each article. Then, in the next part of the analyses, I will include points from all of the remaining articles on level 1, 2, and 3 and compare them with the findings in my level 4 articles. This is also in line with the technique used by Berthon et al. (2003). They propose to use the paradigms found at level 4 and apply them to the rest of the literature.

The following articles will not be presented chronologically in line with the time they appeared in CIM. Instead they will be presented in relation to the scientific paradigm they

belong to.

Level 4 analysis: Core Assumptions

Deleuze - Creating the "New" New

In her article, Jeanes (2006), propose a different view of creativity in contrast to what she thinks leads the management discourse. By reflecting on the notion of creativity, Jeanes (2006) argues that managers and employees can be more creative in an unconscious way. She draws on the thoughts of the philosopher Gilles Deleuze.

According to Jeanes (2006), Deleuze is of the opinion that creativity has a prescriptive character. Today, in Jeanes (2006) view, the common discourse states that there is a recipe for innovative behavior. It is all about getting the 'right' combination of skills to innovate. However, this affects the very basic characteristic and meaning of creativity: "We have become uncreative through this very process. In making creativity the current orthodoxy, and by focusing on the provision of an ontological basis for creativity (what *is it*?), we are actually subverting the true process of creativity" (Jeanes, 2006, p. 128). In other words, creativity has become normalized and we need to break the institutions in order to become creative once again. Scientists are socialized into these ways of thinking: "Working within the creative narrative effectively limits us to merely replicate, or think (or create) within these linguistic boundaries. Our ability to create the 'new' is limited by what we already know" (Jeanes, 2006, p. 129).

According to Jeanes (2006), Deleuze is not driven by the proposal of one true answer. Instead we should change *the way we think*. We need to think differently: "When we talk about creativity we do so essentially within the context of capitalism. The creative process, and its importance, is connected with the economy; we measure creative success in capitalist terms" (Jeanes, 2006, p. 130). In this perspective creativity has a value in itself. By including other perspectives on creativity we can thereby change the way we think about it and go back into being creative. As Jeanes (2006) adds, we should appreciate the more humble processes of thinking and working with problems. One way of doing this is by seeing creativity as a process of personal and perpetual crisis. A creator is someone who creates his/her own (im) possibilities, and this idea of working with problems becomes key. Creative work should not be constrained by known ways of working.

Jeanes (2006) article belongs to the same paradigm as the next two articles. All three articles

have been part of the same special issue of CIM. I will present my thoughts on the paradigm after a brief summary of the next ones.

Innovation as an event: Being Now Here. Being Nowhere

In his article Sørensen (2006) continues some of the thoughts on Deleuze, which was also mentioned by Jeanes (2006) in the above. However, Sørensen's starting point is somewhat different from Jeanes'. Sørensen (2006) acknowledges two routes dominating the literature on innovation. The first route believes that the generating of ideas cannot be organized at all. Instead, creativity and ideas will only emerge in an absolute free and chaotic environment. Sørensen calls this the fantasy route to innovation. Opposite we find the technocratic route to innovation. The underlying assumption in this perspective is that all the information needed (in an organization) is already there. All we need to do is make it available: Turn information into knowledge.

The focus in Sørensen's (2006) view is on the small and accidental forces of innovation and not on the large ossified structures that governs the literature. Sørensen (2006) argues that we need to focus on the crises of the individual which is similar to the Deleuzian view described by Jeanes (2006): "When work and training wears you and your colleagues out, you are close to the secret of innovation, where the body trembles" (Sørensen, 2006, p. 137). It is in the penultimate crisis before death that the body experiences what can be done. This is the innovative event. This can be compared to a creator's (im)possibilities mentioned in Jeanes' (2006) article; you need to explore new territories. Sørensen elaborates:

> Instead of seeing new knowledge as either a god given gift that muses (i.e. highly paid 'process consultants') should bring about, or as a substance and an entity to be managed technocratically, I propose to conceive of knowledge not as an entity, but as an event, a number of actual occasions, incidents, encounters (Styhre, 2003, p. 36; cf. also Whitehead, 1978). Knowledge is a critical event, and innovation occurs when you put your event to work and multiply your crisis.

(Sørensen, 2006, p. 137)

The same deep assumption is underlying in both Sørensen's (2006) and Jeanes' (2006) view: Creativity is an ongoing event within oneself with an unpredictable outcome: Being now here.

Being nowhere.

Empiricist image of novelty

In line with the previous two articles Styhre (2006) continues the discussion in the same direction. Styhre (2006) has his foundation in empiricism, which is a theory of knowledge that asserts that knowledge comes via the senses' experiences. Furthermore, Deleuze's theories are also a part of Styhre's article and in his article Deleuze is characterized as an empiricist. Styhre (2006) explains that creativity is what happens amidst the mundane activities of everyday work life. However, it is somewhat more complicated than just that: "Science-based work and creativity are never reducible to a level of unification" (Styhre, 2006, p. 147). Styhre (2006) broadens up the perspective and also looks at the interaction between people: "Bringing together a number of resources into a functional multiplicity is the best the practicing scientist can hope for" (Styhre 2006, p. 147). The series of events, as explained by Sørensen (2006), are still what makes the outcome and, furthermore, it emerges from a persistent engagement within a field: "The act of creation is an ephemeral and transient event, often not even possible to locate in one single moment in time. Instead, creative thinking is a by-product of work within a particular domain of thinking rather than a precursor" (Styhre, 2006, p. 146).

In order to understand Styhre's (2006) view in relation to more common creativity and innovation management literature he elaborates about how Deleuze in his book Empiricism and Subjectivity speaks of 'the fundamental principle of empiricism, the principle of difference' (Styhre, 2006, p. 145). Styhre concludes that:

> Any work on scientific practice or any other creative undertaking (...) is of necessity drawing on an empiricist ontology and epistemology capable of recognizing the heterogeneity of entities and events in the act of creation, or, rather, the series of acts over time that ex post facto may be regarded as what is a manifestation of creativity.

(Styhre 2006, p. 147)

If the fundamental principle of creativity and innovation management is a principle of 'difference' then management has an extremely difficult task ahead. At the same time something "new" is created the concept loses its meaning since it is "new no more", because

after this something "newer" is needed. The prescriptive part of the management literature, as mentioned by Jeanes (2006), has no use in Styhre's (2006) opinion. Conclusively, Styhre (2006) argues that it is possible to open up for alternative perspectives and new domains of thinking by recognizing the diversity of ontological and epistemological aspects of creative work.

Post-structuralism

The first three articles present a similar view on creativity. First, the fundamental principle of empiricism is a principle of difference (Styhre, 2006). However, Deleuze's definition of empiricism differs from the traditional understanding (web 15), since Deleuze empiricism is always about creating (Ibid.). In this perspective the focus is on creating a different view. But how do we do this? Creativity does not, according to Jeanes (2006), Sørensen (2006), and Styhre (2006), have a prescriptive character. And working within a certain creative narrative has institutionalized us all.

I will characterize Jeanes (2006), Sørensen (2006) and Styhre (2006)'s approach as post-structuralistic. Post-structuralism is partly inspired by structuralism but also phenomenology. When structuralism rejects the enlightened subject and study the structures affecting human culture then phenomenology examines life as it appears right now (Stormhøj, 2005). This is also seen in the view of the three authors above. Therefore, both creativity as an object plus the knowledge that leads to 'creativity' are under investigation. What exist can never be divided or extracted from the articulation itself (Stormhøj, 2005). As stated by Jeanes (2006), we measure creative success in capitalist terms. Within post-structuralism nothing real exist in our world, but meaning is created within historical and specific discourses (Stormhøj, 2005) just like we have seen in the articles above.

The post-original

In response to the articles, with the Deleuzian view on novelty, Rehn & Vachhani (2006) broaden up the perspectives of the new: They question the ontology of innovation and creativity. Rehn & Vachhani's (2006) article is build upon the German polymath Walter Benjamin and his theories of time, ruin and redemption.

A Deleuzian view of novelty takes the understanding that only something radically different can be original and thereby fundamentally new. Rehn & Vachhani (2006, p. 311) argue for a

more complex conceptualization of innovation; "one that is less grounded in simple temporally grounded origination and that rather attends to the valorization thereof – that is, the way in which something is defined as valuable". The authors explain that innovations are often defined by the time it takes place as an original value event. However, as they state, innovations do not have an essentialist character (ibid.). Instead, innovation is seen as a series of events each with a temporal nature of value.

The authors imply that the dominant narrative of innovation management has been a romantic fantasy of controlled revolution. As "innovation clearly is an abstract concept, it should be dealt with as one, rather than falling into the idealist fallacy that innovation can be treated as a locked ontological category" (Rehn & Vachhani, 2006, p. 311). Rehn & Vachhani (2006) argue that reproduction is not only an important part of economy, but also a central part of today's society. Furthermore, reproduction, in their eyes, is more than just copying. The authors use the notion of 'afterlife' and apply it to innovations in accordance with Benjamin's thoughts:

> It is the time in which the object is subject to transformations and interventions which recognize its significance and 'actualize' its potential: translation, transcription, imitation, criticism, appropriation, (re)construction, reproduction, remembrance, redemption.

(Gilloch in Rehn & Vachhani, 2006, p. 314).

The afterlife, which is characterized as the life after the immediate act of valorization, is, in Benjamin's perspective, the true space of innovation and the heart of creativity. This he names the post-original. Moreover, according to Rehn & Vachhani (2006), Benjamin argues for a dialectic engagement with the life of an object, where there is no final point and where no point deserves valorization above another.

Rehn & Vachhani's (2006) article adds to the discussion about the importance of incremental innovation. Not as an antidissertation to the 'true' original (cf. Deleuze), but in order to open up the perspective about novelty turning every innovation into potentiality. Innovation management should deal with this type of creativity and not just new, unique things.

Constructivism

Opposite the first three articles we have a more complex conceptualization of creativity in Rehn & Vacchani's (2006) article. This is based on a dialectic engagement with the life of an object. Innovations should not be treated as a locked ontological category, which is why I characterize their view as belonging to constructivism. Constructivism criticizes objectivism, and meaning or knowledge is always a human construction (Rasborg, 2005). Rehn & Vacchani (2006) argue that there is no final point in the innovation process and thus take an anti-essential stand. Thereby, new valorizations can be (socially) constructed.

The previous four articles were all part of the same number of CIM. Next the rest of the articles at level 4 of the paradigm funnel will be introduced.

A Dynamic and Evolutionary View on innovation Systems

In their article, Steen & Enders (2008) criticize the current, static view of universities in knowledge-based economies labeled National Innovation Systems. The authors suggest looking at "the role of universities from the perspective of an evolutionary system of innovation to understand the embeddedness of universities in a dynamic (national) system of science and innovation" (Steen & Enders, 2008, p. 281). First of all, they propose an evolutionary perspective. Agents learn from their experience and will anticipate future states of the selective environment. In other words, through learning agents adapt. Learning is here seen as a path-dependent process either responsive or innovative. Secondly, the authors propose a dynamic view because various national or regional economic systems characteristics pose different demands towards universities, which also change from one time to another. Moreover, the system never reaches optimum, which is why they label it as a dynamic system. In this view there is not just one optimal governance mode for universities since everything continuously change.

Steen & Enders (2008) have used the model of open innovation in order to demonstrate that knowledge is an interactive process involving many different actors that interact in a system of overlapping organizational fields. Not only do universities have to respond to changes of the institutional environment, but they themselves influence the institutions with their actions (inter-act). Furthermore, Steen & Enders (2008) define this as a methodological interactive approach, which recognizes a level of analysis above the individual or the firm level to within the system. Compared to a more structural view of universities, Steen & Enders' (2008, p.

287) propose that universities "function as an endogenous source of change in the evolution of the innovation system". The process is two-way since change also comes from within.

Even though Steen & Enders (2008) deal specifically with universities, I assume that their assumptions on dynamic, evolutionary innovation systems also hold for other systems than what the universities on a meta-level are part of.

Systems Thinking and Social Constructivism

When reading Steen & Enders' (2008) article systems thinking becomes obvious. The ontology for systems thinking is 'actions', and actions must be understood in relation to the (complex) whole they are part of (Fuglsang, 2005). According to Fuglsang (2005) systems thinking is often formulated in a very abstract language and can be difficult to apply on data. However, Fuglsang's (2005) understanding of systems thinking takes a perspectivistic approach. This means that other theoretical perspectives can be used to broaden up the scope.

If we contemplate Steen and Enders' (2008) article from a social constructivist viewpoint some of the same arguments used with Rehn & Vacchani (2006) can be applied. Interactions are in focus and within social constructivism it is understood that social phenomena are created and changed through historical and social processes (Rasborg, 2005). The innovation process has an anti-essential character, because it is dependent on learning from the past and the outcome of the interactions between individuals.

To sum-up, Steen & Enders article can be seen as belonging both to systems thinking with a focus on the interdependency between the elements as well as belonging to social constructivism where interactions are the fulcrum. Later in this chapter I will discuss how this can be mixed in accordance with Kuhn's notion of paradigms.

A Cultural and Systemic View of Distributed Creativity

Many different schools of thought have participated in the development of creativity and innovation management. The theoretical background stems from psychology, sociology, economy and technology studies, just to name a few. Therefore, Miettinen (2006) presents a view that integrates some of the before-mentioned disciplines.

Two important features have affected the discipline and is the foundation for Miettinen's (2006) new view: The first is a transition from an individualistic into a systemic, contextual or socio-cultural view of creativity. The second feature is a turn from cognitive processes to the

analysis of human practices and material culture.

In this new view the starting point for creativity is seen as the existing cultural resources of a specific domain. Furthermore, interdisciplinarity becomes a key aspect, because it is the interaction between the members of a domain that makes the creative space. According to Miettinen (2006) learning also becomes important, especially in the formation of habits when transmitting knowhow and cultural tradition in a system of practice. Miettinen (2006) further elaborates on this and argues that more informal interaction is needed. Moreover, networks as the locus of innovation are "especially useful for the exchange of commodities whose value is not easily measured" (Powell in Miettinen, 2006, p. 176).

Finally, an important feature of creativity, according to Miettinen (2006), is that it cannot be planned: It is impossible to define the logic of something that by definition does not exist. This emphasizes the assumption in Miettinen's (2006) view that a model of creativity or innovation cannot be formulated. Instead, management of creativity will have to develop adequate means of studying and learning from emerging problems or possibilities in local activities. Miettinen (2006) concludes his article:

> A vital question in managing creativity is related to the mobilization of heterogeneous cultural resources within domains and across the boundaries of domains. This will take place in horizontal networks that cannot be managed in the ways characteristic of the market and hierarchical organization.

(Miettinen 2006, p. 178)

Systems Thinking and Constructivism

Like Steen & Enders (2008) Miettinen (2006) also argues for systems thinking. Thereby, actions must be seen in relation to the whole, which they are part of. Again, it is within the system that creativity fosters. In Miettinen's (2006) view, the interdependency of the system is between the domain and the socio-cultural context.

Miettinen's (2006) also broadens up the perspective of constructivism in comparison to Rehn & Vacchani (2006). In constructivism it is argued that humans generate knowledge and meaning from the interaction between their experiences and their ideas (Rasborg, 2005). Miettinen (2006) argues that the theoretical backgrounds of creativity and innovation management is many fold and has changed over time. This is in line with constructivism that

implicitly involves change in perspective (Rasborg, 2005). However, this can also be understood in line with systems thinking with a change of system or an opening of a domain. However, by including the constructivist view an understanding of how this happens within a system can be explained.

Miettinen (2006) emphasizes that an important aspect of creativity is that it cannot be planned, which is why learning becomes crucial. Both within a systems thinking and a constructivist paradigm the individual is embedded in a specific culture that affects the choices (s)he makes and therefore leaning from the past becomes essential (Rasborg, 2005). Constructivism is sometimes also labeled 'learning theory'.

Toyotaoism: A New Era in Creative Management

In their article Xu & Rickards (2007) look into the development of the domain, creative management. The authors go almost a century back in the management literature in combination with creativity studies (which goes back to the 1930s) and further argues that the domain has developed through four different shifts in the practices and now faces a fifth.

When going through the literature and practices of the last century a thing that was absent, according to Xu & Rickards (2007), was a universally accepted definition of creativity. Creativity is a construct that has invited many definitions. Xu & Rickards (2007) elaborate on this and take a non-essentialist understanding of reality:

> We offer a definition which accords with an interpretivist epistemological stance. This conceives of meaning as a matter of sense-making, open to revision consequential on explorations and refinements through practical experiences and conceptual proposals within a community of practitioners and theory builders.

(Xu & Rickards, 2007, p. 218)

Xu & Rickards (2007) present an examination of the previous practices, which is seen as the background for the new domain.

I will now state the different stages that the management literature has gone through in combination with specific creativity practices in accordance with Xu & Rickards (2007). It starts with the industrial revolution. From Stage 1, a Fordist production perspective, with

structured managerial processes, where creativity was largely ignored in industry, a new perspective focusing on total quality systems emerged (stage 2). In stage 2 the possibility of structures for stimulating creativity emerged as a big idea. The next perspective, stage 3, had a focus on humanistic development as a driver for creativity. This methodology encourages participation of employees and focuses on behavioral elements of the management domain. Finally, stage 4, which has been dominating since the late 20th century, has a wide range of new theoretical concepts on management practices. Where creativity was seen as emerging in specific groups or departments on Stage 3 it is seen as a part of the overall organization in stage 4. So far what has been lacking in stage 4, according to Xu & Rickards (2007), is convincing theoretical bases or grounding, which is why they propose a stage 5.

Xu & Rickards (2007) argue for a revolution towards what they theme a global creative management culture. The action of companies in this new era will reflect three certain principles of creative management:

> - The universality principle: Creativity is an inherent potential of all human beings. (...)
> - The developmental principle: Potential creativity will become actual creativity under suitable developmental conditions (...)
> - The environmental principle: Environmental features will influence the development and manifestation of creativity (the developmental principle). Research will increasingly shed light on the mechanisms through which contextual features limit or enhance creativity.

(Xu & Rickards, 2007, p. 222-223)

From a management perspective the three principles have some consequences. In regards to the first principle a manager has to consider every employee as an ‘owner’ of creativity. The second principle states that creativity can be fostered under certain conditions. And the third principle has to do with an acknowledgement of the influence of the surroundings in both positive and negative ways. Furthermore, the important factor in creative management, according to Xu & Rickards (2007), is the manager who has to follow the three principles in order to ‘create’ an innovative culture. Furthermore, this approach to creativity management is in line with Csikszentmihalyi (1988) who showed how knowledge at the individual level of creativity can be extended into higher-order social systems and also in line with Miettinen’s

(2006) systemic view discussed above.

Finally, the new era, as described by Xu & Rickards, is labeled Toyotaoism:

> The term acknowledges a shift towards a more creative and humanist culture and emerging from procedures pioneered at companies such as Toyota. It implies a fusion of Western and Eastern methods to incorporate into organizations a more Eastern philosophy of harmony and respect – for the environment, customers and employees.

(Xu & Rickards 2007, p. 217)

Systems Thinking and (Structural) Constructivism

Xu & Rickards (2007) article is in line with the previous two papers. However, in addition to the systems thinking and the constructivist view another important fact is included. Xu & Rickards (2007) broaden up the perspective by adding a structural dimension. By adding this dimension reality becomes part of what is (socially) constructed, but with some added objective characteristics (Rasborg, 2005). In the developmental principle Xu & Rickards (2007) emphasize the importance of certain structures that affect the creative outcome of the individual: "Potential creativity will become actual creativity ***under suitable developmental conditions***" (p. 222-223; my highlight). Furthermore, the combination of systems thinking and constructivism can be seen as a structural support to the constructivist paradigm. Namely, according to Fuglsang (2005), actions in systems thinking can be defined as social structures or roles that are interdependent and mutually define each other. Structuralism has been criticized for favoring deterministic structural forces over the ability of people to act. However, in this combined view the structural aspects are merely seen as a setting for the constructivism to function within.

Next, the final article within level 4 will be described and the deep assumptions will be laid out. After this the dissertation will sum-up the different assumptions on level 4 and see them in relation to each other.

A critical review: Four Approaches to Creativity in an R&D context

The starting point for Chen & Kaufmann (2008) is somewhat similar to the one of Xu & Rickards (2007). The term creativity is used in different ways and Chen & Kaufmann (2008) argue that these diverse views of the concept cannot be understood from one single

perspective. On the other hand, they argue, there is a common denominator: Creativity is a dynamic concept that changes through our experience, domain knowledge and socio-cultural context. The topic of creativity, according to Chen & Kaufmann (2008), has progressed from static, content-oriented theories to dynamic, process-oriented theories. This complex conception of creativity has made it inappropriate to study the phenomenon through a single lens and a multi-disciplinary approach is recommended by the authors instead. Chen & Kaufmann (2008) introduce four different methodological approaches to creativity:

- The Evolutionary Approach

Taking an evolutionary approach, creativity can be defined as a product of blind variation and selective retention process – A social process of trial and error, which is subject to individual preferences, socialization and environmental determinants. In this view domain relevant skills are regarded to be affecting the alternatives and the selection of preferred solutions. Creative problem solving techniques belong to this category.

- The Cross-Disciplinary Science Approach

In this approach creativity is drawn upon from a combination of different disciplines. Rhodes (1961: in Chen & Kaufmann, 2008) presented taxonomy for the use of analyzing creativity known as the 4Ps of creativity: person-centered, process-centered, press-centered, and product-centered. The 4Ps emphasize and exemplify the variation of disciplines needed to study this phenomenon, which can be applied to the fields of society, economy, corporate organization and many more.

- The Social System Approach

The underlying assumption in the social system approach is that creativity happens in the interaction between a person's thoughts and the socio-cultural context. Creativity is viewed as a systemic phenomenon rather than an individual one. Therefore, studying creativity needs to concern both the individual level, the team level and the organizational level, which all interact together within a wider social system.

- The Social Network Approach

Within the social network approach one assumption is most important: Social relationships

are needed for creativity. Workers must interact with others to get their job done. Basically, it is this interaction within a network of interpersonal relationships that is the topic of analysis.

To sum up, Chen & Kaufmann (2008) have acknowledged a shift in the understanding of creativity in an organizational setting. The focus has moved from looking only at the individual, cognitive processes of creativity to also include the socio-cultural contexts. Chen and Kaufman (2008) have introduced four approaches that are somewhat different. However, they do not define them as four different paradigms. Even though there are small differences in the four approaches they still share some common beliefs and assumptions.

Systems Thinking and Constructivism

Chen & Kaufmann's (2008) article shows a complexity when dealing with creativity. They show this by presenting four different approaches to creativity, which all contain a dynamic, process-oriented view that changes through our experience, our domain knowledge and our socio-cultural context. This can be seen as the foundation, which is characterized as systems thinking. The three elements and their interdependencies change in accordance with the whole, the system.

Regarding the evolutionary- and the social network approach they seem to belong to a (social) constructivist paradigm, which is in accordance with prior arguments used in other articles. Through processes of accommodation and assimilation, individuals construct new knowledge from their experiences (Rasborg, 2005). Furthermore, this internalization can occur both in the meeting between the individual and the world or between individuals (Fuglsang, 2005), which is constructivism in both approaches.

In relation to the cross-disciplinary science approach it is somewhat difficult to say exactly which research tradition it follows. I perceive the complexity of this approach to be similar to the one of Xu & Rickards (2007). Therefore, I will characterize it as structural constructivism: A mix of objective structures affecting the social processes, which finally "construct" sense-making.

Regarding the social system approach a connection to systems thinking can be made, but also with a leg in constructivism. It is the actions within a wider social system that are in focus. However, once again the focus is on the interaction between the individual and socio-cultural context. Hence, it can be seen as a systemic/structural constructivist approach.

Level 4 Sum-Up

What is creativity?

In the last couple of pages the eight articles belonging to level 4 of the paradigm funnel framework have been introduced. The range of the content in the articles and the different perceptions on creativity and innovation management emphasize the complexity of the field.

All of the articles presented so far have one common denominator: Creativity. It is neither the notion of innovation nor management as such that are the main topics, creativity is. However, the authors have their own individual perception of the concept. Nevertheless, it is implicitly stated in all eight articles that creativity is a precursor for innovation. This is also in line with Amabile et al. (1996) who propose (web 14): ″All innovation begins with creative ideas . . . We define innovation as the successful implementation of creative ideas within an organization. In this view, creativity (...) is a starting point for innovation; the first is necessary but not sufficient condition for the second″. Creativity thereby becomes the smallest common denominator and the understanding of 'what is creativity?' becomes a key issue in relation to these eight articles. By asking 'what is creativity?' we can get an understanding of the deep assumptions and – not least – the changes of perception they affect. Even in the post-structural articles where Jeanes (2006) argue that this question (what is creativity?) cannot be asked, it still says a lot about the perception of creativity.

Management is a term that changes accordingly to the definition of creativity. Obviously, it has great implications for a manager whether he applies a constructivist or a structuralist approach to his/her perception of creativity. In the following, this dissertation will discuss the different definitions of what creativity is in accordance with the paradigms proposed by the authors of the level 4 articles. This is done in order to give a better understanding of the paradigms before moving on to the next levels of the paradigm funnel. After this dicussion the dissertation will move on to the next three levels of the paradigm funnel.

The Paradigms

So far we have seen four different paradigms been introduced by the authors of the level 4 articles. Next, I will sum up the differences in each paradigm before putting them in relation to each other.

At one end of the spectrum there is constructivism. In its most radical form, constructivists

assert that knowledge is only constructed and not discovered from the world (Fuglsang, 2005). Within constructivism individuals can accomplish creative results and when asked the question 'what is creativity?' it can be described as a human construction happening in the interaction between an individual and his/her experiences and ideas (ibid.).

At another end of the spectrum we have systems thinking. As already stated, a system is a group of interdependent elements forming an often complex whole. The notion of interdependence is central to the theory (Rathunde, 1999, p. 606): "One part of a system affects another part and in turn is affected by that part. Thus, a systems approach turns attention toward the pattern of relationships or feedback loops between elements". So in comparison with constructivism where individuals can accomplish creative results, it is the outcome of interactions within a socio-cultural system that makes creativity within systems thinking.

Within systems thinking Mihaly Csikszentmihalyi has developed a framework for the relationship with creativity. Both Chen & Kaufmann (2008), Xu & Rickards (2007) and Miettinen (2006) have references to Csikszentmihalyi.

In Csiksgentmihalyian terms the question 'what is creativity?' cannot be answered correct in a systems perspective (Rathunde, 1999). Instead the question 'where is creativity?' must be asked. Csikszentmihalyi proposes that creativity "resides" in a systemic process (ibid.). Creativity is the result of three main shaping forces:

> a field that selects from the variations produced by individuals those deemed worthy of preserving; a symbolic domain that incorporates the selections of the field and transmits the selected information to following generations; and finally, the person, who after gaining familiarity with the domain brings about some novel change in it.

(Rathunde, 1999, p. 606).

Two other opposing paradigms can also be found in the analysis above, namely structuralism and post-structuralism. Structuralism has only been briefly introduced in combination with constructivism. However, in order to include all the concepts before moving on (with the paradigm funnel) I will now discuss the deep assumptions of that paradigm too. In structuralism knowledge is based on the 'structures' that makes experience possible (Fuglsang, 2005). Structures can be language, concepts or signs and are seen as affecting

human culture (ibid.). Structuralists seek to understand the historical interpretation of cultural concepts. Creativity then, within structuralism, is fostered by systematic structures.

In post-structuralism it is argued that systematic structures are only part of the founding of knowledge together with experience (Stormhøj, 2005). Post-structuralists argue that because culture and history condition the underlying structures it is subject to biases and misinterpretations (Stormhøj, 2005). In post-structuralism there is no reality without the lens through which we observe from; without a construction of our perception (Stormhøj, 2005). Therefore, in relation to answer the question 'what is creativity?', a post-structuralist would have to study both the historical discourses that produce our understanding of creativity and creativity itself as an object (ibid.).

Kuhn's ideas and the paradigms

Constructivism and systems theory dominate the articles above in a mix. According to Fuglsang (2005) systems thinking can be combined with other theoretical approaches. This can be in line with Kuhn's (1996) thoughts on paradigm shifts. A paradigm shift only occurs if a new paradigm is incommensurable with an old one. Therefore, we can see a combination of systems thinking and constructivism as long as we do not understand either of them in their most radical form.

In relation to Kuhn, within structuralism and post-structuralism, we see that the latter is incommensurable with the first one. Obviously, post-structuralism is a critique of the first paradigm and the post-structuralist articles discussed above I will classify as highly radical. This can be seen in relation to the impossibility of creating something new: Creativity as a phrase has lost its own meaning by the use of it.

A final point to be made within the four paradigms discussed so far is the relationship between system thinking and structuralism. Structuralism is "in its broadest sense the holistic view that meaning or intelligibility is not intrinsic to individual items (letters, words, atoms, etc.) in isolation but resides in their relations to one another, their functional place in a system" (Nicklas, 1999, p. 344). In this regard both paradigms (systems thinking and structuralism) imply a deep assumption that structures affect behavior. This I will examine after the analysis of the other levels of the paradigm funnel.

Next, I will go into detail with the rest of the articles from CIM. I will use the points from the level 4 analysis as a lens in order to determine which paradigm each article relates to.

Furthermore, I will use the question ‘what is creativity?’ in order to create coherence between the articles for the cluster analysis.

Analysis Level 3: Specific Theories

Introduction

I have now gone through the first level (4) of the paradigm funnel, and I will proceed to look at the last three levels and see how the articles allocate in accordance with different paradigms. This is in line with Heding et al.‘s (2008) and Berton et al.’s (2003) methodology: I need to analyze every level before I can investigate anomalies between the layers.

In this section I will not include résumés of each article, since I have 52 articles on level 3. Instead, I will cluster them and summarize the basic points for each category. This is the same technique as proposed by Heding et al. (2008). They categorized their literature within brand management into seven clusters representing fundamentally different perceptions of the brand; the nature of brand-consumer exchange; and how brand equity is created and managed.

I began by classifying all of the articles on level 3 by asking the question “what is creativity?”. However, because of the diversity of focus areas in the articles on level 3, this question was not broad enough. Instead I had to ask the question “what is creativity and innovation management?” in order for me to be able to include every article.

The paradigm classification made at level 4 serves as the initial rationale of the clustering of the level 3 articles: The articles are divided accordingly and with respect to the underlying theory of science: Which paradigm does every article belong to? Is it in-line with constructivism, systems thinking, structuralism, or post-structuralism? This is in-line with Berthon et al. (2003) who went through their articles after analyzing level 4 in order to find out if they relied on a positivist or social constructivist assumption. However, I will have to include some other elements also that affect the perception of creativity and innovation management. An important note to make here is that the clustering of articles in accordance with the paradigms only tells us something about the underlying assumptions. Much more information can be useful, which is why two new terms now will be defined

Paradigms, Perspectives, and Approaches

Heding et al.’s (2008) findings led to the discovery of two paradigms and seven groundbreaking theories, which they define as ‘approaches’. As previously mentioned, these

approaches are defined as milestones in the paradigmatic development. The approaches are distinctly different, but at the same time able to coexist under the overriding paradigms. In order to provide a better understanding of the perceptions of this community I will, therefore, include a view of approaches also. Presumably, including another dimension than just the paradigms gives a deeper comprehension of the field of creativity and innovation management.

During the investigation I tried to get access to Heding et al.'s master dissertation, which is the foundation for their research in brand management. Presumably, their dissertation would include an understanding of how to understand the idea of 'approaches' more thoroughly. Because of confidentiality this was not possible. Therefore, here is my own definition of approaches and also perspectives, which have been used in the following clustering:

The underlying deep assumption of a theory is previously defined as a paradigm. In this view, a paradigm function as a lens through which we perceive a domain or field. Next, a certain object is also in play. The cluster analysis has been done in relation to the main objects, which are the focus of, what I call, 'perspectives'. Finally, each perspective contains a number of 'approaches', which are defined as certain methods to understand an object. All three parts influence the perception of creativity and innovation management the way down as shown in the figure below.

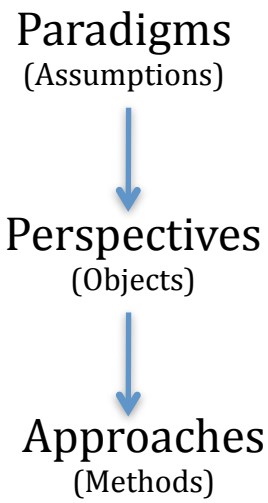


Figure 7: The Affect of Paradigms, Perspectives and Approaches

Clusters of Perceptions

In the following cluster analysis I have split up the articles on level 3 in relation to the different paradigms, perspectives and approaches. It came to my attention during this process that certain perspectives can be seen in relation to different paradigms, and certain approaches can be seen in relation to different perspectives. Therefore, and in order to give a clear picture, the clusters are made in relation to specific perspectives and approaches (and not just paradigms). I acknowledge that the articles of level 4 specifically dealt with underlying assumptions, which is why perspectives and approaches not was of interest. Nevertheless, the articles on level 3 deals with specific perspectives and approaches whereas the underlying assumptions have to be read between the lines. This is why the cluster analysis on level 3 is done within the different perspectives and approaches; and not with the paradigms as the umbrella.

In the cluster analysis five perspectives are located. This means that five different objects are under investigation within this body of literature. These perspectives will be introduced in relation to the different approaches and paradigms, which they are part of in the following section. The perspectives are:

- **The Person**
- **The Organization**
- **The Context**
- **The Product**
- **The Situation**

In the next section this complex patchwork will be stitched together in the presentation of the different clusters and their meanings. Please bear in mind that this classification is made broadly within the different viewpoints. I acknowledge the complexity, but perceive this as necessary, since this is the starting point. I will sum-up afterwards in order to clarify what we have been through plus the main findings.

See appendix on page 64 for the containing articles in each cluster.

THE PERSON

Personality Traits

Five articles belong to this cluster, but more articles include the deep assumptions in a combined form with other assumptions as well. I will return to this matter later in this section. This approach has its roots in structuralism, because it sees a specific character or personality traits as preconditions for creativity. In its most radical form the personality traits are the only factor influencing the creative process and is only part of some human beings, not all. The specific traits can take many forms. One example could be that a creative behavior is only possible for some people with that specific skill (Ottesen and Grønhaug, 2005). Another article (Schweizer, 2006) argues more specifically that novelty-seeking personality is modulated by the transmission of the neurotransmitter dopamine. Thereby, novelty-seeking behavior is related to the individual differences in specific neurotransmitter activity in the brain. This example also explains the structural assumption. A certain structure affects behavior in favor of a creative outcome.

In order to enhance an innovative workforce, in this approach, managers should hire employees with certain characteristics or personality traits.

Behaviorism

Within this behavioral approach a few sub-categories exists. The basic idea is that cognitive processes can be fed in different ways and lead to innovative behavior. 11 articles belong to this cluster. In this category we find some of the ideas behind TRIZ (Theory of Inventive Problem Solving). Researchers of the TRIZ-domain have developed some tools for finding (in a mental sense) creative solutions to problems. This view is in line with the structural paradigm mentioned above. For example, Zhang and Tan (2005) explains the existence of some universal, creativity principles that can be identified, codified and taught to people. In order to enhance an innovative workforce, in this approach, managers should provide the tools for employees to be creative.

5 articles deal with part of structuralism focusing on certain behavior leading to new ways of thinking. Within this approach it is argued that techniques like Creative Problem Solving define a certain setting (structure) for creative ideas to grow. Hence a structural paradigm.

Within the behavioristic approach there is also an emotional view that is part of a structural

paradigm. The other views described within behaviorism deal with specific tools for solving specific problems. The emotional approach deals with motivation as a structure for affecting the well-being of employees who become more creative in a non-specific way. Thereby, the emotional approach can be seen as precursor for creative behavior in general.

Finally, within the behavioristic approach there is also a learning view. This is considered to have one leg in structuralism and another one in constructivism. The first, because of a path-dependency people most go through (eg. Hatchuel and Weil, 2005). The latter, because new knowledge can foster new thoughts, which can lead to innovative behavior. In a learning approach there is a difference between single-loop learning, which restores routines and deals with efficiency, and double loop learning, which improves or modifies it (Basadur and Gelade, 2006). The learning approach is seen in relation to a description of our society labeled the knowledge economy. In this view, knowledge is a scarce and precious resource.

The different views within the behavioristic approach have a foundation in psychology. Innovation, in this perspective, is enhanced by understanding the cognitive processes.

Interactionism

5 articles specifically deal with interactions and/or relationships as a precursor for innovation. This is a constructivist paradigm where things and people are given meaning through their relationships and not by or in the objects themselves. The basic assumption within this approach is in line with the notion of co-creation that states that a relationship is greater than the sum of the parts. The articles in this cluster are diverse even though they have the same deep assumption of where meaning is created. Within this approach many other researchers have made a split between an interactionist-, relational- and network perspective. However, because of the similarities within these domains in the basic assumptions and the variety with the rest of the articles I have classified them within one approach.

Articles within this approach deal with different parts of relationships. Just to exemplify, Bassett-Jones (2005) investigates cohesiveness within a group while DeCusatis (2008) investigates involvement of customers in a creating process. In this approach innovation is enhanced by the combining of human resources through their interactions.

THE ORGANIZATION

Organizational Characteristics

10 articles deal with organizational characteristics and its affect on innovative behavior. This is an internal, corporate view again relating to the paradigm of structuralism. Certain characteristics (structures), like the size of a company (Allocca, and Kessler, 2006), functional management competences (Salomo et al., 2008), the risk of spread by keeping several options open (Vanhaverbeke et al., 2008) or culture (Bakker et al., 2006), are either needed or have some implications on innovative behavior and hence foster innovation. In this perspective the complications for organizations trying to balance continuous and discontinuous innovation work is highlighted. This kind of organization is labeled an ambidextrous organization. Within the notion of an ambidextrous organization it is known that both incremental and radical innovation is needed in order to survive in today's global economy (see fx. Looy et al., 2005; Buijs, 2007; Corso and Pellegrini, 2007). Furthermore, this affects the organizational set-up to either exploit the known capabilities or explore new ones. In this approach, innovation is enhanced and affected by certain organizational characteristics.

THE CONTEXT

A Holistic View

Within this perspective 7 articles deal with the wider context in which an organization functions and it all has to be seen in a holistic view. In the words of Csikszentmihalyi, as mentioned in analysis 2, creativity exists between the different elements of a system.

The systems are manifold, including a social-political system with a focus on public policy and decision-making (García-Arca and Prado-Prado, 2007) to the system in which a Chief Technology Officer performs his/her daily tasks (Probert and Tietze, 2009). The underlying assumption within the holistic view is that the environment should be a conscious (rather than ad hoc) aspect of any innovation strategy: The "environment itself can form part of the firms' innovation strategy and can influence performance in innovation" (Moultrie et al., 2007, p. 61).

Some of the articles within this perspective also include some of the same points in the interactionist view described next: Relationships and networks are considered important, but not as the only important aspects (Carpinetti et al., 2007; Chun, 2006; Probert and Tietze, 2009).

It is important to point out that a holistic view is more than just an external view. It is both

internal and external. In this approach, innovation is enhanced through an entire system in which an organization functions.

MIXING VIEW

I have now been through three different perspectives on creativity and innovation management: The person, the organization and the context. Each of those perspectives contained one or more different approaches. 2 of the articles from level 3 have not been classified under any of the perspectives. These 2 articles include several of the perspectives and approaches already mentioned. I would like to emphasize that this mixing perspectives section could easily include more articles, since many of the articles above include more than just one perspective. However, the classification has been done in order to find different perspectives, which is why I have included the articles to the levels they are mainly related to.

The perspectives introduced so far on level 3 of the paradigm funnel belong to structuralism, systems thinking and constructivism. Within the mixing perspectives the three paradigms are seen partly together. Obviously, we have to include Kuhn's idea that no paradigm can be combined if they are incommensurable (cf. analysis part 2 sum-up). As already discussed at the level 4 analysis-part systems thinking and structuralism can be combined and have similar assumptions that certain structures or systems affect innovative behavior. However, if we include constructivism in its ordinary sense it stands in contrast to both and is hence incommensurable. Nevertheless, a tendency appears in the mixing of the paradigms within this specific scientific group of researchers who combines them in some way.

Before finishing analysis part 3 I will include the remaining articles and their respectively paradigms, perspectives and approaches. Later in the analysis I will continue the discussion of the mixed paradigms when looking at anomalies between the four layers of the paradigm funnel.

THE PRODUCT

Systematizing

All the articles above have focused on the people, the organization or the context as precursors for innovation. Only a few articles on level 3 deal with the product as such. Above, I have introduced some of the thoughts behind Inventive Problem Solving (TRIZ). TRIZ is originally founded on the idea that "someone somewhere has already solved your

problem" (Mann, 2005, p. 16). In a more radical view (compared to the behavioristic approach mentioned above) TRIZ deals with finding an answer in a positivist sense ("finding" is meant literally and not mentally). In other words, "finding" is not concerned with the problem as such, but with the 'someone' who holds an answer to a problem. I use the positivist notion because the assumption within this view is that the truth is already conceptualized (Fuglsang, 2005). For example Hill (2005) and Vincent et al. (2005) argue that a problem has already been solved, but we need the tools to "find" it. Therefore, Vincent et al. (2005) have created a database of biological effects, so researchers or managers can find an answer to a solution somewhere in nature.

Another article dealing specifically with the product, which is not part of the TRIZ approach, has created an instrument that measures different product attributes in order to determine a potential success. According to O'Quin and Besemer (2006) only a small percentage of launched products are successful in the marketplace. Therefore, a product orientation is needed. O'Quin and Besemer (2006) hold the same underlying positivist assumption that the 'truth' is out there. However, where TRIZ focus on where to find an innovative problem solution, O'Quin and Besemer (2006) provide a tool for measuring if a problem solution is innovative. In these approaches, the solution for an innovative problem needs to be found somewhere out there.

THE SITUATION

Being Now Here

Finally, two articles are in line with the post-structuralistic paradigm described in the first three articles in the analysis part of level 4. Specifically, on level 3 the three articles describe the need to include things like luck and chance in the innovation process (Styhre, 2007), and the need to improvise in order to break free from certain structures (Slutskaya, 2006). In this approach innovation is something that just sometimes occurs: Being now here.

Level 3 Analysis - sum-up

After the analyses of all of the articles on level 3 of the paradigm funnel one thing is clear: There is not just one leading paradigm, perspective, or approach.

There is an overweight of articles belonging to either a structural or systems paradigm, but also constructivism, positivism and post-structuralism are represented. In addition to that the

perspectives focus on very different parts of the innovation process: On level 3 I have localized five perspectives plus a mixing perspective. They are the person, organization, context, product and situation, respectively. Furthermore, a larger amount of approaches deal with everything from personality traits, organizational characteristics, behaviorism, searching in databases, co-creation and improvisation.

In the next part of my analysis I will continue with the last two levels of the paradigm funnel before taking a closer look at distribution of articles on all levels. First, there is one article on level 2 that needs my attention and second, I will finish this analysis section off by looking at the 112 articles on level 1.

Level 2 Analysis: Analytical Methods

As already mentioned only one article belongs to Level 2 of the Paradigm Funnel. The article deals specifically with different methods of how to measure organizational output innovativeness (Paleo & Wijnberg, 2008, p. 12): Different "measures of the innovativeness of organizations can be deduced from different perspectives on product innovation". The focus is on the product, and I classify the article to constructivism since different interpretations of product innovation construct the "truth" about the product.

The section above (analysis, level 3) dealt with the product from a positivist perspective. This interpretive view opens up the perspective and includes another dimension: The discourse.

After this brief classification of the single article on level 2 I will begin to cluster the articles on level 1. This is done in a similar way to the cluster analysis of articles on level 3.

Level 1 Analysis: Empirical Observations

107 articles are assigned to level 1 of the Paradigm Funnel. This is by far the largest pile with more than 60% of the articles.

Where multi-disciplinarity was of outmost importance when undergoing level 3, structuralism seems to be the main topic on level 1. A total of 79 articles belong to a combined or pure structural paradigm. I will return to these numbers in the next section, where I will look at anomalies between the levels of the paradigm funnel.

I have divided the articles into clusters (see appendix) similar to the ones on level 3 of the paradigm funnel. I will only briefly go through the next categorizations, since I have already

described the understanding of the different paradigms, perspectives and approaches in the previous section. When a new paradigm, perspective or approach appears I will of course spend a little more time introducing it compared to the rest of the articles on level 1. And so, the clusters have been characterized.

Again, please go to the appendix on page 110 if you wish to see which articles that are part of which cluster.

Clusters of Perception

THE PERSON

Personality Traits

12 articles belong to this cluster, which is based on structuralism and focus on the inherent parts of the humans who affect the innovation process. This can best be described through the individual competencies that are a complex combination of knowledge, skills and abilities by an employee (Soosay, 2005). Or it could be certain personality traits that either foster entrepreneurship (Chen, 2007) or creativity in general (Andersson, 2007). Also, this perspective includes a view on certain personality traits that are needed in specific stages of the innovation process (Puccio and Grivas, 2009).

Behaviorism

The dominant paradigm within the behavioristic approach is structuralism. Above, at level 3, I included three different views within this behavioristic approach that are all part of structuralism.

In order to concretize this a bit further I will elaborate on the differences in the three approaches. First of all, I made a distinction between the conscious processes (like Creative Problem Solving techniques or display of certain behavior) and the subconscious processes (such as emotions). This distinction can also be seen as a direct and an indirect road to creativity and innovation management. I call the first road ‘direct’, since this is where you get certain techniques for specific problems. The latter I call ‘indirect’, because these suggestions for behavior are affected through different and more abstract processes. This could be that the fostering of joy through emotions, which raises productivity; or simply gives inspiration which increases creativity.

11 articles deal with the conscious processes of direct involvement for CIM. Like on level 3,

TRIZ techniques are included in this category (Moehrle, 2005; Glaser and Miecznik, 2009; Belski, 2009) as well as some principles for Continuous Improvement (Jørgensen et al., 2006; Jørgensen et al., 2007).

10 articles deal with the sub-conscious or in-direct processes: Dealing with everything from employee autonomy as a precursor for performance (Steijn and Tijdens, 2005) to different kinds of motivation (Sundgren et al., 2005; Wang and Casimir, 2007; Gebauer et al., 2008; Caughron and Mumford, 2008) and trust (Boehlke, 2008).

Secondly, I include another view, namely the learning approach. This was also introduced on level 3. 10 articles belong to this perspective and focus on a wide spectrum of things all related to learning. A "learning organization is one that encourages and accelerates individual, team and overall organizational learning, and assists in continuously transforming their mission and actions" (Kim and Wilemon, 2007, p. 179). Whereas the first two behavioristic approaches belong to structuralism, the learning approach is part of constructivism and part of structuralism.

Finally, another two articles open up for a constructivist paradigm within the behavioristic approach. Christiansen et al. (2006) deal with managers interpretations of their employees competences (p. 390): "Competences are constructs that first really become meaningful when organizations and managers 'use' them and make decisions based on their own local interpretations". Besides this interpretive view another article deals with new product portfolio management (Perks, 2007). Within the latter article, approval for a certain product development is constructed through an evaluation practice.

In the end next part of my analyses section I will sum-up my findings and add the paradigms, perspectives and approaches in relation to each other. But first, I will finish off my analysis at level 1.

Interactionism

14 articles belong to this cluster at level 1. Here constructivism is the main paradigm, but 9 of the articles also hold a structural dimension. For example, Enkel et al. (2005) holds the assumption that companies should interact with their customers. However, in the article it is also stated that companies should do this only at certain stages of the innovation process, meaning a structural influence for a constructivist paradigm.

Within this perspective different approaches apply. For instance, interactions are both

necessary between companies and customers (Enkel et al., 2005), only between companies (Bidault et al., 2007; Lichtenthaler and Ernst, 2008), or between people within one company (Kratzer et al., 2006; Henneke and Lüthje, 2007). Also, in this perspective both networks (Chen, 2009; Kratzer and Lettl, 2008), relationships (Lichtenthaler and Ernst, 2008), situations (Cousens et al., 2009; Bereiter, 2009), and interactions in general (Bidault et al., 2007; Henneke and Lüthje, 2007) are in focus.

THE ORGANIZATION

Organizational characteristics

This is the second largest amount of articles contained under one approach including 25 articles. Most of the articles are strictly part of structuralism, but 2 articles are also mixed with constructivism. Haner (2005) follows an interactionist model of creativity, but emphasizes that the physical environment will have an impact as well. Manimala et al. (2005) explain how structuralism and constructivism can be combined in order to reach success (p. 414): "it is possible to design organizational structures and processes that will promote innovation cultures".

Both physical structures and structures figuratively are part of this perspective. The first one focuses on a certain physical space that affects innovative behavior (Lewis and Moultrie, 2005; Lugt et al., 2007). The latter focuses on things like culture (Vanhaverbeke and Peeters, 2005) or strategy (Elmquist and Segrestin, 2007; Brink and Holmén, 2009), organizational composition (Larsen and Lewis, 2007; Yap et al., 2005; Cesaroni et al., 2005) and processes (Bröring and Leker, 2007; Buijs, 2008).

THE CONTEXT

Holistic View

16 articles hold the deep assumption that innovation is enhanced through the entire system in which an organization functions. A part of a system can be affected by other parts while at the same time has the potential to affect them.

The systems are many fold; both inside (Chen, 2006) and outside (Ibrahim et al., 2006; Gassmann and Reepmeyer, 2005; Alves et al., 2007) of organizations, which is why this is an holistic approach. A complex social system involves "a combination and integration of various inputs and knowledge from multiple and interdependent (...) members" (Chen, 2009,

p. 276).

External Pressure

Besides the systems perspective another two articles assume something differently while still emphasizing the need for the context. Ford et al. (2008) and Hospers and Pen (2008) are part of structuralism and focus on the structures of the market and the society in general. No articles at level 3 had a pure structuralist assumption to the context perspective

MIXING VIEWS

Just like at level 3 a few articles have been a part of several of the paradigms, perspectives and approaches mentioned above, which is why I characterize them as belonging to the mixing view. Two articles are case descriptions with many different explanations for why things evolved as they did (Abetti, 2006; Abetti, 2005). The second two articles include so many complex dimensions of the innovation process that a classification becomes more of a coincidence than based on the primarily assumptions (Johnson, 2007; Martinsuo, 2009).

THE SITUATION

Being Now Here

Finally, the last paradigm, which is part of level 1 in CIM is post-structuralism. Two articles belong to this cluster. Lightfoot et al. (2006) takes up the discussion of the "new", which I already discussed at level 4. However, this time the authors do it in a case description for French Connection UK. The main point is that the "new" is new no more. In the next article Styhre and Eriksson (2008) investigate another point already discussed. Namely, the inclusion of another domain in relation to creativity. It was mentioned by Jeanes (2006) that working "within the creative narrative effectively limits us to merely replicate, or think (or create) within these linguistic boundaries. Our ability to create the 'new' is limited by what we already know" (Jeanes 2006, p. 129). In Jeanes (2006) article creativity and innovation management was seen in relation to capitalism. In Styhre and Eriksson (2008) creativity and innovation management is seen in relation to something different, namely arts.

Analysis Part 2: sum-up

In the previous analyses we have seen five different paradigms emerging from the articles. Furthermore, in order to broaden up the understanding for the different views of creativity and

innovation management I introduced two new conceptions, namely those of perspectives and approaches. This led to the findings of five different perspectives and an unnumbered amount of approaches in the data.

Through the introduction of articles at level 4, 3, 2 and 1 an illustration of these different views have been introduced, but not organized as such. Now the time has come to create some order in all of this content: To clear out the threads.

Analysis Part 3

3. Organize the Findings

A greater overview

The analyses of the four individual levels of the paradigm funnel have now been done. However, what is really clear is the notion that creativity and innovation management is a very complex field. Luckily, through the analyses of the different levels of the paradigm funnel a more precise conception of different views have emerged. 5 paradigms have been found and another 5 perspectives have been introduced (plus a mixing perspective). In addition to this another number of approaches have been brought up. Next, I will introduce a framework that gives an overview of these findings. The framework divides the different paradigms, perspectives, and approaches in relation to figure 7 introduced in analysis part 2, which is also shown below:

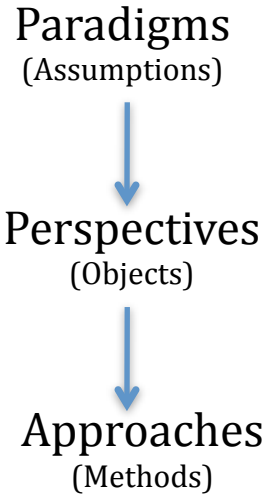


Figure 7: The Affect of Paradigms, Perspectives and Approaches

Before showing the framework I will short define each of the categories that are a part of it. The framework can be seen as the patchwork that this dissertation has been trying to stitch together.

Paradigms

The paradigms hold the underlying deep assumptions for the researchers working within the field of creativity and innovation management. Dependent on which paradigm you belong a set of possibilities occur to specific problems. The following paradigms were localised in the previous analyses:

Positivism

The first paradigm introduced is positivism. Positivism is built on the foundation that knowledge is discovered from the world. Creativity and innovation management become a search for the answer to specific problems.

Constructivism

Constructivism is based on the assumption that humans generate knowledge and meaning from interaction between their experiences and their ideas. The field of creativity and innovation management is constantly constructed and hence developing.

Structuralism

In structuralism, knowledge is founded on the 'structures' that make experience possible. Creativity and innovation management is dependent (for good and for worse) on certain structures.

Post-Structuralism

In post-structuralism, there is no reality without the lens through which we observe things from. Creativity and innovation management is not possible to locate in one single moment of time. It happens right now and all the time in what you are doing.

Systems Thinking

Within this paradigm interdependence is central. Creativity and innovation management is shaped through socio-cultural processes in a system. A system is a group of interdependent elements forming a whole.

Perspectives

In relation to the different perspectives one thing changes accordingly: The object for

analysis. The articles in CIM (2005-2010) have five different objects for analysis, which have been localized in this dissertation. Each perspective or object is attached to a certain paradigm. However, an object for analyzes can be seen in relation to more than one paradigm, but then the underlying assumption for the perspective change accordingly. In the figure on the next page the perspectives can be seen underneath each paradigm, in which they have been introduced by the articles in CIM. The perspectives are:

- The Context
- The Company
- The Person
- The Product
- The Situation

Finally, the perspectives are linked to certain approaches. This means that the possibility of solutions within each approach is dependent on the perspective it is seen in relation to. Just as the perspective is dependent on the assumptions of the paradigm under which it functions.

Approaches

Besides the paradigms and perspectives a number of approaches have also been localized. These are related to the different perspectives and explain a method for approaching the object. The approaches, as a category, explain on a micro level what affects an innovative behavior directly. An analysis of the approaches has not been done thoroughly, because of limitations, and it is possible that more exist than the ones that have been introduced in this dissertation. However, the approaches have been included in the coming figure to provide a comprehension of the composition of the field under investigation.

The Framework Defining the Field of CIM from 2005-2010

Above the different elements of the figure have been introduced, now the time has come to see the elements in relation to each other. As a final remark, the framework below only encompasses the different perceptions that have been found through this dissertation. The five paradigms are listed in the top of the figure with the underlying perspectives appointed to the specific paradigm where it was located. Furthermore, the box with the mixing perspectives is seen in relation to the articles that are included in this category: They encompass several perspectives at the same time.

Below the perspectives and the different approaches appear. From a management point of view these are the strands. This is where theory can become operationalized. Again a connection is made between the perspectives and the different approaches that fit accordingly. Similar to Heding et al.'s (2009) definition of 'approaches' (as a category), they are distinctly different, but at the same time able to coexist in some way. This also holds for this dissertation. This is why the box with the mixing approaches appears in the lower part of the figure.

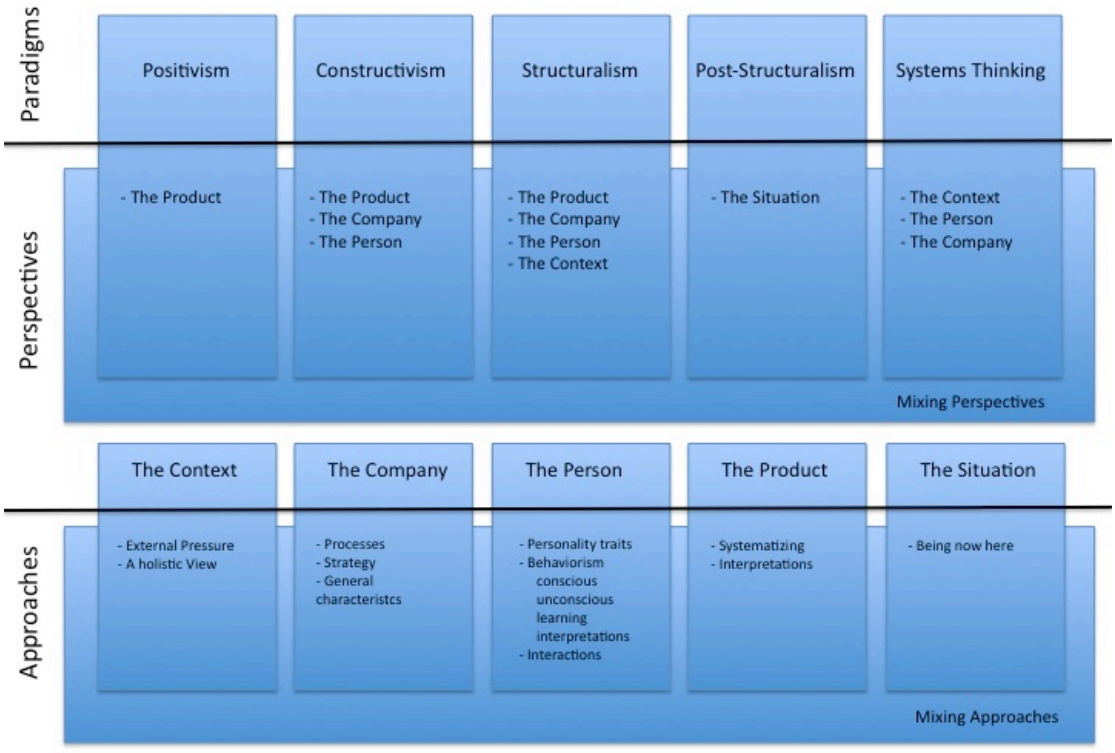


Figure 8: FRAMEWORK: The Field of Creativity and Innovation Management (2005-2010)

In order to make a better understanding of the figure containing the different views, I would like to include Kuhn once again. Kuhn (1996) describes a paradigm as containing the criteria for problem solving. In other words, if managers are to create an innovation within any of the different paradigms above the solution for the same problem will be different. Hence, a solution for any problem within the field of creativity and innovation management (2005-2010) can be seen in the light of this framework.

Analysis Part 4

4. The Meta-Perspective for CIM

Introduction

In the previous sections (analysis part 1, 2 and 3) the focuses have been on the different ways of conceiving creativity and innovation management. I will now proceed to combine this with Kuhn's ideas of the evolution of science and look at anomalies between the levels of the paradigm funnel. In this section the dissertation will investigate which directions are most popular and I will discuss the future tendencies within the field of creativity and innovation management. Furthermore, in the course of normal science, once a paradigm is established one would expect the collective research endeavor to take place at the shallowest levels of the funnel, namely empirical observation. By corollary, one would expect a small proportion of work to be concerned with the matching fact to theory and even smaller amounts of research are devoted to theory building or deep assumptions. This is what will be investigated now.

The results in numbers

To begin with I have made a table with all of the different paradigms, which are part of the articles in CIM. Since these clusters have to be combined with Kuhn's ideas of the evolution of science, and in accordance with Berthon et al.'s (2003) literature review analysis, I can only include paradigms and not perspectives and approaches. The deeper assumptions that are in play in CIM from 2005-2010 are shown in the table below:

Paradigms	**Number of Articles**				
	Level 1	Level 2	Level 3	Level 4	**Total**
Positivism			3		**3**
Structuralism	57		29		**86**
Constructivism	7	1	6	1	**16**
Structuralism & Constructivism	21		3		**24**
Systems Thinking & Constructivism				4	**4**
Post-Structuralism	2		2	3	**7**
Systems Thinking	16		7		**23**
Mixing Perspectives (not used)	4		2		**6**
Total	107	1	52	8	**169**

Table 1: The Distribution of Articles in CIM in Accordance With the Paradigm Funnel-Framework

To begin with I will make some presumptions in general and after that I will focus on the anomalies between the different levels of the table.

Dominant paradigms

As mentioned earlier Kuhn says that the notion of paradigms tells us how certain communities agree on a view of how things are perceived: "A paradigm is what the members of a scientific community share" (Kuhn, 1996, p. 176). Therefore, it is interesting to see the dispersion of the paradigms.

There is a majority of articles belonging to a structural paradigm. More than 50 % of the articles belong to this paradigm and this is without adding the articles that are a part of structuralism in combination with constructivism. With this number of articles close to 2/3 of every article in CIM from 2005-2010 hold a structural assumption. As previously stated systems thinking also hold a structural assumption in view of the fact that systems have interdependent parts interacting. Therefore, if we include this paradigm, both on its own and in a combined view, around 80% or the articles hold a structural dimension. This is by far the most disseminated assumption of creativity and innovation management from 2005-2010.

With such a large focus on structuralism we can assess that the main assumption of this specific community of researchers focus on certain conditions that influence or enable creativity and innovation management. This is the dominant assumption. What we have seen so far is that there are many possible ways to go about this, which in my opinion provides a breeding ground for more theoretical work in this field.

Another important point to withdraw from the data is that structures alone do not do it. Here I would like to emphasize the weight of constructivism. If we contemplate constructivism both alone and in combination with systems thinking and structuralism we find that they are a part of more than 27% of the articles. Furthermore, if we add to this the systems thinking alone (that encompass a constructivist assumption in itself) we come close to 40%. The reason for including the systems perspective alone is the notion that parts of the systems work interdependently. Thereby, it can be argued that interdependence has the same underlying deep assumption as interactionism, which is part of constructivism. In this view, constructivism is also seen as a dominant logic within the field of creativity and innovation management, but mainly in relation with other paradigms. Moreover, as Kuhn describes, no paradigms can be put together if they are incommensurable. This underline the fact that constructivism cannot be seen in its most radical form, but has to be seen as part of the whole.

Paradigmatic developments

The Crisis

According to Kuhn (1996) science is interrelated with progress. It develops continuously towards a higher understanding through a constant questioning of the foundations of different competing schools. Kuhn questions the fact that science is developed by the accumulation of individual discoveries and radical inventions. Instead, he sees it as an incremental process, where the synergy between the members of a specific scientific community together lead to new revolutions. Therefore, it is interesting to look at the development between the four levels. As Berthon et al. (2003) underscore; if there is a general agreement between the members of a community as to which paradigm the members are affiliated with then only articles at level 1 are of interest. Furthermore, as Heding et al. (200) elaborated on, discrepancies in the scientific discipline is revealed through a wide gap between the ‘top’ and ‘bottom’ of the research articles.

If we look at the table on the previous page it shows that 37% of the articles deal with other levels than the ones at level 1. This emphasizes the fact that that there is not complete consensus. There seems to appear a crisis, in Kuhn's terminology, and, presumably, therefore this community is somewhere between normal science and revolutionary science in Kuhn's terminology (cf. the figure below). Next the focus for the last part of the analyses will be on the anomalies between the different levels of the paradigm funnel. This can tell us something about the evolution of the field of creativity and innovation management.

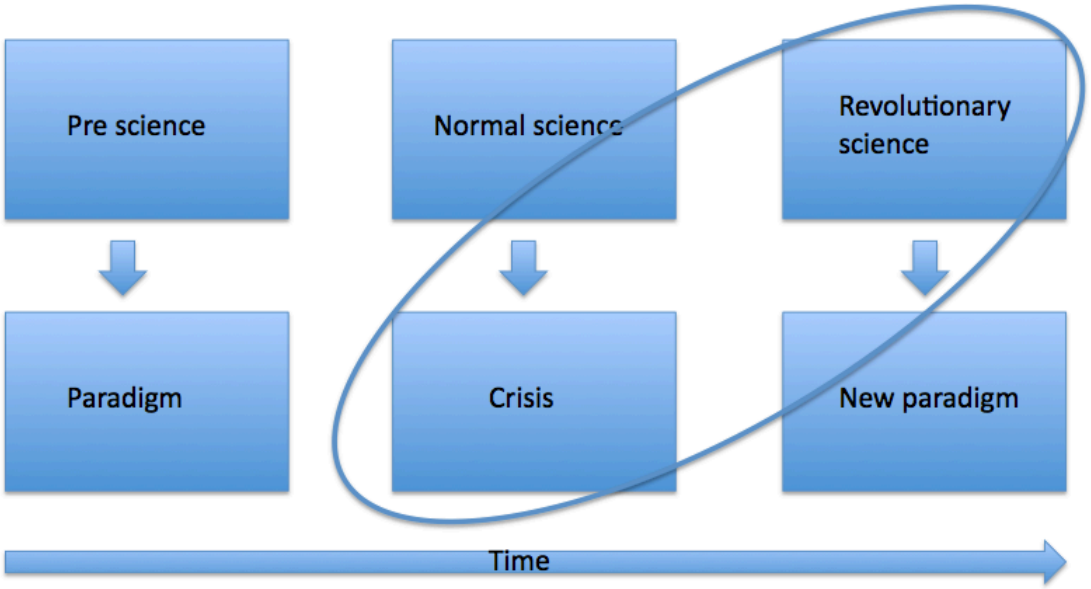


Figure 2(2): The Evolution of Science – Where is CIM at Present?

Post-structuralism

Kuhn (1996) defines a change of paradigm as a revolution. This involves a significant change in the criteria determining the legitimacy of both problems and of proposed solutions.

If we take the 8 articles on level 4, it is interesting to see the three articles belonging to post-structuralism. This is remarkable, because post-structuralism is actually underrepresented at the remaining levels. Presumably this is a newer paradigm that has not been part of the community for long. This can be argued because of the focus on level 4; with 3 out of 7 articles belonging to this paradigm. A pre-dominance on level 4 tell us that something fundamental is being challenged compared to the other levels (Berthon et al., 2003).

In relation to the most dominant paradigm, structuralism, post-structuralism also becomes important. Together with positivism post-structuralism is the most incommensurable

paradigm of all the other paradigms. The deep assumptions of those two paradigms are the most isolated. Also, obviously, post-structuralism in itself must be seen directly as a clash with structuralism, which entails a clash with the majority of the community members.

In the light of this dissertation I see two possibilities of the influence from the post-structural articles. It could be the authors' intention to break with the main paradigm(s) and establish a new one. But it could also be the intention of the authors to provoke the other community members by including a very different view: To break the institutions, which the community members are a part of. Precisely because this community deals with creativity as a concept, creativity could also be a part of the solution for an evolution of the field. If we see structuralism as the dominant paradigm, how will it then be possible to think in new ways; to break the structures?

Theory is weighted against nature whereas paradigms are compared with each other (Kuhn, 1996). Therefore, a paradigm can only be declared invalid if an alternative is able to take its place. By including post-structuralism the authors have the possibility of questioning the dominant structural paradigm even though it might never become the new dominant. In this light the post-structural paradigm can serve the purpose of challenging the dominant structural paradigm.

Positivism

Only three articles deal with a positivist assumption. But neither of them are part of level 4. Therefore, it is unlikely that this is a new paradigm trying to substitute another. If a substitution was expected articles on level 4 would be needed as a response or an attack on the dominant deep assumptions.

Furthermore, two of the articles are a part of the TRIZ framework. As already mentioned TRIZ is originally founded on the idea that "someone somewhere has already solved your problem" (Mann, 2005, p. 18). The other articles related to the TRIZ framework are seen less radical. Therefore, I perceive the articles with the positivist paradigm to be leftovers of a time that once was.

Systems Thinking, Constructivism and Structuralism

Finally, a thing that is important to pinpoint is the anomalies between the levels in relation to systems thinking, constructivism and structuralism. Half of the articles belonging to level 4

are a part of systems thinking and constructivism combined. None of the articles are related to pure structuralism. On the contrary, most of the articles on level 1 and 3 belong to structuralism. This could indicate that the systems thinking in combination with constructivism is the main challenging paradigm (maybe even 'soon-to-be' dominant logic). As previously stated, structuralism and systems thinking have some similarities. Both paradigms hold the assumption that something influences creativity and innovation management processes. On the other hand, it is also interesting to see what differs between the two paradigms. Namely, the complexity: Where structuralism can focus on single structures, systems thinking always focus on the several parts that make the whole. This is also the outcome of the articles at level 4 belonging to a combined view of systems thinking and constructivism. They all deal with the complexity of the field of creativity and innovation management. Moreover, the complexity is further emphasized with the combination of constructivism together with systems thinking. Even though the system as a whole is dominant individuals also hold the possibility of influencing.

When an anomaly has become the expected within a certain research community then the paradigm has been adjusted or a new paradigm has been found. In creativity and innovation management this is not the case. A crisis, in Kuhn's terminology, has occurred, but a new paradigm has not yet become the expected. What we are experiencing within creativity and innovation management is a very complex affair. Maybe the only possibility of dealing with it is to divide the field into smaller and more specialized fields.

Final Reflections

Finally, before I end this thesis, I will present a few reflections that will hopefully shed some light on the future of the field of creativity and innovation management in relation to the specific dissertation.

My driving force for this dissertation was the idea that I could create an overview of the complex field under investigation. It was my hope that I could make it easier for other researchers and managers to approach this field. It was also my hope that this dissertation could help gain awareness of the lenses through which the community of researchers perceives creativity and innovation management. After completing my analyses I must admit that some of the threads unravelled, but not to the extent that I had hoped for. Therefore, even

though we are on the way to a more complete understanding of this complex field, further studies need to be done.

Complexity is an influential part of many aspects of today's society. As previously mentioned in the data collection-section complexity is an inherent part of the scientific domain. Morris et al. (2009) explained how the entire field of science was affected by an increasingly number of academics and students plus the fact that knowledge spreads throughout the Internet. Furthermore, as explained by several of the authors in the data, especially in the level 4 articles, the field under investigation has been influenced from many different directions over time. The field constantly expanding and becoming more specialised. Furthermore, with a shift in ontological direction away from simpler structuralism to systems thinking the complexity is pervading from the core of the subject. This, inevitably leads to increasing complexity.

Kuhn's original ideas on paradigms are pretty black and white. It is either one or the other. However, as this dissertation shows, there is a large grey area in between. This does not help to solve the complexity problem either.

One thing could have done this thesis less complex: If neither 'perspectives' nor 'approaches' were a part of the analyses. However, it was important to include these dimensions in order to create a deeper understanding of creativity and innovation management and make the field a bit more operationalizable. If I only included paradigms the results would have been less useful because of the main focus on the subtle layers.

Further studies can help removing parts of the complexity. New studies can be made with this body of literature by including a larger focus on the operational parts. Since an initial classification has been made the field is much more accessible in regards to the 'perspectives' and 'approaches' level. In addition to this, new studies can also be carried out with a focus on other journals dealing with the same topic and over longer time spans. If we view the results of this dissertation in relation to other data sources we are able get a better understanding of the various perceptions of creativity and innovation management.

Conclusion

This dissertation has dealt with the field of creativity and innovation management. In a study of all published articles in CIM from 2005-1010 the dissertation sets out to create a deeper understanding of the field by presenting different perceptions of scholars within the field.

Creativity and innovation management is a complex field with influences from various disciplines such as psychology, economy, human resource management, design, etc.

Five paradigms have been localized with different assumptions on how to archive success within this field. The most widespread paradigm is structuralism, which conceives creativity and innovation management as being dependent on certain structures. These structures make practice possible within this field. The structures are both physical and psychological and affect behaviour in many ways.

The second most common paradigm is constructivism, which is based on the assumption that humans generate knowledge and meaning from interaction between their experiences and their ideas. In this view, the field of creativity and innovation management is under constant construction.

Systems thinking is a challenging paradigm to both structuralism and constructivism. In a way, systems thinking can be seen as containing assumptions from both structuralism and constructivism. Nevertheless, systems thinking is more than that. Within this paradigm interdependence is central and creativity and innovation management is created through socio-cultural processes in a system. A system is a group of interdependent elements forming a whole. According to this dissertation, systems thinking is likely to become the new dominant logic within this field.

One of the two least supported paradigms is post-structuralism. The group of post-structuralist researchers does not believe that creativity and innovation management have any prescriptive nature. Nor do they believe that it is possible to locate in any moment of time. Creativity and innovation management happens right now and all the time in what you are doing.

The last paradigm introduced is positivism. Supporters of this paradigm perceive creativity and innovation management as a search for the answer to a specific problem. Positivism is built on the foundation that knowledge is discovered from the world. Positivism is not often used within the field of creativity and innovation management as this view, according to this dissertation, is regarded as a leftover from earlier times.

Besides the different paradigms another five perspectives were located in this dissertation. Each perspective is seen in relation to a certain object, which is subject to investigation. In relation to creativity and innovation management the five perspectives define the common denominators for investigation, which are the person, the organization, the context, the product and the situation. To complicate things further a mixing perspective was also located. This was based on the view that several perspectives together can find a solution to a problem within creativity and innovation management.
Finally, an unnumbered amount of approaches were also discovered in the dissertation. These are related to the different perspectives and explain a method for solving a problem in relation to a specific perspective. The approaches as a category explain on a micro level what affects an innovative behavior more directly.

At the end of the analyses a framework was introduced that combine paradigms, perspectives, and approaches. The framework contains the elements, which together form the different perceptions of the practitioners of creativity and innovation management. This framework can be seen as a starting point for a simplification of the field of creativity and innovation management, with a purpose of providing the reader, researchers, scholars or managers with an understanding of the various elements and their interdependence.

References

Theory and Methodology

Articles

Berthon, P., A. Nairn, and A. Money (2003), Through the Paradigm Funnel: "A Conceptual Tool for Literature Analysis," *Marketing Education Review*, Volume 13 (2), pp. 55-66

Barrutia, Jose´ M. and A. Gilsanz (2009), "e-Service Quality: Overview and Research Agenda", *International Journal of Quality and Service Sciences*, Volume 1 (1), pp. 29-50

Morris, Huw, C. Harvey, and A. Kelly (2009), "Journal Rankings and the ABS Journal Quality Guide", *Management Decision,* Volume 47 (9), pp. 1441-1451

Books

Fuglsans, Lars (2004); Fuglsang, Lars and P. B. Olsen (Eds), "Videnskabsteori På Tværs af Fagkulturer og Paradigmer i Samfundsvidenskaberne", *Roskilde Universitetsforlag*, Frederiksberg, pp. 115-143

Heding, Tilde; C. F. Knudtzen, and M. Bjerre (2008); K. Tollin and A. Caru (Eds), "Strategic Market Creation", John Wiley & Sons, 2.nd chapter,

Kuhn, Thomas S. (1996), "The Structure of Scientfic Revoultion", *The University of Chicago Press*, 3rd edition, Chicago/London

Nickles, Thomas (1999); Runco, Mark A. and S. R. Pritzker (Eds), "Encyclopedia of Creativity", *London and San Diego*, Volume 1 A-, pp. 335-346

Rasborg, Rasmus (2004); Fuglsang, Lars and P. B. Olsen (Eds), "Videnskabsteori På Tværs af Fagkulturer og Paradigmer i Samfundsvidenskaberne", *Roskilde Universitetsforlag*, Frederiksberg, pp. 349-385

Rathunde, Kevin (1999); Runco, Mark A. and S. R. Pritzker (Eds), "Encyclopedia of Creativity", *London and San Diego*, Volume 1 A-, pp. 605-610

Stormhøj, Christel (2004); Fuglsang, Lars and P. B. Olsen (Eds), "Videnskabsteori På Tværs af Fagkulturer og Paradigmer i Samfundsvidenskaberne", *Roskilde Universitetsforlag*, Frederiksberg, pp. 473-514

Films

Dalsgaard, Andreas M. (2009), "Cities on Speed - Bogotá Change", *Upfront Films*, Copenhagen

Web

All websites were located on 8th of March, 2011

web 1

http://www.news.Harvard.edu/gazette/2004/03.11/01-mockus.html

web 2

http://en.wikipedia.org/wiki/Antanas_Mockus

web 3

http://www.news.Harvard.edu/gazette/2004/03.11/01-mockus.html

web 4

http://dictionary.reference.com/browse/paradigm

web 5

http://web.ebscohost.com/ehost/selectdb?vid=1&hid=12&sid=b9b8c492-aa69-403a-9633-c3dcee5b58ee%40sessionmgr10

web 6

http://www.sciencedirect.com.esc-web.lib.cbs.dk/science?_ob=BrowseListURL&_type=subject&subjColl=7&zone=brws&_acct=C000033618&_version=1&_urlVersion=0&_userid=634332&md5=06d7a84b2ed66503aa068977ff965930

web 7

http://info.sciencedirect.com.esc-web.lib.cbs.dk/content/journals

web 8

http://frontpage.cbs.dk/insights/640009.shtml

web 9

http://www.wiley.com/bw/aims.asp?ref=0963-1690&site=1

web 10

http://www.harzing.com/jql.htm

web 11

http://www.the-abs.org.uk/?id=257

web 12

http://www.wiley.com/bw/editors.asp?ref=0963-1690&site=1

web 13

http://www.wiley.com/bw/editors.asp?ref=0963-1690&site=1

web 14

http://en.wikipedia.org/wiki/Innovation

web 15

http://www.iep.utm.edu/deleuze/

Data

All articles are from Journal of Creativity and Innovation Management

Volume 14 (2005)

vol_14_1_2
Moehrle, Martin G. (2005), "What is TRIZ? From Conceptual Basics to a Framework for Research", pp. 3-13

vol_14_1_3
Mann, Darrell (2005), "New and Emerging Contradiction Elimination Tools", pp.14-21

vol_14_1_4
Hipple, Jack (2005), "The Integration of TRIZ with Other Ideation Tools and Processes as well as with Psychological Assessment Tools", pp. 22-33

vol_14_1_5
Zhang, Jun, K. Chai, and K. Tan (2005), "Applying TRIZ to Service Conceptual Design: An Exploratory Study", pp. 34-42

vol_14_1_6
Mueller, Sandra (2005), "The TRIZ Resource Analysis Tool for Solving Management Tasks: Previous Classifications and their Modification", pp. 43-58

vol_14_1_7
Hill, Bernd (2005), "Goal Setting Through Contradiction Analysis in the Bionics-Oriented

Construction Process", pp. 59-65

vol_14_1_8
Vincent, Julian F.V., O. Bogatyreva, A. Pahl, N. Bogatyrev, and A. Bowyer (2005), "Putting Biology into TRIZ: A Database of Biological Effects", pp. 66-72

vol_14_1_9
Lewis, Michael and J. Moultrie (2005), "The Organizational Innovation Laboratory", pp. 73-83

vol_14_1_10
Sundgren, Mats, M. Selart, A. Ingelgård, and C. Bengtson (2005), "Dialogue-Based Evaluation as a Creative Climate Indicator: Evidence from the Pharmaceutical Industry", pp. 84-98

vol_14_2_1
Leede, Jan de and J. K. Looise (2005), "Innovation and HRM: Towards an Integrated Framework", pp. 108-117

vol_14_2_2
Shipton, Helen, D. Fay, M. West, M. Patterson, and K. Birdi (2005), "Managing People to Promote Innovation", pp. 118-128

vol_14_2_3
Dorenbosch, Luc, M. L. van Engen and M. Verhagen (2005), "On-the-job Innovation: The Impact of Job Design and Human Resource Management through Production Ownership", pp. 129-141

vol_14_2_4
Ramamoorthy, Nagarajan, P. C. Flood, T. Slattery and R. Sardessai (2005), "Determinants of Innovative Work Behaviour: Development and Test of an Integrated Model", pp. 142-150

vol_14_2_5
Steijn, Bram and K. Tijdens (2005), "Workers and Their Willingness to Learn: Will ICT-Implementation Strategies and HRM Practices Contribute to Innovation?", pp. 151-159

vol_14_2_6
Bondarouk, Tanya and J. K. Looise (2005), "HR Contribution to IT Innovation Implementation: Results of Three Case Studies", pp. 160-168

vol_14_2_7
Bassett-Jones, Nigel (2005), "The Paradox of Diversity Management, Creativity and Innovation", pp. 169-175

vol_14_2_8
Yap, Chee-Meng, K. Chai, and P. Lemaire (2005), "An Empirical Study on Functional

Diversity and Innovation in SMEs", pp. 176-190

vol_14_2_9
Abetti, Pier A. (2005), "Case Study: The Creative Evolution of Steria: From French Venture to European Leader without Loss of Entrepreneurial Spirit and Control (1969–2004)", pp. 191-204

vol_14_3_1
Looy, Bart Van, T. Martens, and K. Debackere (2005), "Organizing for Continuous Innovation: On the Sustainability of Ambidextrous Organizations", pp. 208-221

vol_14_3_2
Cesaroni, Fabrizio, A. Di Minin and A. Piccaluga (2005), "Exploration and Exploitation Strategies in Industrial R&D", pp. 222-232

vol_14_3_3
Gassmann, Oliver and Gerrit Reepmeyer (2005), "Organizing Pharmaceutical Innovation: From Science-based Knowledge Creators to Drug-oriented Knowledge Brokers", pp. 233-245

vol_14_3_4
Vanhaverbeke, Wim and Nico Peeters (2005), "Embracing Innovation as Strategy: Corporate Venturing, Competence Building and Corporate Strategy Making", pp. 246-257

vol_14_3_5
Uittenbogaard, Boaz, L. Broens, and A. J. Groen (2005), "Towards a Guideline for Design of a Corporate Entrepreneurship Function for Business Development in Medium- Sized Technology-Based Companies", pp. 258-271

vol_14_3_6
Medina, Carmen C., A. C. Lavado, and R. V. Cabrera (2005), "Characteristics of Innovative Companies: A Case Study of Companies in Different Sectors", pp. 272-287

vol_14_3_7
Haner, Udo-Ernst (2005), "Spaces for Creativity and Innovation in Two Established Organizations", pp. 288-298

vol_14_3_8
Soosay, Claudine A. (2005), "An Empirical Study of Individual Competencies in Distribution Centres to Enable Continuous Innovation", pp. 299-310

vol_14_3_9
Ames, Michael and M. A. Runco (2005), "Predicting Entrepreneurship From Ideation and Divergent Thinking", pp. 311-315

vol_14_3_10
Andriopoulos, Constantine and M. Gotsi (2005), "The Virtues of 'Blue Sky' Projects: How

Lunar Design Taps into the Power of Imagination", pp. 316-324

vol_14_4_1
Koners, Ursula and K. Goffin (2005), "Learning from New Product Development Projects: An Exploratory Study", pp. 334-344

vol_14_4_2
Hatchuel, Armand, P. Le Masson, and B. Weil (2005), "The Development of Science-Based Products: Managing by Design Spaces", pp. 345-354

vol_14_4_3
Varela, José Antonio, P. Fernández, M. L. Del Río, and B. Bande (2005), "Cross-Functional Conflict, Conflict Handling Behaviours and New Product Performance in Spanish Firms", pp. 355-365

vol_14_4_4
Ledwith, Ann and P. Coughlan (2005), "Splendid Isolation: Does Networking Really Increase New Product Success?", pp. 366-373

vol_14_4_5
Hurmelinna, Pia, K. Blomqvist, K. Puumalainen, and S. Saarenketo (2005), "Striving Towards R&D Collaboration Performance: The Effect of Asymmetry, Trust and Contracting", pp. 374-383

vol_14_4_6
Christiansen, John K., A. Hansen, C. J. Varnes, and J. H. Mikkola (2005), "Competence Strategies in Organizing Product Development", pp. 384-392

vol_14_4_7
Dawson, Kelly, P. Larsen, G. Cawood and A. Lewis (2005), "National Product Design Identities", pp. 393-404

vol_14_4_8
Ottesen, Geir Grundvåg and K. Grønhaug (2005), "Positive Illusions and New Venture Creation: Conceptual Issues and An Empirical Illustration", pp. 405-412

vol_14_4_9
Manimala, Mathew J., P.D. Jose, and K. R. Thomas (2005), "Organizational Design for Enhancing the Impact of Incremental Innovations: A Qualitative Analysis of Innovative Cases in the Context of a Developing Economy", pp. 413-424

vol_14_4_10
Enkel, Ellen, J. Perez-Freije, and O. Gassmann (2005), "Minimizing Market Risks Through Customer Integration in New Product Development: Learning from Bad Practice", pp. 425-437

Volume 15 (2006)

vol_15_1_1
Rickards, Tudor and S. Moger (2006), "Creative Leaders: A Decade of Contributions from Creativity and Innovation Management Journal", pp. 4-18

vol_15_1_2
Puccio, Gerard J., R. L. Firestien, C. Coyle, and C. Masucci (2006), "A Review of the Effectiveness of CPS Training: A Focus on Workplace Issues", pp. 19-33

vol_15_1_3
O'Quin, Karen and S. P. Besemer (2006), "Using the Creative Product Semantic Scale as a Metric for Results-Oriented Business", pp. 34-44

vol_15_1_4
Basadur, Min and G. A. Gelade (2006), "The Role of Knowledge Management in the Innovation Process",pp. 45-62

vol_15_1_5
Chun, Rosa (2006), "Innovation and Reputation: An Ethical Character Perspective", pp. 63-73

vol_15_1_6
Abetti, Pier A. (2006), "Case Study: Jack Welch's Creative Revolutionary Transformation of General Electric and the Thermidorean Reaction (1981–2004)", pp. 74-84

vol_15_1_7
Laugen, Bjørge Timenes, H. Boer, and N. Acur (2006), "The New Product Development Improvement Motives and Practices of Miles and Snow's Prospectors, Analysers and Defenders", pp. 85-95

vol_15_1_8
Kratzer, Jan, R. Th.A.J. Leenders, and J. M.L. van Engelen (2006), "Team Polarity and Creative Performance in Innovation Teams", pp. 96-104

vol_15_1_9
Chen, Ming-Huei (2006), "Understanding the Benefits and Detriments of Conflict on Team Creativity Process", pp. 105-116

vol_15_2_1
Jeanes, Emma L. (2006), "'Resisting Creativity, Creating the New'. A Deleuzian Perspective on Creativity", pp. 127-134

vol_15_2_2
Sørensen, Bent Meier (2006), "Identity Sniping: Innovation, Imagination and the Body", pp. 135-142

vol_15_2_3
Styhre, Alexander (2006), “Organization Creativity and the Empiricist Image of Novelty”, pp. 143-149

vol_15_2_4
Slutskaya, Natalie (2006), “Creativity and Repetition”, pp. 150-156

vol_15_2_5
Lightfoot, Geoff, S. Lilley, and D. Kavanagh (2006), “The End of the Shock of the New”, pp. 157-163

vol_15_2_6
Schweizer, Tanja Sophie (2006), “The Psychology of Novelty-Seeking, Creativity and Innovation: Neurocognitive Aspects Within a Work-Psychological Perspective”, pp. 164-172

vol_15_2_7
Miettinen, Reijo (2006), “The Sources of Novelty: A Cultural and Systemic View of Distributed Creativity”, pp. 173-181

vol_15_2_8
Hyland, Paul W., J. Marceau, and T. R. Sloan (2006), “Sources of Innovation and Ideas in ICT Firms in Australia”, pp. 182-194

vol_15_2_9
Moehrle, Martin G. and S. Wenzke (2006), “Exploring Problems with Function Analysis. Experimental Insights for Team Management”, pp. 195-206

vol_15_2_10
Luenen, Henri G.A.M. van and W. H. van Harten (2006), “Quality Management and Stimulation of Technology Transfer in a Research Institute”, pp. 207-217

vol_15_3_1
Dempster, Anna M. (2006), “Managing Uncertainty in Creative Industries: Lessons from Jerry Springer the Opera”, pp. 224-233

vol_15_3_2
Eikhof, Doris Ruth and A. Haunschild (2006), “Lifestyle Meets Market: Bohemian Entrepreneurs in Creative Industries”, pp. 234-241

vol_15_3_3
Mathieu, Chris (2006), “Transforming the Danish Film Field Via ‘Professionalization’, Penetration and Integration”, pp. 242-249

vol_15_3_4
Davenport, John (2006), “UK Film Companies: Project-Based Organizations Lacking

Entrepreneurship and Innovativeness?", pp. 250-257

vol_15_3_5
Yamada, Jin-ichiro and M. Yamashita (2006), "Entrepreneurs' Intentions and Partnership Towards Innovation: Evidence from the Japanese Film Industry", pp. 258-267

vol_15_3_6
Napier, Nancy K. and M. Nilsson (2006), "The Development of Creative Capabilities in and out of Creative Organizations: Three Case Studies", pp. 268-278

vol_15_3_7
Allocca, Michael A. and E. H. Kessler (2006), "Innovation Speed in Small and Medium-Sized Enterprises", pp. 279-295

vol_15_3_8
Bakker, Han, K. Boersma, and S. Oreel (2006), "Creativity (Ideas) Management in Industrial R&D Organizations: A Crea-Political Process Model and an Empirical Illustration of Corus RD&T", pp. 296-309

vol_15_3_9
Rehn, Alf and S. Vachhani (2006), "Innovation and the Post-Original: On Moral Stances and Reproduction", pp. 310-322

vol_15_4_1
Jørgensen, Frances, H. Boer, and B. T. Laugen (2006), "CI Implementation: An Empirical Test of the CI Maturity Model", pp. 328-337

vol_15_4_2
Middel, Rick, H. Boer, and O. Fisscher (2006), "Continuous Improvement and Collaborative Improvement: Similarities and Differences", pp. 338-347

vol_15_4_3
Kaltoft, Rasmus, H. Boer, R. Chapman, F. Gertsen, and J. S. Nielsen (2006), "Collaborative Improvement – Interplay but not a Game", pp. 348-358

vol_15_4_4
Lassen, Astrid Heidemann, F. Gertsen, and J. O. Riis (2006), "The Nexus of Corporate Entrepreneurship and Radical Innovation", pp. 359-372

vol_15_4_5
Talke, Katrin, S. Salomo, and N. Mensel (2006), "A Competence-Based Model of Initiatives for Innovations", pp. 373-384

vol_15_4_6
Heerkens, Hans (2006), "Assessing the Importance of Factors Determining Decision-Making by Actors Involved in Innovation Processes", pp. 385-399

vol_15_4_7
Hänninen, Seppo and I. Kauranen (2006), "A Multidimensional Product-Concept Model Enhancing Cross-Functional Knowledge Creation in the Product Innovation Process: The Case of the Suunto t6 Training Wrist Computer", pp. 400-409

vol_15_4_8
Ibrahim, Sherwat E., M. H. Fallah, and R. R. Reilly (2006), "Do Localized Clusters Influence Creativity of Inventors?", pp. 410-418

vol_15_4_9
Zackariasson, Peter, A. Styhre, and T. L. Wilson (2006), "Phronesis and Creativity: Knowledge Work in Video Game Development", pp. 419-429

Volume 16 (2007)

vol_16_1_1
Isaksen, Scott G. (2007), "The Climate for Transformation: Lessons for Leaders", pp. 3-15

vol_16_1_2
Tassoul, Marc and J. Buijs (2007), "Clustering: An Essential Step from Diverging to Converging", pp. 16-26

vol_16_1_3
Alves, Jorge, M. J. Marques, I. Saur, and P. Marques (2007), "Creativity and Innovation through Multidisciplinary and Multisectoral Cooperation", pp. 27-34

vol_16_1_4
Visser, Froukje Sleeswijk, R. van der Lugt, and P. J. Stappers (2007), "Sharing User Experiences in the Product Innovation Process: Participatory Design Needs Participatory Communication", pp. 35-45

vol_16_1_5
Holmquist, Mats (2007), "Managing Project Transformation in a Complex Context", pp. 46-52

vol_16_1_6
Moultrie, James, M. Nilsson, M. Dissel, U. Haner, S. Janssen, and R. Van der Lugt (2007), "Innovation Spaces: Towards a Framework for Understanding the Role of the Physical Environment in Innovation", pp. 53-65

vol_16_1_7
Lugt, Remko van der, S. Janssen, S. Kuperus, and E. de Lange (2007), "Future Center 'The Shipyard': Learning from Planning, Developing, Using and Refining a Creative Facility", pp. 66-79

vol_16_1_8
Dewett, Todd and S. D. Williams (2007),"Innovators and Imitators in Novelty-intensive Markets: A Research Agenda", pp. 80-92

vol_16_1_9
Mostert, Nel M. (2007), "Diversity of the Mind as the Key to Successful Creativity at Unilever", pp. 93-100

vol_16_2_1
Elmquist, Maria and B. Segrestin (2007), "Towards a New Logic for Front End Management: From Drug Discovery to Drug Design in Pharmaceutical R&D", pp. 106-120

vol_16_2_2
Henneke, Daniel and C. Lüthje (2007), "Interdisciplinary Heterogeneity as a Catalyst for Product Innovativeness of Entrepreneurial Teams", pp. 121-132

vol_16_2_3
Karlsson, Christer and M. Sköld (2007), "Counteracting Forces in Multi-branded Product Platform Development", pp. 133-141

vol_16_2_4
Larsen, Povl and A. Lewis (2007), "How Award-Winning SMEs Manage the Barriers to Innovation", pp. 142-151

vol_16_2_5
Perks, Helen (2007), "Inter-functional Integration and Industrial New Product Portfolio Decision Making: Exploring and Articulating the Linkages", pp. 152-164

vol_16_2_6
Bröring, Stefanie and J. Leker (2007), "Industry Convergence and Its Implications for the Front End of Innovation: A Problem of Absorptive Capacity", pp. 165-175

vol_16_2_7
Kim, Jongbae and D. Wilemon (2007), "The Learning Organization as Facilitator of Complex NPD Projects", pp. 176-191

vol_16_2_8
Meer, Han van der (2007), "Open Innovation – The Dutch Treat: Challenges in Thinking in Business Models", pp. 192-202

vol_16_2_9
Buijs, Jan (2007), "Innovation Leaders Should be Controlled Schizophrenics", pp. 203-210

vol_16_3_1
Xu, Fangqi and T. Rickards (2007), "Creative Management: A Predicted Development from

Research into Creativity and Management", pp. 216-228

vol_16_3_2
Wang, Karen Yuan and G. Casimir (2007), "How Attitudes of Leaders May Enhance Organizational Creativity: Evidence from a Chinese Study", pp. 229-238

vol_16_3_3
Chen, Ming-Huei (2007), "Entrepreneurial Leadership and New Ventures: Creativity in Entrepreneurial Teams", pp. 239-249

vol_16_3_4
Rego, Arménio, F. Sousa, M. P. e Cunha, A. Correia, and I. Saur-Amaral (2007), "Leader Self-Reported Emotional Intelligence and Perceived Employee Creativity: An Exploratory Study", pp. 250-264

vol_16_3_5
Sandberg, Birgitta (2007), "Enthusiasm in the Development of Radical Innovations", pp. 265-273

vol_16_3_6
Johnson, William H.A. (2007), "Managing Uncertainty in Innovation: The Applicability of Both Real Options and Path Dependency Theory", pp. 274-281

vol_16_3_7
Christiansen, John K. and C. J. Varnes (2007), "Making Decisions on Innovation: Meetings or Networks?", pp. 282-298

vol_16_3_8
Huhtala, Hannele and M. Parzefall (2007), "A Review of Employee Well-Being and Innovativeness: An Opportunity for a Mutual Benefit", pp. 299-306

vol_16_3_9
Malakate, Anna, C. Andriopoulos, and M. Gotsi (2007), "Assessing Job Candidates' Creativity: Propositions and Future Research Directions", pp. 307-316

vol_16_3_10
Bidault, Francis, J. de La Torre, C. de Rham, and M. Sisto (2007), "What Makes Executives Trust Each Other? The Determinants of the Willingness to Rely on Trust in Business Partnerships", pp. 317-329

vol_16_4_1
Corso, Mariano and L. Pellegrini (2007), "Continuous and Discontinuous Innovation: Overcoming the Innovator Dilemma", pp. 333-347

vol_16_4_2
Dabhilkar, Mandar, L. Bengtsson, and J. Bessant (2007), "Convergence or National

Specificity? Testing the CI Maturity Model across Multiple Countries", pp. 348-362

vol_16_4_3
Jørgensen, Frances, B. T. Laugen, and H. Boer (2007), "Human Resource Management for Continuous Improvement", pp. 363-375

vol_16_4_4
Carpinetti, Luiz Cesar Ribeiro, M. C. Gerolamo, and E. V. C. Galdámez (2007), "Continuous Innovation and Performance Management of SME Clusters", pp. 376-385

vol_16_4_5
García-Arca, Jesús and J. C. Prado-Prado (2007), "The Implementation of New Technologies Through a Participative Approach", pp. 386-396

vol_16_4_6
Laugen, Bjørge Timenes and H. Boer (2007), "The Implementation of Best Practices: Process and Performance Effects", pp. 397-407

vol_16_4_7
Gemünden, Hans Georg, S. Salomo, and K. Hölzle (2007), "Role Models for Radical Innovations in Times of Open Innovation", pp. 408-421

vol_16_4_8
Sim, Edward W., A. Griffin, R. L. Price, and B. A. Vojak (2007), "Exploring Differences between Inventors, Champions, Implementers and Innovators in Creating and Developing New Products in Large, Mature Firms", pp. 422-436

vol_16_4_9
Andersson, Hans and C. Berggren (2007), "Individual Inventors in the R&D Factory", pp. 437-446

vol_16_4_10
Grosse, Diana (2007), "Leadership in R&D Projects", pp. 447-456

Volume 17 (2008)

vol_17_1_1
Paleo, Iván Orosa and N. M. Wijnberg (2008), "Organizational Output Innovativeness: A Theoretical Exploration, Illustrated by a Case of a Popular Music Festival", pp. 3-13

vol_17_1_2
Lichtenthaler, Ulrich and H. Ernst (2008), "Innovation Intermediaries: Why Internet Marketplaces for Technology Have Not Yet Met the Expectations", pp. 14-25

vol_17_1_3

Kratzer, Jan and C. Lettl (2008), “A Social Network Perspective of Lead Users and Creativity: An Empirical Study among Children”, pp. 26-36

vol_17_1_4
DiLiello, Trudy C. and J. D. Houghton (2008), “Creative Potential and Practised Creativity: Identifying Untapped Creativity in Organizations”, pp. 37-46

vol_17_1_5
Styhre, Alexander and M. Eriksson (2008), “Bring in the Arts and Get the Creativity for Free: A Study of the Artists in Residence Project”, pp. 47-57

vol_17_1_6
Gebauer, Heiko, R. Krempl, and E. Fleisch (2008), “Exploring the Effect of Cognitive Biases on Customer Support Services”, pp. 58-70

vol_17_1_7
Chen, Ming-Huei and G. Kaufmann (2008), “Employee Creativity and R&D: A Critical Review”, pp. 71-76

vol_17_1_8
Boehlke, Steve (2008), “The Politics of CreativityTM: Four Domains for Inquiry and Action by Leaders in R&D”, pp. 77-87

vol_17_2_1
Gassmann Oliver and M. Zeschky (2008), “Opening up the Solution Space: The Role of Analogical Thinking for Breakthrough Product Innovation”, pp. 97-106

vol_17_2_2
Li, Ying, W. Vanhaverbeke, and W. Schoenmakers (2008), “Exploration and Exploitation in Innovation: Reframing the Interpretation”, pp. 107-126

vol_17_2_3
Mahmoud-Jouini, Sihem Ben and F. Charue-Duboc (2008), “Enhancing Discontinuous Innovation through Knowledge Combination: The Case of an Exploratory Unit within an Established Automotive Firm”, pp. 127-135

vol_17_2_4
Styhre, Alexander (2008), “The Element of Play in Innovation Work: The Case of New Drug Development”, pp. 136-146

vol_17_2_5
Torka, Nicole, M. van Woerkom, and J. Looise (2008), “Direct Employee Involvement Quality (DEIQ)”, pp. 147-154

vol_17_2_6
DeCusatis, Casimer (2008), “Creating, Growing and Sustaining Efficient Innovation Teams”,

pp. 155-164

vol_17_3_1
Ford, Cameron M., M. P. Sharfman, and J. W. Dean (2008), “Factors Associated with Creative Strategic Decisions”, pp. 171-185

vol_17_3_2
Salomo, Sören, J. Brinckmann, and K. Talke (2008), “Functional Management Competence and Growth of Young Technology-Based Firms”, pp. 186-203

vol_17_3_3
Caughron, Jay J. and M. D. Mumford (2008), “Project Planning: The Effects of Using Formal Planning Techniques on Creative Problem-Solving”, pp. 204-215

vol_17_3_4
Koch, Rudolph and K. Leitner (2008), “The Dynamics and Functions of Self-Organization in the Fuzzy Front End: Empirical Evidence from the Austrian Semiconductor Industry”, pp. 216-226

vol_17_3_5
Reuvers, Mark, M. L. van Engen, C. J. Vinkenburg, and E. Wilson-Evered (2008), “Transformational Leadership and Innovative Work Behaviour: Exploring the Relevance of Gender Differences”, pp. 227-244

vol_17_4_1
Vanhaverbeke, Wim, V. V. de Vrande, and H. Chesbrough (2008), “Understanding the Advantages of Open Innovation Practices in Corporate Venturing in Terms of Real Options”, pp. 251-258

vol_17_4_2
Hospers, Gert-Jan and C. Pen (2008), “A View on Creative Cities Beyond the Hype”, pp. 259-270

vol_17_4_3
Raesfeld, Ariane von and K. Roos (2008), “How Should a Small Company Interact in Its Business Network to Sustain Its Exchange Effectiveness?”, pp. 271-280

vol_17_4_4
Steen, Marianne van der and J. Enders (2008), “Universities in Evolutionary Systems of Innovation”, pp. 281-292

vol_17_4_5
Hoppe, Rob (2008), “Public Policy Systems Dealing with Ethically Contested Medical Technological Innovations”, pp. 293-303

vol_17_4_6

Rose-Anderssen, Christen, J. S. Baldwin, K. Ridgway, P. M. Allen, and L. Varga (2008), "Aerospace Supply Chains as Evolutionary Networks of Activities: Innovation via Risk-Sharing Partnerships", pp. 304-318

vol_17_4_7
Buijs, Jan (2008), "Action Planning for New Product Development Projects", pp. 319-333

Volume 18 (2009)

vol_18_1_1
Magnusson, Mats, P. Boccardelli, and S. Börjesson (2009), "Managing the Efficiency-Flexibility Tension in Innovation: Strategic and Organizational Aspects", pp. 2-7

vol_18_1_2
Sandström, Christian, M. Magnusson, and J. Jörnmark (2009), "Exploring Factors Influencing Incumbents' Response to Disruptive Innovation", pp. 8-15

vol_18_1_3
Lassen, Astrid Heidemann, B. V. Waehrens, and H. Boer (2009), "Re-orienting the Corporate Entrepreneurial Journey: Exploring the Role of Middle Management", pp. 16-23

vol_18_1_4
Brun, Eric and A. S. Sætre (2009), "Managing Ambiguity in New Product Development Projects", pp. 24-34

vol_18_1_5
Bengtsson, Lars, R. von Haartman, and M. Dabhilkar (2009), "Low-Cost versus Innovation: Contrasting Outsourcing and Integration Strategies in Manufacturing", pp. 35-47

vol_18_1_6
Hallgren, Erik W. (2009), "How to Use an Innovation Audit as a Learning Tool: A Case Study of Enhancing High-Involvement Innovation", pp. 48-58

vol_18_2_1
Schuh, Günther, J. Kreysa, and C. Haag (2009), "The Product Piracy Conflict Matrix – Finding Solutions to Prevent Product Piracy", pp. 63-70

vol_18_2_2
Cavallucci, Denis, F. Rousselot, and C. Zanni (2009), "Linking Contradictions and Laws of Engineering System Evolution within the TRIZ Framework", pp. 71-80

vol_18_2_3
Hentschel, Claudia (2009), "Attribute-Domain Matrix: A Reverse Engineering Method for Innovation", pp. 81-89

vol_18_2_4
Glaser, Markus and B. Miecznik (2009), “TRIZ for Reverse Inventing in Market Research: A Case Study from WITTENSTEIN AG, Identifying New Areas of Application of a Core Technology”, pp. 90-100

vol_18_2_5
Belski, Iouri (2009), “Teaching Thinking and Problem Solving at University: A Course on TRIZ”, pp. 101-108

vol_18_2_6
Brink, Johan and M. Holmén (2009), “Capabilities and Radical Changes of the Business Models of New Bioscience Firms”, pp. 109-120

vol_18_2_7
Visscher, Klaasjan and O. A.M. Fisscher (2009), “Cycles and Diamonds: How Management Consultants Diverge and Converge in Organization Design Processes”, pp. 121-131

vol_18_2_8
Kobe, Carmen and I. Goller (2009), “Assessment of Product Engineering Creativity”, pp. 132-140

vol_18_3_1
Martinsuo, Miia (2009), “Teaching the Fuzzy Front End of Innovation: Experimenting with Team Learning and Cross-Organizational Integration”, pp. 147-159

vol_18_3_2
Fernandes, António Augusto, S. da S. Vieira, A. P. Medeiros, and R. M. N. Jorge (2009), “Structured Methods of New Product Development and Creativity Management: A Teaching Experience”, pp. 160-175

vol_18_3_3
Cousens, Alan, K. Goffin, R. Mitchell, C. van der Hoven, and M. Szwejczewski (2009), “Teaching New Product Development Using the ‘CityCar’ Simulation”, pp. 176-189

vol_18_3_4
Coughlan, Paul and A. Graham (2009), “Embedding a Threshold Concept in Teaching and Learning of Product Development Management”, pp. 190-198

vol_18_3_5
Fixson, Sebastian K. (2009), “Teaching Innovation through Interdisciplinary Courses and Programmes in Product Design and Development: An Analysis at 16 US Schools”, pp. 199-208

vol_18_3_6
Pullen, Annemien, P. de Weerd-Nederhof, A. Groen, M. Song, and O. Fisscher (2009),"Successful Patterns of Internal SME Characteristics Leading to High Overall Innovation Performance", pp. 209-223

vol_18_3_7
Styhre, Alexander and P. Gluch (2009), "Creativity and Its Discontents: Professional Ideology and Creativity in Architect Work", pp. 224-233

vol_18_3_8
Bereiter, Carl (2009), "Innovation in the Absence of Principled Knowledge: The Case of the Wright Brothers", pp. 234-241

vol_18_4_1
Puccio, Gerard and C. Grivas (2009), "Examining the Relationship between Personality Traits and Creativity Styles", pp. 247-255

vol_18_4_2
Byrne, Cristina L., M. D. Mumford, J. D. Barrett, and W. B. Vessey (2009), "Examining the Leaders of Creative Efforts: What Do They Do, and What Do They Think About?", pp. 256-268

vol_18_4_3
Chen, Ming-Huei (2009), "Guanxi Networks and Creativity in Taiwanese Project Teams", pp. 269-277

vol_18_4_4
Hemlin, Sven (2009), "Creative Knowledge Environments: An Interview Study with Group Members and Group Leaders of University and Industry R&D Groups in Biotechnology", pp. 278-285

vol_18_4_5
Buijs, Jan, F. Smulders, and H. van der Meer (2009), "Towards a More Realistic Creative Problem Solving Approach", pp. 286-298

vol_18_4_6
Moultrie, James and A. Young (2009), "Exploratory Study of Organizational Creativity in Creative Organizations", pp. 299-314

vol_18_4_7
Magadley, Wissam and K. Birdi (2009), "Innovation Labs: An Examination into the Use of Physical Spaces to Enhance Organizational Creativity", pp. 315-325

vol_18_4_8
Verworn, Birgit (2009), “Does Age Have an Impact on Having Ideas? An Analysis of the Quantity and Quality of Ideas Submitted to a
Suggestion System”, pp. 326-334

vol_18_4_9
Probert, David and F. Tietze (2009), “Open Innovation and the CTO”, pp. 335-337

Appendices

Paradigm Funnel Clusters

Articles belonging to level 1

vol_14_1_2	vol_14_1_9	vol_14_1_10	vol_14_2_2
vol_14_2_3	vol_14_2_5	vol_14_2_8	vol_14_2_9
vol_14_3_2	vol_14_3_3	vol_14_3_4	vol_14_3_6
vol_14_3_7	vol_14_3_8	vol_14_3_9	vol_14_3_10
vol_14_4_1	vol_14_4_3	vol_14_4_4	vol_14_4_5
vol_14_4_6	vol_14_4_7	vol_14_4_9	vol_14_4_10
vol_15_1_6	vol_15_1_7	vol_15_1_8	vol_15_1_9
vol_15_2_5	vol_15_2_8	vol_15_2_9	vol_15_2_10
vol_15_3_1	vol_15_3_2	vol_15_3_3	vol_15_3_4
vol_15_3_6	vol_15_4_1	vol_15_4_3	vol_15_4_4
vol_15_4_6	vol_15_4_8	vol_15_4_9	vol_16_1_1
vol_16_1_3	vol_16_1_5	vol_16_1_7	vol_16_1_9
vol_16_2_1	vol_16_2_2	vol_16_2_3	vol_16_2_4
vol_16_2_5	vol_16_2_6	vol_16_2_7	vol_16_2_8
vol_16_3_2	vol_16_3_3	vol_16_3_4	vol_16_3_6
vol_16_3_10	vol_16_4_2	vol_16_4_3	vol_16_4_6
vol_16_4_7	vol_16_4_8	vol_16_4_9	vol_16_4_10
vol_17_1_2	vol_17_1_3	vol_17_1_4	vol_17_1_5
vol_17_1_6	vol_17_1_8	vol_17_2_1	vol_17_2_3
vol_17_2_5	vol_17_3_1	vol_17_3_3	vol_17_3_4
vol_17_3_5	vol_17_4_2	vol_17_4_3	vol_17_4_6
vol_17_4_7	vol_18_1_2	vol_18_1_3	vol_18_1_5
vol_18_1_6	vol_18_2_4	vol_18_2_5	vol_18_2_6
vol_18_2_7	vol_18_3_1	vol_18_3_2	vol_18_3_3
vol_18_3_4	vol_18_3_5	vol_18_3_6	vol_18_3_7
vol_18_3_8	vol_18_4_1	vol_18_4_3	vol_18_4_4
vol_18_4_6	vol_18_4_7	vol_18_4_8	

Articles belonging to level 2

Vol_17_1_1

Articles belonging to level 3

vol_14_1_3	vol_14_1_4	vol_14_1_5	vol_14_1_6
vol_14_1_7	vol_14_1_8	vol_14_2_1	vol_14_2_4
vol_14_2_6	vol_14_2_7	vol_14_3_1	vol_14_3_5
vol_14_4_2	vol_14_4_8	vol_15_1_2	vol_15_1_3
vol_15_1_4	vol_15_1_5	vol_15_2_4	vol_15_2_6
vol_15_3_5	vol_15_3_7	vol_15_3_8	vol_15_4_2
vol_15_4_5	vol_15_4_7	vol_16_1_2	vol_16_1_4
vol_16_1_6	vol_16_1_8	vol_16_2_9	vol_16_3_5
vol_16_3_7	vol_16_3_8	vol_16_3_9	vol_16_4_1
vol_16_4_4	vol_16_4_5	vol_17_2_2	vol_17_2_4
vol_17_2_6	vol_17_3_2	vol_17_4_1	vol_17_4_5
vol_18_1_4	vol_18_2_1	vol_18_2_2	vol_18_2_3
vol_18_2_8	vol_18_4_2	vol_18_4_5	vol_18_4_9

Articles belonging to level 4

vol_15_2_1	vol_15_2_2	vol_15_2_3	vol_15_2_7
vol_15_3_9	vol_16_3_1	vol_17_1_7	vol_17_4_4

Clusters of content:

Level 3

THE PERSON

Personality Traits

vol_14_4_8	vol_15_2_6	vol_15_4_5	vol_16_3_9
vol_18_2_8			

Behaviorism

Direct behaviorism

vol_15_1_2	vol_16_1_2	vol_18_1_4	vol_18_1_5

vol_18_2_3	vol_18_2_1	vol_18_2_2	vol_14_1_3
vol_14_1_4	vol_14_1_5	vol_14_1_6	

In-direct behaviorism

vol_14_2_4	vol_16_3_5	vol_16_3_8

Learning

vol_14_4_2	vol_15_1_4	vol_15_4_2

Interactionism

vol_14_2_7	vol_15_3_5	vol_16_1_4
vol_16_3_7	vol_17_2_6	

THE ORGANIZATION

Organizational characteristics

vol_14_3_5	vol_15_3_7	vol_16_1_8	vol_17_3_2
vol_14_3_1	vol_16_2_9	vol_16_4_1	vol_17_4_1
vol_15_3_8	vol_17_2_2		

THE CONTEXT

A holistic view

vol_16_4_5	vol_17_4_5	vol_18_4_9	vol_15_4_7
vol_16_1_6	vol_16_4_4	vol_15_1_5	

Mixing view

vol_14_2_1	vol_14_2_6	

THE PRODUCT

Systematizing

vol_14_1_7	vol_14_1_8	vol_15_1_3

THE SITUATION

Being here now

vol_15_2_4	vol_17_2_4	

Level 1

THE PERSON

Personality Traits

vol_14_3_8	vol_14_3_9	vol_15_3_2	vol_15_3_3
vol_16_3_3	vol_16_3_4	vol_16_4_7	vol_16_4_8
vol_16_4_9	vol_16_4_10	vol_18_4_1	vol_14_4_7

Behaviorism

Direct

vol_14_1_2	vol_14_4_3	vol_15_4_1	vol_15_4_4
vol_16_4_3	vol_17_2_1	vol_18_2_4	vol_18_2_5
vol_15_2_9	vol_15_4_6	vol_16_2_5	

In-direct

vol_14_1_10	vol_14_2_5	vol_14_3_10	vol_16_3_2
vol_17_1_6	vol_17_1_8	vol_17_2_5	vol_17_3_3
vol_17_3_5	vol_14_2_3		

Learning

vol_14_2_2	vol_14_4_1	vol_16_2_7	vol_16_4_2

vol_17_1_4	vol_17_3_3	vol_18_3_2	vol_18_3_4
vol_18_4_8	vol_16_1_5		

Interactionism

vol_14_4_4	vol_14_4_5	vol14_4_10	vol_15_1_8
vol_15_3_4	vol_16_1_9	vol_16_2_2	vol_16_3_10
vol_17_1_2	vol_17_1_3	vol_17_4_3	vol_18_3_3
vol_18_3_7	vol_18_3_8		

THE ORGANIZATION

Organizational characteristics

vol_14_1_9	vol_14_2_8	vol_14_3_2	vol_14_3_4
vol_14_3_6	vol_14_3_7	vol_14_4_9	vol_15_1_7
vol_15_2_10	vol_16_1_7	vol_16_2_1	vol_16_2_3
vol_16_2_4	vol_16_2_6	vol_16_4_6	vol_17_2_3
vol_17_4_7	vol_18_1_2	vol_18_1_3	vol_18_1_5
vol_18_1_6	vol_18_2_6	vol_18_3_6	vol_18_4_6
vol_18_4_7			

THE CONTEXT

Holistic View

vol_18_4_3	vol_14_3_3	vol_15_1_9	vol_15_2_8
vol_15_3_1	vol_15_3_6	vol_15_4_3	vol_15_4_8
vol_15_4_9	vol_16_1_1	vol_16_1_3	vol_16_2_8
vol_17_4_6	vol_18_2_7	vol_18_3_5	vol_18_4_4

External pressure

vol_17_3_1	vol_17_4_2	

Mixing Perspective

vol_14_2_9	vol_15_1_6	vol_16_3_6	vol_18_3_1

THE PRODUCT

Systematizing

vol_16_2_5

THE SITUATION

Being Now Here

vol_15_2_5	vol_17_1_5	