HUMAN RESOURCE MANAGEMENT IN SMALL AND MEDIUM SIZE AMBIDEXTROUS ORGANIZATIONS.

UNIVERSITY OF TWENTE.

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Title page

Title: Human Resource Management in small size ambidextrous organizations.

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Introduction

In 2007 the University of Twente started a research program called competences for innovation. The purpose of this research program was to support the development of competitive power for the local industry market. In line with the competences for innovation research, this research focus on the involvement of Human Resource Management (HRM) to support innovation. Innovation is a word which appears more and more in daily live. Advertisements screaming about new innovative products, new innovative computer technologies and innovative health insurance plans are all examples of the word innovative which appears in daily live. Although innovation is thus a common used word people have different understanding. Some people confuse innovation with the word invention which is only a small part of innovation. Originally the term innovation comes from the Latin word "*innovare*' which means '*to make something new*' (Tidd et.al. 2005). To make something new is actually the key sentence of innovation. Therefore, in this study, innovation is defined as: an idea, practice or material artifact perceived to be *new* by the relevant unit of adoption (Dewar & Dutton, 1986). Innovation can be subdivided in two definitions. An incremental innovation and a radical innovation. An incremental innovation represents a small or minor improvement to an already existing product, service, process or technology. On the contrary a radical innovation represents a fundamental change in a product, service, process or technology. For example in 1970 the first VCR was sold. At that time it was a radical innovation, it was the first time people were able to record television programs, in order to watch this program at a time of their choice. In order to record the consumer had to set the start and end time of the VCR. Later on manufactures developed codes, that are composed of starting time and ending time. When a consumer entered the code the VCR knew when it had to start and to end recording. This code can be seen as an incremental innovation, because it is a small improvement to the already existing product (Narayanan, 2001).
Innovations have a time path (Dewar & Dutton, 1986). In 1970 every person would agree that a VCR was an innovation. Nowadays people do not see the VCR as an innovation anymore. In other words novel products change over time into mature products (Dewar & Dutton, 1986).
The distinction between incremental and radical innovation is made upon the perception of the person who is judging. Some people might see an innovation as radical because it is completely new to them, while other people might see the same innovation as more incremental innovation because they were already aware of the existing product (Dewar & Dutton, 1986).

Different forms of capital

Human capital and social capital influence the radical innovation capabilities of an innovative organization (Subramaniam & Youndt, 2005). Human capital represents the knowledge, skills and abilities of individual employees while social capital represents knowledge that becomes available through the interaction among individual employees in their network. In other words for radical innovation capabilities there are individuals needed who have their own knowledge and skills and a network of relations. Through this network the different knowledge from different individuals can be combined into a radical innovation. Furthermore it is possible for an individual to have a creative new idea, but an individual employee is unable to transform this idea into an innovative product. Therefore the individual employee needs to find support of other employees in order to develop the radical innovation. The greater attention paid on human and social capital the greater radical innovation capabilities will be (Subramaniam & Youndt, 2005).
Other than for a radical innovation, an incremental innovation does not need new knowledge. The knowledge needed for an incremental innovation is already present in an innovative organization. Therefore organizations need to make this already existing knowledge and experience available through databases, patents, manuals, structure systems and processes. This form of making knowledge which is already inside the organization available to employees is called organizational capital and is found to influence incremental innovation (Subramaniam & Youndt, 2005). The greater the attention on organizational capital, the greater the incremental innovation capabilities of an organization will be (Subramaniam & Youndt, 2005).

Exploration and exploitation

For a radical innovation new knowledge is needed and employees need to interact with each other. This is represented by the concept exploration (March, 1991). Exploration is in this study defined as the search and use of knowledge new for the organization (March, 1991). On the contrary, for an incremental innovation, new knowledge is not needed. Employees use already existing knowledge which is made accessible by databases and manuals. This search and use of already existing knowledge is represented by the concept exploitation (March, 1991). Exploitation is defined as the search and use of already existing knowledge (March, 1991).

Although both exploration and exploitation are important for an individual organization, they are fundamentally incompatible (March, 1991). They are both important because, focusing too much on exploration to the exclusion of exploitation will lead an organization to a novel product but without the ability to further exploit this product. Contradictory, focusing too much on exploitation, to the exclusion of exploration, will eventually leave the organization with an developed product but without a market to sell.

There are several arguments why exploration and exploitation are fundamentally incompatible. Both exploration and exploitation are iteratively self-reinforcing (Benner & Tushman, 20030). Exploration often leads to failure, which triggers the search for even newer ideas and knowledge resulting in more exploration (Gupta et.al. 2006). On the contrary, exploitation leads to early success, which reinforces further exploitation among the same path (Gupta et.al. 2006). In other words, exploration often leads to more exploration and exploitation often leads to more exploitation (March, 1991; Gupta et.al. 2006). Furthermore the routines needed for exploration are radically different from the routines needed for exploitation. Which makes the simultaneous pursuit of both impossible. E.g. exploitation often thrives on commitment while exploration often thrives on thoughtfulness (March, 1991; Gupta et.al., 2006).

Organizing exploration and exploitation

There are four different theories on how organizations can organize exploration and exploitation.

Some organizations try to pay attention to both exploration and exploitation by the use of a punctuated equilibrium theory (Gersick, 1991; Romanelli & Tushman, 1994). This theory depicts innovative organizations as evolving through long periods of stability (which includes exploitation), that are called equilibrium periods, and punctuated short bursts of fundamental change (which includes exploration) (Gersick, 1991). The short fundamental changes establish activity patterns and install basis for new equilibrium periods (Romanelli & Tushman, 1994). The limitation for this theory is that organizations cannot undertake both exploration and exploitation at the same time, possibly compromising their future advantages (Annique, 2007).

A somewhat different theory is based on a wider system view. This theory is called specialization. In this theory exploration and exploitation are divided between two organizations. Organization A focuses on exploration while organization B focuses on exploitation (Lavie & Rosenkopf, 2006). A limitation for the specialization theory is that hold-up can occur. If organization A is the designer and organization B the manufacturer. Organization B can refuse to produce the product as being expected by organization A or refuse to produce it so efficiently. Likewise organization A can refuse to accommodate their new ideas and products to organization B (Annique, 2007; Smirnov & Wait, 2004).

The third theory is called structural ambidexterity. Ambidexterity means that the organization is able to both explore and exploit at the same time. This is done through a structural separation between units focusing on exploration and units focusing on exploitation (O'Reilly & Tushman, 1993). The units are coupled through senior management (O'Reilly & Tushman, 1993).

The fourth theory and last theory is based upon the organizational context and called contextual ambidexterity. Again ambidexterity because the organization is able to both explore and exploit. However in this theory the individual employee is free to choose how much time he/she will devote on exploration and how much on exploitation (Birkinshaw & Gibson, 2004). In order to be successful in this theory a proper organizational context is needed. In this context the individual employee is able to do what is best for the organization but also feels the support of his co-workers to choose how much time is spent on exploration or exploitation (Gibson & Birkinshaw, 2004).

HRM perspective

The four different theories can all be supported from different perspectives. As an example from a financial perspective there are key instruments to support either one of the two ambidexterity theories, punctuated equilibrium theory or specialization theory. In this study the Human Resource Management (HRM) perspective is taken. Not because this is found the most important perspective but because this research is started from a HRM specialization. Notation has to be made that HRM is not the only perspective which can support the four different theories.

HRM is buildup out of four domains. The first domain is Human Resource Planning, that includes analyzing employees needs, and selecting and hiring qualified employees in order to achieve long and short term organizational goals (Gupta & Singhal, 1993). The second domain is Reward Systems. With this domain reward is used to motivate employees to achieve goals on productivity, innovation and profitability (Gupta & Singhal, 1993). The third domain is called Performance Appraisal, which represents the evaluation of employees (Gupta & Singhal, 1993). The last domain is Career Management. It means the match between the employees long term career goals in combination with the organizational goals, by the mediation of education and training (Gupta & Singhal, 1993).

From an HRM perspective it is important to have an external fit (Hayton, 2003). In other words the four domains should be in line with the strategy of the organization. On the other hand the four domains should also have an internal fit (Hayton, 2003). Meaning that the four domains should work in addition to each other instead of ruling each other out. The above standing is depicted in figure 1.

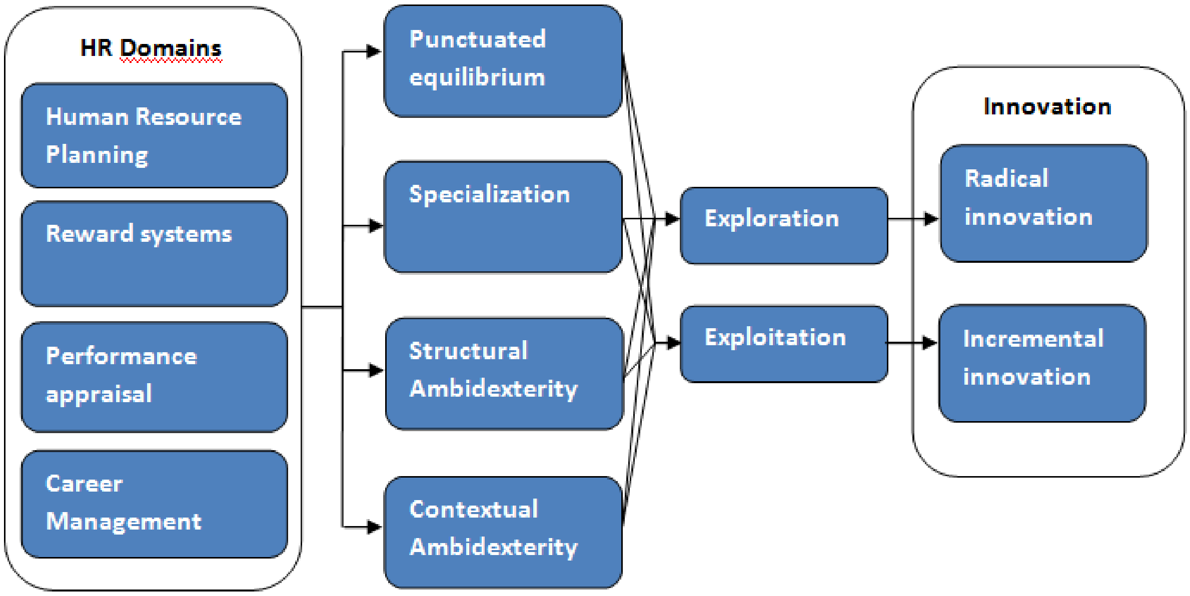

Figure 1: Research model in which red represents the focus of this study.

This study

In this study the focus lies on the four different HRM domains in combination with the two forms of ambidexterity. With the structural ambidexterity theory as well as with the contextual ambidexterity theory, organizations are able to pay simultaneously attention to exploration and exploitation in a single organization. Paying simultaneously attention to exploration and exploitation is not possible in the punctuated equilibrium theory or in a single organization in the specialization theory.

In an organization the four HRM domains are linked with the ambidexterity theory. Which means that some organizations will design their HRM domains in order to support structural ambidexterity, while other organizations design their HRM domains in order to support the contextual ambidexterity. Because both form of ambidexterity differ from each other, it is assumed that there also should be differences between the design of the four HRM domains in order to support structural- or contextual ambidexterity. Unfortunately no direct results were found in the literature which gives this research an explorative focus.

Intended, actual and perceived HRM

There is a difference between intended, actual and perceived HRM (Wright & Nishii, 2006; Boxall & Purcell, 2008). As described in the book of Boxall & Purcell (2008) and studied by Wright & Nishii (2006), senior management including the HR-managers design specific HRM mostly linked to the business plan (Intended). This design is implemented in a certain way (Actual). An employee has his own individual perception of this HRM design (perceived). Resulting in a specific behavior for an individual employee (reaction). Leading to a certain organizational performance. This all is depicted in figure 2. Along this path problems can occur.

Figure 2: Process model of strategic HRM (Wright & Nishii, 2006)

In this study the focus will be on the intended HRM. The intended HRM is designed by the director or HR-manager and directly linked to the organizational strategy or business plan. In other words, the intended HRM is directly linked to structural ambidexterity and/or contextual ambidexterity. Differences in the design of HRM for the form of ambidexterity should thus become clear at this level. It may also become clear at other levels such as the actual or perceived level, but in order to research these levels attention had to be paid towards the implementation of HRM and the perception of individual employees, which would have made this research less focused and to time consuming.

Small and Medium size Enterprises

It is chosen to do research among small and medium size organizations, which are addressed in literature as small and medium size enterprises (SMEs). In this study SMEs are organizations who employ at least one and not more than 199 employees. According to the Central Bureau of Statistics (CBS), in 2006, 57% of all organizations in The Netherlands can be characterized as SMEs. Although of all organizations in The Netherlands the largest part consists out of SMEs, most of the studies found in the literature only focus on large established organizations (Heneman et.al. 2000). An example is studies about recruitment and selection. There are only a hand full of studies on this topic in SMEs, while for large established organizations literally hundreds of studies can be found (Heneman, et.al. 2000). Looking at how exploration and exploitation are organized there are differences between SMEs and larger organizations. SMEs lack the amount of resources and hierarchical administrative systems that can help them managing both exploration and exploitation (Lubatkin et.al. 2006). From an HRM perspective there are also differences between SMEs and larger organizations. According to Kok et.al. (2003) the differences lies in the formalization of HRM. SMEs operate in an informal and flexible way in comparison with larger organizations (Kok et.al. 2003; Hornsby & Kuratko, 1990; Bacon en Hoque, 2005). Furthermore SMEs are less likely to have a specific HRM department or manager, which is in line with the findings that smaller organizations have fewer HRM practices in comparison with larger organizations (Kok et.al. 2003).

Research questions

Based upon the introduction the following research question is drawn:

- *What differences and similarities can be identified within the four HRM domains for the structural ambidexterity theory in comparison with the contextual ambidexterity theory, at small and medium size organizations?*

The research question is too complex to answer directly, therefore sub research questions are drawn:

- *What are the differences and similarities between structural ambidexterity and contextual ambidexterity?*
- *How are the four domains of HRM linked to the structural ambidexterity theory and the contextual ambidexterity theory?*
- *What can be expected about the four HRM domains within small and medium size organizations?*
- *What is found in the literature does that also occur in practice at small and medium size organizations?*

2. Method

After it became clear what the intention of this research was, the next step was to determine the method of the research. This research was buildup out of two parts, a literature study and interviews as explained in this chapter.

2.1 Literature study

This research is done by the use of a literature study and interviews. The literature study is used to give answer to the first two sub-questions. Literature is searched with the use of PiCarta, Scopus and The web of science. The following search criteria where used: *HRM and innovation*, *Reward systems and innovation, Human resource planning and innovation, Appraisal and innovation, Career management and innovation, HRM and ambidexterity, HRM and radical innovation, HRM and incremental innovation, exploration and exploitation, structural ambidexterity, contextual ambidexterity.* In total more than 700 results were found. Because it was impossible to read all the information the search criteria where increased. Results were found interested when they were articles, published in journals, not older than 10 years and in English. Again more than 400 results were found. For each search criterion the abstracts of the first five articles was read. If the article was about the design of one or all four HRM domains in combination with ambidexterity, or the article was about ambidexterity, exploration and exploitation, it was printed and the full article was read. If the previous criteria did not match the article was left out. Of some articles only the abstract was available, also these articles were left out.

When the full text articles were read, sometimes interesting references appeared. For these references the article was also searched by the use of PiCarta, Scopus or The web of science. Again the abstract was read to determine the relevance. If the article was not found to be relevant it was left out. In order to determine the relevance the same criteria as before were used.

In addition, the supervisors of this research also gave some suggestion for future reading. Also these articles and books were read and used in this research.

In total 36 articles and 6 books were read to do this research.

2.2 Research subjects

In 2007 the University of Twente started a research program called competences for innovation. The purpose of this research program was to support the development of competitive power for the local industrial market. A total of twelve organizations agreed to participate in that research. These twelve organizations also agreed to reserve a certain amount of their time for other research on innovation.

The organizations that participated in the competencies for innovation program are applicable to this research. But as already stated, the focus of this research is on the two forms of ambidexterity: contextual ambidexterity and structural ambidexterity. In order to identify similarities and differences in the four HRM domains between structural ambidexterity and contextual ambidexterity, for each form of ambidexterity two organizations were needed. Two organizations for each form of ambidexterity was found sufficient enough for a first exploration, which was the aim of this research.

In this study qualitative interviewing is used to give an insight in the intended design of the four HRM domains at the interviewed organizations. Two persons for each organization were interviewed in-depth. This to ensure a more complete insight in the intended design of the four HRM domains at the organizations. Besides, bias as a result of personal perception is reduced. The interview was a qualitative semi-structured interview to ensure that collected data could be compared (Babbie, 2007). In addition, a qualitative semi-structured interview provides a deeper understanding on how organizations design the four HRM domains. It is important to notice that during the interviews the interviewer probed. This ensured that sufficient data was received to develop an in-depth understanding of the design of the four HRM domains at the specific organization.

From the twelve organizations that contributed to the competences for innovation research program, four were selected for this research. All twelve organizations contributed to an innovation scan which made clear how organizations are trying to organize innovation between the years 2005

till 2007. Through this innovation scan organizations were analyzed to identify if and how the organizations tried to pay attention to both exploration and exploitation.
It might be good to recall the definition of exploration, exploitation and ambidexterity. In this study exploration was defined as the search and use of knowledge new to the organizations, while exploitation was defined as the search and use of knowledge which already exists in the organization. Ambidexterity was defined as the ability of an organization to both explore and exploit at the same time in the same organization.

2.3 Organization selection

In the innovation scan, organizations were asked to what extent their organization focuses on exploration and on exploitation, by looking at the total amount of projects, budget and time spend. Organizations that scored lower than 20% on exploration or 20% on exploitation of the total amount of projects were not appropriate for this research, because these organization choose not to pay sufficient attention to both exploration and exploitation and are thus not ambidextrous organizations.
In total four organizations scored lower than 20% on either exploration or exploitation. But because the innovation scan is based upon the time period 2005-2007, the numbers shown might be different nowadays. That is at least the case for one organization, Messner. Messner is an organization that used to trade pond equipment. In the last years Messner became aware that they could do more than trading alone en they started up a production department in China. This development changed their focus from 100% on exploration to a better balance between exploration and exploitation. This change of focus might also be applicable to the other three organizations but this is not clear. Therefore nine organizations were found ambidextrous organizations because they were able to both explore and exploit sufficient enough. From these nine organizations four had to be chosen of which two focusing on exploration and exploitation through the use of structural ambidexterity and two through the use contextual ambidexterity.
A structural ambidextrous organizations is characterized by a level of structural separation between units focusing on exploration and units focusing on exploitation (O'Reilly & Tushman, 1993). There were two organizations that appeared to show a clear separation between departments focusing on development and departments focusing on production. In other words departments focusing on searching for new knowledge and departments focusing on the use of already existing knowledge. These two organizations were Messner and Safan. Messner had one employee focusing on the existing market while the other employee focused on the emerging market. At Safan one department was focusing on the research and development of a new product, while another department was focusing on minor improvements to the already existing products. Because it became clear that these two organizations had a structural separation, they are found appropriate and chosen as the two structural ambidextrous organizations for this research.
Of the seven organizations who are resulting two seemed to be contextual ambidextrous organizations. Indes and Gaudium. At both organizations there was a sufficient amount of time off for employees to develop own ideas or to do research projects of their own. A main characteristic of a contextual ambidextrous organization is that employees are free to choose whether they focus on exploration of new knowledge or exploitation of already existing knowledge (Birkinshaw & Gibson, 2004). It is therefore important to receive sufficient amount of time off to develop own ideas or research projects. In addition in both organizations the employees received a high amount of autonomy in order to overcome bureaucratic delay. Furthermore employees received an amount of autonomy in order to solve problems. These two forms of autonomy are characteristics which are common for contextual ambidextrous organizations (Gibson & Birkinshaw, 2004). Also in both organizations employees recognized the importance of sticking to the strategy of the organization. Again this is a characteristic of a contextual ambidexterity (Birkinshaw & Gibson, 2004).
A company outline of all four companies can be found in appendix II.

2.4 Participant selection

Within these four companies the director and the manager Human Resources (HR-manager) were interviewed concerning the four HRM domains. These people were interviewed because they were responsible for the intended design of the HRM domains. Furthermore, this responsibility also did ensure that the people were fully knowledgeable about the design. For every organization two people were interviewed to ensure that sufficient data was collected and to enable verification of answers.

At two of the four organizations an HR-manager was working, however not at Messner and Gaudium. At these two organization besides the director also the manager of the administration office was interviewed. These managers were chosen because they were responsible for the administrative processes including the processes which were the results of different HRM practices. The administrative managers therefore had a proper perception of the different HRM domains at their organization.

2.5 The interviews

Before the interviews were conducted organizations were asked to answer 5 questions which can be found in appendix III. These questions were asked to ensure that the organizations paid sufficient attention on both exploration and exploitation, and to determine if the organizations used teams in their search for innovation. Because the organizations were all Dutch organizations they were send a Dutch translation of the five questions which can be found in appendix IV. The interview had a total of seven main questions which delivered the researcher a better understanding of the design of the different HRM domains at the specific organizations. For each main question a checklist was made on which subjects needed to be addressed for that question. An overview of the interview protocol can be found in appendix V. Because the organizations are Dutch organizations and the interview was therefore in Dutch, a Dutch interview protocol can be found in appendix VI. The duration of each interview was between the 40 and the 75 minutes. Every interview was recorded so that the researcher was able to once again listen to the interview during the analyses.

2.6 Interview analyses

After the interviews were conducted the raw data had to be analysed. This was done by listening to the recorded interviews. By listening to the interview the researcher was able to give a full description about the organization, of exploration and exploitation and the design of the four HRM domains at the specific organizations. Later on the analysed data was compared with the literature found in order to help answering the main question of this research.

3. Theoretical framework

In order to give answer to the first three sub-questions as pointed out in the introduction, a literature study was done. With this literature study the researcher was able to build a theoretical framework to support this research. This chapter will start with explaining structural ambidexterity, followed by an explanation on contextual ambidexterity. After both forms of ambidexterity are described the four HRM domains will be explained. First Human Resource Planning is addressed followed by Reward systems, Performance Appraisal and Career Management. Because it was expected that there are differences between HRM in large organizations in comparison with small and medium size organizations (SMEs) this research framework is ended with a concentration on HRM in SMEs.

3.1 Structural ambidexterity

Structural ambidextrous organizations consist of multiple tightly coupled subunits that are themselves loosely coupled with each other. Within each subunit the tasks and cultures are consistent but inconsistent across the subunits (Benner & Tushman, 2003). The subunits are tightly coupled through the senior management which enables the subunits to share important resources (e.g. budget, talent, expertise). A structural ambidextrous organization is depicted in figure 3. Furthermore, because the subunits themselves are loosely coupled, it enables the subunits to develop their own specific tasks and culture (O'Reilly & Tushman, 2004). The exploratory units are small, decentralized and have loose cultures. The exploitation units on the other hand, are large, centralized and have tight cultures (O'Reilly & Tushman, 2004; Benner & Tushman, 2003). These differences in subunits make it necessary for the senior management to develop techniques that permits them to be small and large, centralized and decentralized and have their focus on the short and the long run all at the same time. (Benner & Tushman, 2003). However these characteristics (unites size, level of centralization and culture) are characteristics of large size organizations. Small and medium size organizations (SMEs) lack the amount of resources and hierarchical administrative systems that can help them managing both exploration and exploitation (Lubatkin et.al. 2006). Therefore the differences between size of unites, level of centralization and specific culture may be different in practice at SMEs in comparison with the literature that is researched at large size organizations.

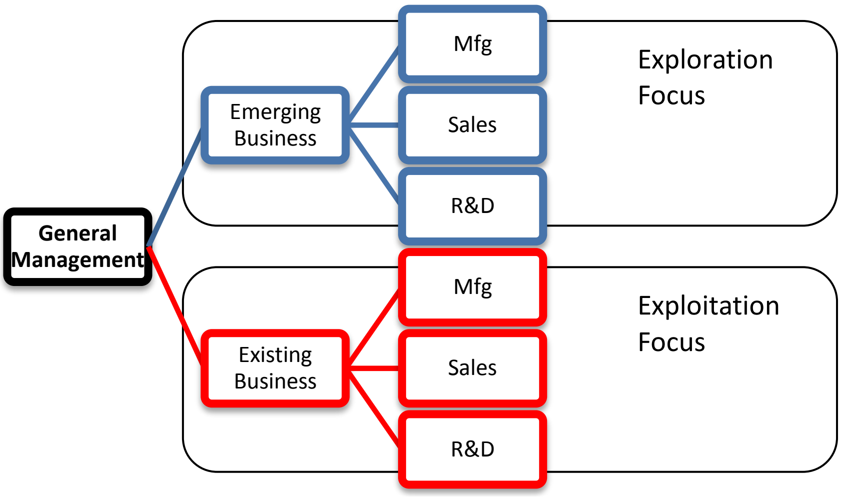

Figure 3: *"Structural Ambidextrous organizations establish project teams that are structurally independent units each having its own process, structures, and cultures, but integrated into the existing management hierarchy (O'Reilly & Tushman, 2004)".*

Conditions for structural ambidexterity

Structural ambidexterity has some limitations. Innovations require the integration of new and already existing knowledge. This integration cannot be separated and therefore this model seems to be less effective for organizations. (Annique, 2007). An argument against this limitation would be that in structural ambidexterity through senior management, important resources such as talent and

expertise can be shared. This will mean that some employees will switch between the exploration and exploitation departments for a period of time, resulting in an integration of new and existing knowledge, which is precisely necessary for an innovation (Güttel & Konlechner, 2007).
But still, separation can lead to isolation. In studies is found that many Research & Development departments and business development groups have failed to get their ideas accepted, due to the lack of linkages to the core business (Birkinshaw & Gibson, 2004).
With structural ambidexterity, pressure is put on the senior management. The senior management has to wear two different hats. Focusing for one part of the organization on exploration and at the same time for another part of the organization on exploitation. The senior management must develop techniques that permits them to be constantly inconsistent (Benner & Tushman, 2003). Which will introduce tensions (Greve, 2007). Senior management tries to overcome this tension by developing strategic planning in order to divide resources and attention between the exploration and the exploitation units (Greve, 2007). Strategic planning has been seen as an appropriate instrument to help the senior management balancing exploration and exploitation (Güttel & Konlechner, 2007.)
Different studies discussed that structural ambidexterity might be an appropriate manner to balance exploration and exploitation (O'Reilly & Tushman, 2004; Benner & Tushman, 2003; McNamara & Baden-Fuller, 1999; He & Wong, 2004; Gupta et.al 2006; Greve, 2007)
In a study of O'Reilly & Tushman (2004), 90% of the structural ambidextrous organizations achieved their goal on innovation. This percentage was far lower for organizations with a functional design, cross-functional teams or unsupported teams, as an approach towards balancing exploration and exploitation (O'Reilly & Tushman, 2004). However the goal of this study is not to make any judgment on the effect of the different forms of ambidexterity.

3.2 Contextual Ambidexterity

Besides structural ambidexterity, a different theory for paying simultaneously attention on exploration and exploitation in a single organization can be found. This theory is called contextual ambidexterity. The differences between structural ambidexterity and contextual ambidexterity can be found in the organizational outline. In a structural ambidextrous organization exploration and exploitation are divided between different departments. In a contextual ambidextrous organization exploration and exploitation are not divided. An individual employee has the ability to focus both on exploitation and exploration. Of course it is impossible for an individual employee to both explore and exploit at the same time (March, 1991). The amount of focus on exploration versus exploitation is not directed from the management but is left to the individual employee. The individual employee can choose how much time he will divide at exploration and how much time on exploitation. (Gibson & Birkinshaw, 2004).

Conditions for contextual ambidexterity

In order to foster contextual ambidexterity on an individual level, greater attention has to be paid to the human side of the organization (Gibson & Birkinshaw, 2004). For contextual ambidexterity there are four ambidextrous behaviors an individual employee should fulfill:

1. Individuals should take the initiative and should be alert for opportunities beyond the boundaries of their own jobs.
2. Individuals should be cooperative and seek out opportunities to combine their efforts with the effort of others.
3. Individuals should act as intermediary, constantly looking for opportunities to build internal links.
4. Individuals should act as multi-taskers who are able to wear more than one hat.

With this behavior, individual employees are able to act outside their own job and take action in the broader interest of the organization. Furthermore, through this behavior employees are sufficiently motivated and informed to act spontaneously, without asking support or permission from their supervisors. In addition, this behavior encourages actions that involves exploring new knowledge and new opportunities but is also clearly aligned with the overall strategy of the organization.

Still an individual's ability to behave ambidextrous is supported or constrained by the organizational context in which the individual employee operates. Therefore contextual ambidexterity can be defined as the collective orientation of employees toward the simultaneous pursuit of exploration and exploitation (Gibson & Birkinshaw, 2004; Annique, 2007).

Organizational context for contextual ambidexterity

An organizational context is an often invisible set of stimulation and pressure methods to motivate employees to act in a certain way (Birkinshaw & Gibson, 2004). The organizational context is created through the system, incentives and control which are put in practice by the management of an organization. The organizational context is furthermore created through the actions of the management on a day to day basis and reinforced through the attitudes and behavior of the employees within an organization (Gibson & Birkinshaw, 2004).

There are four sets of attributes that interact and define an organizational context. The first is called *stretch,* it persuades individual employees to voluntarily strive for more ambitious objectives. The development of an collective identity, shared ambition, and the ability to give personal meaning to the way in which individuals contribute to the overall purpose of an organization contributes to the creation of stretch. The second attribute is called *discipline*, it persuades individual employees to voluntarily strive to meet all expectations generated by their commitments. Either implicit or explicit. Discipline is established through clear standards of performance and behavior, a system of open, candid, and rapid feedback, and consistency in the application of sanctions.

The next attribute is named *support,* it persuades individual employees to give assistance and countenance to other employees. Support is established through mechanisms that allow individual employees to access the resources available to other employees, freedom of initiative at a lower level. The top management should give priority to provide guidance and help rather than exercising authority. The last attribute is called *trust,* it persuades individual employees to rely on the commitment of each other. Trust is established through fairness and equity in decision processes, involving individual employees in decisions and activities which affect them, and staffing positions with employees who possess and are seen to possess required capabilities.

In combination, these attributes create the two dimensions of an organizational context. The first dimension is called performance management and represents a combination of stretch and discipline. Performance management is concerned with making employees accountable for their actions and, stimulating them to deliver high quality results. The second dimension is called social support and represents a combination of support and trust. Social support is concerned with providing employees security and autonomy which they need to perform. (Birkinshaw & Gibson, 2004). This all is depicted in figure 4.

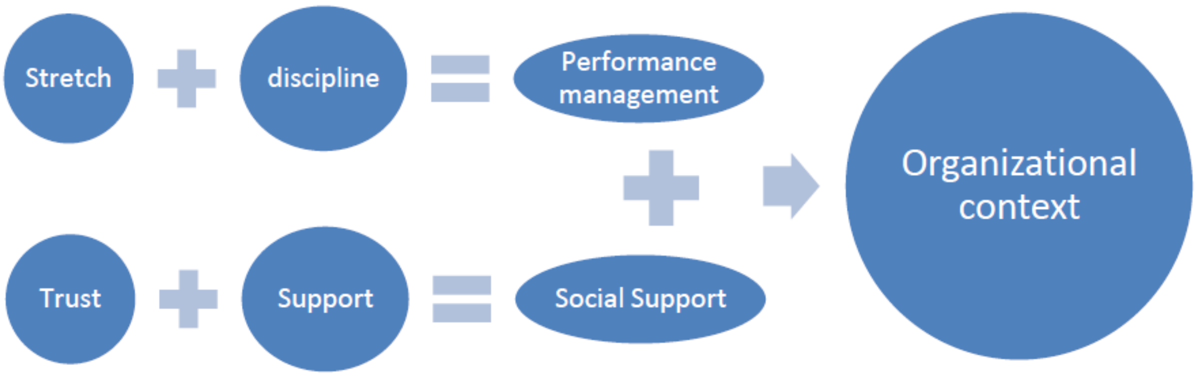

Figure 4: Performance management and social support establish the proper organizational context.

For an proper organizational context it is important to pay equal attention to the four attributes. If organizations are unable to pay equal attention a less effective organizational context will arise. (Birkinshaw & Gibson, 2004)

3.3 Differences between Structural ambidexterity and Contextual ambidexterity

a Study by Birkinshaw & Gibson (2004) concluded that structural ambidexterity may at time be essential, but it should be temporary. The ultimate goal should be reintegration with the mainstream organization. Contextual ambidexterity can enhance both separation and reintegration processes. The main differences between structural ambidexterity and contextual ambidexterity are addressed in table 1. Gibson & Birkinshaw (2004), Birkinshaw & Gibson (2004), and Annique (2007) find contextual ambidexterity an effective way to establish a balance between exploration and exploitation.

	Structural ambidexterity	Contextual ambidexterity
How is the ambidexterity achieved?	Separate units or teams	Employees are free to divide their time between exploration and exploitation
Where are decisions made about the split between exploration and exploitation?	At the top of the organization by the top management	On the front line, by individual employees
Role of top management	To define structure, to make trade-offs between exploration and exploitation	To create organizational context needed for exploration and exploitation
Nature of roles	Clearly defined	Relatively flexible
Skills of employees	More specialists	More generalists

Table 1: structural ambidexterity versus contextual ambidexterity (Birkinshaw & Gibson, 2004).

3.4 Human Resource Management perspective

In this study a Human Resource Management (HRM) perspective is taken. Different scholars have researched HRM in combination with innovation (Laursen & Foss, 2003; Laursen, 2002; Shipton et.al. 2006; Searle & Ball, 2003; Gupta & Singhal, 1993). In this study the four domains as addressed by Gupta & Singhal (1993) are used. The reason for this choice is that Gupta & Singhal (1993) is frequently used in research of HRM and innovation. In total there are four domains: Human resource planning, Reward systems, Performance appraisal and Career management. In the upcoming paragraphs the different domains and their implication for structural ambidexterity and contextual ambidexterity are explained.

3.5 Human Resource Planning

Organizations who want to pay attention to Human Resource Planning need to analyze employees needs, and recruit and select qualified employees in order to reach short and long-term organizational goals (Gupta & Singhal, 1993). The domain human resource planning can be divided between two sub domains. Composition of teams and Recruitment and Selection. First the composition of teams will be explained, followed by a description of the recruitment and selection.

Innovation team

In order to foster innovation, organizations should establish teams, in which different individuals work together on a project. Innovations are too complex to be achieved by an individual employee (Jiménez-Jiménez & Sanz-Valle, 2008). The individuals in a team can have different roles and different specialisms or expertises (Gupta & Singhal, 1993). A team, combining the knowledge, specialisms and expertises, will have the potential to lead to a better result than an individual employee (Jiménez-Jiménez & Sanz-Valle, 2008). For each team five different roles are essential (Badawy, 2007; Gupta & Singhal, 1993). 1) *Idea generating,* the person who comes up with the new idea; 2) *Entrepreneuring or Championing,* the person who sells the new idea to the management; 3) *Project leading,* the person who provides leadership and motivation necessary for mobilizing scarce resources; 4) *Gatekeeping,* the person who ensures that information from inside and outside the organizations is collected and disseminated; 5) *Sponsoring or Coach,* the person who provides guidance and support to less experienced employees in their critical roles (Badawy, 2007; Gupta & Singhal, 1993). Some employees only take one role to their account while other employees take several roles to their account. But again in each team all roles should be represented.

Furthermore in order to ensure social and organizational capital, the team should consist of employees from different departments (Subramaniam & Youndt, 2005). This will ensure that employees with different knowledge and different skills can share their knowledge and skills with their team-members, who have other knowledge and skills. Creating a situation where team-members have access to knowledge and skills from different departments.

Recruitment and selection

Recruitment and selection of employees is an important activity for every organization, including innovative organizations. Only the best is good enough for an organization which makes selection so important (Pfeffer, 1994). Only qualified employees can take one or more of the five described roles to their account. When searching for a new employee organizations need to pay attention towards the different roles needed for innovation. The new employee should take at least one role which is currently not present in the specific team. So the search criteria should not only be education and job experience but also the innovation role. Furthermore when recruiting employees organizations can choose to search for generalists (potential employees who are broad educated and have skills in multi disciplines) and more specialists (potential employees who are educated in-depth). For an innovative organization it would be good to recruit and select generalists (Badawy, 2007). The reason is that studies have shown that generalists work better in groups and are opener to solutions of employees from other disciplines (Badawy, 2007). One exception has to be made. In an exploitation unit specialists instead of generalists are needed in order to reach efficiency. At the exploitation units the focus is on doing what the organization does only better (O'Reilly & Tushman, 1993; March, 1991). In order to do better a deeper understanding of the work is needed and thus specialists are needed.

Recruitment and selection is often done through job interviews but assessments might also be an appropriate tool to find out which role the prospective employee might take. With job interviews organizations can decide if an employee will fit the organizational culture, but job interviews are not the proper instrument to determine which role the employee would take. Furthermore job interviews are not suited for determining if an employee is good or exceptional (Badawy, 2007). An assessment would therefore be better.

By the use of an assessment organizations can find out which skills the employee has and which roles the employee prefers. Assessment is a form of selection system which is more dynamically related to the interest, career and attitudes of the employee, compared to the more traditional job interview (Scarbrough, 2003). In addition, there should be paid attention to the fit of the employees needs and the organizations demands. This fit is not only necessary for innovative organizations but for all organizations who are searching for new employees. Every organization has a specific culture in which the employee should feel like a fish in the water.

3.6 Reward systems.

A reward system has several functions. First of all, it is a system which will help to attract and retain employees and it provides motivation for extra effort of the employee (Galbraith, 1992). There are even some authors who suggest that successful performance deserves a reward (Galbraith, 1992), although this assumption is not shared by every employer. In addition, through reward systems employees are influenced to show appropriate behavior. When discussions are on reward systems most people think of financial consequences and although this might sometimes be the case, other forms of reward are also used. Examples are for instance: promotion, a cup for the best new idea, temporary private parking place or an interview in the organizations own magazine.

When putting a reward system into practice organizations should ask themselves what kind of behavior is needed in the organization. Although it sounds so simplistic, most of the time it is forgotten, resulting in a need for behavior A and a support through the reward system for behavior B (Gupta & Singhal, 1993). Innovative organizations demand from their employees an innovative behavior. However there are two forms of behavior an organization demands. For radical innovations explorative behavior is needed. Employees need to search for new knowledge, share knowledge and take risk. On the contrary for incremental innovation exploitative behavior is needed. Employees use knowledge that is already present in the organization and follow prescribed rules to reach efficiency.

Different forms of reward systems for different forms of innovation.

Because a radical innovation requires a different behavior in comparison with an incremental innovation and reward systems are put in practice to stimulate a specific behavior, it is logic to assume that for a radical innovation different reward systems are put in practice in comparison with an incremental innovation. Thus there will be a different reward system for the exploration unit in comparison with the exploitation unit within structural ambidexterity. For the contextual ambidexterity, two forms of reward systems should be designed, one focusing on exploration and one focusing on exploitation. If the organization only provides one of the two different reward systems, employees are motivated only to behave either explorative or exploitative.

Employees and reward systems

When reward systems are designed, employees in general are defining the relationship between effort, performance and reward (Badawy, 2007). There are three basic questions employees are asking themselves: *What's in it for me?* (how important are the available rewards or consequences for me), *If I try harder, will it make a difference in my performance?* (Is it possible to influence my level of performance through my level of effort), *Am I rewarded for what I produce?* (If I increase my level of performance, will my level of reward also increase, or vice versa, If I decrease my level of performance will it increase personal consequences) (Badawy, 2007). If it is clear for an employee that by working harder, there will be an increase in performance, which will result in a reward which is valued by the employee and this reward is linked to an increase in performance, the employee is willing to work harder (Badawy, 2007).

Scientists versus Engineers

In an innovative organization there are two different kinds of people. Scientists and engineers. While scientists are searching for new knowledge, engineers focus on the application of current knowledge (Badawy, 2007). Scientists in general have a focus on professional orientation. This focus can be characterized by a basic interest in advancing science, contributing to knowledge, and increasing or conserving their professional reputation in their field (Badawy, 2007). On the other hand the engineer in general has an organizational career focus. This focus is characterized by a lesser concern to the profession, but a greater concern to goals and approval of the organization (Badawy, 2007). The behavior of the scientists can be typified as explorative, while the behavior of the engineers can be typified as exploitative. As already is stated earlier, different persons need different reward systems (Badawy, 2007). There is made a distinction between incentives for scientists and engineers, which is represented in table 2.

Scientists (exploration focus)	Engineers (exploitation focus)
Encouragement to publish	Merit salary increases
Time off for professional meetings	Promotion within career ladder
Paid transportation to professional meeting	Stock options
Dues paid in professional organizations	Profit sharing
Greater freedom to come and go	Rewards for suggestion
Better technical equipment	Improved office space
Sabbatical leave for education	Increased technical or clerical assistance
Tuition or other educational aid	Increased challenge in job assignment
Participation in company seminars	Special recognition and/or monetary reward for superior performance
Divisional freedom	
Freedom to conduct research	
Freedom to fail	
Freedom to run one's own show	

Table 2: Incentives for engineers and scientists (Badawy, 2007; Gupta & Singhal, 1993)

As is shown in table 2, scientists want to have freedom to conduct research, to fail, to run one's own show and divisional freedom. Gupta & Singhal (1993) argue that these forms of freedom are a proper reward. But is that really so. The different forms of freedom are essential for scientists to perform. Therefore they should not being viewed as a reward but as a context in which scientist perform optimal.

Promotion in a dual ladder system

Promotion can also be a form of reward. However organizations sometimes do not want to promote a scientist. In some cases there are scientists that perform so outstanding that the management decides that the scientist should be promoted, but there is no level of promotion within the scientists profession. An answer would be to promote the scientist to a management level. Resulting in a loss of a great scientist and a scientist performing as a manager although he may not want that position. An answer to this problem can be found in a dual ladder system. With this system it is possible for an scientist to receive promotion inside their own profession. The employee never outgrows the organization but grows along with it (Gupta & Singhal, 1993).

Rewarding teams or individuals

After the forms of reward are clear the question now is, who should be rewarded, teams or the individual employee? When rewarding the team as a whole, the best performer will be de-motivated. This is because the best performer sees that with less effort the same reward will be received. On the other hand rewarding only the best performer, the other team members are de-motivated (Gupta & Singhal, 1993). There are specific situations in which either teams or individuals should be rewarded (Mower & Wilemon, 1989). These situations are outlined in table 3.
Furthermore teams that are rewarded as a whole, in which team-members share the rewards equally, almost always out-perform teams in which some individual members are rewarded more than other individuals (Gupta & Singhal, 1993).

Teams	Individuals
At the start of a new project;	When someone has clearly gone the extra mile;
When a destructive conflict is settled;	To encourage the less assertive;
When a though problem has been solved;	To encourage the newcomer;
When a milestone has been reached;	To thank someone who is leaving;
When team spirit, cooperation and morale are low;	When someone's contribution has been ignored by the team;
After a crisis;	To stir things up when group thinking is beginning to set in;
At the beginning and end of every meeting;	When team members differ greatly in the kind of rewards they want.
To celebrate project completion.	

Table 3: Rewarding teams or individuals (Mower & Wilemon, 1989)

3.7 Performance appraisal

Reward systems are put into practice to stimulate proper behavior of both the scientists and the engineers. With the use of performance appraisal employees are evaluated in order to receive rewards or punishments. It is difficult or even impossible to evaluate employees objectively (Badawy, 2007). There is always some level of perception of the evaluator. The idea behind performance appraisal is not to reward or punish an employee, but to help the employee to develop a proper behavior in order to perform better (Gupta & Singhal, 1993). The best way to do this is by talking with the employee and look for improvements and compliments on the already achieved improvements. Although it might be better to do it more often, most performance appraisal is done annually (Gupta & Singhal, 1993). In most cases the manager is the evaluator and the employee is being evaluated, but it might also be possible to let employee evaluate their team members. By doing so every team-member is motivated to perform to the maximum effort because nobody wants to be the worst team member (Gupta & Singhal, 1993). Another way of evaluation is found at 3M (the producer of for instance Post-it). In this organization teams can ask other teams to audit their innovation process. These audits, which are called unit by unit audit, are voluntarily, but were used quite often. The disadvantage of this unit by unit audit, is that it is very costly, because it takes a lot of time. But as the general management of 3M said: the results exceed over the costs (Gupta & Singhal, 1993).

Performance appraisal for scientists and engineers

Innovative organizations know that for radical innovations, employees need to explore. Take risk in their search and discovery of new knowledge and not always will this search result in any result. But how should these employees who are in previous paragraph identified as scientists be evaluated. It is not the case as for the employees who are typified as engineers, that individual employees can be compared with each other. There are some researchers who suggest that employees should be evaluated through productivity in written work, recent reports, originality of written work, professional society membership, judgment of actual work output, creativity ratings by high level supervisors, overall quality ratings by immediate supervisors, likeableness as a member of the research team, visibility, recognition for organizational contributions, status seeking tendencies, current organizational status, and contract-monitoring load (Badawy, 2007). But it is difficult to establish standards of performance because of the creative nature of the activity and the fact that it usually lacks precedent (Badawy, 2007).

A solution can be found in looking at the entire organization instead of the individual employee. In the case of the same or even a better performance of the organization in comparison with last year is a sign that things are going well (Badawy, 2007). If performance decreases in comparison with last year nobody is doing a good job and thus everybody should be punished.

Engineers on the other hand can be evaluated far more easy. Different engineers and their performance can be evaluated against each other, showing which engineer performs good, optimal and bad (Badawy, 2007).
Furthermore it is possible for organizations to focus on the development of competences. Every year the development of specific competences are evaluated and new targets are set for the upcoming year (Kluytmans, 2001). Evaluation by the use of competences is applicable for both engineers and scientists although for each function other competences might be needed.

3.8 Career management

Career Management is build upon four steps. In the first step a new employee is entering the innovative organization. This employee is supervised by the manager, and the most important thing for the new employee is to collect as much knowledge as possible and to develop as many skills as possible. It is important for the new employee to work at complex and hard assignments, because this will have a positive effect on his or her further career (Badawy, 2007). In the second step, the new employee takes the career into their own hands. The best way to do this is by specializing into a discipline of choice (Badawy, 2007). In the third step the employee becomes a manager or a mentor. In this step the employee wants to take responsibility of their own work and the work of others. Furthermore they want to help other employees with their career. Most employees stay in this step and have no need to further grow into step four (Badawy, 2007). In the fourth step, the employee is not only a manager or mentor in their own specialty, but is also involved in the organizations development. The employee then is responsible for the direction of the organization (Badawy, 2007). The first, second and third step are applicable to both scientists and engineers. However, career step four seems to be less suitable for scientists. As already discussed in the paragraph *promotion in a dual ladder system,* scientists most of the time do not want to perform management tasks (Badawy, 2007).

Empowering

Career management involves the creation and linking of employees long term goals and the innovative organizations long term goals. Ensuring that both goals are the same will be best for the organization. Research has shown that employees who are high in self-esteem are generally more innovative compared to those with a lower self-esteem. This self-esteem can be improved by empowering the employees, in other words, granting employees the authority to solve problems as they deem fit. This empowering may lead to creative problem solving and to innovation (Gupta & Singhal, 1993)

Working in different departments

Innovative organizations need to constantly educate and train their employees in various skills. Matching the employees career goals, with the organizational needs. In many cases innovative organizations encourage employees to work in different departments, in order to gain a well founded experience (Gupta & Singhal, 1993). This will help the employees getting access to new knowledge, and helping them to share their knowledge (Subramaniam & Youndt, 2005).

Employment relations

Employees who are working in the exploration unit, are mostly looking for a relatively short term flexible employment relationship, while employees who are working in the exploitation unit, are mostly looking for a relative stable long term employment relationship (Litz & Klimecki, 2005).
This distinctions in employment relationships should be visual in the structural ambidextrous organization because a distinction between the two units is made.

A complete interpretation of the four HRM domains in combination with the two ambidexterity's are represented in table 4.

	Contextual ambidexterity	Structural ambidexterity	
		Exploration unit	Exploitation Unit
Human Resource Planning	Teams consist of 5 team roles	Teams consist of 5 team roles	Teams consist of 5 team roles
	Generalists	Generalists	Specialists
Reward systems	Team based rewards	Team based rewards	Team based rewards
	Individual rewards	Individual rewards	Individual rewards
	Rewards for scientists and engineers	Rewards for scientists	Reward for engineers
Performance appraisal	Engineers based upon other engineers	Based upon organizational performance	Based upon engineers mutually
	Scientists based upon organizational performance		
	Based upon competences	Based upon competences	Based upon competences
Career Management	The 4 career stones	The 4 career stones	The 4 career stones
	Empowering	Empowering	Empowering
	Long and short term employment contracts	Short term employment contracts	Long term employment contracts

Table 4: Four HRM domains and their implications for the two forms of ambidexterity.

3.9 Small and Medium size Enterprises

As already discussed in the introduction, small and medium size enterprises (SMEs) are defined in this study as organizations that employ at least 1 but no more than 199 employees.
The definition of SMEs varies in the literature. In the United Kingdom SMEs are often defined as organizations with no more than 250 employees. And in the United states SMEs are defined as organizations with less than 500 employees (Kok et.al., 2003). However in The Netherlands the Central Bureau of Statistic (CBS) keeps track of all new started, ended and existing organizations and can supply liable numbers about organizational size. Unfortunately the CBS makes a distinction between 199 and 200 employees and not between 249 and 250 as in the definition of the UK. Therefore 199 is chosen in this research.
According to the CBS 57% of all organizations in The Netherlands are SMEs and although this proofs that SMEs account for the largest part of all organizations in The Netherlands, SMEs are often left outside the research scope (Heneman, et.al. 2000).

Ambidexterity in SMEs

Ambidexterity in SMEs differs from ambidexterity in large organizations. Take for instance large structural ambidextrous organizations. These organizations have the resources and hierarchical levels available to make a separation between unites focusing on exploration and on exploitation. Were the unites focusing on exploration are small and decentralized and the unites focusing on exploitation are large and centralized. Small and medium size structural ambidextrous organizations lack the amount of resources and hierarchical levels that could help them to pay simultaneously attention to exploration and exploitation in a single organization (Lubatkin et.al. 2006). SMEs still are able to explore and exploit through separation, but the size of unites and the level of centralization may differ in comparison with larger organizations.

HRM perspective and SMEs in comparison with larger organizations

By taking an HRM perspective differences can be identified between SMEs and large organizations. A difference lies in the formalization of HRM. SMEs operate in a more informal way in comparison with larger organizations (Kok et.al. 2003). This results in a less formulized and more flexible HRM design. HRM activities at SMEs are often less formal and may be limited in their scope and sophistication (Hayton, 2003).
An example is found in the study of Hornsby & Kuratko (1990), they argue that large firms for instance use more often personality tests in order to select the best fitting employee, in comparison with SMEs (Hornsby & Kuratko, 1990). Furthermore they argue, as the size of the small business increases, the use of performance appraisal also increases (Hornsby & Kuratko, 1990).

The presence and absence of an HR department or manager

SMEs are less likely to have a specific HRM department or manager (Kok et.al. 2003). Therefore HRM in SMEs is most of the time done by the owner or manager of the organization (Tocher & Rutherford, 2009). The presence or absence of an HR department or manager might have influence on the formality of HRM activities. This formality will increase when a department or manager is present. Bacon & Hoque (2005) argued that organizations with a higher proportion of low skilled workers were less likely to adopt 5 of the 8 practices tested in their research. In contrary SMEs employing a high proportion of high skilled workers adopted all practices. They conclude that low skilled employees are more easy to replace making HRM less needed in comparison with high skilled employees (Bacon & Hoque, 2005).

Transforming HRM from large organizations to SMEs

Most of the research on HRM is done in large established organizations (Heneman et.al. 2000). However scholars have argued that it is not possible to simply extend this research on HRM in large organizations to SMEs (Tocher & Rutherford, 2009). Instead HRM theories specifically for the small and medium size organizations have to be developed (Tocher & Rutherford, 2009)

4. Data results and analyses

In total four organizations participated in this research. At each organization two persons were interviewed: the director and the HR-specialist or HR-manager. Two organizations did not have a specific person for HR. At these organizations the manager of the administration department was interviewed. During one interview besides the director also the R&D manager participate in the interview in order to complete the answers of the director.
Every interview consisted of six parts: the organization of innovation, Human Resource planning, Appraisal, Reward systems, Career Management and differences in HRM between innovation departments and other departments. This chapter is started with the background characteristics of the participants represented in table 5. Followed by a description of the organization of innovation for the four organizations. Continued with de four domains. For each domain a summery is represented at the end of a paragraph by the use of tables. This chapter is ended with a description of the differences in HRM between departments focusing on innovation and the other departments.

4.1 Background characteristics

Name organization	Name Participant	Function	Start year	Duration interview (min.)
Messner	Ton Fontijn	Director/owner	1988	75
Messner	John Hiddink	Administration manager	2000	60
Safan	Stefan Kok Marco Lichtenberg	Director R&D Manager	2001 2010	70
Safan	Annette Hagenbeek	HR-manager	2007	60
Gaudium	Bart Oonk	Director	2006	40
Gaudium	Edwin de Vries	Administration manager	2000	40
Indes	Henk Jansen	Director/owner	1988	60
Indes	Karin Duimel	HR-specialist 1 day a week	2007	45

Table 5: Background characteristics participants

4.2 Organization of innovation

All organizations pay attention to exploration and exploitation, but the organizations follow different methods. Messner and Safan separate individuals or departments focus on exploration or exploitation, while at Gaudium and Indes individual employees are involved in both exploration and exploitation.

Messner

At Messner two employees are responsible for innovation: one employee focuses on the consumer market and the other employee focuses on the professional market. For the consumer market existing products are improved and manufactured in China. These products are transported by boat to The Netherlands and sold at gardening shops. Examples of consumer products are fountains, water lighting and small nets to remove leafs from the pool all for home use. The employee focusing on the professional market is an independent contractor working three days a week at Messner. The professional market includes theme parks and organizations that nurture fish that for instance need large pumps to clear the water. The independent contractor designs these products and arranges fabrication at manufactories in the surrounding environment. Although the two employees focus on different markets, they share knowledge and ideas on a day to day basis. They share a room at the headquarters of Messner and are stimulated to help each other by the director.
Regarding the time spent on innovation 60 % of the time is focused on exploitation and 40% is focused on exploration. With respect to the budget spent on innovation 70% of the budget is focused on exploitation, and 30% is focused on exploration. Concerning the amount of projects spent on innovation 90% of the projects is focused on exploitation while 10% is focused on exploration.

The products that are sold at the garden shop are the basic income for the organization as the director of Messner said: *"The products which are sold at the Garden shop can be seen as the pizza bottom, which enables us to switch to different markets, such as the professional market"*

Safan

At Safan two departments are responsible for innovation: the Research & Development (R&D) department and the Engineering department. At the R&D department new machinery is invented. An example is the Safan E-break machine. In the past the machinery to bent and flip steel plates was hydraulic. A disadvantage of hydraulic machines is that they even have to be powered and oiled when they are not used. This is not needed with an electronic machine. With an electronic machine organizations can cut back power and oil costs while getting the same results as with a hydraulic machine. The electronic machine is invented at the R&D department. Currently the R&D department is focusing on a robot arm to operate the bent and flipping machine and the cutting machine. These machines are now operated manually by an employee, but in the future the employee can be replaced by a robot arm.

The engineering department is responsible for minor improvements on the already existing machinery. An example is that some customers want to use the Safan E-break machine for steel plates of 60 centimeters long, while other costumers need a larger machines for steel plates of 3 meters long. The engineering department adjusts machines to the specific customer demands.

Although separate departments focus on exploration and exploitation, the supporting production-, administration- and sales departments are not separated and all support both the R&D department and the engineering department.

Organizing exploration and exploitation in separate departments is the best manner according to the R&D manager. *"At my previous employer, innovation was organized differently. At that organization the engineers were sometimes asked to do a R&D project. The engineers see the developed machine as a child of their own. They want to nurture the machine and they want constantly being involved with the machine. At Safan this is different. R&D employees develop a product but at the end this product has to be able to live a life on its own. Everybody should be able to work with this machine, so the machine should be 'monkey proof' as we call that. The next step is that a highly skilled knowledgeable engineer takes the machine and starts exploiting. Ensuring that there is a fit for use. People have their own specialties. Organizing innovation the way Safan does, ensures that R&D capacity is not immersed by customer projects."*

Besides the difference in tasks there is also a difference in the mentality of employees. The employees at the engineering department are focusing on customers demands which makes them more pragmatically. The R&D employees must have a broader view and are therefore the opposite. Furthermore the number of employees differs per department. The R&D department counts a total of 10 employees, whereas the engineering department counts 3 employees.

Regarding the time spent on innovation 30 % of the time is focused on exploitation and 70% is focused on exploration. With respect to the budget spent on innovation 25% of the budget is focused on exploitation, and 75% is focused on exploration. Concerning the amount of projects spent on innovation, 20% of the projects is focused on exploitation while 80% is focused on exploration.

Gaudium

Gaudium has an innovation team that focuses on both exploration and exploitation. Originally the innovation team only solved questions/problems of customers that mainly concerned the pattern or the utilization of the fire resistant fabric. When the sales of Gaudium decreased because the market stagnated while the number of competitors increased, the director became aware that Gaudium also had to innovate besides the solving of questions/problems of customers. Together with the innovation team the director searched for ways to increase sale again looking at the possibilities of both incremental innovation (different use of fire resistant fabric) and radical innovation (a new product). This eventually resulted in a new focus on the possibilities of selling wool.

Nowadays the innovation team is thus focusing on both exploitation (helping customers with the pattern or utilization of fabrics) and exploration (searching for different new products such as wool).

This is also seen in the time, budget and amount of projects spent on innovation. From all point of views there is an 80% focus on exploitation and a 20% focus on exploration.

Indes

Compared to the other three organizations, Indes has another way to organize innovation. Indes has no core product it focuses on, but only focuses on innovative projects. Some of the projects at Indes are instructed by customers while other projects are created by themselves. As for the costumer projects a customer has a demand (an idea or problem) that has to be answered by Indes in a new developed and designed product. In the personal projects, Indes searches gaps in the market and tries to develop and design solutions. Some solutions of Indes are produced at a production facility in China. These products are sold by a companion of Indes that is active in that market and not by Indes itself. The production department at China is not involved in the innovation process. This production department receives a full description of the product and has to produce the product the way suggested by the design and engineer departments. In the future this production department will receive the autonomy to adjust the products, which will result in incremental innovations. However that is the future and it thus does not occur at this moment.

Because of the large variety in customers, Indes has a more radical innovation focus. After all, for each new customer and new problem and idea, new knowledge and new solutions are needed. However, incremental innovation also occurs at Indes. Sometimes a customer wants an adjustment in an existing product. An example is the hospital bed for children that Indes has designed for Oostwoud. This bed had a surrounding fence to ensure that a child could not fall out of the bed. Parts of this fence had to be movable to make the child in the bed accessible for parents, doctors and nurses. In the first design the fence went downwards in a straight line. However a downward fence limited parents to sit next to their child because they could not put their feet and legs under the bed. Oostwoud asked Indes to redesign the product and Indes recently introduced the redesigned bed at the Medica in November 2009 in Dusseldorf. However the director of Indes told: *"Incremental innovations are something in which we are not that good. Maybe in the future when we start producing more and more, we might have to search for ways to cut back on costs wherefore we need incremental innovation. But then it is only improvements in the production not in the product itself."*

Employees at Indes work on both incremental and radical innovations. In case of a redesign it is tried to involve employees that were involved in the original design but this is not always possible and necessary because all employees are able to innovate and to come up with new or improved solutions.

Concerning time, budget and amount of projects spent on innovation there is a 20% focus on exploitation and a 80% focus exploration.

	Messner	Safan	Gaudium	Indes
Organization of innovation	Structural ambidexterity	Structural ambidexterity	Contextual ambidexterity	Contextual ambidexterity

Table 6: Organization of innovation for Messner, Safan, Gaudium and Indes

4.3 Human Resource Planning

Human resource planning is analyzed in two parts. First the organization of innovation teams will be discussed, followed by a description of the recruitment & selection process of new employees.

Innovation team

All organizations use teams to innovate. However the teams vary in size, presence of specialists and generalists, variety of functions, team roles present, and job experience, age and gender of team members.

Messner

At Messner the innovation team includes 3 persons. One employee focuses on incremental innovation in the existing market, an independent contractor focuses on radical innovations in the emerging market and the director arranges communication between these two employees. The independent contractor is a specialist because he has in-depth knowledge of engineering and materials. The other employee is a generalist because he has knowledge about engineering, sales and the market Messner is active in. The director is also a generalist because he has knowledge about both engineering and market. The leading role of the director in the communication between the two innovators is important, because: *"If I do not lead them, everybody would do where he is passionate about, which will result in all kinds of parts of products but not into products which can be sold. As an example the independent contractor loves to make technical drawing on his computer, however these drawings also need to be manufactured before we can sell them."*

All the members of the innovation team are male and are in their early forties. The employee focusing on the consumer market works at Messner since 13 years while the independent contractor started two years ago. The director started in 1988 at Messner. Because there is no attention on team roles it is not known if different team roles are present in the innovation team. This will be a focus in the future.

Safan

At Safan, the R&D department and the engineering department are involved in innovation. Both departments work in teams that only consist of specialists, because the work is very specific and technical according to the HR-manager: "*For someone with a none technical background, it would be horrible at the R&D or the engineering department."*

Currently, there is no specific attention for team roles but this will probably receive attention in the near future. However, this might be very difficult according to the HR-manager: "*Our employees are technical people who are very good in their work. When you start asking them to look at themselves and what kind of roll they have in the team, they will start arguing that it becomes vaguely and that they do not understand it. Technical people just want to do their work and find it impossible and unnecessary to look at their roll in the team."* Another problem is pointed out by the director of Safan. "*At Safan we compose an R&D project team based upon the functions and knowledge of an individual employee. It is hard to take team roles to the account, because at Safan we do not have a range of employees. It is not that we have ten software engineers, and thus you cannot say let us take him because there is a best fit with the roll. We only have two software engineers."*

At both departments employees vary in age and job experience. Safan pays attention to this variety because a mix of age and job experience is thought to be better for innovation. As the R&D manager mentions: *"You should try to establish a certain mix of older and younger employees. Only employees who just finished school, will result in nothing. Conversely, only older employees will also result in nothing."*

Both departments work in teams. At the engineering department the team always consists of all three employees of the department. At the R&D department the combination of team members changes between projects. At all times is tried to compose a balanced project team.

To create continuous inflow of knowledge, Safan tries to have at least one place for internships. Internships can bring new knowledge and new ideas from which Safan can profit. Besides this internship Safan also hires knowledge from outside and works closely with their co-manufacturers.

During each R&D project one engineer is needed in the team. The engineer is not in the project for his knowledge, ideas or creativity, but just to ensure knowledge transformation from the R&D department towards the engineering department.

Gaudium

The innovation team of Gaudium consists of four employees. Two employees focus on design and two employees focus on production. All members of the innovation team are specialists because fire resistant fabric is a very specific product. In fact, all employees within Gaudium are trained internally to establish adequate knowledge about fire resistant fabric. The result of this training is that all employees are specialized. The members of the innovation team are all male but differ in age and team roles. As a group, they form a balanced innovation team.

Indes

For each innovation project Indes composes a suitable team. Every team consists of an account manager (who is responsible for the acquisition of the project and customer contact), some industrial designers (who are responsible for the design) and some engineers (who are responsible for the engineering part). The total number of team members depends on the size and complexity of the assignment. All junior and medior employees at Indes are specialist within their discipline. Senior employees are also specialist in other disciplines. All teams contain junior, medior and senior functions, which ensures that at least one generalist and some specialists are present.
Indes formally does not keep records of the different team roles of employees. However, it is known what the specialties of an individual employee are, which ensures that Indes can link projects to employees with special knowledge or interest in the project: "*For a specific project we always look at specific employees. In other words we link the different projects to different employees in order to let the employee do that work where he is good and interested in. And leave the work in which this individual employee is not interested or not that skilled for others who do like it.*"
Furthermore Indes knows which employees are so called "*car pullers*". These employees can lead a project and help other team members to finish a project. Additionally, there are employees with a commercial focus and therefore better in customer contact. These two different employees are always present in the innovation projects.
As a result of the mix of Junior, Medior and senior employees, almost all teams consist of employees with different age and experience.
Indes has more male than female employees, which is also seen in the innovation teams. When composing an innovation team Indes does not pay specific attention to a variability in gender.

Recruitment & Selection

All organizations pay attention on human resource planning. For each organization will be discussed how the recruitment & selection of new employees is arranged. There will be discussed if job experience, specific competences and team roles receive any attention and if job interviews or assessments are used to select potential employees.

Messner

At Messner new employees are recruited 'by coincidence', found at competitors and found by advertisements in newspapers. As an example of the recruitment 'by coincidence' the office manager told how he started at Messner. His brother in law worked at Messner and asked the director if there was any work for his family member at the administration office. After a job interview the office manager could start. An advantage of hiring employees this way is that new employees want to perform properly because of the social control.
Other new employees are recruited at competitors. This might be direct competitors or indirect competitors. An example is the employee who is now responsible for the incremental innovations and the production in China. This employee worked at a pets store. This is an indirect competitor: selling pets is a form of sales but it is a completely different market.
However Messner is changing. In the past it was always easy to recruit employees because the demands were lower. Nowadays the focus of Messner is more professional and therefore the

demand arises. It is now harder to recruit proper employees, as the director of Messner argued: "*In the future when we develop the professional market more, it will be harder to find proper employees, human resource planning should be taken to a more professional level, the hobby time will than go away.*"

For a new employee specific competences are important: taking initiative and proper experience are two important competences. The most important competence however is that the new employee should fit in the organization. This is because Messner is a small organization in which a click between the new employee and the already existing employees is essential. The competences are checked in a job interview. Other methods as an assessment are too costly and therefore not used.

The director mentioned that there was not paid attention on team roles in the innovation team, but that it could be an important point for the future. Otherwise everybody does what he likes to do which will not result in complete products but just in parts of products: *"If there are five ideas, let us just finish one first before going to the second idea."*

Safan

At Safan usually a function profile is created when a vacant position appears. Via vacancy advertisement websites candidates can react on the function and appropriate candidates are invited for a job interview. For the R&D department, Safan does not pay specific attention to the knowledge of the candidate. Of course some level of education is needed, but for the R&D department they find it more important if someone has the ability to learn. As the HR-manager mentions: "*Knowledge is something which you can learn. So to what extend is someone able to learn. This depends on the motivation, the attention and the level of technical development."*

However the director mentioned that he finds it important that new employees for the R&D department also bring some extra knowledge. As he said: "*You can only bring a department to a higher level by learning from each other. Therefore you need to gather in knowledge, which is not present at the department. Others can learn from this knowledge and bring the department together to a higher level."*

For the engineering department it is important that the candidate is able to buildup and hold a good customer contact and that the candidate has technical knowledge.

In the past it was always 'a surprise' what kind of qualities a candidate brought to Safan. In the future specific qualities of an individual will receive more attention as well as team roles. However, therefore it is first important to identify which roles are already present and it is expected to be a problem that it is difficult for technical employees to talk about themselves. Another problem is that most functions consist of two employees which limits the options to compose an R&D project team with different roles.

For some functions specific competences are needed. For example, for the new R&D manager was searched for a person with leader capacity, because the new R&D manager had to be able to get the best out of the employees. In order to make a proper judgment, the R&D manager had to do an assessment. In fact, the managers of all departments have to do an assessment to identify if the candidate has the potential to work at Safan. This assessment is done at an assessment center because Safan does not have this knowledge in-house. Assessments are not used for other employees because that would be too costly.

The director of Safan mentioned: *"What do you do if an assessment results in a different outcome, in comparison with the outcome of the interview? Who do you believe, the assessment or your own judgment? And if you will follow your own judgment, why then do an assessment? At Safan an assessment is used to confirm the outcome of the interview."*

Gaudium

Gaudium has different methods to recruit employees for the production department and the innovation department. A vacant position in the production department is fulfilled by recruiting a young employee with no or minor education. That new employee gets full school training and will be a professional production employee after three years. The production employee is recruited in and around Winterswijk, The Netherlands because enough people with low or minor education can be

found in that area. For the innovation department it is important that the new employee has a creative background. Typically there is searched for an employee with a graduation at the institutes of the arts, such as artEZ . Because these people are harder to find the search area is nationwide. For all new employees it is important that there is a match with the team. Therefore all employees get three times a contract for the period of one year. This gives the organization three years the ability to find out if the employee fits the organization and the team.
Although team roles are found to be important and the director mentions that there is a focus on different team roles, the innovation team is not analyzed to determine which team roles are present and which team roll a new employee should have. This is not done because: *"Gaudium is a small organization where everybody knows everybody and you should be able to feel if somebody fits or not. In the three years we can find out if somebody can add something extra to the organization."*
Assessments are not used because the assessment centers do not have the knowledge of fabric that is needed for a proper assessment.

Indes

At Indes the method of human resource planning depends on the kind of employee they are searching for: for an industrial engineer creativity is important while for a receptionist creativity is not needed. Therefore for each new employee a functional description is setup which is used in a vacancy advertisement on the website of Indes or other vacancy websites. Potential candidates get a job interview and if Indes lacks the knowledge to judge the skills of the candidate help from outside is searched. For example, recently Indes was searching for an employee with software/hardware knowledge. Indes itself did not have enough experience on the skills and knowledge needed for this function and therefore asked one of their companions to judge the candidates. The companion invited some candidates and gave them the assignment to design something. This was a creative and proper way to find the best candidate for Indes.
Designing something is an instrument which is also used by Indes. Sometimes they ask candidates to design something in order to judge if the candidate is skilled enough.
It might happen that they are searching for a senior employee. In that case job experience is very important. But in most cases Indes searches for junior employees that recently finished their education. In that case job experience is less relevant.
Team roles of an employee receive attention during the selection of candidates, because Indes sometimes needs someone that can *"pull the car"* or a person that has a more commercial focus.

The above standing is summarized in table 7.

	Messner		Safan		Gaudium	Indes
	Exploration	Exploitation	Exploration	Exploitation		
Human Resource Planning	Teams but no team roles	Teams but no team roles	Teams but no team roles	Teams but no team roles	Teams but no team roles	Teams and two team roles *"car puller"* and commercial focus.
	Specialists	Generalists	Specialist	Specialists	Specialist	Specialists and senior employees are Generalists

Table 7 : Human Resource planning for Messner, Safan, Gaudium and Indes

4.4 Reward systems

All organizations have forms of reward systems. All organizations pay the employees salary, but other forms of reward systems such as profit sharing can also be found. For each organization the different forms of reward systems will be presented: individual reward and team reward. Furthermore will be discussed if the reward is equally for everyone, and what the aim of the reward system is.

Messner

Besides paying salary, Messner also has to look at the possibilities of other reward systems because 'the times are changing'. Therefore Messner recently developed a policy to reward performance. This policy is approved by the accountants and is ready to be put in to practice. However the director hopes to postpone this policy, but he expects that he has to put it in practice in the near future. The director expects problems with performance rewards because the performance of most employees is hard to measure especially in comparison to each other. Some employees put effort in making their work better, more attractive or easier without discussion with the director, which is very positive because the director wants own initiative. However, the result is that the director might not notice the possibly good change while this change actually should be rewarded.
Some employees that delivered a good performance already receive an extra amount of money, but this is based on the individual and not on a policy. In the past everybody was treated the same, but because the times are changing Messner has to put in practice the individual reward system. The reason for this change is unclear.
Currently every employee receives profit sharing. This is based upon a percentage of the salary of the employee. The profit sharing is coupled to the performance of the organization and not to the individual employee. The aim of profit sharing is to motivate employees to perform to the max to make high profit.
Other forms of rewards were tried at Messner but did not have any effects. A short time the director tried an idea box in which employees could place ideas that would be rewarded. Unfortunately it did not result in ideas and therefore the box is gone.
Finally forms of rewards such as tax free saving (spaarloon in Dutch) and buying a bicycle with your overtime that are made attractive by the Dutch Government are put into practice at Messner. It does not cost Messner anything while the employees can profit from it.

Safan

Safan pays salary as described in the mandatory collective labor agreement for the metal and electro industry. In this labor agreement the salary is also coupled to job description and experience. However, Safan in contrary to Gaudium gives only an salary increase when an employee receives a good evaluation. With an employee that gets a negative evaluation, plans are made to help the employee to get a good evaluation next year. Decrease in salary does not happen. The labor agreement also has a maximum of experience years for each function.
Besides, Safan has a policy on profit sharing. Safan is owned by a foundation that is called NIVORA (NIet VOor Rave: not for Rave). Mr. Rave used to be the director of Safan and when he wanted to stop working he could not find a proper successor and did not want his family to profit from Safan. Therefore NIVORA was started. As a result of the foundation any profit made at Safan can be reinvested in Safan and the employees. When profit is made employees receive a percentage of this profit. The profit sharing is seen as fair, because employees have to put in extra effort to make profit. At busy times for instance they also have to work at Saturday-mornings to satisfy customers' demands. All employees receive the same profit. As the HR-manager told: *"Nobody is doing it by themselves, they have to do it as a team, share knowledge and ideas, individually reward therefore would be wrong."*
Another reward system at Safan is that patents are requested with the name of the employee who came up with the idea or solution. Some other organizations request patents with the name of the R&D manager or the director, but not at Safan as explained by the R&D manager: *"An employee from the R&D finds it really important to have a patent on his own name, he really experience it as a*

reward for all the effort he has to give in order to come-up with the idea or solution." Besides, employees also receive positive feedback from managers, co-workers or even the director. This positive feedback can also been seen as a form of reward.
Other forms of reward do not occur at Safan. As the HR-manager of Safan said: "*Employees at Safan, of course want to receive other forms of reward, but they just do not get it."*

Gaudium

The salary paid to the employees at Gaudium is based upon the collective labor agreement (CAO in Dutch) for the textile industry. This labor agreement is mandatorily for all organizations working in the textile industry and ensures a certain amount of salary coupled to job description and experience. This means that at Gaudium an appropriate performing employee gets an annual salary increase until the maximum salary for the function is reached. Besides, the salary is coupled to specific jobs which means that a change in job also means a change in salary.
Beside the salary every employee receives a percentage extra salary when a certain amount of profit is made. The profit sharing is not coupled to the performance of the individual but to the performance of the organization, because employees all perform differently as the director said: *"If you keep firing the employee who performed the worst eventually you have to fire yourself."*
Finally the forms of rewards that are made attractive by the Dutch Government are put into practice at Gaudium, because it does not cost Gaudium any extra money and might have value for the employees. Furthermore, although some employees do not see it as a form of reward employees receive different trainings to let them perform better. Other rewards are a lease car (only for the director) and a mobile phone (only for the sales employees who need this for their job).

Indes

Indes also pays employees as described in a collective labor agreement even though this is not mandatory because there is no collective labor agreement for the industry they operate in. Which labor agreement Indes applies became not clear during the interview.
All employees can receive an extra amount of money at the end of the year which can be interpreted as a form of profit sharing. All employees (junior, medior and senior) receive an individual financial reward dependent on the EDO evaluation. Senior employees also get a quarterly performance related reward dependent on their competence evaluation.
Another form of reward, although not used as a reward on performance is that employees can go to a seminar or other job related meeting when that is approved by management. As explained by the HR-specialist: *"It is not the case that some employee will have a bigger piece of pay, because he performed better than other employees. Individual reward is only done through the profit sharing at the end of the year."*
Sometimes when a large and complex project has come to a good end, Indes is throwing a party. During this party al team members and external partners are invited. This party can also be seen as a form of reward.

The above standing is summarized in table 8.

	Messner		Safan		Gaudium	Indes
	Exploration	Exploitation	Exploration	Exploitation		
Reward systems	Individual rewards	Individual rewards	Individual rewards	Individual rewards	Individual rewards	Individual rewards
	Reward for engineers	Reward for engineers	Reward for scientists and engineers	Reward for engineers	Reward for engineers	Reward for engineers
	No Dual ladder system	No Dual ladder system	No Dual ladder system	No Dual ladder system	No Dual ladder system	No Dual ladder system

Table 8 : Reward systems for Messner, Safan, Gaudium and Indes

4.5 Performance appraisal

At all organizations performance appraisal occurs although there is a difference in formal appraisal and informal appraisal. For each organization both formal and informal appraisal will be discussed. Furthermore will be discussed if the formal evaluation occurs annually or more frequently and who is evaluated, teams or individual employees.

Messner

At Messner a formal annual evaluation and an informal daily evaluation takes place. Everyday employees discuss with their manager how things are going and what can be improved or resolved. The annual evaluation started two years ago. Two managers and the director started evaluating the employees they were responsible for. The director evaluates the two employees responsible for innovation. The aim of the annual evaluation is to look on what can be improved and what is needed for this improvement. Therefore, a week before the evaluation the employee receives a list with points that will be discussed during the evaluation. This gives the employees the time to think about possible improvements. The aim of the evaluation is not to discuss if someone is performing good or bad thus an employee will never hear that he/she is performing above or below others. Messner is performing as a team where everybody needs everybody.

Safan

At Safan the appraisal policy is changing from informal to a more formal policy. In the past the evaluation of employees was based on an open discussion about the performance of the employee between the employee and the manager. In the near future 5 basic competences and 5 job specific competences will be evaluated annually. Therefore all competences are defined as well as the corresponding behavior. During this more formal evaluation an individual employee is evaluated by the manager who leads the conversation and has the authority to point out the competences that have to be improved. Each improvement is formulated with SMART (Specific, Measurable, Achievable, Realistic and Time based). This ensures a clear overview of how the employee can develop competences to improve performance. The SMART method also makes it easier for managers to make agreements with employees about their improvements. The formal appraisal policy is currently waiting for approval, because organizations with more than 50 employees in the Netherlands have a work council that has to approve new employee policy. As soon as the work council agrees on the policy, it can be put into practice.

At Safan it is not the opinion that as the organization performs well, everybody is performing well. As the HR-manager at Safan told: "*We, as Safan, do not believe that as the organization performs well, the individual employee is also performing well. We believe in lifetime learning, as long as you are present in the working world, you should develop yourself. Absolutely, when innovation is one of your basic competences. You have to stay ahead."*

Appraisal also occurs on a more informal base. When employees are not performing appropriate they will hear it from their manager. It is not the case that the manager keeps waiting until the formal evaluation. As the director of Safan said: *"on a daily basis evaluation also occurs. It would be unusual if an employee hears for the first time during his formal evaluation that he is not performing well. That is impossible. If an employee does not perform well, he will hear it. If an employee performs well he probably only hears it during his formal evaluation."*

Gaudium

At Gaudium only informal evaluation takes place. Evaluation does not take place because everybody is doing his best at Gaudium and if not he or she will hear it. Of course some employees perform better than others, but as the director of Gaudium said: *"At Gaudium we work as a team. Take a soccer team for instance, who is performing better: the players attacking and scoring or the players defending and ensuring that the competitor cannot score?"*

Although there is no formal evaluation, employees do get some evaluation on a daily basis. Every employee has conversations with his manager and co-workers in which employees receive evaluation about their performance.

Twice a year the director of Gaudium has so called group conversations. During these conversations groups of 10 to 15 employees can ask the director everything, although personal questions and problems cannot be discussed. During this conversation employees also receive information about the performance of the organization.

Indes

At Indes every employee gets an annual 'EDO'. EDO stands for evaluation, targets and development. During the EDO the employee and manager discuss the number of projects that will be done in the upcoming year, the kind of projects the employee will involve in and how the employee performed that year. Sometimes a project leader that has worked during the year with the employee is asked to help with the evaluation, because the project leader has an accurate view on the performance of the employee.
Besides the EDO every senior employee gets a quarterly evaluation of competences. The aim of this evaluation is to determine how the senior employee developed his competences, the competences the senior employee will improve in the up-coming quartile and what Indes can do to help the senior employee to improve the competences. The evaluation of competences is carried out by the managers with a web based tool. Each competence is standardized by Indes and the manager gives the senior employee a grade for each competence. The marks are compared with the standards. This results in an analyses of competences on which the senior employee need to pay more attention or is developed enough. The senior employee can also ask other employees (junior, medior or senior) to fill-in the evaluation. This helps the senior employee to make better judgment of his competences and his appearance to other employees. Each individual employee can also fill-in the evaluation for him/herself and compare the outcomes with the judgment of co-workers. For the evaluation of managers, de director fills-in the computer program and discusses the outcomes with the manager. The evaluation on competences is done quarterly in order to be effective. The aim of the evaluations is to help the employee to develop. At Indes is the opinion not that as long as Indes is performing well, the individual employee also does it well.

The above standing is summarized in table 9.

	Messner		Safan		Gaudium	Indes
	Exploration	Exploitation	Exploration	Exploitation		
Perfor-mance Appraisal	Based upon standard questionnaire personal development	Based upon standard questionnaire personal development	Based upon development competences	Based upon development competences	Based upon organization performance no formal individual evaluation	EDO conversations junior and medior employees. Quarterly web based evaluation senior employees

Table 9 : Performance Appraisal for Messner, Safan. Gaudium and Indes

4.6 Career Management

All organizations was asked how they pay attention on career management and what their policies on career management are. Therefore was asked if a dual career ladder is used. A dual career ladder ensures that a technical or engineering employee can promote within his/her own profession, with the intention that the employee never outgrows the organization but grows along with it (Gupta & Singhal, 1993). Furthermore the variety between long and short term employment contracts, the autonomy of making decisions and the circulation of employees between departments was discussed.

Messner

At Messner it is hard to grow to a different position in the organization due to the small size of Messner. However, the director finds it very important to know how and into what his employees want to develop themselves and therefore career management receives attention at the start of an employment and during the evaluation.
Tools as a dual ladder system are not formulized at Messner, because that has not been necessary thus far. If career problems occur a solution will be found. However this is not formalized and might change per situation. As the director of Messner argued: *"I do not want a formalized organization, with boxes and doors, everything will be based upon the individual situation."* The director wants to be able to judge every individual situation: *"As soon as you establish policy you lose on flexibility to react to a certain situation."*
At Messner, beside the independent contractor, all employees have a long term commitment and probably will stay at Messner for the rest of their working live. In addition, there are no short term employment contracts.
All employees have a lot of freedom, but the director has the idea that the some employees do not want this freedom and are not willing to make decisions and take responsibility. Therefore there is started with an assertiveness training.
Some employees have to work at different departments in the organization, nevertheless the employees of the innovation team do not circulate between departments because of their specific work and knowledge.

Safan

At Safan career management also gets special attention as described in their Talent Management policy. An employee can change from each position in the organization. However, because Safan is a small-size organization a change in position is not always possible. However, recently an employee started at the organizational bureau. This employee started at Safan as a production employee, but developed himself into a position in which he is responsible for the planning of production.
At Safan a dual ladder system is also not applied. The director mentioned: *"If you work at an employer is that a reward? We have reward systems in order to reward an evaluate employees on their behavior. Many organizations do not have a reward system, every employee receives an annual salary increase. So the salary is based upon the time an employee is working at an organization. Do you want that as an employer, everybody to stay at your organization in order to have annual salary increase?"* The R&D manager followed: "*Let's take an employee above the age of 50. An employee who has a lot of knowledge, but probably will not give you the technology of tomorrow. What if the salary of these people can indefinitely grow? Soon you will have a point in time, where for the salary of one older R&D employee, you can hire 2 fresh younger employees."*
Sometimes functions are expanded in tasks and responsibilities, which not specifically means an increase in management tasks. This gives employees the possibility to grow from a specialist function into a more general function. The employees with expanded functions get an increase in salary.
Safan recently started with project work at the R&D department in which employees can experience their role within the project team and probably become project leader. However a good project leader needs to have different competences that need to be taken into account. As the HR-manager of Safan mentions: "*The most important is that you take a close look at what employees can and like to do. Those are the tasks you should deploy them on. If you do not do that, then you are not doing well as an employer."*
Approximately 30% of the employees is flexible with a short term contract or hired from outside. The other 70% of the employees has a long term contract.
Employees are free to make decisions on their own. Employees do not work on other departments. However, as mentioned before, an R&D project always requires the involvement of an employee from the engineering department to transform the knowledge from the R&D department towards the engineering department.

Gaudium

Career management does not receive any attention at Gaudium. Most employees start working at some department and stay there for the rest of their working life. Similar to Messner at Gaudium life time employment still exists. This might be because Gaudium is a good employer but also because the work at Gaudium is very specific which makes it harder to find a job outside the organization.
At Gaudium a dual ladder system is not used: *"That might be something for a large organization, but not for an organization such as Gaudium."*
At this moment there are no employees with a short term contract. All employees have a contract for an indefinite period.
The employees are free to make choices of their own, but on their responsibility.
The employees of the innovation team do not circulate between departments. Other employees within Gaudium sometimes replace each other, because short term employments had to be ended as a result of the economical crisis. Employees of the administration office now sometimes need to help at the production department because the production otherwise cannot continue.

Indes

At Indes career management gets special attention and Indes has a special policy for it. Normally an employee starts as a junior employee and becomes almost automatically a medior employee by involving in different innovation projects. Medior means that the individual employee can perform individually within his specialization and that he/she has more in-depth knowledge. The next promotion step for an employee is to become a senior employee. Therefore the medior employee has to specialize in another area and thus broaden his/her knowledge.
A dual ladder system is not applied at Indes. Some employees that came to the max of their salary and liked to have more responsibility changed from function and started to perform management tasks. Besides, some employees get allowance to develop a deeper understanding within their specialty. However this does not have any financial consequences.
Employees at Indes have a high level of freedom to make choices of their own. This is also needed to come with answers and solutions for customers.
Employees do not circulate between departments because their work is too specific. However, recently a new production startup department was created. The new department helps with the translation from the design and engineering departments to the production of the product. Some engineers from the engineering department worked at the new department for a while. Indes experienced that the engineers actually lacked enough organizational feeling and knowledge. To share knowledge between designers and engineers Indes has the Indes academy. At this academy engineers and designers can together discuss and share problems, experiences and other forms of knowledge. This ensures that employees can learn from each other and are able to develop themselves.

The above standing is summarized in table 10.

	Messner		Safan		Gaudium	Indes
	Exploration	Exploitation	Exploration	Exploitation		
Career management	No career stones	No career stones	The 4 career stones	The 4 career stones	No career stones	The 4 career stones
	Empowering	Empowering	Empowering	Empowering	Empowering	Empowering
	Long term employment relations, although looks different	Long term employment relations	30% employees involved in innovation short term employment relations	Long term employment relations	Long term employment relations	Long term employment relations

Table 10 : Career Management for Messner, Safan, Gaudium and Indes

4.7 Different HRM design for different departments

During each interview is asked if employees and departments involved in innovation are treated different than other departments.

At all four organizations employees are treated the same. There is not made any distinction between employees focusing on innovation and the other employees who for instance focus on the production or the administration. In some cases at Messner, an individual employee is treated somewhat differently in comparison to other employees. However this has nothing to do with the fact if the employee focus on innovation or not. Treating differently at Messner is based upon the specific situation. Furthermore at Gaudium the director explained: "*I do not believe in treating employees differently. We do it all together, all as a team.*

5. Discussion and conclusion

The results of the literature research and the interview data are compared and discussed in this chapter. In table 11 the results of the literature research and interview for a structural ambidextrous organizations are summarized. In table 12 the results of the literature study and interview for a contextual ambidextrous organization are summarized. After the two tables the results will be discussed. First, the two forms of ambidexterity will be discussed. Followed by the four HRM domains. Additionally the differences between departments focusing on innovation and other departments within the organizations will be discussed. In the second part of this chapter the conclusion, limitations and suggestion for further research is addressed.

	Structural ambidexterity		Messner		Safan	
	Exploration	Exploitation	Exploration	Exploitation	Exploration	Exploitation
Human Resource planning	Teams consists of 5 different roles	Teams consists of 5 different roles	Teams but no team roles	Teams but no team roles	Teams but no team roles	Teams but no team roles
	Generalists	Specialists	Specialists	Generalists	Specialists	Specialists
Reward systems	Team based reward	Team based reward				
	Individual reward	Individual reward	Individual reward	Individual reward	Individual reward	Individual reward
	Reward for scientists	Reward for engineers	Reward for engineers	Reward for engineers	Reward for scientists and engineers	Reward for engineers
	Dual ladder system	No dual ladder system	No dual ladder system	No dual ladder system	No dual ladder system	No dual ladder system
Perfor-mance appraisal	Based upon performance organization	Based upon engineers mutually	Based upon standard questionnaire personal development	Based upon standard questionnaire personal development	Based upon development competence	Based upon development competence
Career Manage-ment	The 4 career stones	The 4 career stones	No career stones	No career stones	The 4 career stones	The 4 career stones
	Empowering	Empowering	Empowering	Empowering	Empowering	Empowering
	Short term employment relations	Long term employment relation	Long term employment relations although looks differently	Long term employment relations	30% employees focusing on innovation short term employment	Long term employment relations

Table: 11 summary literature study and interviews for a structural ambidextrous organization.

	Contextual ambidexterity	Gaudium	Indes
Human Resource planning	Teams consist of 5 different team roles	Teams but no team roles	Teams and two team roles *"car puller"* and *"commercial focus"*
	Generalists	Specialists	Specialists and senior employees are generalists
Reward systems	Team based reward		
	Individual reward	Individual reward	Individual reward
	Reward for scientists and engineers	Reward for engineers	Reward for engineers
	Dual ladder system	No dual ladder system	No dual ladder system
Performance Appraisal	Engineers based upon other engineers	Based upon organizational performance	EDO conversations junior and medior employees
	Scientists based upon organizational performance	No formal individual evaluation	Quarterly web based evaluation senior employees
Career Management	The 4 career stones	No career stones	The 4 career stones
	Empowering	Empowering	Empowering
	Long and short term employment relations	Long term employment relations	Long term employment relations

Table: 12 summary literature study and interviews for a contextual ambidextrous organization.

5.1 Organization of innovation

The organization of innovation is studied in four organizations. Two organizations innovated with the use of structural ambidexterity and two organizations innovated with the use of contextual ambidexterity. However, differences between literature and practice are found. In this paragraph, structural ambidexterity will be discussed first, followed by contextual ambidexterity.

Structural ambidextrous organization of innovation

At Messner and Safan innovation is organized through the separation of exploitation and exploration which makes them structural ambidextrous organizations. O'Reilly & Tushman (2004) argued that in a structural ambidextrous organization, the units focusing on exploitation should be large and centralized, while the units focusing on exploration should be small and decentralized. This is not the case at Messner and Safan.

At Messner, there is no difference in size or level of centralization between the employee focusing on exploration and the employee focusing on exploitation. This is most likely due to the fact that there are only two people focusing on innovation, which makes it impossible to setup different departments and make a distinction between centralization.

Safan has several employees working in two departments on innovation. Remarkably, Safan's unit focusing on exploration is larger than the unit focusing on exploitation which is completely opposite to the description in literature. There are two arguments that can explain this difference. First, O'Reilly & Tushman (2004) may have only analyzed organizations that pay (close to) equal attention towards exploration and exploitation. This is not the case at Safan. Safan focuses for 30% of the time spent on innovation on exploitation and 70% on exploration. Another explanation is the difference between large organizations and SMEs. Already in the theoretical framework it became clear that SMEs are able to both explore and exploit through separation but, the size of the unites and the level of centralization may differ.

Another difference between literature and Messner and Safan is that literature not only describes a separation between the innovation units but also between the supporting units such as marketing and sales. This does not occur at Messner and Safan where sales and marketing support both employees or departments. This can also be explained by the size of the organization. It is for an organization as Messner with only 25 employees impossible to have an administration office focusing on the existing market and an administration office focusing on the emerging market. Therefore is not enough work and are there not enough employees.
Literature argues that in a structural ambidextrous organization separation leads to isolation and that many R&D departments fail to get their ideas accepted, due to the lack of linkages to the core business (Birkinshaw & Gibson, 2004). Both Safan and Messner pay attention towards this separation and isolation problem. At Messner the two people focusing on innovation work together: they share a room in the building and have weekly formal meetings with the director to share knowledge and ideas. At Safan an engineer is added in each R&D project team to ensure knowledge transformation from the R&D department towards the engineering department. These approaches avoid isolation.

Contextual ambidextrous organization of innovation

At Gaudium and Indes the management does not demand specific focus of it employees. In other words, employees have the freedom to choose if they focus on exploration or exploitation which makes them contextual ambidextrous organizations. However there is a distinction between Gaudium and Indes in the actual freedom that employees have.
At Gaudium the innovation team has two tasks: answering customers questions and searching new products and markets. An employee is free to decide how much time he will devote on which task but within boundaries. The questions of customers always have to be answered within a certain time because this is the man priority of the organization.
Indes designs and engineers solutions for customers problems. The innovation team is free to use already existing knowledge or to search and use new knowledge. However, because most problems are new, most solutions have a explorative focus. Thus, in most situations employees are forced to search for new knowledge as a result of the kind of projects. Sometimes Indes has to redesign one of their products. Then the innovation team has to focus more on existing knowledge. Though, it is not always the case that the employees who made the first design also receive the assignment for the redesign. Because all employees are involved in more than one project, an individual employee can be involved in projects with an exploration focus as well as in projects with an exploitation focus at the same time. In the future Indes will probably change from contextual ambidexterity to structural ambidexterity. This will be due to the involvement of the production department in China. At this moment this production department only produce what is directed from the engineer and design departments. This results in many problems. In the future the production department will receive the autonomy to make adjustments on their own. This all will change the organization in to a more structural ambidextrous organization, were one unit focus on exploration and the other on exploitation.
In literature is stated that in a contextual ambidextrous organization the individual employee should be able to choose how much time he will divide at exploration and how much time at exploitation (Gibson & Birkinshaw, 2004). In the case of Indes can be seen that the kind of project may force the employee to focus only exploration, however the management is not directing the specific focus on exploration. The individual employee is free to choose. At Gaudium can be seen that there are boundaries. The questions of costumers always have to be answered within a certain time, because this is the main priority of the organization. Thus, although organizations may try to organize innovation by using contextual ambidexterity, situations may force the employees to a more explorative or exploitative focus.

5.2 Human resource planning

Human resource planning is divided in innovations teams and recruitment & selection.

Innovation teams

In literature is found that innovation is too complex to obtain by an individual employee (Jiménez-Jiménez & Sanz-Valle, 2008). All organizations agreed upon this opinion and search for innovation by innovation teams. Literature describes that in order to reach efficiency a contextual ambidextrous organization should have innovation teams consisting of generalists while a structural ambidextrous organization should have generalists at the unit focusing on exploration and specialists at the unit focusing on exploitation. However this is not seen at all organizations.

At Gaudium and Indes, the contextual ambidextrous organizations, most employees at the innovation team are specialists in contrast as the description in literature. At Gaudium even all employees can be seen as specialists. The explanation is that the work at Gaudium is very specialistic and impossible to do for people who have not followed internal education. At Indes all junior and medior employees are specialists because they did not yet develop knowledge and skills in other disciplines. However employees strive to become senior employees, which would make them more generalists because senior employees also have skills and knowledge in other disciplines. Indes thus applies career management to develop employees from specialists to generalists, which will be better for innovation teams as described in literature.

At Messner and Safan, the structural ambidextrous organizations, the situation is also different as described in literature. At Messner the situation is even completely opposite as described in literature. According to literature the independent contractor focusing on exploration should be a generalist while the employee who is focusing on exploitation should be a specialist, but this is not the case. An explanation is that the employees involved in innovation are hired upon coincidence. The director did not identify if the independent contractor was a generalist but was glad to find and hire an employee with his level of knowledge and skills. This is due to the size of the organization which makes the recruitment & selection methods less formal in comparison with larger organizations. At Safan only specialists work instead of specialists and generalists. However one comment has to be made. Badaway (2007) argues that it would be *better* for innovation to have teams with generalists. However, that does not mean that innovation cannot be searched with only specialists.

It is remarkable that all organizations search for innovation through the use of teams. Even an organization as Messner that only consists of 25 employees searches innovation through the use of a team. In literature is described that an innovation team that consists out of five different team roles can foster innovation (Badaway, 2007). However the composition of such a team can be too difficult in small-size organizations. This can be explained by an example from Safan. When Safan composes an R&D team and they need a software engineer, they can only choose out of two employees with software engineering skills. If a software engineer with a gatekeeper roll is needed, it is probable that they do not have such an employee. This example can again be typified as an effect of the size of the organization. In SMEs HRM is less formal. This results in not paying attention on team roles. Besides, the size of the organization, the HR manager of Safan mentioned that technical people find it harder to look at themselves in team roles.

Human capital and social capital can together support radical innovation (Subramaniam & Young, 2005). For an organization it is therefore important to pay attention on both forms of capital. All organizations try this by composing an innovation team consisting of employees with different age and job experience. This creates a situation where employees share knowledge, skills and abilities, which fosters radical innovation. However at Safan the department focusing on exploitation also consists of employees of different age and job experience, while this is not necessary for incremental innovations. For incremental innovation knowledge needs to be accessible for employees. Safan does that by putting an employee from the exploitation unit in an exploration project to transform knowledge from the exploration to the exploitation unit.

Recruitment & Selection

Literature argues that organizations should pay attention toward the five team roles during the recruitment and selection of employees. However as already discussed none of the four organizations pay attention to team roles. This is not done during the composition of a team as well as during the recruitment and selection of new employees. Job experience is thought to be more important.

Two of the four organizations only use an interview to determine if an candidate fits the organization. However as suggested by Badaway (2007), interviews alone are not good enough to determine if an employee is good or exceptional and assessments are needed to determine which skills an employee has. Assessments are however not often used due to the time and costs of an assessment. Only Safan uses assessments for managers. Gaudium mentioned that an assessment center is unable to make a proper judgment, because a center lacks the specific knowledge needed to judge an employee for Gaudium. Moreover, the additional value of an assessment is debatable. It is possible that the results of an assessment are completely different with the results of an interview. It is then the question if an organization sticks to its own judgment or follows the assessment. And if an organization chooses to stick to its own judgment, the organization probably does not need to do an assessment and can save time and costs. It is common for SMEs to not use assessments. SMEs mostly use less sophisticated instruments in order to determine if an candidates fits the organization. A possibly better way to select employees is the method Indes sometimes utilizes. In this method new employees are asked to design something which makes it possible to judge their skills. When Indes searches an employee with skills and knowledge that are not present in the organization, companion organizations are asked to help to judge the employees knowledge and skills. The method of Indes is very objective because the skills of the employee are actually tested.

5.3 Reward systems

Reward systems are used to support and stimulate appropriate behavior. In literature a distinction is made in the reward system for employees focusing on exploration (scientists) and employees focusing on exploitation (engineers). According to literature scientists want to be rewarded with a sabbatical leave for education, while engineers are more interested in a stock option. Such a difference is not found at the four organizations. An explanation is that the organizations do not want to make a distinction in reward systems for different employees or departments because that would be unfair. At Indes however a distinction is made in the reward system for senior employees and other employees. Senior employees can receive a quarterly bonus coupled to their development of competences. However this bonus is coupled to the development of the employee and not to the fact that the employee is an engineer or a scientist. The distinction described in literature can thus not be found in practice. However, the organizations also have the opinion that it might be better for the performance of an individual employee to treat employees differently because some employees want to be treated differently. This statement is also addressed by the HR-Manager of Safan, who argued that some employees might want other reward forms. However, Safan simply does not give that.

All employees at the four organization receive salary. This salary is always based upon a collective labor agreement suited for the relevant industry. Only Indes, does not have a mandatory labor agreement. Still they stick to one. Furthermore all organizations apply a form of profit sharing. Profit sharing is put into practice to reward employees for the extra effort they had to put in to make the profit. At three of the four organizations the profit sharing is based upon the performance of the organizations and not on the performance of the individual employee. This organizations argue that their organizations have to work as a whole and that everybody needs to work with each other to perform good. Therefore individual rewarding employees would be wrong. At Indes the profit sharing is indeed based upon the individual. Only after a positive evaluation and if there is made profit, the employee will be rewarded in the form of profit sharing.

However profit sharing is a reward system which is appreciated by engineers focusing on exploitation. The employees (scientists) focusing on exploration should also receive other reward

forms like the ability to publish articles to be stimulated because they are less interested in profit sharing. At Safan the employees are for instance rewarded with their own name on a patent.
In addition, also other forms of reward are found at the four organizations such as positive feedback from managers and co-workers at Safan, or a party at the end of project as at Indes. However these forms of reward are not mentioned in the literature as rewards that stimulate appropriate behavior. Although it is believed that it really does stimulate appropriate behavior.

5.4 Performance Appraisal

An organization can help employees to develop and perform better by evaluation of employees. However not all organizations evaluate their employees.
Gaudium for instance formally not evaluates performance of an employee. However, an individual employee gets daily feedback from his manager. Furthermore the director discusses the performance of the organization twice a year in groups of employees. This can be characterized as a form of evaluation of the organization instead of an evaluation of the individual employee. In literature is stated that if an organization is doing well, everybody is doing a good job (Badaway, 2007). This also is a good example of a lower level of formality and sophistication of HRM in SMEs.
Messner and Safan evaluate all employees individually. Messner focuses on an annual evaluation of development and improvement of the employee, while Safan will start to evaluate competences in the near future. The use of competences makes the aim of the evaluation, development of employees, more easy to measure. The evaluation at Safan will be done annually by the manager of the employees.
At Indes junior and medior employees have an annual so called EDO (Evaluation targets and development) conversation to evaluate employees. The senior employees are evaluated quarterly through a web based tool with which specific competences are valued. The evaluation via the web based tool cannot only be used by the managers but also by other employees giving the senior employee a better and more objective evaluation.
The different organizations thus evaluate their employees differently, but always apply some form of evaluation. Three of the four organizations focus on the development of the employee, which is corresponding to the literature. In the literature is stated that: the idea behind appraisal is to help employees develop a proper behavior in order to perform better (Gupta & Singhal, 1993).
Besides the formal evaluation all organizations have a form of informal evaluation. All employees hear from their manager or co-worker how they perform and what they can do better on a daily basis. Although this became clear during the interviews, and seems to help increase behavior and thus performance, none of this form of informal appraisal is found in the literature.
Furthermore Indes and in the near future Safan link the evaluation to a reward system.

5.5 Career management

Regarding career management both Indes and Safan follow the steps that are described in literature. In a standard situation at Indes and Safan, employees start with a contract for one year in a junior function and have the opportunity to develop themselves. Then the employees start to specialize themselves to become better skilled and increase their knowledge within their specific function. In the third step the employees also develop understanding in other functions, which results in a senior function. This career process is in a standard situation discussed with every employee at Indes and Safan. Sometimes a senior employee is searched outside the organization and for this employee the career management would not hold. However Messner and Gaudium do not have the step by step career management, which are suggested by the literature. Both Messner and Gaudium argue that it is hard to grow within their organization as a result of their small-size. This is similar as in other HRM-domains an example of lower level of formality. In SMEs, there is no availability to make career movements and the organization does not pay attention, or does not formulize this attention.
All organizations let their employees free to make decisions of their own. According to literature, this will empower employees, giving them more self-esteem which leads to more innovation (Gupta & Singhal, 1993).

In literature it is stated that employees focusing on exploration look for a short term employment relationship, while employees focusing on exploitation look for a long term employment relationship. Only for one of the four organizations this theory also holds in practice. At Safan indeed 30% of the employees at the R&D department have a short term employment relation. This is the complete opposite for Messner and Gaudium where all employees have a long-term employment relation. At Messner the independent contractor is of course hired-in and the contract could therefore be perceived as a short term employment relation, but this is not the case. The independent contractor wanted to work for an organization with stability for three days a week, to be able to do different assignments at different organizations during the other day. With those other organizations the independent contractor builds up a short employment relationship, but at Messner he will probably stay a long time. This all shows that what is found in literature does not occur in practice.

5.6 Difference between departments.

It was expected, although not directly stated in literature, that organizations treat the employees focusing on innovation different in comparison with other employees at the organization. However this is not the case at the four organizations. In all organizations employees who work for instance in the production or sales, are treated the same as the employees who work at the department focusing on innovation. Organizations wants to treat employees the same, which is seen as the most fairly. Also this is argued because of the size of the organization. When an organization employs 25 employees, they will have close contact with each other, ruling different treatment out.

5.7 Conclusion

As is seen in the literature, it is possible to organize innovation differently. This difference in organization of innovation is not only found in the literature, but also at the four organizations. Two organizations organize innovation by the use of structural ambidexterity, and the two other organizations use contextual ambidexterity. Already in literature it became clear that there are differences between Human Resource planning, Reward systems, Performance appraisal and Career management for structural ambidexterity in comparison with contextual ambidexterity. In a structural ambidextrous organization the design of the HRM-domains is divided. A specific design for the exploration units, designed with generalists and rewards for scientists and another specific but different design for the exploitation units, designed with specialists and reward systems for engineers. In a contextual ambidextrous organization the focus is on both exploration and exploitation, leading to a design for HRM-domains focusing on generalists and reward systems for both engineers and specialists.

In practice the differences between the HRM-domains for a structural ambidextrous organization in comparison with a contextual ambidextrous organization are less different. Structural ambidextrous organizations do not make distinctions in their HRM-domains between employees focusing on exploration in comparison to the employees focusing on exploitation. Everybody is treated equally as is also the case in a contextual ambidextrous organization.

This all is supported by the similarities found in the design of the HRM-domains of the structural ambidextrous organizations and the contextual ambidextrous organizations. Although this similarity sometimes differs with the results of the literature study. An explanation for the difference between literature and practice can be found in the size of the organization. The theories used in the theoretical framework were based upon research among large enterprises such as Intel and 3M, although this study focused on SMEs such as Gaudium and Messner. As already became clear in the introduction SMEs have less formal, less sophisticated and more flexible HRM-design in comparison to large size enterprises. This also is shown with this study. It can therefore be concluded that SMEs are able to simultaneously explore and exploit in a single organization by the use of structural ambidexterity or contextual ambidexterity. Although there is a difference in organization of innovation there is no difference in the design of HRM. Structural ambidextrous SMEs design their HRM similar as contextual ambidextrous SMEs. By taking a closer look at the four HRM domains the following can be concluded.

Taking into account human resource planning, in SMEs specialists instead of generalists are involved in exploration and exploitation. The work at the innovation departments is too specific and hard to accomplish for generalists. Furthermore there are not enough employees to compose a team with different team roles. Therefore the focus on team roles is left out.

Regarding reward systems, SMEs only apply individual reward. Team reward is something which is hardly found. Only one organizations rewards a team for the fulfillment of a project by the use of a party to celebrate the end of the project. Individual reward is used because that is seen as the most fair. Most of the time reward is in the form of money. All employees receive salary based upon the collective labor agreement suitable for the specific industry. Besides, employees also receive a form of profit sharing. For three of the four organizations this profit sharing is based upon the performance of the organization. Other forms of reward to stimulate specific behavior are not found. However at one organization scientific employees are rewarded with a patent on their own name instead of the name of the director or R&D manager.

Additionally for performance appraisal, most SMEs pay annual attention on individual evaluation. Only one organization explained that employees are not evaluated until they perform bad. The explanation for this is that this is a small size organization with no HR-department or HR-manager, which makes HRM less formal and less sophisticated.

Evaluation can take place based upon specific competences, or in the form of a conversation about development. By using competences organizations are able to evaluate more objective. Especially as the evaluation occurs as it does at Indes for the senior management.

Finally, for career management, SMEs just do not have the possibilities to let employees fulfill another function. This makes career development hard. Still two organizations showed that they have specific career development policy. This were also the two organizations who have a HR-manager. Again with this example it is showed that when an SME has an HR-manager, HRM is designed more formal. However the policy does not mean that employees are able to fulfill other functions. Due to the size of the organizations, the occurrence of available positions is limited. This limitation is a result of the life-time employment found in the organizations. Most employees stay at the organization for the rest of their working life sticking in their function which prevents other employees to grow and develop into this function.

The four HRM-domains might change in the future. All four organizations are constantly searching for new products and improving or changing existing products. This can result in a growth of the organization. This growing will also result in an increase in formalization of the HRM-domains.

Furthermore, because organizations grow, the director might see their employees as more valuable and less easy to replace. This will increase the importance of an HR-department or manager, which will result in more sophisticated and formalized HRM. So although at this moment HRM is designed as represented in this report, in the near future the design can change dramatically.

5.8 Limitations

This research is done among four organizations, which might not represent the entire population of SMEs in The Netherlands. Therefore the outcomes of this research cannot be generalized. In order to generalize further research is suggested.

Furthermore as already became clear, this research is done at the end of the year 2009 and start of the year 2010. The SMEs that contributed to this research are organizations who constantly search for new products and improve/change existing products. This might result in a growth and therefore in a change in formalization of the HRM-domains. Additionally HRM in SMEs is very flexible. This all results in the fact that what is measured today might be different tomorrow, next month or next year.

Furthermore with this study only the intended HRM design is researched. As already became clear in the introduction, the intended design is implemented by line managers and perceived by employees who react on this perception eventually resulting in an organizational performance. There are many places among this path were things can go wrong. Possibly resulting in an attendant design A, an actual design B and a perceived design C. So although this study shows the intended design of HRM for the four organizations, this does not mean that it is the same design as perceived by the employees.

5.9 Suggestions for further research

All in all the results of this study have shown remarkable aspects of the HRM-domains in SMEs. However, this study focused on the intended design of HRM. The next step will be to do research among the actual and perceived HRM. It is possible that although directors and HR-managers design the four HRM domains, these domains are implemented differently by the line managers and perceived even more differently by the individual employees, resulting in an even more different behavior. Eventually resulting in a different organizational performance than assumed. In addition, it would be wise to develop a measurement instrument to measure performance of innovation. The combination between actual and perceived HRM, employee behavior and the performance of innovation will lead to an understanding of how the four HRM domains should be implemented in order to support innovation performance. Additionally it does not matter if the organizations organize innovation through the use of structural ambidexterity or contextual ambidexterity. However ambidexterity still seems important because it is the only way organizations can both explore and exploit simultaneously in a single organization.

This future research has several implications. First of all a research instrument has to be developed to measure actual and perceived HRM of the four domains, employee behavior and innovation performance. The measurement of innovation performance is difficult, but needed in order to determine which actual and perceived HRM and employee behavior support innovation performance better. Second, there has to be searched for SMEs with at least an HR-department or an HR-manager. At those SMEs more formal HRM is found which will ensure actual and perceived HRM, by the line managers and employees. Third with the designed instrument it is possible to determine which organizations are more successful in innovation performance. Finally the actual and perceived HRM of the four domains and the employee behavior have to be analyzed at the better performing organizations in comparison with the less performing organizations.

Such a study will provide insight in how organizations should implement the four HRM domains, how employees perceive the implemented HRM and what employee behavior is needed to become or stay better in innovation. The research model is depicted in figure 6.

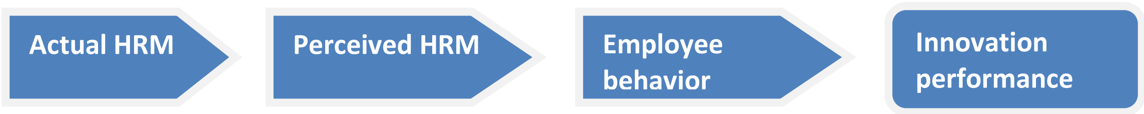

Figure 6: Suggestion research model for further research.

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Appendix I Definitions

Innovation an idea, practice or material artefact perceived to be *new* by the relevant unit of adoption (Dewar & Dutton, 1986)

Incremental innovation represents minor improvements or simple adjustments in already existing products, services, processes and technology. (Dewar & Dutton, 1986)

Radical innovation represents fundamental change in products, services, process and technology resulting in a complete new product, services, processes or technologies. (Dewar & Dutton, 1986)

Exploration the search and use of knowledge, new for the organization (March, 1991)

Exploitation the use of knowledge which already exists inside the organization (March, 1991)

Punctuated equilibrium switching between long periods of exploitation and short bursts of exploration (Gupta et.al. 2006)

Specialization Together with a network partner one organization focus on exploration the other on exploitation (Gupta et.al. 2006)

Contextual ambidexterity The individual employee has the freedom to choose how much time he/she will devote to exploration and how much to exploitation. (Gibson & Birkinshaw, 2004)

Structural ambidexterity organizations consist of multiple tightly coupled subunits that are themselves loosely coupled with each other. Where one subunit focus on exploration the other focus on exploitation. (O'Reilly & Tushman, 2004)

HRM domains. The HRM domains consist of Human Resource planning, Reward systems, Performance appraisal and Career Management.

Human resource planning includes analyzing employees needs, and selecting and hiring qualified employees in order to achieve long and short term organizational goals (Gupta & Singhal, 1993).

Reward systems are used to motivate employees to achieve goals on productivity, innovation and profitability (Gupta & Singhal, 1993)

Performance appraisal represents the evaluation of employees (Gupta & Singhal, 1993).

Career Management means the match between the employees long term career goals in combination with the organizational goals, by the mediation of education and training (Gupta & Singhal, 1993).

Appendix II Organizations outlines

Messner Benelux bv.

Messner Benelux is a small trading organization located in Hengelo (Gld.) The Netherlands. Their specialization is plump or pool techniques such as fountains and plump lighting. Their products separate them from their competitors by quality and lifespan. Messner used to be a department from the German organization called Meßner, but became independent in the year 1998. In the year 2007 a total of 18 employees worked in The Netherlands (16 fulltime equivalents) . Only 6% of them had a temporary contract. The sick rate was extremely low 1%. And there were no employees who left the organization. From week 8 until week 28 Messner sells the most of their products. In the last years Messner started up the development of products for a professional market. For this development a independent contractor is used.

Indes

Indes is an organization located in Enschede, The Netherlands. They specialize themselves on the development and design for customer solutions. Indes nowadays is transforming from a engineer and design bureau into an organization who is also able to produce the products. Therefore they startup a small production department in China. the year 2007 80% of their sold products were new developed products, the other 20% were products with a minor or small improvement. In the year 2007 Indes thus did not sell any already existing products without making any adjustments to this products. The focus on exploration versus exploitation in comparison with Projects, Budget and Time is for all three cases 80% - 20% in the year 2007. Also in this year Indes experienced a low sick rate of 2%. 15% of all employees left Indes in the year 2007. Furthermore Indes appears to have a reward system based on the organizational performance.

Safan

Safan is a large organization specialized in the production of machinery to bent and flip steel plates. In the year 2007 a total of 140 employees worked at Safan (130 fulltime equivalents). 25% of the employees had a temporary contract. The sick rate was 3% which seems in line with the other organizations. 8% of the working position became vacant in the year 2007. In 2008 Safan had a total of 5 innovation projects. 4 of them had a exploration focus, the other one had a more exploitation focus. This while in the time period 2005-2007 20% of the products sold were new developed products, the other 80% were already existing products. So there were no products sold in the year 2005-2007 which had minor improvements. On the question how do employees receive some “free time” to develop own ideas or research projects, Safan was the highest scored organization. Safan also has different forms of reward systems focusing on the organizations as a whole, groups and individuals.

Gaudium

Gaudium is a weaving mill located in Winterswijk The Netherlands, originally founded in 1866. In 1980 the weaving mill almost went bankrupt but was able to re-exist under the name Gaudium. Nowadays Gaudium focuses on the development and production of fabrics (for instance cloths which will melt instead of burn for the use in airplanes). In the year 2007 a total of 50 employees was working in The Netherlands (45 fulltime equivalents). Only 4% of them had a temporary contract. The sick rate was 3,5%. And there were no employees who left the organization. In the year 2008, Gaudium had a total of 230 R&D projects of which 80% had an exploration focus and the other 20% had an exploitation focus. Over the period 2005-2007 10% of their sold products were new developed products, 5% were improved products and the other 85% were products which did not change and were already developed.

Appendix III Pre-questionnaire in English

Before the interview is started organizations are asked to answer the following five questions and send them back by e-mail:

How is the innovation budget divided between the following two types of innovation projects for the year 2008:

	Percentage
1 Projects with the focus on the search and use of new knowledge.	……%
2. Projects with the focus on the search and use of already existing knowledge.	……%
	100%

How are the amount of innovation projects divided between the following two types of innovation projects for the year 2008:

	Percentage
1 Projects with the focus on the search and use of new knowledge.	……%
2. Projects with the focus on the search and use of already existing knowledge.	……%
	100%

How is the time spend on innovation divided between the following two types of innovation projects for the year 2008:

	Percentage
1 Projects with the focus on the search and use of new knowledge.	……%
2. Projects with the focus on the search and use of already existing knowledge.	……%
	100%

The search and use of new knowledge, is that done through the use of a team? Yes / No *

The search and use of already existing knowledge, is that done through the use of a team? Yes / No *

*please put a circle around the right answer.

Appendix IV Pre-questionnaire in Dutch

Organisaties werden gevraagd voorafgaande aan het interview de volgende vijf vragen te beantwoorden en deze per mail terug te sturen:

Hoe is het innovatiebudget verdeeld over de volgende twee types van innovatieprojecten in 2008:

	Aandeel
1. Projecten waarbij de nadruk ligt op het zoeken en gebruiken van reeds eerder verworven of gebruikte kennis.	……%
2.Projecten waarbij de nadruk ligt op het zoeken en gebruiken van nieuwe kennis.	……%
	100%

Hoe is het aantal innovatieprojecten verdeeld over de volgende twee types van innovatieprojecten in 2008:

	Aandeel
1 Projecten waarbij de nadruk ligt op het zoeken en gebruiken van reeds eerder verworven of gebruikte kennis.	……%
2.Projecten waarbij de nadruk ligt op het zoeken en gebruiken van nieuwe kennis.	……%
	100%

Hoe is de tijd besteed aan innovatie verdeelt over de volgende twee types van innovatieprojecten in 2008:

	Aandeel
1 Projecten waarbij de nadruk ligt op het zoeken en gebruiken van reeds eerder verworven of gebruikte kennis.	……%
2. Projecten waarbij de nadruk ligt op het zoeken en gebruiken van nieuwe kennis.	……%
	100%

Wordt het zoeken en gebruiken van nieuwe kennis gedaan door teams? Ja / Nee *

Wordt het zoeken en gebruiken van reeds voor de organisatie bestaande kennis gedaan door middel van teams? Ja / Nee *

* Omcirkeld u alstublieft het goede antwoord.

Appendix V Interview structure

Interview
Opening

- Ask permission to record the interview. After the interview analyses the recordings will be deleted.
- Does the participant agree upon the mention of the name of the organization and the function of the participant in the report?
- The interview will take approximately 1 hour.
- Has the participant answered the questions which where send to hem/hear by mail and did he or she replied the answers. As not does the participant want to fill in the form now.

In this organization attention is pay to both incremental innovation, minor improvements on already existing products, services or technologies, but also on more radical innovations, fundamental new products, services or technologies. Could you tell me how this is organized?

- Innovation is organized through <u>separation</u> where there are units focusing on the use of already existing knowledge in order to search for incremental innovations. While the other units focus more on the search and of new knowledge for development of new products, services or technologies. The so called radical innovations.
- The organization of innovation is left free to the employee. The employee self can decide how much time is spent on exploration and how much time is spent on exploitation.

In your organization new knowledge but also already existing knowledge for innovation is searched and used through the use of teams. Could you give me a description of these innovation teams.

- Rate of Generalists and specialists
- Rate male vs. female
- Different functions
- Different team roles
    - Idea generating
    - Entrepreneuring/ Championing
    - Project leading
    - Gatekeeping
    - Sponsoring or Coach
- Job experience
- Rate in age

In the case organizations answer that the search and use of new and already used knowledge for innovation is not done through the use of teams.
Could you please tell me how your organization searches for new and already existing knowledge.
U heeft aangegeven dat er binnen uw organisatie geen gebruik wordt gemaakt van teams voor het

Recruitment and selection
Could you please tell me something more about the recruitment and selection at your organization?

What does receive specific attention during this process?
How is that done?

- Job experience
- Specific competences
- Team roles
    - Idea generating
    - Entrepreneuring/ Championing
    - Project leading
    - Gatekeeping
    - Sponsoring or Coach
- Assessments
    - Always
    - Specific situations

Performance appraisal
Could you please tell me something more about the performance appraisal at your organization?

- Does appraisal takes place?
- How many times
- Who evaluates who?
- Aim of the evaluation?
- How does the evaluation takes place, based upon standard forms, competences Personal development program etc.
- Which performance that of an individual or the organization.

Reward systems
Could you please tell me something more about the reward systems at your organization?

- Individual reward/team reward
    - Depends on the situation?
- Does everybody receives equal reward?
- Aim of the reward
- Different forms of reward see next page.

	Merit salary increases
	Promotion within career ladder
	Stock options
	Profit sharing
	Rewards for suggestion
	Improved office space
	Increased technical or clerical assistance
	Increased challenge in job assignment
	Special recognition and/or monetary reward for superior performance
	Encouragement to publish
	Time off for professional meetings
	Paid transportation to professional meeting
	Dues paid in professional organizations
	Greater freedom to come and go
	Better technical equipment
	Sabbatical leave for education
	Tuition or other educational aid
	Participation in company seminars Divisional freedom

Career Management
Could you please tell me something more about the career management of the employees?

- Is there any policy on career management
- Dual ladder system?
- Rate short term employment relations versus long term employment relations
- Employees are left free to make decisions of their own or things are decided by the management.
- Job rotation in order to have employees who are able to work in other departments?

Are there any differences between the departments focusing on innovation and all other departments in combination with the four discussed HRM-domains?
- Why yes?
- Why not?
- Human Resource planning
- Performance appraisal
- Reward system
- Career management

With this we have come to the end of this interview. I would like to thank you for this interview.

- A copy of the final report will be send to the organization.
- Every participant receives a small attention.

Appendix VI Interview structure in Dutch

Interview
Opening

- Toestemming om op te nemen? Na verwerking worden opnamen vernietigd.
- Mogen de naam van de organisatie en functie van de kandidaat in het verslag genoemd worden?
- Interview duurt ongeveer een uur.
- Als de lijst met vragen die vooraf gemaild is al is geretourneerd dan hoeft er verder niet meer naar gevraagd te worden. Als de lijst nog niet is geretourneerd wordt verzocht de 5 vragen direct in te vullen.

U heeft aangegeven dat er binnen uw organisatie zowel aandacht wordt besteed aan incrementele innovatie en radicale innovatie. Kunt u mij vertellen hoe u dat doet:

- Innovatie is georganiseerd door onderscheid te maken in units die zich richten op het zoeken en gebruiken van nieuwe kennis en units die zich richten op het zoeken en gebruiken van reeds bestaande kennis.
- Het organiseren van innovatie wordt vrijgelaten aan de medewerker. De medewerker zelf mag bepalen hoeveel tijd wordt besteed aan het zoeken en gebruiken van nieuwe kennis en het zoeken en gebruiken van reeds bestaande kennis.

U heeft aangegeven dat er binnen uw organisatie gebruik wordt gemaakt van teams voor het zoeken en gebruiken van nieuwe/ reeds bestaande kennis. Kunt u mij een omschrijving geven van deze teams?

- Verhouding generalisten specialisten
- Verhouding man/ vrouw
- Verschillende functies
- Team rollen
    - Idee generator
    - Ondernemer of verkoper (verkoopt idee aan management)
    - Project leider
    - Informatie verzamelaar en doorspeler
    - Sponser of coach (gene die nieuwe medewerkers begeleid)
- Werk ervaring
- Leeftijdsverschil

In het geval dat zoeken en gebruiken van zowel nieuwe als bestaande kennis niet wordt gedaan door teams.
U heeft aangegeven dat er binnen uw organisatie geen gebruik wordt gemaakt van teams voor het zoeken en gebruiken van nieuwe/ reeds bestaande kennis. Kunt u mij uitleggen hoe het innovatieproject dan georganiseerd wordt?

Werving en selectie
Kunt u mij iets vertellen over de werving en selectie aanpak van uw organisatie?
Waar wordt er nou opgelet bij nieuwe medewerkers?
En hoe wordt dat gedaan dan?

- Werkervaring
- Specifieke competenties
- Team rollen
  - Idee generator
  - Ondernemer of verkoper (verkoopt idee aan management)
  - Project leider
  - Informatie verzamelaar en doorspeler
  - Sponser of coach (gene die nieuwe medewerkers begeleid)
- Assessments
  - Altijd
  - Specifieke situaties

Beoordeling
Kunt u iets vertellen over de beoordelingssystemen?

- Vind beoordeling plaats
- Hoe vaak vind het plaats
- Wie wordt door wie beoordeeld
- Doel van de beoordeling
- Hoe vind de beoordelingplaats aan de hand van standaard formulier, competenties, pop etc.
- Prestatie van de individu of de organisatie

Beloningssystemen
Kunt u iets vertellen over de verschillende manieren van beloning binnen uw organisatie?

- Individuele beloning/ team beloning
  - Verschild dit per situatie
- Beloning voor iedereen het zelfde?
- Doel van beloning
- Verschillende vormen van beloning zie volgende pagina.

	Salarisverhoging
	Promotie binnen de carrière ladder
	Aandelen
	Winstdeling
	Beloning voor goede ideeën
	Grotere werkplek
	Meer technische of administratieve ondersteuning
	Uitdagender opdrachten
	Speciale erkenning en / of financiële beloning voor superieur werk
	Aanmoediging om te publiceren in wetenschappelijke tijdschriften
	Vrije tijd om professionele bijeenkomsten bij te wonen
	Betaald vervoer naar de professionele bijeenkomsten
	Grotere mate van vrijheid om zelf te bepalen hoe laat er wordt begonnen en geëindigd met werken
	Beter technisch gereedschap
	Betaald verlof voor studie
	Studie of andere kennis verhogende hulp.
	Deelname in organisatie seminars
	Afdelingsvrijheid, zelf je werkplek kunnen kiezen

Carrière Management
Kunt u mij vertellen hoe er wordt omgegaan met de carrières van medewerkers

- Is er beleid op
- Dual ladder system?
- Verhouding korte en langer termijn contracten
- Medewerkers mogen zelf beslissingen nemen of het wordt opgedragen door management
- Medewerkers in verschillende afdelingen laten werken om zo'n breed mogelijk inzetbaar te maken.

Afsluiting
Zit er nou verschil tussen de afdelingen die bezig zijn met innovatie en de andere afdelingen op het gebied van de vier besproken HRM strategieën?

- Waarom wel?
- Waarom niet?
- Werving en selectie
- Beoordelen
- Belonen
- Carrière management

Hartelijk dank voor dit interview.

- Kopie eindverslag wordt naar bedrijf opgestuurd.
- Iedere deelnemer ontvangt een kleine attentie.