

The Dutch innovation manager from a project manager perspective

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Abstract: Nowadays there is a growing number of innovation managers within companies. The function of the innovation manager is not known so companies are not able to hire the perfect innovation manager and schools in general will not be able to properly educate potential innovation managers. This article therefore reports on this lack of information by comparing project manager theory with innovation manager practice in order to structure a general job description. The results show that innovation manager can partially be derived from the theory found by the project manager. In order to be an effective innovation manager some additional features to the project manager are needed due to the high speed changing environment and uncertainty of innovations. This research shows what the differences and similarities are between those distinct managers and also explains what the general function of the innovation manager is. It can be concluded that the innovation manager is the possible link between a trend watcher and the project manager. The innovation manager will then be responsible to produce a case from trends derived from the trend watcher and give the business to a project manager in order to make the possible trend a successful product or service.

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Keywords

Managerial skills, project manager, management, innovation management, innovation project management, project management.

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1. INTRODUCTION

The innovation manager is becoming more and more popular as a leading role in the innovation process. With the increase in importance of keeping innovative as a company in order to stay alive, an innovation manager is needed more supplementary to successfully and effectively lead this innovation process. The innovation manager is distinct from other managers because it needs to combine managerial abilities with the abilities needed in innovation management such as coping with uncertainties, fuzzy goals and taking huge risks in financial and organizational terms. Innovation can actually be seen as projects but the difference is that normal projects already have some kind of basis to start with whereas this is missing in innovation projects. Up until now no research has been done on the innovation manager's job, so it is not known what the innovation manager should do in daily activities and management. This means that companies do not know when a person is qualified for this particular job. Next to this it will also be hard to educate and train people to become qualified innovation manager due to the lack of information on this subject. When it becomes clear what activities an innovation manager does and what characteristics an innovation manager needs it becomes easier for companies to hire a person which fit with the description and schools can start to train people to become an actual innovation manager. So to recall it is not known what an innovation manager does, why companies are using the innovation manager as a job and how in turn we will then be able to educate such innovation managers. That is why the research question of this research paper is: what does the Dutch innovation manager actually do?

2. THEORETICAL FRAMEWORK

The theoretical framework will be constructed by hierarchically explaining the manager's job, project manager and then innovation project management with also a reference to a synonym for the innovation manager namely the chief innovation officer. So first a quick overview will be given about the manager's job written by Mintzberg where facts will be given about the general manager. After this the link between project manager and manager will be explained and an overview of project manager and management theory will be given. After this innovation projects will be related to projects which will in turn lead to assumptions about the potential job of the innovation manager. Which will later on be compared with practical data gathered from interviews. This literature review will be mainly focused on the activities a manager does and the skills, tools, responsibilities and duties needed in order to be a manager. Next to this the managerial roles

2.1 Managers job

2.1.1 Manager: Folklore and facts

In order to define the manager's job the study of Henry Mintzberg on the folklore and facts of the manager will be used as the basis of the rest of the literature review. When a manager is asked to explain its job it will be likely that he/she tells that planning, organizing, controlling and coordinating are the most important tasks. These four words have dominated management vocabulary since Henri Fayol introduced them in the year 1916, these words actually explain little about what managers actually do. Next to this, the field of management, has for more than half a century not seriously addressed the basic question: What do managers do? Mintzberg made a distinction between the folklore and the facts about what a manager does. To start with, managers think that they are a reflective systematic planner. Whereas the fact actually tells us that study after study has shown that they work at an

unrelenting pace and that their activities are characterized by brevity, variety and discontinuity. From this can be concluded that planning is hardly possible with the characteristics of the activities done by a manager. The next folklore of managers is that they do not have regular duties to perform. The fact on the other hand is that managers actually perform a number of regular duties such as ceremonies, negotiations and processing of information that links the organization with its environment. Another folklore is that managers need aggregated information, which can be best provided by a formal information system such as the total information system. Whereas the fact actually is that general managers strongly prefer verbal media, telephone calls and meetings, over formal documents. This means that managers do not prefer formal information but rather favor verbal communication to acquire information. The last folklore is that management is becoming a science and profession. Whereas the fact is that the manager's program: to schedule time, process information, make decisions and so on, remains deep inside the managers brain. After all, a profession involves knowledge of some department of learning or science as is stated in the random house dictionary.

2.1.2 Managerial roles

All managers have formal authority over organizational departments. With this formal authority managers acquires status, which in turn leads to various interpersonal relations, from which access to information is acquired. Information in its turn facilitates managers to make decisions and strategies for its particular unit. This can in turn be explained by various roles. According to Mintzberg these 10 roles can be divided under 3 main roles namely interpersonal, informational and decisional roles. The interpersonal role can be divided in three roles namely:

1. The figurehead role which is about the ceremonial duties a manager has such as taking important stakeholders to lunch, giving speeches about the company at events.
2. The leader role is about taking responsibilities for the work done by its employees accompanying the hiring and training of these employees in order to make them as effective and efficient as possible. In addition is the indirect leader role in which the manager should motivate and encourage people in order to keep them on the right track.
3. The liaison role which is constructed to make contacts with people outside the vertical chain of its unit, instead of only making contact with people inside the unit itself.

Then the informational roles which can be stated under the monitor, disseminator and spokesperson role.

1. The monitor role is about scanning the environment to find information, interrogating subordinates and liaisons contacts and receiving unsolicited information. Most of the information that is collected via the monitor role is acquired in verbal form such as gossip, hearsay and speculations.
2. The disseminator role is about directly passing privileged information to subordinates, which would otherwise have no access to this kind of information. When subordinates have no easy contact with each other the managers might be used as an intermediary to pass the information from one subordinate to the other.

3. Lastly, the spokesperson role is about bringing information to people outside the unit such as suppliers and customers. This can be done by for instance suggesting product modifications to suppliers. Next to this the spokesperson also needs to keep the most influential people satisfied by regularly informing them.

At last there are the decisional roles which are divided into four individual roles: the entrepreneur, disturbance handler, and resource allocator and negotiator role.

- a. The entrepreneur as the manager is responsible for improving the unit so it keeps up with changes in the environment. Mostly used to initiate change or setting up development projects when a good idea is found in the monitor role, including supervising the project by himself or delegating it to an employee.
- b. Whereas the entrepreneur role is on a voluntary basis, the disturbance handler is on involuntary basis. This role is mainly about responding to pressures. Here the changes are beyond the reach of the manager's control. When the pressure of a certain situation becomes too severe to be ignored the manager must take action. In fact the entrepreneur and disturbance handler do seem similar, however the difference can be found in the voluntary basis of the changes made by the manager.
- c. The resource allocator role is concerned with the allocation of resources and he makes a decision on the question who gets what. The most important resource might in fact be the distribution of his own time over the stakeholders and subordinates. Next to this is the resource allocator role responsible for the authorization of the important decisions before these can be implemented.
- d. The final decisional role is that of the negotiator. These negotiations are an integral part of the manager's job, as the manager is the only one that has the power and authority to commit organizational resources for real and the nerve-center information that is required in order to get the most out of these negotiations.

2.2 Project manager

Turner (1999) Defines a project as an: *"endeavour in which human, financial and material resources are organised in a novel way to undertake a unique scope of work, of given specification, within constraints of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives"*. It is important to define what a project is in order to make a difference with innovation. Parts of the project manager will be applicable to innovation manager but an innovation manager starts with a blank sheet while most of the projects that a project manager faces have already some requirement on paper. A distinction is made between projects and innovation project. The first difference is in the requirements because projects do know them, whereas in innovations customers do not know what they want which leads to an unknown basis to start a project. Next to this innovation projects are fuzzy in the goals and much more vulnerable to changes in the environment as normal project (Brzozowski, 2016). Next to this projects can be split into different types such as; construction type, design of plans, equipment or system

installation, new product development and research. The innovation project can be defined under the new product development type. These types of projects all need other approaches but this will not be defined in this research paper.

An innovation manager should probably have a mixture of project management and innovation management skills in order to successfully lead an innovation project throughout an unknown period of time. In this section aspects of the project manager will be explained. In the next section the relation between project management and managing innovation project will be elaborated and extensive skills, activities and duties will be given. Besides this it is important to have the right person as a project manager otherwise it would be likely that your project would fail instantly (Munns; Bieirmi, 1996).

2.2.1 General project Manager

For the project manager most information is acquired via the Project Management Institute (PMI) as they are the world's leading not-for-profit professional membership for the profession that includes project, program and portfolio management. According to the PMI : project managers are organized, passionate and goal-oriented but also understand what different projects have in common and what their particular role is in how organizations succeed, learn and change. Next to this project managers also functions as a change agent. In this way they try to make project goals their own and incorporate their own skills and expertise into the project in order to inspire the team member in the project team and get some sort of shared purpose. These project managers should be able to work under high pressure and they should be comfortable with the change and complexity that arises in the dynamic environment in which these projects should be established (PMI).

2.2.2 Tools

Lackman (1987) on the other hand has discussed different tools which are available to a project manager in order to achieve a successful implementation of the innovation. He meant for example; work breakdown structures, client information sheets and project plans. Besides this there are numerous tools that can be used in managing projects, but it is not yet known which tools would also be applicable for innovation project management and accompanying the tools the innovation manager could thus use. Next to this the scrum tool might become a future tool that might be used by project or innovation manager. This tool is a management and control process and currently used widely in the software industry. In fact this tool might be used in the innovation process to finish the more complex radical inventions.

2.2.3 Duties and Responsibilities

The project manager needs to fulfill certain duties and responsibilities when managing a project, in order to successfully and efficiently lead this project. Neal Whitten (1999) has established a list with a range of duties that an effective project manager has and needs in order to fulfill the job in the most effective and efficient way. These duties are

- Having the full responsibility and accountability of the project outcome in both success and failure.
- The project manager has the duty to apply the lessons learned from recent projects, so the mistakes made in recent project will not be made in future projects.

- He also needs to make sure that all the team members from the project team know what is expected from them and what they should expect from each other.
- He needs to lead the project planning activities in order to direct the creation, approval and ongoing change within the project plan.
- The project manager needs to do project tracking in order to discover potential problems before they actually do occur.
- The most important duty of all might be to make the things happen. The project manager does not have to be the smartest of most knowledgeable person in the company, but they do need the knowledge, skills and experience to be able to recognize when problems might surface or when potential problems might rise in the future. This all to make sure that the project will not be affected by the problems and that these potential problems might be tackled before they arise.

2.2.4 Skills

According to Strang (23/09-2003) successfully managing projects requires a mixture of certain skills, these skills includes interpersonal ability, technical competence and cognitive aptitude, accompanied by the capability to understand the situation you are in and the people you work with in your team and dynamically integrating appropriate leadership. So this means that different skills are needed in order for a process to succeed or fail. Different studies has been done on which skills would then be most important and which skills would be of lesser importance for a project manager.

To start With Katz (1974) who made a distinction between 3 different types of skills namely technical skills, human skills and conceptual skills but next to this for an innovation manager perspective it might be assumed that an extra type of skill has to be added for an innovation to be a successful project. A technical skill is the understanding of and the proficiency in a specific field or activity considering methods, processes procedures or techniques. Human skills is the ability to effectively work as a group member and building cooperative effort within the team the executive builds. Lastly, the conceptual skill which is the ability to see the organization as a whole including seeing how the various functions intertwine with each other, and how changes in any function might affect all the other functions as well.

El-Sabaa (2001) constructed a table with the characteristics for the three types of skills according to the outcomes of the survey, these Characteristics were ranked from most important to least important for every type of skill. The characteristics for the human skill category were mobilizing, communication, coping with situations, delegating authority, political sensitivity, high self-esteem, and enthusiasm. All are ranked according to importance so starting with the most important one and finishing with the least important one, this is also done for the other two types. The characteristics for the conceptual skill category were planning, organizing, strong goal orientation, ability to see the project as a whole, ability to see the relationship of the project to the industry and the community, and strong problem orientation. In fact the problem orientation might be the most important characteristic for an innovation manager because without focusing on a problem or dealing with problems, an innovation would never be finally implemented in the market. Lastly, the characteristics of the

technical skill category were special knowledge in the use of tools and techniques, project knowledge, understanding methods, processes and procedures, technology required, and skills in the use of the computer. These characteristics and skills categories will be part of the assessment on what innovation managers should need as skills and characteristics in order to describe the innovation managers job and giving accompanied skills and characteristics needed in order to be effective in their job.

Human skills: Primarily concerned with working with people, and the ability to work effectively as a group member and build a cooperative team	<ul style="list-style-type: none"> - Mobilizing - Communication - Coping with situation - Delegating authority - Self-esteem - enthusiasm
Conceptual skills: Is seeing and envisioning the project as whole. This includes recognizing how functions relate to each other and how changes in a single part affect the whole project.	<ul style="list-style-type: none"> - Planning - Organizing - Strong goal orientation - Seeing the project as a whole - Visualizing relationships - Strong problem orientation
Technical skills: Implies an understanding, and proficiency in, a specific kind of activity/technology, which particularly involves methods, procedures and techniques.	<ul style="list-style-type: none"> - technical knowledge - Project knowledge - Computer skills - Technology required

Table 1. Project manager skills categories

According to the research done by El Sabaa (2001) the human skill category with a percentile score of 85.3% is most important for project management closely followed by the conceptual skill category 79.6%. In this research the technical skill category with a score of 50.46% was least essential as a project manager skill. On the other hand this category might be more important as innovation manager skills. With no technical knowledge about a particular domain it is likely that the innovation project will fail and that the company loses its invested money.

Next to the research done by El- Sabaa on the three skill types suggested by Katz, Fisher did elaborate more on the human skill type itself. This skill can be considered quite important because when a manager cannot handle a team well or manage it in the right way, an innovation will fail or will not be worked out well at the end so at will eventually fail on the market. MC Gregor (1967), Blake and Moutan (1964) and Likert and Hayes (1957) consider an effective manager as someone that needs to show concern for people, build trust, show sympathy and involve the emotions from people in for example solving problem. Fisher (2011) used interviews as a method in order to gather information on the skills that an effective manager should have. At the end he constructed a table with the skill the application and the ranking of that specific skill. This can be

found in the table below. These skills are an extension on what El-Sabaa already did and which can also be used in the research on the skills that an innovation manager needs and how he might cooperate as a manager in a team effectively.

Keil et al. (2013) did research on the most critical skills for project managers in the IT branch. He used a Delphi method in order to find answers on his research questions. It is important to see the skills needed for a project management from different angles in order to find an elaborative and extensive list of skills which can be used to identify the innovation manager, so the IT project management skills might also become useful in a later stage. The data analysis of the research of Keil et al. (2013) was constructed following a three-way process involving brainstorming, narrowing down and ranking. The first phase was used to brainstorm with the IT panelists and come up with as much skills as possible that could be used in the next stages. The second phase was used to identify the 20 most important skills from a list of 48 but essentially ended with a list of 19 skills. The third phase focused on ranking the 19 skills throughout multiple rounds of ranking. In his paper he constructed several tables, one with a summary of all the skills described by category and 2 tables concerning the ranking.

Table 2 shows some other skill categories that can be linked to the skills categories mentioned by El Sabaa (2001). A few categories are left out because they were not sufficiently important for a project manager to have. From this list of skills, five skills are considered most important for a project manager to have. Those skills (chronologically ordered on importance) are leadership, verbal communication, scope management, listening, project planning. To have leadership is important because it requires to share the vision of the project and provide the team with direction, but also necessary to motivate the team members towards the project goal. The verbal communication skill is important in order to provide clear directions and to manage expectations. The scope management skill is important while it is critical to the success of the project as the management of scope directly impacts the schedule and cost. Besides this it is also necessary in order to control stakeholders' expectations and project deliverables. A project manager should also be a good listener to critically identify stakeholder with the accompanying expectations, for problems with the project and identify project risks. At last project planning is important this skill sets the goal in for example schedules, budget and deliverables. Most of these skills can be obtained and developed by experience and training classes and workshops.

<i>Skill category</i> <i>(ranked on importance)</i>	<i>Most important skills per category</i>
<i>Communication</i>	<ul style="list-style-type: none"> - Verbal communication - Listening - Written communication
<i>Team management</i>	<ul style="list-style-type: none"> - Leadership - Ability to motivate the project team
<i>Project management</i>	<ul style="list-style-type: none"> - Scope management - Project planning - Time management - Resource management - Cost management

<i>People skills</i>	<ul style="list-style-type: none"> - Negotiation - Relationship building - Conflict management
<i>Personal characteristics</i>	Having attention to detail
<i>Organizational</i>	<ul style="list-style-type: none"> - Organization skill - Multi-tasking
<i>Problem solving</i>	Analytical skills

Table 2. Most important skills per category

2.3 Innovation project management vs project management

The definition of an innovation is “*the process of translating an idea or invention into a good or service that creates value or for which customers will pay*” (Business dictionary). Next to this Anbari (2005) provides an explicit definition of the management in innovation projects: “*...the management of a system that transforms inputs into outputs and has a feedback mechanism to ensure that the project output is consistent with its objectives*” (Filipov; Mooi, 2010). In most organization the ideation part of the innovation process is the easiest. The biggest challenge for these companies often lies in turning the concepts of the ideation phase into final outcomes or products (Shaker 2014). To ensure that this challenge becomes an opportunity a manager needs to be appointed which constructs and leads a team. This manager can in his turn make sure that these team players are kept motivated and grant the help they need in order to turn this innovation into final outcomes (products or service). In fact these managers might use the research done in project management in combination with what is needed in innovation management. Managing a breakthrough/ radical innovative project requires blending new ways of thinking about projects with the more familiar ways which are already accessible (Shaker, 2014). The role that management plays at the front end of innovations is to ensure that decisions and choices made in the entire process are in the interest of the company and fulfill their long term strategic needs. The influence of management is the greatest in the front end of innovation because of the fact that the decisions and choices made in this stage are of greatest influence in later stages of the entire innovation process. Nonetheless, executives' interference and involvement in the initiatives typically comes to late (Artto et al. 2011).

On the other hand, the traditional innovation literature largely ignores project management and the intricacies of the management of innovation in project-based firms. Supplementary project management literature, which expanded hugely in the last decades, largely ignores innovation in their turn (Keegan and Turner, 2002). However, scholars and practitioners started to see a certain degree of relationship between these two areas of literature, which lead to scrutiny between innovation and projects literature (Filipov and Mooi, 2010).

Brady and Söderland (2008) reported the following on this discussion: “*...In the innovation arena, project management has often been looked upon as a simple implementation endeavour with little problems. However, research has time and time again pointed out the difficulties of moving from invention to innovation, of moving from ideas to value creating products – a process where project management potentially would have a very important role...*”

Besides the statement of Brady and Söderland do Kavanagh and Naughton (2009) directly address the link between

innovation and project management which is suggested by the aforementioned statement. They compared project management scores with innovation indices for a particular group of nations. Kavanagh and Naughton (2009) found an inverted U-shape curve which basically explains that increasing levels of project management are positively correlated with rising levels of innovations. Whereas, after a certain threshold, where a high level of project management becomes negatively correlated with levels of innovation. Therefore Kavanagh and Naughton suggest that formal methods used for project management might facilitate exploitation of existing knowledge, but on the other hand hinder the exploration of new methods. (Kavanagh and Naughton, 2009)

Len Brzozowski (2013) argues that when people get good at the art of project management, they will in turn create barriers to innovation. Next to this he actually states that the innovation management thinking approach (Belding) will be more energy-consuming and more costly than the traditional project management approach. However he concludes that not all projects require innovative solutions, and I actually might be possible that the more traditional project management methods will just work fine in innovation project (Len Brzozowski, 2013).

From these discussion it can be concluded that the link between project management and innovation project management is still quite vague, but on the other hand a linkage between the two theories can be identified and be used in further research on this specific topic.

2.4 The Chief Innovation Officer

The problem in companies nowadays (poor management and best management) is that without realizing it, they generate an environment hostile to innovation. This problem can particularly be found in the frontline business units. These processes and performance metrics are optimized to relatively short-term goals that are focused on what they currently do or sell, rather than focusing on what they could be doing. The eventual result is that line managers instinctively reject innovation that do not immediately contribute to their own goals (Di Fiore, 2014).

This problem is the reason why large companies need a Chief Innovation Officer (CInO), which should be a powerful executive who can counterbalance the natural killing instinct of innovation in a particular business unit and design a more innovation-friendly environment in which the organization can work (Di Fiore, 2014). Phil McKinney (2016) describes the CInO as a person in an organization that has the specific task to responsible for driving and giving direction to the innovation (McKinney, 2016). From the results of a research done at the European Center for Strategic Innovation, Alessandro Di Fiore (2014) developed a framework that can help a CInO to find out how successful he/she actually is in what he does. In this framework they identified seven key roles in the mission of a CInO namely:

- Supporting best practices
- developing skills
- supporting business units in new product and service initiatives
- identifying new market spaces
- helping people generate ideas
- directing seed funding
- designing shelter for promising projects

The importance of these seven roles is different in every company, this because of the fact that companies focus on

different aspects of the innovation cycle. This means that some roles are more important for a certain company whereas other roles might be more important in a whole other company.

Besides these seven roles a CInO could have, Phil McKinney (2016) discovered 5 key skills an effective CInO needs. These 5 traits are:

1. Having a high credibility factor.
2. The ability to see and communicate the future.
3. The ability to drive ideas and action around his or her vision
4. The ability to identify, and disarm, the innovation antibodies
5. The ability to build and bridge connections.

For the first trait, it is just not enough for a CInO to be respected by the employees of the company, but it is also important to get the respect of all the other officers in the company. Innovation is not only about coming up with new and radical ideas, or recognizing an idea when presented. It is crucial for a CInO to have a perfect predictive sense based on experience they have acquired in the market, besides this they should also be able to see where this particular market might be going in the future and the identification of future product needs. Next to this should the CInO be able to communicate those predictions in ways that should make sense to others within the organization. The CInO has the power to drive ideas and actions around their vision in order to make it reality. As a CInO, you are a team leader and most important, you need to know how to communicate your vision to multiple people in such a way that this vision becomes theirs as well. Then there is the ability to identify, and disarm, the innovation antibodies. Innovation antibodies are forces within the organization that fight against anything that threatens the status quo of the company. These innovation antibodies are like the antibodies in our body fighting against outside invaders. The CInO should not only be able to function as the leader of a team, but they also need to identify those team members that are resistant to change. To follow up they need to figure out why, and what it takes to disarm them from being resistant. Lastly, a CInO has the priority to build connections, not only within the company itself but also between their own company and the other organizations. A CInO should set aside its own ego and not worry about who gets the credits for the innovation, but rather stimulate openness and transparency to drive collaborative change (McKinney, 2016).

Innovation is a creative process based on insight, but putting some managerial processes and an organizationally-savvy manager in charge makes the whole innovation process less prone to error. This means according to Alessandro Di Fiore that a manager is needed in order to solve the problem that companies face today, in being hostile to innovation. If no (innovation) manager is appointed the whole innovation process is more susceptible for errors than when an innovation manager or CInO is appointed.

On the other hand George Bradt (2016) states that organizations should eliminate their CInO. If only one person controls and is in charge of innovation, all the other members are not. Next to this innovation is way too important to be left to the CInO, because everyone must innovate. However as a Chief Innovation Officer explained, when making a cultural shift, a Chief Innovation Officer “can be an effective catalyst for change, as long as that person’s charter is to create the right conversations and underlying business processes that connect the appropriate functions in a powerful and integrated way”(Bradt, 2016).

2.5 Relation between the types of managers (manager in general, project, innovation)

In order to define the function of the innovation manager, the manager in general and project manager is explained. In the Manager theory, Mintzberg described three general roles with accompanying a few general activities defined in the three separate roles. This means that a manager needs to do some activities described in the general manager part in order to be described as a manager and to possibly be effective as well. Next to this the project manager is described as a link to generate and make assumptions about the possible function of the innovation manager.

The project manager does have the same roles as the manager in general, however some of the activities stated in de theory of Mintzberg does not belong to the project. The activities the project manager does perform are among others, the leader role because he needs to take responsibility to lead the entire project and make sure to reach the set deadlines in time. Next to this he also has the monitor role in which he scans the environment for possible changes that affect the project or that might delay de project. The spokesperson role is another role he performs in order to make sure that he meets the requirements of the customers and keep them up to date about the progress of the project. Lastly he also performs the negotiator role as he is the only one that has the authority and power in this project group to use resources for real. In project management theory a distinction can be made between different kinds of project. In this research a distinction is made between projects and innovation projects. As is already explained above the biggest difference between these types of projects is that a project does have requirements which needs to be met and most of the time also have a set deadline which thus can be planned partially in detail. Next.

An innovation project on the other hand has lots of uncertainties and no requirements at all. The project is not well defined and they can only make a planning based on a gut feeling. This means that it can be assumed that the roles of the innovation and the accompanying activities will slightly differ with the project manager. It can be assumed that the innovation manager has also the leader role, the monitor role and the spokesperson role. Additionally the innovation manager would also have the liaison role in which he makes contacts with possible customers in order to know whether they would have interest in a certain innovation. In this way they know whether to work on an innovation idea when interest is high or terminate the idea when there is no interest. Next to this it can also be assumed that an innovation manager performs the role of the entrepreneur in which he tries to improve the innovation department so it keeps up with the changes in the environment.

3. EMPIRICAL APPROACH

First of all the research will be started with a thorough literature review in which potential characteristics an innovation manager might need to lead the innovation process successfully need to be set up. After the potential characteristics are found and logically explained and ranked a practical approach will be taken in order to find similarities or differences between literature and the actual innovation manager function. This practical approach will consist of interviews with 4 to 5 managers that have the job title innovation managers. These interviews will be held with innovation managers that work in different branches in order to make sure that a variety of innovation managers is interviewed. The questions for this interview are based on the theoretical framework and will focus purely on the function itself and not on the innovation process that might be present in the specific companies. The branches

that participated in this practical research are a non-profit organization, a bank, a paper manufacturer and a sunscreen company. This basically means that all different innovation possibilities in product, process and service innovation are used. When multiple managers are interviewed the possibility will be there that some answers will be the same, but due to the different branches will also slightly differ in some aspects of the function of the innovation manager. After these two stages has been accomplished an explanation on the differences between theory and practice will be done to make clear how it is possible that theory and practice are different/similar. After this argumentation is finished a global set up of the innovation manager's job and characteristics that is needed to successfully lead the innovation management process.

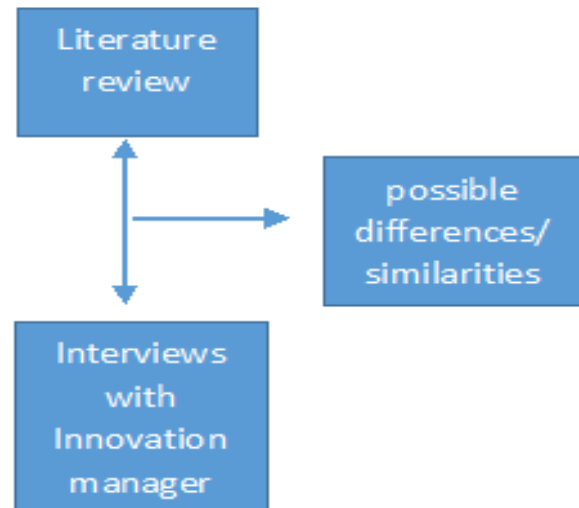


Figure 2. Research method

4. DATA ANALYSIS

In order to find out what the Dutch innovation manager is actually all about, the theory should be compared to how innovation managers themselves think about their function. As also explained in the empirical approach, the theory described above will be compared with the data acquired from the interviews held with four innovation manager. Two of these innovation manager where more oriented on service focused innovation and encouraging people to start with a possible interesting innovation. On the other hand two innovation manager focused more on product innovations with just a little bit of orientation on service innovations. Next to this those innovation managers worked in different branches. These branches where a bank, a non-profit organization, a paper manufacturer and an in-house sunscreen manufacturer. The first two companies focused more on service innovation and encouraging people to innovate, whereas the last two companies focused more on the product innovation with keeping in mind taking the broader picture including also looking at services. The interviews held with these innovation manager were all based on the same general questions, whereas the follow up questions were slightly different due to the different answers given by these managers. For the following up of the data analysis the interview will be split in four sections in order to be able to compare and explain potential differences/similarities in the most effective way. After that a general overview will be given with a comparison between project manager theory and the practical information described below.

4.1 The general innovation manager

The explanation of what the function of the innovation manager in general looks like differed between the innovation managers. One of the reason for this is the focus on a particular innovation (service or product oriented) and the particular Branch a certain innovation manager is active in. For instance the innovation manager of the Rabobank explained that most of the time he is busy with building networks and keeping up contacts with companies. Next to this he tries to convince companies to work on a certain innovation when he thinks the idea generated by a particular company has potential. He is not busy with innovating himself but has the function to encourage other people to work on particular inventions. On the other hand both innovation managers at Verosol and Coldenhove Papier explained that their function had this name, but is more related to the function of an R&D manager and more technically focused. Next to this they both explained that they do not only focus on product innovations and development but want to see the broader picture of innovating including services. This already shows that the same function, innovation manager, already shows differences in the general explanations of this function.

Next to this the question was asked how they would construct a team when they found a potential innovation in the ideation phase. Whether this team would consist of people with different backgrounds or they would have quite the same backgrounds. All the innovation managers construct a team when a potential innovation arises. However, all innovation managers took another approach in constructing a particular team around an innovation project. For instance the innovation manager of Coldenhove Papier works according a structured approach and make use of the stage gate process in order to make sure that the innovation process is reviewed on a regular basis. Within the constructed team it is possible to have some change because certain people are needed in later stage of the innovation process whereas other employees are needed at the start of the innovation process. On the other hand Verosol constructs the team according to the interest of the employees and the abilities needed in the innovation project. This basically means that companies that focus on the same innovation processes, construct their teams in a different manner. The reason for this is the way in which companies operate, besides the actual size of a certain company. Most of the companies work in different ways and use different models to review the innovation project. This leads also to the fact that the construction of the teams in a particular company is different. Also the preference of the innovation manager plays a role in constructing teams which will also differ between different people which in turn also causes differences in the construction of teams. This difference can also be seen in the characteristics of team members. Where the innovation managers of Coldenhove Papier and Verosol spoke about functions such as you need a financial person, an engineer, a salesperson, etc. to construct a team. Whereas the innovation manager of Rabobank constructed a team by combining broadminded person in the beginning to find out what the interests are and to understand what is possible. When you start to conceptualize the project, he constructs a team with more critical person that see things more in detail. This difference between the constructions of those teams can be explained by the fact that Verosol and Coldenhove Papier do actually develop the innovation, so they literally need all aspects of the business in order to bring a certain product in the right way to the market and thus they need a team consisting of widespread abilities. Whereas the Rabobank only do research on whether an innovation has the potential to become a product

or service in order to make sure that the company, organization or start-up starts working with it.

Another aspect of the innovation manager in general is to establish an innovative environment within the company in order to stimulate innovative thinking throughout the whole company. As is explained in the theory section, project management does restrict companies to be innovative that is why it is an important task for innovation manager to create an innovative environment which will stimulate the company to stay innovative. In order to find out how innovation manager can stimulate this innovative environment the question was asked in what way they stimulate the employees in their department to keep the innovative thinking in place. The ways on which the innovation managers stimulate their departments and employees differed between every innovation manager. For instance the innovation manager of Humanitas is not sure that she stimulates her department employees to stay innovative. She gives some lectures on innovation from time to time, but she never gave those presentations to her employees. She in fact literally said that she would ask this question in the meeting she had that afternoon to see whether on how she stimulates an innovative environment. On the other hand the innovation manager of Verosol stimulates the employees by giving them tasks and sending them to fairs that are in relation with their interests. For instance when one of them is interested in the machinery, she gives him/her the responsibility when it is about the machinery. In this way she gives the employees tasks related to their interests which will automatically stimulate them to do well. Then the innovation manager of Coldenhove Papier encourages an innovative environment by having regular meetings with the sales department. Within these meeting they talk about the upcoming trends in a specific market and discussing whether they can produce ideas around these new trends. In this way they try to encourage innovation and in the same time they make sure that they keep up to date with the trends that are visible in the market.

If then the theory of the CInO is compared to practice it can be said that they look similar in some aspects. In the theory is stated that the CInO needs to counterbalance the natural killing instinct of innovations in a particular business unit and try to create an innovative working environment within the company. While also diving and giving direction to the innovation. As seen in practice most of these aspects are also visible for the innovation manager whereas the difference is that the CInO is more working on stimulating a particular department to be innovative whereas most innovation manager are innovating themselves in their own department. Next to this both two functions need to establish an innovative environment. The CInO needs to do this throughout the whole company, while the innovation manager tries to create an innovative environment at his own innovation department.

4.2 Skills, activities, responsibilities and tools

Next to the general explanation of the innovation, some questions on the skills and abilities of the innovation manager were asked, in addition with responsibilities, activities and tools they might use in order to be an effective innovation manager.

4.2.1 Activities

Next to the skills needed, a questions was asked on what activities the innovation manager performs within their function. The general answer that they gave is that most of the time they are busy with building relationships with customers or other companies and making sure that these relationships stay up to date and healthy. This means that they will have a lot

of meetings and talks with them. This activity also makes sure that the company stays up to date on what is actually going on in the market. Next to this is of course following the innovation projects that are established and making sure that the teams working on those particular projects stay on the right track. Maybe the most important activity that the innovation manager has is talking. This in order to make sure that the company stays up to date which changes in the market and of course that you as an innovation manager stay up to date on the developments that happen in the market in order to react to it. The answers given on this question were more or less the same from every innovation manager which means that the difference in the orientation on a particular innovation does not cause any differences in the performance of activities.

4.2.2 Skills

Starting with the skills which is partially linked to the theory on skills explained in the theoretical framework. In this theoretical framework 5 skills were ranked as most important: leadership, scope management, project planning, verbal communication and listening. All the innovation managers said that these were also important for the innovation manager, especially the verbal communication and listening part. The other three skills, project planning, leadership and scope management are a little less important for the innovation manager than the aforementioned two. The project planning is necessary for an innovation manager but due to the high uncertainty and speed of change of the environment related to the innovation the flexibility and creativity of the innovation manager, which will also be stated later on, is maybe even more important in order to react to these uncertainties and changes.

Next to this all managers gave a few additional skills, some skills matched whereas some other skills were just mentioned by a particular innovation manager. The reason that some of the skills needed differed is because these managers all work in a different way and within a different setting which literally means that they need different skills in order to perform well in their function. The difference cannot actually be explained by using the difference in being more service innovation oriented and product innovation oriented because all innovation managers gave different additional skills. In order to get an overview of the additional skills needed for the innovation managers, the answers of the four innovation managers will be combined. The additional skills that can be derived from the interviews is having intuition and the feeling to understand when an innovation got potential and to make a distinction in the earliest stage at the front end between innovations that could possibly be successful and innovation that will become a failure. Next to this the innovation manager should be flexible and creative. With this they mean that innovation projects are quite complex and sensitive to changes in its environment which means that the innovation manager should be flexible in working style and planning and be creative to solve potential disruptions and delays within the process. The scenario might be that the planning needs to be changed in order to keep up with the changes which needs creativity and flexibility to keep on the right track that was proposed at the beginning of the process.

Additionally the innovation manager of Verosol said that portfolio management is quite important as well. This skill was not particularly mentioned by the other managers, as this skill is partially based on the function of this innovation manager. The portfolio management is basically about seeing on which innovations the company is working and deciding which innovation should be given priority and which innovations to pause. This in order to have the full focus on one project instead of spreading the focus over multiple innovation projects. Which

will have as a consequence that an innovation will easier be successful then when working on multiple projects and losing the essential essence of a particular innovation. Next to this having the ability to turn ideas into concepts is quite important otherwise a company would not be able to work efficiently and effectively on that particular idea. Besides this the innovation managers also addressed the traits of the chief innovation manager which can also be found in the theoretical framework.

Besides this some traits/skills have been found in the theoretical framework about the Chief Innovation Officer. In the interviews these traits were actually addressed but not by asking a question, but they gave these traits during their answers. To recall these traits where having high credibility of the company, ability to see and communicate the future, ability to drive ideas around his vision, ability to disarm the antibodies and the ability to build an bridge connections. If this is then compared to what the innovation managers said it can be concluded that all these traits are also applicable for the innovation manager. The innovation managers all told that the ability to communicate the future to the entire company and the ability to disarm antibodies and build and bridge connections are most important. Whereas the other two are also important for the innovation manager, they are of less importance than the aforementioned three. This literally means that based on the CInO theory, the innovation manager might also be a CInO when looked at only the skills. As aforementioned there is already a small difference between these two function. If looked at the overall functions it might be concluded that they are really close together and so almost similar so why having two different names for practically the same function. This will be partially more elaborated on in the discussion.

4.2.3 Responsibilities

Than the third factor which consists of the responsibility of the innovation manager within their department and for the entire company. The answers given on the question about responsibility were different for every innovation manager. The main reason for this is the way the companies work with the innovation process but also the fact that for instance the Rabobank encourages other people to realize a particular innovation, whereas Humanitas is more focused on service innovation and thinking about innovative ways to earn money besides the funds they get from the government. Whereas the focus of Verosol and Coldenhove Papier is related to the realization and invention of new products in order to actually stay ahead of competitors within the same business market. When the answers for this question are compared to each other a big difference in responsibilities can be identified. For instance the responsibility of the innovation manager at Rabobank is to create more working spots in order for more people to start working. Next to this he also has the responsibility to contribute to the relationships with their customers, because the Bank becomes more and more important to them. On the other hand the innovation manager of Coldenhove Papier explained that his responsibility is to realize the innovations that arose during the meetings with the sales department. Additionally he is also responsible for the continues stream of ideas. This in order to keep the pipeline filled, instead of letting it dry out. This difference clearly explains the reason given at the beginning of this factor. Also the way in which companies do work and constructed the innovation department contributes to the difference in responsibilities. If a company focuses on creating working spots instead of new products, the responsibility already becomes different due to a particular focus of a company.

If theory is compared with the answers found in practice it can be seen that there are some differences in responsibility. The

reason for this is the focus of the project manager and the innovation manager. Where the project manager focuses on leading a project to a success the innovation manager focuses on generating ideas and keeping up to date with changes and potential gaps in the market. This difference in turn will lead to differences in the responsibilities of the two distinct managerial functions. Some of the responsibilities do match such as making sure that the team knows what is expected of them and making sure that things happen such as turning an idea into a final product. On the other hand as explained in the theory the project manager is fully responsible for leading the team and make sure that things learned in the past will be used in future project. Whereas the innovation manager is more busy with generating a continues stream of ideas and making sure that his department stays innovative. in so the company can keep up with the competition.

4.2.4 Tools

This factor will not be discussed that much because it is not that important for an innovation manager. He only needs to know how to work with certain tools. Again the answers given on this subject were different because of mostly the same reason given in the beginning. If a company works in a particular way they will probably use tools that will match their way of working. If looked at the tools mentioned in the beginning the project planning tool is definitely used by most innovation managers. From the answers given by the innovation managers, a few additional tools can be derived that might become handy in the following years. These tools are scrum and the stage gate process in order to have regular review session on the innovation process and insight in possible problems and the way of working. Next to this the business case process can be quite helpful in order to turn an idea into a concept or business case which can be used as starting point of the actual realization of the innovation.

4.3 Innovation manager vs project manager

This research is constructed around the literature that can be found on project managers. This to be partially able to define the innovation manager function and have some starting points to start the practical side of this research. In order to find out how innovation managers think about this relationship, as is proposed in the theoretical framework. The question was asked how they saw this in relation to each other and what they

thought were the physical differences or similarities. The four innovation managers gave more the less the same answers on this topic. The innovation managers explained that they saw the innovation manager as the one the constructed the ideas of the trend watcher to an actual business case or concept, in order to give it to a project manager who has the knowledge and abilities to put its full attention on the project in order to make it a success. This basically means that they see their function in between the trend watcher and the project manager. The innovation manager of Verosol adds to this that the she should be able to stimulate and support the employees of her department, whereas the project manager would be less interested in being supportive and stimulating.

Next to this if we compare the theoretical framework with the answers given in the data analysis as can be seen in Table 3, it can be concluded that the project manager can be used as a starting point in order to construct a general job description for the innovation manager. Most of the skills and tools do have comparisons, except that the innovation manager does have some additional important skills and tools in order to perform well in the job. The biggest difference that can be found between the innovation manager and project manager are the

responsibility and the main activity they should perform. The responsibility is difference because of the fact that the innovation manager is responsible to keep finding ideas and making sure that these ideas become concepts so they can be actually realized, whereas the project manager is only responsible to lead the assigned project to a successful end. Next to this the main activity of a project manager is to be the leader in executing the project and making sure that all deadlines are met in order to launch the project in the time that is set. However the activity of the innovation manager is to keep up to date with the changes in the market in order to be able to react to gaps that will be created. Next to this he should also have regular meetings with other companies and within the company itself in order to keep the company up to date with the changes and to see whether potential ideas will be interesting for the clients.

	Most important skills	responsibility
Manager in general	<ul style="list-style-type: none"> - Human: interact and motivate - Technical: knowledge and proficiency - Conceptual: understand concept/develop ideas 	Has the responsibility to lead a particular department and have to make sure that all employees work at their top best and train them where necessary.
Project manager	<ul style="list-style-type: none"> - Verbal communication - Listening - Project planning - Scope management - Leadership 	Has the responsibility to lead the project in a proper way and make sure that he and the team leads the project to a successful end.
Innovation manager	<ul style="list-style-type: none"> - Leadership - Verbal communication - Listening - Portfolio management - Flexibility/creativity - Risk management 	Has the responsibility to keep updated about the changes in the environment, make sure that the company has a continues stream of new potential ideas and he needs to make sure that those potential ideas will be realized

Table 3. comparison between the managerial types

5. CONCLUSION

This article proposes a general description of the innovation manager contributing to the discussion on what the innovation manager actually does and needs in order to take the vagueness of this function away. This research let to a basis for a job description of the innovation manager. From the data analysis and the comparison with the project manager theory it can be said that parts of the project manager are also applicable to the innovation manager. The innovation manager however does need some additions such as the skills, flexibility/creativity and risk management in order to lead the innovation process in the most proper way. Next to this the responsibilities did differ due to the fact that the innovation manager is responsible for generating ideas and keeping the pipe line filled whereas the project manager is responsible for taking the lead in the project in order to finish it successfully. From this research can also be concluded that the function title of the innovation manager is used wrongly in some companies due to the fact that they basically did not know what the innovation manager actually does. The innovation managers from Rabobank and Humanitas can therefore also not be seen as innovation manager but are respectively more like an innovation advisor (Rabobank) and a strategist (Humanitas). The other two innovation managers are more in the range of how the innovation manager looks like, and they can actually be seen as innovation managers according to this research. This leads to the fact that the research done above will give some sort of job description which schools can use in order to educate potential innovation managers. Next to this companies could use this set up in order to identify what an innovation manager means and what he needs in order to use the innovation manager in the right way and be able to hire the best person to perform the job.

6. DISCUSSION

This research has been established in order to find out what an innovation manager does within his function and abilities, skills, responsibilities he has in order to be able to function in the best way. Nowadays most of the jobs do have a general job description which companies can use in order to find the right person for the job. This is not yet done for the innovation manager job, which is also the reason this research on the innovation managers job was established. On the other hand the question might be asked why there is not a general job description for the innovation manager while it is actually used for quite some years now. Which also causes that schools cannot educate persons who want to become an innovation manager and companies will not be able to hire the right person for this particular job. With this research and follow up research that will be done on this subject it might be possible to generate a general job description which would change the way the job is used nowadays. With more research done on this subject it will be possible to educate potential innovation managers in the right way which will lead to an increase in effectiveness and efficiency of these persons then when it is not particularly known what these persons actually need to do. Next to this the innovation manager function is now widely used in lots of different ways as is also explained in this paper. This leads to the fact that it might even be possible that lots of people that have an innovation manager job title perform actually as an innovation advisor, such as the innovation manager of Rabobank. This in fact also leads to the need of a general job description of this particular job in order for companies to know that they give a particular person the right job including job name.

Next the innovation manager can be assumed also as a project manager by leading their own generated concepts to a final product of service. The big question however is can then the project manager also be an innovation manager. For this question a distinction should be made between incremental and radical. In my opinion the project manager can be an innovation manager in the incremental innovation area because of the fact that this are only minor changes to an already existing product or service. On the other hand the project manager will not be able to handle radical innovations due to the fact that he is used to work with a work break down structure and now what is expected from him. Radical innovations are really something new in thus do not have any structure, which will put the project manager as innovation manager in a weak spot, as he can possibly not handle the uncertainties and major changes of this particular innovations. To know this for sure further research on this particular matter should be established in order to have a justifiable answer to this question.

Next to as also mentioned before in the data analysis part the function of the CInO and the innovation manager are according to this research very look alike. So why having two function names for practically the same function. Would it not be a better idea to combine the two function into one in order to be better able to educate persons on these subjects? This would also lead to higher effectiveness due to the fact that not two different persons are trying to do the same, stimulating and performing innovation but only one. In order to get this clear more research should probably be done on the relationship between the CInO and the innovation manager.

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9. APPENDIX

Interview Questions Innovation Manager

1. How would you describe the function of the innovation manager in general and how would you relate this to your own function at your company?
2. In what way does the innovation manager contribute to the innovation process, in your opinion?
3. How does the innovation manager stimulate an innovative environment within their company?
4. What skills does an innovation manager need in order to lead an innovation project, and why are these particular skills important?
5. In project management theory 5 skills were seen as most important, these are leadership, verbal communication, scope management, listening and project planning. In what way do these skills relate to the innovation manager (If they relate to the innovation manager at all). And how important would these skills be for the innovation manager.
6. How would you describe the most important skills you need in your function and why are these important to you.
7. What activities do you perform on a daily basis, which of these activities are in your eyes most important for the innovation manager in general?
8. What duties and responsibilities do you have within your own company and how does these relate to the innovation manager and in what way do these responsibilities contribute to an innovative environment?
9. Do you use tools such as a work-breakdown structure, client information sheets and project plans in order to lead an innovation project and how does these contribute to the completion of a certain innovation?
10. Do you think that the innovation manager function is partially based on the project manager as a function and in what way do these two functions differ or are similar based on your experience as an innovation manager?
11. How would you characterize yourself as an innovation manager and do you think these characteristics are applicable to the general manager, if yes why do you think so?

