

MASTER

Understanding the impediments of adopting co-creation within medium and large enterprises

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Eindhoven, November 2010

Understanding the impediments of adopting co-creation within medium and large enterprises

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in partial fulfillment of the requirements for the degree of

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Summary

When a product is created in collaboration with multiple stakeholders, one can call that process open innovation. When this open innovation is done with customers or potential customers, it can be labeled as 'co-creation'. Co-creation in this report is the collaboration between an initiating organization and (potential)customers or consumers. This collaboration is often done in an online environment, making it possible for an initiating organization to collaborate with lots of customers; the participants of the co-creation project.

Traditionally, the research and development (R&D) department within an organization is responsible for coming up with new ideas and products. With co-creation, an organization can attract ideas from outside the companies' borders. By involving the consumer in the value creation process, it is likely that the final product or service will be better. A summary of the most important benefits co-creation has to offer:

- Latent needs can be identified (Kristensson, Matthing, & Johansson, 2008; Chesbrough, 2003)
- More creative ideas than the own R&D could generate (Kristensson, Matthing, & Johansson, 2008)
- Reduce cost (Reichwald & Piller, 2006; Kleemann, Voss, & Rieder, 2008)
- Reduce time-to-market (Reichwald & Piller, 2006)

All these benefits should eventually lead to an increase in revenues. But if the advantages of co-creation are so obvious, why aren't more companies using co-creation? This very question was asked by the CEO of Redesignme B.V. (RDM), a company facilitating an online co-creation platform, and formed the central question in this report. When there aren't more companies reaping the benefits of co-creation, there must be something that prevents them from engaging in co-creation. In other words:

What are the impediments for organizations to adopt co-creation and what can be done to overcome them?

In order to break this main research question into sub-question, a framework with possible contributing and hampering factors was formulated. For most organizations, co-creation is a new way of solving questions and challenges, which can be very innovative to them. Co-creation can therefore be regarded as a specific innovation that could to be adopted by an organization. Combining the meta study of Frambach and Schillewaert (2002) on which factors are important in the acceptance of innovations by organizations and individuals with the study of Fichter (2009) on the importance of individual promoters of open innovation, an adoption model is composed. Key elements in this model are the (1) Perceived innovation characteristics (PIC)¹, (2) Supplier marketing efforts^{2,3,4}, (3) Social network^{1,2}, (4) Environmental influences^{1,2}, (5) Personal characteristics¹, (6) Personal dispositional innovativeness², (7) Adopter characteristics^{2,5} and (8) Individual's power base⁶.

¹ (Rogers, 2003)

² (Frambach & Schillewaert, 2002)

³ (Woodside & Biemans, 2005)

⁴ (Frambach, Barkema, Nooteboom, & Wedel, 1998)

⁵ (Damanpour & Gopalakrishnan, 2001)

⁶ (Fichter, 2009)

The eight according sub questions are: How can these factors help or hamper the adoption of innovation and how the hampering effects can be overcome. A note has to be made that every element is broken down into smaller aspects. In this summary, I will call these smaller aspects 'sub elements'. An answer to the sub questions was formulated by conducting an explorative, multiple case study.

In the context of this research, eleven Dutch organizations, all with more than 30 FTEs, were selected from the customer database of RDM, and participated in this research. A full transcript of all interviews was made and coding and analysis was done on these interviews. Based on these interviews, knowledge, understanding and insights about the sub questions and main research question, is gathered. In order to transfer that knowledge into practice, Design Principles (DPs) are formulated. The goal of these DPs is to explain why (Mechanism) an Outcome is likely when you do something (the Intervention), within a certain Context. The CIMO logic provides a way to formulate these design principles, in a systematic and concise way.

The analyses of the cases was done by conducting a within case analyses, and a cross case analyses. In the within case analyses, every aspect of the possible hypothesized impediments were tested. When one or more were present, a note on how that impediment formed a challenge to the Project leader (PL) was made and, if applicable, how a solution was found. It became apparent that some key elements of the hypothesized model were mentioned and observed more often, than others.

The resulting cross-case analyses showed that the Perceived Innovation Characteristics (The sub elements: Compatibility, Complexity, Trialability and Uncertainty), Environmental influences (Sub element: Competitive pressure) and Adopter Characteristics (sub element: Organizational innovativeness) all formed important possible impediment. Supplier marketing efforts on the other hand formed an important enabler to eliminate as much of the impediments as possible, especially the PICs. Besides the hampering effects of the impediments, factors that increase the likelihood of adoption were found as well. Next, the personal characteristics among the different PLs showed remarkable resemblance in some key areas and when testing the personal dispositional innovativeness, PLs had a favorable attitude towards social media. Also, as hypothesized, the power base of the PL played an important role in convincing colleagues and management to adopt co-creation. Finally, the hypothesized element organizational characteristics (sub elements: Organizational innovativeness and organizational culture) proved to be an indication of the likelihood that an organization would adopt co-creation.

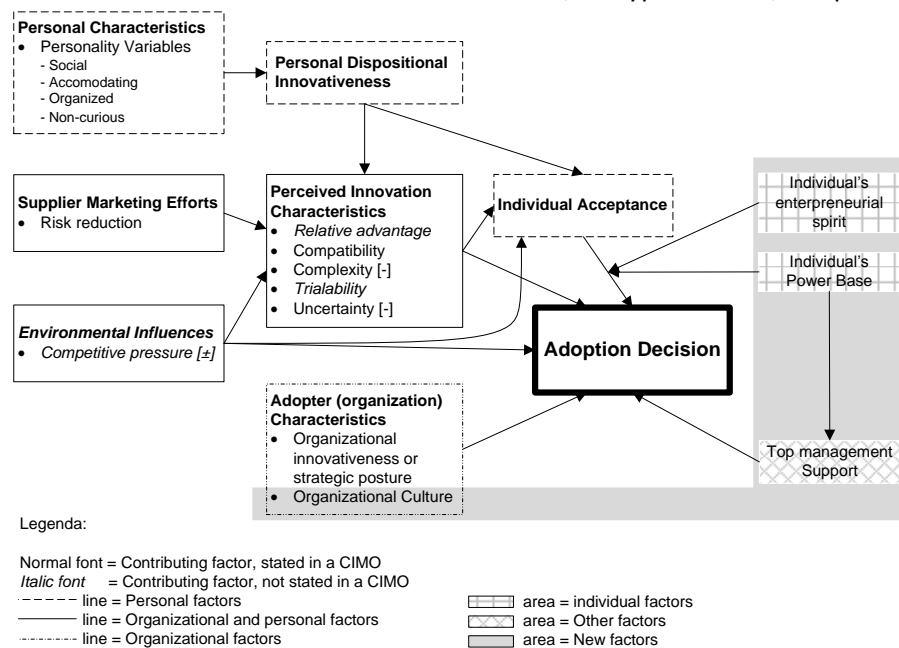


Figure 0-1 Overview of the impediments and contributing factors. All have a positive influence, unless indicated otherwise

Besides the hypothesized impediments and enablers, some relevant non-hypothesized impediments were found as well. First, three different adoption strategies for co-creation were identified: (1) Flying under the radar, where (top)management is (partially) unaware of the co-creation project. (2) Operating on an island, where co-creation is implemented in an isolated part or division within the organization and (3) Operating in a green field, where co-creation is being implemented as something totally new without any goals or expectations to live up to. In the latter two, (top)management support is very favorable, mainly to get resources. Finally, the interviews showed that practically all PL showed some form of entrepreneurship by being the one who suggested using or trying co-creation. For an overview of the contributing factors, see Figure 0-1.

Where possible, all factors contributing to the adoption decision for co-creation have been stated in CIMOs. These CIMOs can be regarded as managerial implication for both initiating organization, and for organization selling co-creation. Both need to be aware of the possible pitfall and how to overcome them. An overview of the CIMOs is given here:

	Context	Outcome	Intervention	Mechanism
Perceived Innovation Characteristic: Compatibility	In the context of executing a co-creation	Higher compatibility can be achieved	(1) By making the project leaders aware how much time it takes and what they tasks are (2) By making the project leader aware that he might need other departments as well	So that they know on forehand how much time they have to plan for the tasks associated with co-creation. So he/she can plan and delegate tasks not directly related to that of the project leader.
Perceived Innovation Characteristic: Complexity	In the context of adopting co-creation	The (perceived) complexity can be reduced	By informing / training the project leader	So he/she knows how to keep the community alive (and as a result, increase the number of generated ideas)
Perceived Innovation Characteristic: Uncertainty	In the context of adopting co-creation	The uncertainty about the adoption can be reduced	(1) By the organization: by appointing a project leader with a well established power base (2) By the project leader and/or organization: By appointing and reserving enough resources	Because such a project leader is more like to get things done in an organization, formal and/or informal So the project doesn't suffer from lack of resources and all involved know that this isn't a limiting factor.
Supplier marketing efforts	In the context of selling co-creation	The likelihood of a sell can be increased	By listing and addressing all issues and worries (I.e. the PIC) the initiating organization has	So the initiating organization has less to worry about
Personal characteristics	In the context of adopting co-creation	It is more likely to get potential buyers of co-creation interested	When a screening is made based on personality type	Since social, accommodating, organized and non-curious people are more likely to engage in co-creation.
Personal dispositional innovativeness: Experience with social media	In the context of adopting co-creation	A more favorable outcome can be achieved	By appointing a community manager who is active on social media	Since (s)he is used to post comments on a regular basis. This posting habit is copied when being a community manager.
Power base; Convince management	In the context of adopting co-creation	Adoption is more likely	When the project leader has a well-established power base	Because (s)he can then convince management and colleagues more easily

Power base; Convince colleagues	In the context of executing the co-creation project	Finding support within the organization to help with the co-creation project	Is more likely found when the project leader has a well-established power base	Because (s)he can then convince colleagues more easily.
Organizational Innovativeness	In the context of adopting co-creation	Adoption is more likely	When the initiating organization has a medium or high organizational innovativeness	Because this makes organizations more open minded for other (in this case co-creation) ways of gathering information / trying new things.
Organizational culture	In the context of adopting co-creation	A favorable organizational culture can be created	By involving co-workers, even if they are not directly related to the project	Since this makes them aware of what co-creation is, and how this is important to the organization itself.
Top management	In the context of adopting co-creation	A favorable outcome is more likely	When (top)management support is gathered	Because this opens doors and budget to means that couldn't be attained otherwise.
Entrepreneurial attitude	In the context of adopting co-creation	Stimulating an entrepreneurial attitude towards considering co-creation	Can be done by increasing publicity with regard to co-creation	Because this serves as a trigger towards considering co-creation.

Table 0-1 Overview of all CIMOs

Of course, this research has its limitations and should be interpreted in the light of these limitations. The suggested CIMOs haven't been validated yet, nor is the proposed model in Figure 0-1 tested and validated. These two important limitations could form the base of further research.

Preface and acknowledgement

The thesis lying before you is the final hurdle towards the fulfillment of the requirements for the degree of Master of Science in Innovation Management at the Eindhoven University of Technology. This project was executed at Redesignme B.V., a small company facilitating an online co-creation platform.

First, I would like to thank my supervisors from the university Eindhoven: dr. ir. J.J. Berends and prof. dr. E.J. Nijssen. Dr. Berends has supported and advised me through many feedback- and iteration sessions. Without his help, this thesis wouldn't be as solid and scientific based as it is now. In a later stage in the process, prof. Nijssen provided valuable input on how to make the thesis more readable and he provided valuable feedback and reflection on the total process.

Second, a big 'thank you' goes out to all my colleagues at Redesignme B.V., in particular to Maxim Schram. Without his contacts, knowledge and support, this thesis would not have been possible. Also, he has given me an insight on how to transform a novel idea into a successful business, by being determined, focused and working hard. Maxim, keep up the good work!

Third, I would like to thank all project leaders who have contributed to this thesis. Unfortunately I cannot thank them here by stating their names and companies, for reasons of anonymity. Their insights, stories and experiences with co-creation, formed the basis of this thesis.

Fourth, a special thanks goes out to all people who I hold very dear: my girlfriend, parents, friends and my family for their understanding and support throughout the entire process. Finally, I am about to be graduated!

Finally, a note has to be made on the interpretations and opinions expressed in this paper: They do not necessarily reflect the policy of the company Redesignme B.V., and remain my own.

I sincerely hope you will enjoy reading this thesis.

Eindhoven, November 2011,

Stefan van Stiphout

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List of abbreviations

AC	Adopter characteristics
CEO	Chief executive officer
CI	Confidence interval
CIMO	Context, Intervention, Mechanism, Outcome
DMU	Decision making unit
DP	Design principles
EI	Environmental influences
NDA	Non-disclosure agreement
NSF	No solution found
Org.	Organization
PIC	Perceived innovation characteristics
PL	Project leader
R&D	Research and development
RDM	Redesignme B.V.

1 Introduction

1.1 The power of open innovation

Under the right conditions, a group of people can know more than the individual experts of an organization. This is well illustrated by Netflix, an online DVD-rental service. In 2006 they launched a competition for the best filtering algorithm to predict user ratings for films. The grand prize was US \$1.000.000 and was reserved for the person or group who increased the original prediction algorithm of Netflix by 10%. After one year, an improvement of 8.4% was realized by a group of 3 researchers. After two years, the improvement made was 9.44% over the original algorithm. This improvement was made by the same three researchers as the year before, in collaboration with 2 other researchers. Finally, in June 2009, the former mentioned team, extended with yet another two researchers, claimed to have written an algorithm that was 10% better than the original algorithm of Netflix. Netflix tested the algorithm and indeed, it performed 10.09% better than the original. The 7 researchers won the grand prize, but the real winner was Netflix: Where spending US\$ 1.000.000 would traditionally gotten Netflix about five researchers for a year, Netflix now spend the same amount and got probably thousands of engineers per year, all trying to win the grand prize. To put things into perspective: the grand prize was only 1.13 % of the 2008 R&D budget, but resulted in a significant advantage for the company.

The underlying idea behind this is the concept of co-creation, where a product is developed by multiple stakeholders like customers, employees, suppliers, etc. This radical new way of problem solving requires businesses to change the way R&D is done and the way they interact with different stakeholders. This is a form of open innovation and is relatively new to R&D departments within organizations.

1.2 Open Innovation vs. Closed innovation

Within traditional-, or closed-innovation, the research and development (R&D) leading to the innovation is done within the R&D department of one organization. This innovation is then applied to their own products and/or services. (Damanpour & Gopalakrishnan, 2001; Chesbrough, 2003; Howe, 2008; Prahalad & Ramaswamy, 2004a; Surowiecki, 2005). Closed innovations have the advantage that no one other than the company knows who is working on new products and therefore competitors have no tactical advantage of knowing who is working on what. A lot of these research projects will never make it to development, because projects are terminated for whatever reason. This form of innovation is represented in Figure 1-1.

An alternative to the closed innovation model is the open innovation model. A graphical representation of this model is given in Figure 1-2. The idea behind this model comes from Chesbrough (2003) and businesses in several branches have opened up their R&D to let ideas, other than their own, in. These ideas can come from all stakeholders involved; customers, employees, suppliers, etc. As can be seen in Figure 2-1, it requires translucent company borders so good ideas

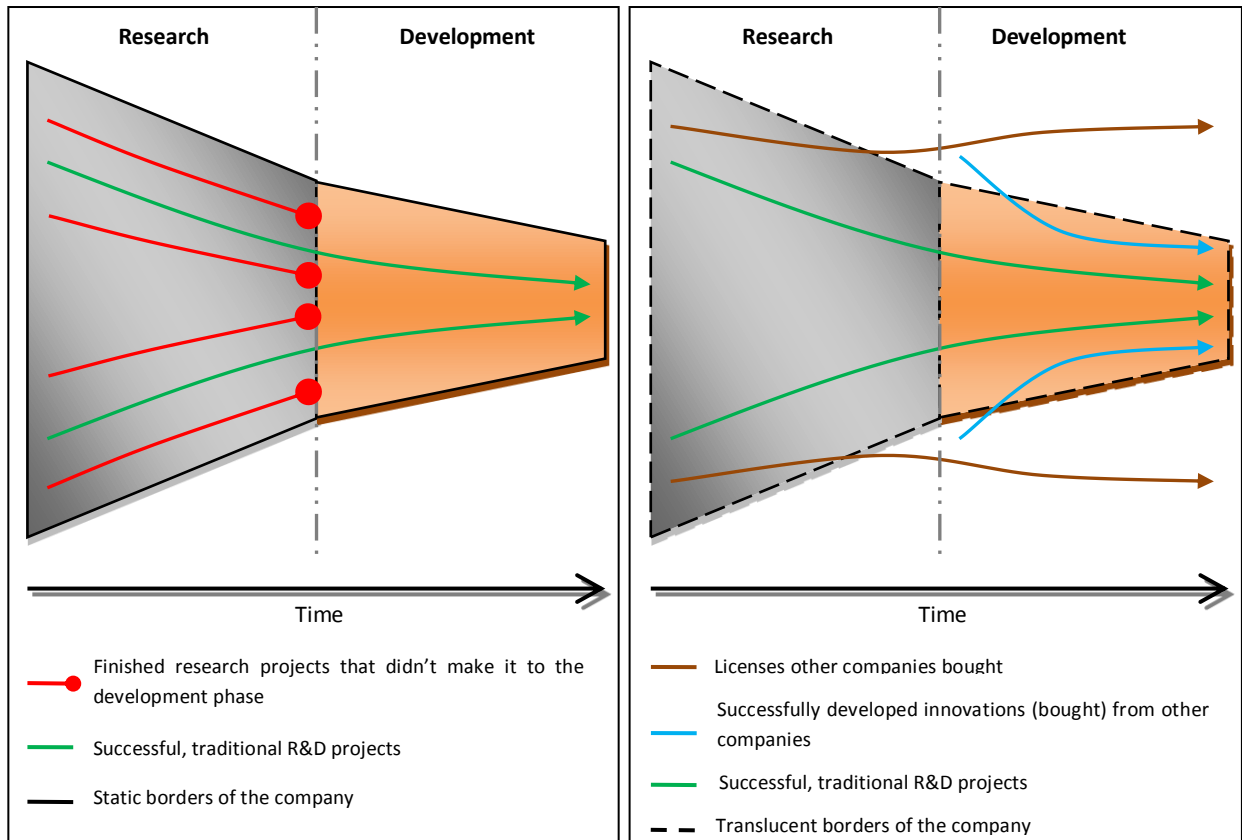


Figure 1-1 Closed innovation funnel, adapted from Chesbrough (2003) Figure 1-2 Open innovation funnel, adapted from Chesbrough (2003)

that are not used within the own organization can be sold or licensed to other companies. On the other hand, good ideas outside the borders of the organization be acquired. Chesbrough (2003) summarizes this idea in one sentence: “Not all the smart people work for us. We need to work with smart people inside *and* outside our company”. When applying the closed vs. open innovation on the framework of value creation, it is clear that the focus shifts from an isolated value creation strategy in closed innovation, to a more open value creation strategy, where the leveraging from external resources is crucial (Prahalad & Ramaswamy, 2004a; Zhang & Chen, 2008)

In principle, every kind of organization is able to apply open innovation. However, research indicates that there are some predictors on what kind of firms with specific qualities encounter in open innovation sooner than others. An overview of what the positive- and moderating influences of different factors are on the outcome of open innovation can be found in appendix A.

1.3 Co-creation

A special form of open-innovation is co-creation. To my knowledge, there is no academic consensus about what the exact difference is between co-creation and open innovation. Both share the same characteristic that an initiating organization wants to attract knowledge that is outside the organization. However, open innovation in literature is often regarded as the collaboration between the initiating organization and one or more of its stakeholder, i.e. a supplier (Keupp & Gassmann, 2009; Lichtenthaler, 2008; Reichwald & Piller, 2006). Co-creation is often regarded as the

collaboration between an initiating organization and customers or consumers. Co-creation can therefore be seen as a specific type of open-innovation.

Co-creation is involving the customer in innovation. This should be done on purpose with the goal of innovation in mind. Prahalad & Ramaswamy (2000) were among the pioneers in the field of co-creation and stated that consumers will become a new source of information for organizations. Consumers who first adopt a new product or new technology are called lead users (Hippel, 1986). These lead users often have a lot of valuable information about the product: What is good, what can be improved and how these improvements can be realized. When organizations tap into the knowledge of customers, they can create unique (added) value to their product. According to Prahalad and Ramaswamy (2004b), consumers have access to large amounts of information and based on this, make more informed decisions.

1.3.1 Motivation

In order to co-create, at least two parties are involved; the (initiating) organization and the consumer. In the context of this thesis, only the theoretical motivations of the initiating organization are further explained. For more in-depth research on the motivations of both the initiating organization and the consumer, see van Stiphout (2010).

When customers are involved at all stages of the value creation process of a product (or service), it is very likely that this product is better than when this product would have been developed without the involvement of the customer. This benefit can be in terms of more creative ideas that are more easily implemented. Also, co-creation can capture the latent needs of customers and these needs are identified in the roles consumers have every day. There is no real alternative for companies who want to research such things (Kristensson, Matthing, & Johansson, 2008). Organizations can also reduce time-to-market, reduce cost-to-market, increase fit-to-market and increase new-to-market (Reichwald & Piller, 2006). Kleemann, Voss and Rieder (2008) state that firms initiating in open innovation profit from cost reduction through reducing complexity, productivity gains through more efficient use of resources, an increase in turnover and by using the knowledge of customers resulting in an improvement of quality.

1.3.2 The adoption of co-creation

In order for an organization to adopt co-creation, the company should design their new product development process accordingly. Kristensson, Matthing and Johansson (2008), argue that there are seven possible strategies for an organization to successfully involve the customer in the co-creation process: (1) Consumers should have the possibility to experience the product or technology in their own environment / situation and (2) in their own various roles. (3) Consumers who engage in co-creation should be provided with the right analytical tools. (4) Facilitate an environment where consumers get the feeling that the ideas they came up with could lead to a personal benefit. (5) Inform consumers that limited knowledge about the product, technology, etc. does not matter at all since the most innovative ideas can come from people who are not hampered by the boundaries of knowledge. (6) Be aware that when co-creators communicate to each other online, that it should not evolve into a (negative) brainstorm session. (7) When possible, ensure that the group of co-creators is as heterogenic as possible. This covers the wide variety of possible ways a new product is (mis)used.

1.4 Problem statement and research questions

The potential importance of co-creation for organizations and how it can help organizations to innovate is reasonably well documented in the academic literature, as can be seen in the paragraphs above. However, only a limited number of organizations engage in the co-creation process, even though research has shown that co-creation can be very successful; it can be used to attract external knowledge which can lead to new products /services (Chesbrough, 2003; Prahalad & Ramaswamy, 2004a). Besides the potential increase in revenues, research has also shown that co-creation can lead to unique insights in customer needs, demands and wishes (Kristensson, Matthing, & Johansson, 2008), and it can reduce time-to-market, reduce cost-to-market, increase fit-to-market and increase new-to-market (Reichwald & Piller, 2006).

Despite the above mentioned advantages, not many organizations engage in co-creation. One can conclude that there are obviously impediments for organizations to enter in the co-creation process. However, to this very moment, no academic study has been identified that can explain why these impediments exist and what these impediments are. The central research question of this study will therefore be:

What are the impediments for organizations to adopt co-creation and what can be done to overcome them?

To answer this question, a framework for the adoption of co-creation is given in chapter 2. How the research is conducted is described in chapter 3 and the results of this study are stated in chapter 4. In the last part of this report, I will discuss the findings and elaborate on the limitations and future research questions.

2 Framework for adoption of innovations

Before any impediments can be identified, a framework is made on how an innovation, in this case co-creation, is adopted. This framework is then used to identify different possible impediments. According to Rogers (2003), the decision making unit (DMU) responsible for implementing an innovation has to pass through five stages. First, the DMU has to be *aware* of the innovation. Second, *attitude* is being formed towards the innovation and then, third, a *decision* is made to adopt or reject the innovation. Forth, the innovation has to be *implemented* and five; a *confirmation* of the decision is being made. So, before an innovation can be considered as implemented, it has to be adopted first. This thesis will emphasize on the adoption rather than the implementation of co-creation, partly because co-creation is in nature very suitable for occasional use.

To answer the central question, a framework is needed in order to systematically identify these impediments. In essence, co-creation is a new way of solving problems, interacting with customers and using the potential benefits co-creation can have. But we have to realize that co-creation is a relatively new way of doing these things, it can be regarded as a new innovation that has to be adopted by the organization. Combining the (1) meta study of Frambach and Schillewaert (2002) on what factors are important in the acceptance of innovations by organizations and individuals and (2) the study of Fichter (2009) on the importance of individual promoters of open innovation, the following resulting model is composed.

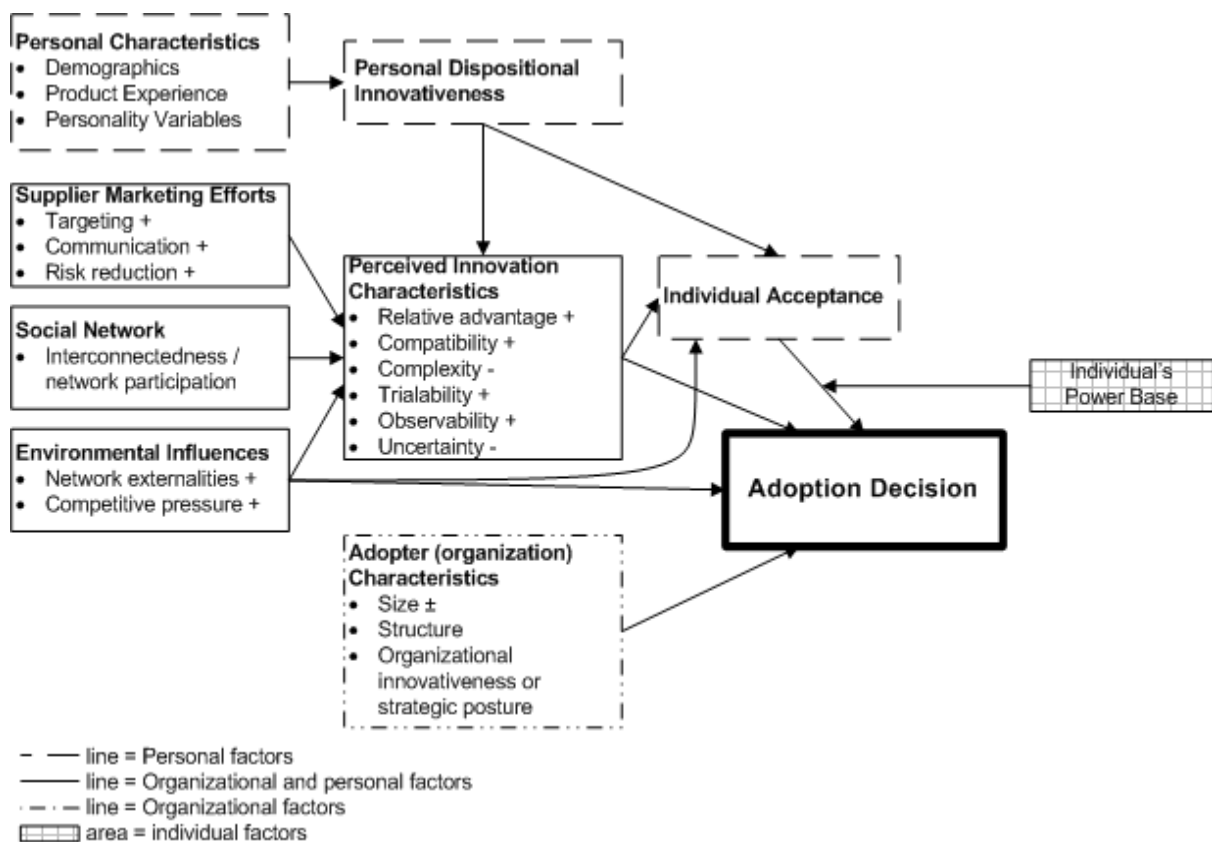


Figure 2-1 Adoption model, based on Frambach and Schillewaert (2002) and Fichter (2009), where + indicates a positive influence on the adoption decision and – a negative influence. ± indicates that literature is not clear about the expected influence of that determinant.

This framework is introduced to understand the impediments individuals and companies can have when adopting co-creation. Every single item in Figure 2-1 can be a possible impediment. Following this framework, eight sub questions can be formulated that should give more insight into the central research question. The questions are derived from the main topics within the model.

Perceived innovation characteristics are at the heart of the model. Introduced by Rogers (2003, first introduced in 1963), they form a widely adopted theory on why an innovation is adopted in favor of another innovation. Key constructs are the relative advantage, compatibility, complexity, trialability, observability and uncertainty. This leads us to the first sub question:

Q1: How does the Perceived Innovation Characteristics (PIC) hamper or help the adoption of co-creation and how can one overcome the hampering effects?

Literature (Frambach & Schillewaert, 2002; Woodside & Biemans, 2005) suggests that targeting an innovation towards a selected potential adopter will increase the chance of the innovation being adopted. Especially important are (1) personal selling, (2) the communication of product features, (3) communication of price level, (4) communication of integration possibilities, (5) communication of user friendliness and (6) communication of service delivered. (Frambach, Barkema, Nooteboom, & Wedel, 1998).

Q2: How do marketing efforts in- or decrease the success of selling co-creation to organizations and what can be done to improve them?

Social networks can accelerate the rate of innovation (Rogers, 2003), as long as the messages sent by the social network are positive in nature. Best is when members of the network interact frequently with rich information (Frambach & Schillewaert, 2002). From discussions on the internet, we can learn that not all information and opinions about co-creation are positive in nature⁷. The question arises:

Q3: How can social networks help or hamper the adoption of co-creation and how can the personal networks help in diffusing the innovation throughout organizations.

Besides the information of the network, the environmental influences of the network co-exert pressure to adopt as well. Factors can be critical mass (Tellis, Stremersch, & Yin, 2003; Rogers, 2003), competitive pressure (Poston & Grabski, 2001; Zaltman, Duncan, & Holbek, 1973; Rogers, 2003) and network externalities (Frambach & Schillewaert, 2002; Mahler & Rogers, 1999).

Q4: How can environmental influences (EI) like network externalities, critical mass and competitive pressure, form an impediment for the adoption decision of co-creation and how can this/these factors be used to overcome the impediments.

Eleanor Roosevelt said: "Remember always that you not only have the right to be an individual, you also have an obligation to be one." No two persons are alike; not only physical, but mentally we all differ. Rogers (2003) shows that there are various personality variables associated with the

⁷ Some example in the media:

<http://www.research-live.com/features/is-co-creation-over-hyped/?/4000848.article>

http://www.12manage.com/methods_prahalad_co-creation.html

likelihood of early adoption or rejection of the innovation. Some personal characteristics could form an impediment on the adoption of co-creation.

Q5 How does the personal characteristics hamper the adoption decision within an organization, and how one can coop with the negative aspects of the personal characteristics that hamper the adoption.

People can have a tendency to use or reject certain types of products or innovation, the so called 'personal dispositional innovativeness' (Frambach & Schillewaert, 2002). This predetermined state of mind can form an impediment in the adoption of co-creation, leading to the question:

Q6 How does the a person's personal dispositional innovativeness influence the likelihood of him/her adopting co-creation and how can people who do not tend to use co-creation be persuaded to do so?

An organization possesses different characteristics like size (nr. of employees), organizational structure (high/low organizational complexity and high/low bureaucracy control (Damanpour, 1991; Damanpour & Gopalakrishna, 1998) and organizational innovativeness (Frambach & Schillewaert, 2002). Literature is not consistent (Zaltman, Duncan, & Holbek, 1973; Damanpour & Gopalakrishna, 1998; Damanpour & Gopalakrishnan, 2001) in what type of organization is best in adopting innovation. It could be possible that there are impediments based on the aforementioned adopter characteristics.

Q7: How do adopter characteristics (AC) help or hamper the adoption of co-creation and how can the negative characteristics be overcome?

According to Fichter (2009) a person's power-base can be based on his/her position within the organization (hierarchical power promoter), based on the knowledge someone has (expert promoter), based on the organizational knowhow or communication skills (process promoter) or the power is based on the network competence (relationship promoter) of a person. All these bases, or the lack of it, can form respectively an accelerator or impediment in the adoption of co-creation.

Q8: How can an individual's power base, or the lack of one, contribute (in a positive or negative way) to the adoption of co-creation within an organization?

3 Methodology

“What are the impediments for organization to adopt co-creation and what can be done to overcome them?” This research tries to answer this question by executing a case study. According to Yin (1994), a case study is described as “an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. It is useful when there is an experimental setup is not possible. If the research question starts with “how”, a case study can provide useful insights. Since it is not sure what factors contribute to the impediments of adopting co-creation, an explorative, multiple case study is chosen (Eisenhardt, 1989; Burg, Romme, Gilsing, & Reymen, 2008; Yin, 1994). But first, let us start with the scope and goal of this research.

3.1 Research scope and goal

The research questions found above, are very broad and from a researcher’s point of view, investigating every possible organization, would not be feasible. Therefore the scope (what type of organizations) is limited and the goal, restricted by the scope, is set.

3.1.1 Scope

In the context of this research, only Dutch organizations were selected. The selection embraced two types of organizations: 1) organization who actively participated in co-creation and 2) organizations that seriously considered co-creation, but didn’t adopt it (yet). A second restriction to the scope of the research is that organizations had to engage in co-creation out of free will. This may seem obvious, but it is not. At the time of the research, several organizations within the province of “Noord-Brabant” had won an award and a so called ‘Co-creation voucher’. This voucher represented one co-creation project. This can be seen as non-voluntary participation of the co-creation. Another group that was excluded, were small (<30 employees) organizations. For this research, the assumption was made that small organizations deal with problems on a more ad-hoc base, and thus dealing with impediments in a different way than medium and large sized enterprises. The scope for this research therefore is: Dutch mid and large size organizations.

3.1.2 Goal

The goal of this research is of course to answer the central research question. By doing so, new knowledge about co-creation for the academic- and practical field is generated. The goal in this research is to do this by formulating a set of design principles that will help smoothing the adoption of co-creation for initiating organizations.

3.2 Framework for the case study

Eisenhardt (1989) introduced a framework for the process of building theory from case study research. This framework looks as follows:



Figure 3-1 Process of Building Theory from Case Study Research (Eisenhardt, 1989)

The first step, getting started, consists of a definition of the research question and is therefore already covered in chapter 2. An elaboration on the resulting steps will follow here.

3.2.1 Selecting Cases

The case study will be at Redesignme B.V., a company facilitating a co-creation platform, deployable worldwide, with a community of >5000 members, and growing. Redesignme B.V. (RDM) sells so-called challenges to other organizations. These challenges are basically questions organizations have. For example: If an organization wants have a (new) logo, they can post that question on redesignme.com (<http://connect.redesignme.com/>) and the community of >5000 will send in their ideas. Another example could be: When an organization wants a new product, or wants the opinion of the community about an aspect of a product, they can post that question on the website as well and the community will come up with ideas. These ideas are called 'redesigns'. This name could be misleading, since the ideas can be totally new and innovative and don't have to be a re-design of any kind. Community members, called 'redesigners', get rewarded when they provide good ideas for that challenge. This rewarding is done arbitrary by someone of the organization who posted the challenge. Rewarding is done with RDMs, the online currency of RDM. 10 RDMs equal 1 Euro. RDMs can be used to buy products in the web store of RDM, can be used to buy gift certificates or can be converted into money. Besides the monetary value the RDMs represent, they are also used to show how good a certain redesigner is. The more RDMs he/she has, the better the redesigner is and the higher he/she will be in the online charts at the RDM website. RDM is founded in 2007 and has at the moment of writing about 8 FTE and a few freelancers. Within RDM, a number of cases will be studied. These cases will be selected from the RDM customer database. Since it is still a company in startup phase, this database is not enormous.

The selection criteria will be theory based but practically limited due to the size of the customer database of RDM. At the time the proposal for this research was written, the customer base of RDM was mainly composed larger companies; both non-profit (government) and multinationals. For this research, it is to be expected that networks and forces within an organization can play an influential role in the barriers an organization experiences when adopting co-creation. As already stated in the paragraph Scope, very small organizations are not likely to have such an organization since day-to-day business is likely to be managed ad-hoc. The first selection criteria therefore will be: Organizations need to have at least 30 FTEs. In this way it is guaranteed that not all processes are taken care of at an ad-hoc basis, but things need to be planned ahead with commitment of the right people. By selecting organizations with more than 30 FTEs, the likelihood of some politics and power differences are increased as well.

The second selection criterion is geographically; for practical limitations, only organizations vested in the Netherlands are selected. This does not mean that headquarters need to be vested in the Netherlands. Third, both cases that have already engaged in the co-creation process will be contacted, as well as cases that have been considering co-creation, but have not (yet) entered in the co-creation process.

Of all companies contacted, about half were willing to grant an interview. Interviews were all conducted with at least the project leader. An overview of the sources can be found in the Table 3-1. To guarantee absolute anonymity, all cases, including product names, have been given fictitious names.

Name	Already adopted Co-creation?	Size (nr. of employees)	Evidence
Organization A	Yes	~ 180.000	1 interview with project leader (PL), public documentation
Organization B	Yes	~ 2.200	1 interview with PL, public documentation
Organization C	Yes	~ 100.000	1 interview with PL
Organization D	Yes	~ 33.000	1 interview with PL, 1 presentation, public documentation
Organization E	Yes	135	1 interview with PL, 1 telephone call with PL
Organization F	Yes	~ 100	1 interview with PL
Organization G	Yes	32	1 interview with 3 people (PL + 2 facilitators), public documentation
Organization H	No	62	1 interview with PL
Organization I	No	30	1 interview with PL, 1 sales meeting
Organization J	Yes	~400	1 aftersales meeting with two PLs, public documentation
Organization M	No	~3.200	1 sales meeting with 7 people
Redesignme B.V.	Yes	~8	General information

Table 3-1 Cases

3.2.2 Crafting instruments and protocols

Following Eisenhardt (1989), a set of protocols was made before the interviews were held. The protocols were directly derived from the research questions earlier mentioned and are based on the literature study done earlier (Stiphout, 2010). By doing so, relevant factors could be identified. The protocols can be found in appendix B.

During the interview, the interviewee was free to first tell about the organization, what the organization did and what the role of co-creation was within the company. Next, the interviewee is asked what (s)he thought where critical steps and important events within the whole co-creation route. After this, questions were asked to clarify these steps and events. In most cases, a number of factors from the hypothesized model were answered. The role of factors that were not mentioned by the interviewee were then specifically asked.

3.2.3 Entering the field

Eisenhardt (1989) makes a useful remark on what to be aware of when conducting the interview: “Overlapping data analysis with data collection not only gives the researcher a head start in analysis but, more importantly, allows researchers to take advantage of flexible data collection.” This advice

was followed. During some interviews and presentations, unexpected events occurred leading to opportunities resulting in more in-depth insights. I.e. more interviewees appeared than was anticipated, sales meetings about co-creation with far more people than anticipated and attended presentations with opportunity to ask questions. Of every event, notes were taken as suggested by Eisenhardt (1989).

3.2.4 Analyzing data

Coding was done by following the method suggested by Burnard (1991). In this method, Burnard assumes data is collected in semi-structured interviews in qualitative research. Both apply here, making the method very suitable for this analysis. Burnard suggests a 14-step plan, of which the first 10 lead to categories within the interviews. The last 4 steps are about writing the report itself and are ignored in this paragraph. Executing these first 10 steps (or stages as Burnard calls them), may seem redundant since the interviews were semi-structured -and thus had categories- to begin with. However, the most interesting categories and themes are the ones a researcher doesn't expect. To find this, the guidelines of Burnard (1991) are followed. An overview of these can be found in the table below.

Stage	What to do?	Goal
1	Make notes after every interview regarding the topics and themes talked about	Function as memory joggers
2	Transcripts are read through and notes made, on general themes within the transcripts.	Become immersed in the data.
3	Transcripts are read through again and as many headings as necessary are written down to describe all aspects of the content.	Index the data, exclude data that has nothing to do with the research (small talk, etc.)
4	List of categories is surveyed by the researcher and grouped together under higher-order headings.	Reduce number of categories
5	Review list again	Remove similar headings, produce final list
6	Repeat step 3, 4 and 5 with two colleagues ⁸	Enhance validity
7	Transcripts are re-read alongside the finally agreed list of categories and sub-heading.	Is the degree to which the categories cover all aspects of the interview satisfying? No: Make adjustments
8	Each transcript is worked through with the list of categories and sub-headings and 'coded' according to the list of categories headings.	
9	Each coded section of the interviews is cut out of the transcript and all items of each code are collected together.	
10	Past all cut out sections together	Group everything with the right heading and sub-heading

Table 3-2 Stages, inspired on Burnard (1991)

The cases themselves will be analyzed in two steps: A within case analyses where data per case is presented, and a cross case analyses, where one can see what the overlapping barriers are. The design principles found, will be based on the cross case analyses.

⁸ Burnard (1991) suggests to use 2 colleagues. For this thesis, one colleague is used. As suggested, the colleague was not involved in any other part of the research and had some experience in category generation.

3.3 Design principles

As stated before, a goal of the case studies is the synthesis of design principles. These design principles will be stated as so called CIMOs. Design principles (DPs) act as a transfer and/or communication mechanism between academia and practice (Romme, 2008). The goal of these DPs is to explain why (mechanism) an outcome is likely when you do something (the intervention), within a certain context. The CIMO logic provides a way to formulate these design principles, in a systematic and concise way and can be described as: “in this context C, use this intervention I to invoke generative mechanisms M that produce outcome O”, see Table 3-3. (Denyer, Tranfield, & Aken, 2008). The following table is adapted from Denyer et al (2008), to give a better insight into what CIMO means.

Constructing the design principles can be seen as the 6th step in the model of Eisenhardt (1989)

Context (C)	The surrounding (external and internal environment) factors and the nature of the human factors that influence behavioral change. (...) Interventions are always embedded in a social system and, as noted by Pawson and Tilley (1997), will be affected by at least four contextual layers: the individual, the interpersonal relationships, institutional setting and the wider infrastructural system.
Interventions (I)	The interventions managers have at their disposal to influence behavior. For example, leadership style, planning and control systems, training, and performance management. It is important to note that it is necessary to examine not just the nature of the intervention but also how it is implemented.
Mechanisms (M)	The mechanism that in a certain context is triggered by the intervention. For instance, empowerment offers employees the means to contribute to some activity beyond their normal tasks or outside their normal sphere of interest, which then prompts participation and responsibility, offering the potential of long-term benefits to them and/or to their organization.
Outcome (O)	The outcome of the intervention in its various aspects.

Table 3-3 CIMO adapted from Denyer et al (2008)

4 Results

The design principles will be derived from a within case analysis and a cross-case analysis. In the within case analyses, every sub-chapter starts with a case description. Then, an elaboration on what challenges, difficulties and impediments the PL experienced is stated in a table. In these tables, each challenge is categorized into the impediments suggested in the model (see Figure 2-1). The experiences of the project leaders are then cross referenced with each other in chapter 4.2, where the framework presented in Figure 2-1 is placed on all cases and checked what impediments were mentioned, what impediments were obvious, but not mentioned, and what impediments were hypothesized, but not present.

4.1 Within case analysis

The within case analyses “allows the unique patterns of each case to emerge before investigators push to generalize patterns across cases.” (Eisenhardt, 1989). As Eisenhardt (1989) already stated: “There is no standard format for a within case analyses”. Therefore, all cases will first be introduced, and then the main issues concerning the adoption of co-creation will be stated. Then, a summary or each case is made by forming a table.

In that table, a summary of all the challenges the PL experienced is stated and also how this challenge can be linked to the research model. This latter is done by first stating what type of impediment it is, followed by a subtype, when applicable. I.e. if the impediment says that the PL has to do overtime due to the co-creation project, this is then be marked as a [PIC: Compatibility], impediments, including the squared brackets. When a solution to that particular challenge was found, this solution is stated as well. Also, if a solution is found, a remark on what could even be better is added. Finally, a comment about the successfulness of the project is made. This comment is not classified in quantitative terms, but is a result of my own observations about the co-creation process as a whole. This is done to put things into perspective and to state that the outcome of the project (i.e. number of ideas) is not always equal to how successful the project was for the PL involved.

In order to keep all information strictly private, all cases have been treated as confidential. Therefore, all cases will be described as “Organization X”. Associating firms, organizations, products, etc. to the case, will be labeled XY or XYZ. The first letter will always be a reference to the initiating organization.

4.1.1 Organization A

Organization A is a major international retail operator. The organization has over 118.000 employees worldwide. In The Netherlands, the most famous brand of Organization A is ‘Brand AA’, a very well-known Brand where lots of Dutch inhabitants shop on a regular base.

Together with Organization AB, a product producing company also vested in The Netherlands, and the organization AC, where this trial was held, Organization A developed a product called ‘Product ABC’, a joint effort between the organizations A, AB and AC. This product could be used by

customers of Brand AA. After they have paid for the products, customers can put the products in Product ABC, making it easy to transport the bought product home. 80 Customers of Brand AA were given this Product ABC for free in order to test it. Remarks, improvements, flaws, etc. could be posted in an online co-creation platform. These improvements could be technical, visual, user friendliness, etc.

Product or concept testing with customers is not very unusual for Organization A; new products or (marketing)concepts are being evaluated with customers on a regular bases. However, these tests are often done on paper. Evaluating Product ABC within an internet platform, was new for the Organization A team, and yielded some unique challenges and insights. Being this interactive with customers, takes up much more time than sending a questionnaire to customers. The project leader of Organization A felt responsible for reacting on questions the consumers had about Product ABC. Reading all the questions and remarks takes a lot of time. Once they had found out how much time it took, the project leader tried to plan it in her daily agenda, but this was not always possible and overtime had to be made regularly. Despite some hierarchal and expert power, the project leader was not able to involve other departments like IT and marketing into the project. Especially the latter was unfortunate, because the Product ABC generated much attention in local-⁹ and online media¹⁰. A note has to be made that the project leader had no hierarchal power over the other departments. With the involvement of the marketing team, perhaps even more media could be involved, with ‘free’ advertising for Brand AA.

In this specific case, Ahold was the biggest, but not the only stakeholder in the project: Organization AB was participating as well. However, when the community had very specific (technical)questions about Product ABC, Organization AB was very slow to react on these questions. The project leader had to e-mail every single question to the involved employee of Organization AB, and ask for a reply. The third stakeholder, the municipality AC, didn’t participate actively in the co-creation platform either. This latter was not a practical problem since there were no questions or remarks specifically for the municipality. Using co-creation was new to all involved stakeholders and the project leader of Organization A indicated that the Product ABC project was the first real tryout for online co-creation.

From my own observation, comes another very interesting fact. Organization A asked RDM to remove all messages about the co-creation project and RDM was not allowed anymore to advertise that they had worked on this project with the iShop. It is my opinion that this means that Product ABC was discontinued and Organization A is trying to cover up as much of the project as possible.

Challenge	Solution	What could be better?
There were too little resources (time, manpower) [PIC: Uncertainty]	Dedicated recourses to the project	Training on how to deal with the community
Little support of other departments (communication, IT). Too little time, too little involvement, no priority [PIC: Compatibility]	No solution found	Create awareness and priority within other departments.
How to do a co-creation trial [PIC: Trialability]	Make a budget and just do it	

⁹ News article in local newspaper ‘De Stentor’.

¹⁰ Articles on: deweekkrant.nl and many more

Incorporation of co-creation in the current way of working [PIC: Compatibility]	Making overtime	Make co-creation more manageable
Convincing other people within the organization [PIC: Compatibility]	Partial solution: Only some people where convinced by the case build	Convincing all involved
How to minimize reputation damage when it goes wrong	Intensive communication between Ahold and community	
How to trigger the community into participating? [PIC: Complexity]	Well throughout themes	
Low involvement of external stakeholders [Individual's Power base]	No solution found, Ahold just had to work harder as a result	
How to minimize reputational damage?	Erase as much evidence of the co-creation project as possible	

Table 4-1 Challenges in the Organization A case

That Product ABC is discontinued is a pity. The project itself was very successful for Organization A. The feedback from the community was very valuable and good insights were gained.

4.1.2 Organization B

Organization B is a large city within The Netherlands with, on the moment of writing, over 200.000 inhabitants. The organization has several departments. One of these departments put together a group with the aim to improve the communication with the inhabitants of the city. They wanted to establish a platform where civilians can easily communicate with the organization. This platform itself was the topic for co-creation. The municipality asked participants what their idea was on how such a platform should look like.

One of the first initial worries of the project leader involved, was how to generate enough response in order to make the results of the co-creation useful. When there are only 10 remarks on how to improve the way of communication with the municipality, reliability is not very high. This was one of the motives for the project leader to interact very intense with the community on the co-creation platform. The project leader was very involved in this project, and posted numerous reactions in her free time. One of the challenges for her was how to combine her normal day-to-day tasks with managing and monitoring the co-creation platform. Letting someone else do the community management was not possible, since she was the only one really involved in the project. Despite top-management support, there was no help from colleagues. Within her own department she did receive understanding and mental support for this project, but she received no help in answering questions from the community. Outside her own department, she asked the marketing- and IT department for help, but they indicated they didn't had much hope for this co-creation initiative to be successful and where not willing to help at all.

The project leader indicates that the latter comes from ignorance within the organization. The organization is not used to communicate with customers (in this case the customers are the inhabitants of the municipality) and people within the organizations do not know what to expect or gain from communicating with customers. She knew in advance, prior to starting this co-creation

initiative, that this was a trial for her and the municipality of Eindhoven. The knowledge gathered about co-creation, was as important as the outcome of the co-creation platform itself.

Challenge	Solution	What could be better?
How to generate enough response, so the results of the co-creation is useful? [PIC: Complexity]	No solution found	Try to keep people motivated, i.e. by getting them involved into the project, or by upgrading the (financial) reward
There was no support from other communication and IT for the project. [PIC: Compatibility]	Non found. Convincing communication and IT was tried, but failed initially. Important decisions where forced-fed to unwilling departments by top management (top management support was key)	Support from RedesignMe with standard information for supporting departments.
How to combine “normal” work with managing the community? [PIC: Compatibility]	Partial solution: Make overtime and react on questions asked within the community. Losing the feeling that you need to react on everything, 24/7, resulted in less stress	RedesignMe needs to manage expectations about what community management is, and what you need to do as a community manager
The organization is not used to interact with customers. [AC: Organizational innovativeness]	No solution found	Cultural change within an organization needs to be made. Co-creation could be seen as a step in the process. RedesignMe can use this as a selling proposition.

Table 4-2 Challenges in the Organization B case

The outcome of the project was diverse. The organization received a lot of response, but often, these responses had little or nothing to do with the co-creation project itself. The project suffered from inhabitants that used the co-creation platform as an outlet for their (negative) feelings. This, in combination with a tense relationship with some colleagues, made it very difficult for the project leader. The quality of the ideas itself generated by the community was moderate.

4.1.3 Organization C

Organization C is a large organization with over 100.000 employees worldwide, with headquarters in the Netherlands. Organization C has a so called Product CA, where a team of professionals give advice to other companies. However, they had the feeling that the name Product CA was not reflecting the proposition they had to offer. This was the mean reason why they started a co-creation challenge where a new name and matching logo had to be designed.

Even before the very start of this co-creation project, the project leader had to make an important decision: Am I going to follow the rules of my organization, or not? The rules of the organizations prescribed that when a new name and logo is needed, a specific marketing agency is contacted and instructed to come up with a new name and logo. The project leader however, was under the impression that this was not the way to go and decided to fly under the radar and do it differently. His opinion was that in the marketing agency, 10 people thought about the new name and logo he needed, versus the hundreds or perhaps thousands of the crowd when he did a co-creation project. The project leader consulted his direct manager and he approved the co-creation project, giving the project leader the opportunity to “just do it”, and see what the outcome would be. The costs of this project where never a real issue: For organization C, this co-creation project does not take up a lot of financial resources.

The project leader also noted that this is, for his specific environment, a very unusual and odd way of doing things: First, within his industry, risks are avoided as much as possible. Second, managers are

being judged by their results. Taking risks and not knowing what the outcome will be, is therefore very unusual and does not stroke with the ruling organizational culture.

When the project leader decided the co-creation project was a go, he had to inform the co-creation community about his search for a new name and logo. The project leader indicated that it was a big advantage to really think about that, and keep asking yourself the questions: What do I want? What is necessary, and what isn't?

Finally, the co-creation project went online. The project leader already thought that managing the community would take some time, and it turned out he was right. As stated before, financial resources where not much of a problem for this project. Manpower and time however, was. The solution was that the project leader did a lot of the community management in overtime.

Challenge	Solution	What could be better?
Co-creation was officially not allowed.	Based on the power the initiator had, he made the decision to just do it anyway. However: The project is done with approval from initiators managers	
Managing the community takes up a lot of time. [PIC: Compatibility & Uncertainty]	Do a part of the community management in overtime.	
In a hard business world, a manager is judged by results. The outcome of co-creation is uncertain and control over the results is low. No control over the results, in a result-driven environment, leads to very high uncertainty about co-creation [PIC: Uncertainty]	A 'just do it' approach, where the initiator has enough power/credit: He can afford to make a mistake.	Decrease uncertainty about the results.

Table 4-3 Challenges in the Organization C case

In hindsight, it is clear that the Organization C – challenge was a very successful project as well. Although the community wasn't as big as it is today, the ideas posted in the challenge where very good.

4.1.4 Organization D

Organization D is a global consumer-goods company based in the USA. It has operations in more than 40 countries and sells its products in over 180 nations worldwide. One operation headquarters is in The Netherlands. Organization D owns various very well-known brand names, one being "Brand DA" and another one being "Brand DB". From the operation headquarters came the initiative to startup a co-creation challenge on RDM. This co-creation initiative started in 2009 and was done for the brand DA. Brand DA is the name of a beverage, often drunken in The Netherlands. This co-creation project was about coming up with a new and innovative way of making this beverage at home. The second co-creation initiative started about a year later and was done for brand DB, another beverage brand and again well known in The Netherlands. The challenge here was to come up with a new name for a specific product under the name of Brand DB.

The project leader of this project is also the innovation director of Organization D. He is a man with a very well established power base, based on his experience, hierarchical power and overall statue

within the organization. Being an innovation director, he is always on the lookout for new opportunities. On a business event, he met the chief executive officer (CEO) of RDM. In retrospect, he said that he immediately saw a business opportunity, although at that time, he did not know what that opportunity was, only that he wanted to do something. Soon after that, he had come up with a question he thought suitable for co-creation: Invent a new, innovative way of making and / or drinking the beverage of Brand DA. The project leader understood the risks of co-creation very well: It will cost money, it will cost manpower, it will cost time, and the outcome is uncertain. But as a trial, the project leader wanted to continue anyway, just to see what co-creation can do and to have some experience with it. Competitive pressure was an important enabler in this situation. The project leader wanted to have first-hand experience in co-creation, ahead of the competition. During the first, and later also during the second co-creation project, the project leader noticed that co-creation was, in his opinion, under valued within the company. He said: "When person A works on a presentation all day long, gives the presentation to his superiors and the superiors didn't like the presentation, you feel bad for him. When person B is sitting behind his computer all day long, just chatting with consumers who have negative remarks on the products, or whatever, you don't feel bad for him: He just has to type a bit. But in fact, you have to feel sorrier for the second person, because your customers indicate that your product is no good!" The project leader tried to involve as much departments and people as possible within the co-creation projects, making them feel responsible for the result as well. He states that this is in his opinion the first step towards a cultural change within the company, regarding co-creation and interacting with customers.

In retrospect, the project leader confirms that the first co-creation project was a failure, when looking at the direct result. The project leader recons that the question posed in the community was not specific enough. He argued that posing specific questions is "scary", because you can be judge by the outcome. The project leader however learned that this is exactly what you have to do: Ask very specific questions that the crowd can answer. This was done in the second co-creation project and this was more successful in terms of outcome, than the first. However, this doesn't mean the first co-creation project was a failure. In terms of marketing, it was a great success: It generated much attention. In this respect, the first project was a great success.

For the second challenge, the project leader asked RDM if it was possible that all who participated to this challenge, could sign a digital NDA (Non-disclosure agreement), before reading the challenge description. This was something the legal department demanded. The PL understood the disadvantages of the NDA: Less people could see the challenge without taking the hurdle of signing the NDA and this challenge was not visible of Google search results as well.

Another interesting point the project leader indicated was the fact that they didn't know what "the rules of engagement" where for co-creation. What he mend was, how do you interact with the community? I.e. can you say to someone within the community: "Your idea is no good"? The project leader observed and learned and his opinion now is: Yes, you can say that someone's idea is no good, but you always have to give him the reason why you thing that that is the case. Being too friendly and only say to people: All your ideas are good, isn't working either, you come to a point where the community doesn't take you serious anymore.

Challenge	Solution	What could be better?
In a hard business world, a manager is judged by results. The outcome of co-creation is uncertain and control over the results is low. No control over the results, in a result-driven environment, leads to very high uncertainty about co-creation [PIC: Uncertainty]	A 'just do it' approach, where the initiator has enough power/credit: He can afford to make a mistake.	
Co-creation is not 'valued' within the organization. [AC: Organizational innovativeness]	Try to involve and brief co-workers: what are we doing, what is co-creation, etc.	
What are the 'rules of engagement?' of co-creation? I.e.: Do consumers have 100% control? Should I interfere with the co-creation process? Can I do parallel development projects? [PIC: Complexity]	An ego-model was used to tackle this problem: What would I like, if I was the consumer?	
How to do a co-creation trial [PIC: Trialability]	Make a budget and just do it	
How to protect the results of the co-creation project legally? [EI: Competitive pressure]	All participants have to sign an NDA, stop Google from finding the online challenge.	
The question posed in the co-creation project was not specific enough, resulting in the fact that the outcome was not very useful.	In the second co-creation project, a more specific question was asked, resulting in a more usable outcome.	
Interviewee has authority, but doesn't want to make co-creation his responsibility. He only wants to make co-creation possible. How to involve and make others enthusiastic about co-creation?	Partial solution found: Make those people/departments responsible that benefit from the outcome of the co-creation, and do not force any decision based on the interviewee's authority. Let them make their own decisions.	

Table 4-4 Challenges in the Organization D case

To this day, the Organization D challenges remain among the most successful in the history of RDM. For the first challenge, a wide variety of ideas was posted. For the second challenge, several hundred ideas were posted.

4.1.5 Organization E

With more than 2000 very specific products for one industry, Organization E has a solid reputation as manufacturer and distributor of these products. Organization E operates in 45 countries worldwide with headquarters in The Netherlands. Organization E started a co-creation initiative where they want to ask users and non-users of their product called Product EA to improve this particular product. Organization E has about 135 employees in Europe, dispersed over The Netherlands, Germany, France and the U.K.

At the time of this co-creation project, Organization E struggled with Product EA and similar products in their assortment. The project leader on the co-creation initiative indicated that Product EA is a general commodity and that the selling price was the most important factor on which a sell was made or not. Organization E tried to be innovative, and already made some very new, but incremental innovations to other products in their product line. For the Product EA, they wanted to

do the same thing: An incremental innovation where the added value functions as a unique selling point. Competitive pressure and trying to be ahead of competition were important enablers for this co-creation initiative. This competitive pressure also inhibited this project from being truly open. Organization E had asked RDM to make an NDA so people could not see the challenge before signing the NDA. Also, all search results in Google regarding this challenge were blocked.

The project leader was issued by his superior to do this co-creation initiative. His superior is managing director at Organization E, one of the highest hierarchical positions within the company, so the project leader had full top management support. Before the project started, there were some uncertainties. Especially about the outcome and if the price paid, would be justified when the results were not what Organization E had in mind. What I noticed was that the project leader didn't have a clear goal about what he expected from the co-creation project. During the interview, I got the feeling that Organization E is stuck with this product, which soled very well in the past, but has not a real idea about what to do with the product now it has become more or less obsolete. Several things were already tried: The internal R&D team was issued to look at it, but this R&D team was more specialized in the production process optimizing, rather than optimizing the product itself.

The project leader indicated that he started the project without any expectations about how much time it would take and how he could combine it with his normal day-to-day activities. When I called the project leader after the co-creation initiative ended, the project leader indicated that it was hard to combine his normal day to day activities with co-creation and that he had to do a lot of things in his overtime.

Challenge	Solution	What could be better?
High uncertainty about the outcome [PIC: Uncertainty]	No solution found	Define a definition about when one is satisfied with the result, and when one is not.
High uncertainty about how much manpower the project will consume [PIC: uncertainty]	No solution found	
Initiating organization is stuck with a product that doesn't sell as good as it did in the past	Do co-creation and let the community solve the problem	RDM could indicate that the community can't solve all problems.
How to combine co-creation with the normal day-to-day activities. [PIC: Compatibility]	Just do it and do some things in overtime.	
How do we stop the competition from seeing what we are doing regarding the co-creation project [EI: Competitive pressure]	All participants have to sign an NDA, stop Google from finding the online challenge.	
How to do a co-creation trial [PIC: Trialability]	Make a budget and just do it	

Table 4-5 Challenges in the Organization E case

Although the number of ideas generated by the community was averaged, I am under the impression that Organization E and the project leader were not too enthusiastic about the results of the project. It is my opinion that the project leader expected more ideas and more ideas fully developed ideas, instead of the kind of brainstorm ideas the project yielded.

4.1.6 Organization F

Organization F, located The Netherlands, has about 100 employees and offers consumers and businesses around the world a range of different solutions for supporting of specific products. In their continues quest for innovation and being ahead of competition, Organization F wants to start a co-creation initiative where they are asking the customers what could be improved in their products. This question is not restricted to a specifically targeted at one product or product group, but applies to all of Organization F’s products.

During the interview with the project leader, one of the first things he talked about was the uncertainty related to the whole project. He was not sure about how much manpower and time it would take, and he was very uncertain about the outcome of the project. For Organization F, this was the first co-creation initiative done this way. The organization and the project leader had little to non experience with co-creation. The co-creation initiative embraced all products within the current Organization F’s line-up. The R&D department is relatively passive and closed. This is a habit inherited from the past, where R&D literally took place behind closed doors. The current R&D department is not that closed anymore, but the culture of closed R&D is still present to some extent. This was one of the reasons the project leader started the co-creation initiative. Coming from a marketing background, he is more used to outsource tasks than the R&D department is. Although his initial goal for the co-creation project is to gain some specific consumer insights, there is always a change the co-creation project will yield a very good idea about a new product or service. The project leader fears that if that is the case, the R&D department is not willing to admit that that idea is indeed a good one. It is my opinion that this is a very close approximation of the ‘not invented here syndrome’.

Another observation is that Organization F is stuck with products that soled very well in the past, but due to a lack of innovation and ever increasing competition, don’t sell as good as they used to. The project leader thinks that the organization doesn’t sell as good as they used to, because there is too little consumer insights. By doing a co-creation project, he hopes to gain some consumer insights. These insights should on their turn result in better products and more sold products. It is my opinion that this strategy does not yield any (valid) consumer insights because there is no control over the target group: The community participating in this co-creation project are probably not the same as the target group of Organization F and there are too little participants to make a valid judgment about any insights the co-creation project may or may not yield.

Challenge	Solution	What could be better?
High uncertainty about the outcome [PIC: Uncertainty]	No solution found	Define a definition about when one is satisfied with the result, and when one is not.
Uncertainty about how much resources the project will take (Time, money, manpower) [PIC: Uncertainty]	Just do it and the company will respond adjusting the manpower and time spend.	
Initiating organization is stuck with a product that doesn’t sell as good as it did in the past. Own R&D is very passive: They wait for marketing to come up with a specifications list, and then they start to design. [PIC: Compatibility]	Do co-creation and gain some consumer insights so the initiating organization can sell more products. Project leader wanted to do things differently, and started a co-creation initiative	One can wonder if the community generates (reliable) consumer insights

How to combine co-creation with the normal day-to-day activities. [PIC: Compatibility]	Just do it and do some things in overtime.
How do we stop the competition from seeing what we are doing regarding the co-creation project. (Privacy issue) [EI: Competitive pressure]	All participants have to sign an NDA, stop Google from finding the online challenge.
Project leader is from marketing, at the start of the project, he has doubts if R&D is going to accept the idea's presented by the co-creation community. [AC: Organizational innovativeness]	No solution found

Table 4-6 Challenges in the Organization F case

This project leader expected to gain some insights from consumers by doing a co-creation project. It is my opinion that the project leader didn't receive the insight that he might had in mind / hoped for. And although the results of the co-creation project where average, I was under the impression that there was no full satisfaction within Organization F and the involved project leader.

4.1.7 Organization G

Organization G is a Dutch insurance company and is a part of a much larger company. Organization G sells all kinds of insurances on their online website with as little customer contact and paper mail as possible, while still providing the service customers expect. The has 32 FTEs. Organization G has started a co-creation challenge where they want to ask their own customers what could be improved on the insurances they offer. This improvement can be on the interaction between Organization G and the customers, about processes that could be speeded up or other co-creation topics Organization G presents to their customers. This co-creation initiative is started in December 2009 and is still active on the moment of writing (2011).

The project leader of this co-creation project was one of board members of the company. Top management support was not an issue at all in this matter. He personally, in collaboration with another board member, started the co-creation initiative. The basic ideas was to have a customer forum, but it resulted in a co-creation project where customers can indicate what they like, dislike and would change about their insurance. Insurances can be very difficult and complex. The project leader struggled to find suitable problems for the community. When the questions are too difficult, the customers will not understand them, and response will be low. When the questions are too easy, it is likely they will not be interesting enough. The project leader also indicated that he thought hard and long about how to keep the community active and alive. To tackle this latter problem, he came up with a five point battle plan. First, when there are too little reactions from the community, he will post reactions himself under a false name, posing as a customer, instead of himself. Secondly, keep the challenges simple. Especially in the beginning, the content of the reactions from the community are not so important, more important is that they react at all. Third, give the co-creation platform as much media attention as possible; send press-releases about Organization G doing co-creation and point out in other communications (email, social media, etc.) customers receive that Organization G has a co-creation platform. Fourth, the project manager wants to give as much feedback to the community as possible, so the community sees that every contribution is being valued. Finally, the project manager want to reward contributions posted in the co-creation platform with so called G Dollars. G dollars are an online currency customers of Organization G can spend in a webshop.

Even with this battle plan in hand, the project leader has some uncertainties. He didn't know what this co-creation platform will bring, only that it will take up a lot of resources. Budget comes from marketing, and Organization G is not going to keep track exactly how much resources this whole project is going to take. They are just going to do it. Doing a trial was partially possible; first they invited 1400 customers, selected through a survey. When they have some experience with who those customers react to different questions, the project leader will invite the rest of the customers, about 20.000.

Challenge	Solution	What could be better?
How to do a co-creation trial [PIC: Trialability]	Partial solution: First invite only 1400 customers, in a later stage, invite the other 20.000.	
The initial subject, insurances, can be very complex. When questions are too complex, response from the community is low.	Think very hard about what you really want to know, and adjust the question accordingly to a question that is as simple as possible.	
How to keep the community active? [PIC: Complexity]	Partial solution was found: Solution 1: Make 'dummy' posts. This means that employees of VUZ pose as customers and contribute in the hope that this triggers other (real) customers to participate as well. Solution 2: Keep the challenges simple. Solution 3: Send a press release for even more attention. Solution 4: give feedback on as much as possible, so the customer knows his input is being valued. Solution 5: Reward with VUZies (Only currency, just like RDMs)	No one knows what solution works best.
Uncertainty: No one knows what the co-creation project will bring, only that it will take up a lot of resources: Time and manpower. [PIC: Uncertainty]	Plan the resources under 'marketing' and just do it, regardless of the time and manpower it costs.	

Table 4-7 Challenges in the Organization G case

This project is meanwhile almost two years up and running. Despite the usual start-up problems for such a long lasting co-creation project, it can be considered as successful.

4.1.8 Organization H

Organization H is an organization specialized in attracting subsidies for other organizations. Organization H has 62 employees divided over 3 offices in The Netherlands. Organization H is currently considering how they can implement co-creation for their business. One option would be to invite all customers to a kind of platform, where customers can talk to each other and exchange information about subsidies.

The project leader, or in this case it is better to speak of a project initiator, struggled to build a good business case for co-creation. During the interview, it became clear that he saw many advantages, but disadvantages and traps related to co-creation as well. One business case he made was to do co-creation with customers. He immediately pointed out that there was an obstacle that had to be overcome: Customers of Organization H are, or might be, competitors of each other. When they share information and spread knowledge, they could give competition critical information about themselves. The project initiator saw this as a big disadvantage and had no solution for it. Another

problem of doing co-creation with customers was the loss, or decline, of the personal relationship. This latter is one of the strengths, and selling points, of Organization H. A final worry on the project initiators mind was: What would happen when the crowd or community turns itself against you? He quoted the famous “Dell – Hell” case¹¹ where the crowd turned themselves to Dell. He had not found a solution for that matter as well.

Another option would be to co-creation with the employees of Organization H themselves. The project initiator had thought out a business case for that as well. At the moment of the interview, he still had troubles convincing other people within the organization about the benefits of co-creation. He stated that the main reason why people were hard to convince, is because they had negative experiences with computer related projects in the past.

Challenge	Solution	What could be better?
How to do a co-creation trial [PIC: Trialability]	No solution found	
When co-creation is done with customers, customers might be reluctant to share information, because competitors could see this information. [EI: Competitive pressure]	No solution found	
Other people within the organization are not yet fully convinced about the necessity of co-creation. Neither for internal or external co-creation. [PIC: Compatibility]	No solution found	Give the project initiator more information on how to convince others within the organization.
In the current business, direct, personal relationship with the customer is important. The initiator fears that this contact will be lost when implementing co-creation, and thus the personal relationship, one of the strong selling points of the company, disappears.	When implementing co-creation give the customer still lots of personal attention. This means that the co-creation questions have to be well selected.	
What to do when the crowd turns itself against you? [PIC: Complexity]	No solution found	

Table 4-8 Challenges in the Organization H case

4.1.9 Organization I

Organization I is a strategic market research agency located in The Netherlands. Organization I is specialized in qualitative and quantitative research on brands, people and their motives. They have 30 employees and they are considering co-creation as a new option in their services to their customers.

Main reason for offering (online) co-creation, is because customers actively ask for it and because they see competition offering co-creation as well. Organization I doesn't want to miss the boat and is actively investigating different forms of co-creation. The project leader of the co-creation investigation is trying to find an answer on what form of co-creation is best suitable for Organization I. As an alternative to co-creation, or in addition to co-creation, different forms of concept testing, concept development and product evaluation are being investigated by the project leader. This is not as easy as it might seem, since different options yield different results and all forms of co-

¹¹ See Jeff Jarvis weblog: <http://www.buzzmachine.com>

creation have their distinct advantages and disadvantages. The project leader has no real overview, academic or nonacademic, about what form of co-creation yields the best result in which condition. The project leader has to find this out herself, which takes up a lot of time. Also, the project leader argued that one of the limitations of co-creation is that “consumers (and by extend, the community) aren’t professionals”, so you have to guide the community into a specific direction. The project leader assumed that the community can’t solve complex problems, since they lack specific knowledge and skills.

In the opinion of the project leader, this latter can only be confirmed or denied by doing an actual co-creation project. The project leader finds it difficult to ‘just’ do a co-creation trial, since there are always consequences to such a trial: Uncertainty about manpower, possible financial- and reputational risk. The proposed solution by the project leader for this is to just make a budget and go for it.

Challenge	Solution	What could be better?
Very difficult to find information on co-creation, specific for the industry Trendbox operates in. How to do a co-creation trial [PIC: Trialability]	Explore all different types and kinds of co-creation and make a list of all the pros and cons. Make a budget and just do it	From an academic point of view, an overview of what type of co-creation is best suitable in which conditions.
What is the ability of the community? What can they do, what can’t they do? [PIC: Complexity]	Make estimations and assumptions: “The community isn’t a professional”, so they cannot solve complex problems	
Uncertainty about time and manpower involved in the co-creation process [PIC: Uncertainty]	No solution found	

Table 4-9 Challenges in the Organization I case

4.2 Cross case analysis

When analyzing the cases, it became obvious that next to the hypothesized impediments, there were also impediments and solutions that where not foreseen. In chapter 4.2.1, a more in depth study about the research model is conducted to see if the individual aspects of the model have an influence on the adoption decision and if so, how these can be overcome. These outcomes are stated in different CIMOs.

Besides hypothesized impediments, non-hypothesized impediments are identified in chapter 4.2.2. A research is done to see what these impediments are, and how these can be overcome. Again, these outcomes will be stated in CIMOs.

4.2.1 Hypothesized impediments

For the cross-case analysis, all challenges that occurred more than ones in the within-case analyses are stated in Table 4-10 and Table 4-11. All challenges are, if possible, classified into which category they belong with respect to the framework (see Figure 2-1). When a challenge applies to a case, the solution found in that case is stated. When there is no solution found, the abbreviation NSF (No Solution Found) is used to indicate that the problem did occur, but that there was no solution found. Next, an analysis is made to see if there are commonalities in the solutions found among the different problems.

Cases, with solution (NSF = No Solution Found)									
Challenge	Organization A	Organization B	Organization C	Organization D	Organization E	Organization F	Organization G	Organization H	Organization I
Difficult to convince other people within the organization Perceived Innovation characteristic: Compatibility	NSF (No solution found)							NSF	
Limited support of other departments PIC: Compatibility	Communication , IT (NSF)	Communication , IT (NSF)				R&D (NSF)			
Incorporation of co-creation in the current way of working Perceived Innovation characteristic: Compatibility	Do a part of the community management in overtime	Do a part of the community management in overtime	Do a part of the community management in overtime		Do a part of the community management in overtime	Do a part of the community management in overtime			
How to deal with a community? Perceived Innovation characteristic: Complexity	How to trigger the community into participating? <i>Solution: Well throughout themes</i>	How to generate enough response? <i>NSF</i>		What are the 'rules of engagement?' of co-creation? <i>An ego-model was used to tackle this problem: What would I like, if I was the consumer?</i>			How to keep the community active? <i>Various solutions where formulated</i>	What to do when the crowd turns itself against you? <i>NSF</i>	What is the ability of the community? What can they do, what can't they do? <i>NSF</i>
How to do a co-creation trial? Perceived Innovation characteristic: Trialability	Make a budget and just do it			Make a budget and just do it	Make a budget and just do it		Partial solution: First invite only 1400 customers, in a later stage, invite the other 20.000.	No solution found	Make a budget and just do it

Table 4-10 Overview of the challenges [part 1]

Cases, with solution (NSF = No Solution Found)									
Challenge	Organization A	Organization B	Organization C	Organization D	Organization E	Organization F	Organization G	Organization H	Organization I
Uncertainty about resources Perceived Innovation characteristic: Uncertainty	Time, Money: Dedicate resources to the project		Time: Do a part of the community management in overtime.		Do a part of the community management in overtime.	Just do it and the company will respond adjusting the manpower and time spend.	Plan the resources under 'marketing' and just do it, regardless of the time and manpower it costs.		Time, Manpower: NSF
Uncertain about the outcome of co-creation Perceived Innovation characteristic: Uncertainty			NSF	A 'just do it' approach, where the initiator has enough power/credit: He can afford to make a mistake.	NSF	NSF			
Intellectual Property / How to stop competition from stealing good ideas? Environmental influences: Competitive pressure				All participants have to sign an NDA, stop Google from finding the online challenge.	All participants have to sign an NDA, stop Google from finding the online challenge.	All participants have to sign an NDA, stop Google from finding the online challenge.		NSF	
Organizational culture is wrong for co-creation Adopter characteristics: Organizational innovativeness		NSF		Try to involve and brief co-workers: what are we doing, what is co-creation, etc.		NSF			

Table 4-11 Overview of the challenges [part 2]

4.2.1.1 Perceived innovation characteristics

The perceived characteristics of co-creation by project leaders can be very important. All project leaders indicated that they struggled with one or more characteristics. Although not mentioned in the within case analyses, relative advantage is mentioned in the interviews, but not as an impediment. On the contrary: Co-creation is always perceived as being advantageous over other alternatives such as a customer survey, hiring of another organization or not communicating with customers and/or consumers at all. A possible explanation for this might be that all project leaders had already made the decision that co-creation would be advantageous in their situation, or at least that it had specific advantages over the alternatives.

Compatibility has a very high influence on the process of adopting co-creation. 5 Out of 9 cases indicated that they found it difficult to combine co-creation with their normal day-to-day activities. Especially the so called 'community management', i.e. answering questions posed by the community and reacting on contributions from the community, was experienced as difficult and thus time consuming. Main reason for this was that the project leaders were not used to do this job, and had no idea how much time and effort it would take. But compatibility goes beyond being compatible with the project leader's own job, co-creation has to be compatible with the organization as well. 4 out of 9 cases indicated that they either had difficulties convincing other people within the organization, or that they had received no support from other departments at all, even though those departments sometimes agreed with the co-creation project on forehand.

C:	In the context of executing a co-creation project,
O:	Higher compatibility can be achieved,
I:	(1) By making the project leaders aware how much time it takes and what they have to do in that time,
M:	So that they know on forehand how much time they have to plan for the tasks associated with co-creation.
I:	(2) By making the project leader aware that he might need other departments as well,
M:	So he/she can plan and delegate tasks not directly related to that of the project leader.

Figure 4-1 CIMO 1: Perceived Innovation Characteristic: Compatibility

Much to my own surprise, the complexity of co-creation was a real problem in most cases. Specifically how to deal with the community involved and necessary to do co-creation proved very difficult. 3 Cases indicated it was difficult to keep the community active and generate enough response. Two cases wondered in what way to communicate with the community and what they had to do when the community would turn itself against them. Interesting was that one project leader indicated that she wondered what the abilities of the community were in the first place. This specific case hadn't adopted co-creation yet. Most other cases, who had adopted co-creation already, understood the abilities of the community very well. Several cases indicated explicitly that co-creation is suitable for incremental innovation, but it isn't suitable for radical innovation.

C:	In the context of adopting co-creation,
O:	The (perceived) complexity can be reduced,
I:	By informing / training the project leader,
M:	So he/she knows how to keep the community alive (and as a result, increase the number of generated ideas).

Figure 4-2 CIMO 2: Perceived Innovation Characteristic: Complexity

How to do a co-creation trial? This proved to be the most challenging question of all. Actually all cases struggled with this problem, although some didn't explicitly indicated it as being an impediment. 6 out of 9 cases did indicate it explicitly and the general solution was to make a budget, and just go for it. Doing a real trial, where an organization can try, experiment, learn and adapt, without any strings attached, proved to be impossible. Whether it being time, money or other resources spent, there are always strings attached to the try-out of co-creation. Since there is neither an intervention nor a mechanism, there is no CIMO formulated.

Observability as an obstructive factor in the adoption process not mentioned in any of the cases studied. However, it is mentioned as a promotional factor. Some cases report that due to the fact that competition uses co-creation, they have considered/adopted co-creation as well.

Uncertainty about resources is mentioned as a problem in most cases. The resources time, money and manpower are mentioned often. A real solution is not found, since doing a co-creation project will inevitably take up more or less resources. The most common solution found for this problem is to allocate resources to the project. If that turned out to be not enough, some extra resources are allocated. This latter often means that the project leader had to make overtime. But even though resources can be allocated, the outcome of the co-creation project is always uncertain. With good (community)management, the chance of a good outcome can be positively influenced, although there is no guarantee that the outcome will fully satisfy the needs and expectations of the project leader or initiating organization. I noticed that when the project leader came from a profit oriented organization and/or department, (s)he mentioned this uncertainty more often than someone who came from a non-profit organization (i.e. a municipality) or a nonprofit oriented department (i.e. innovation department). A general solution to this problem was not found. I however did notice that most of the project leaders indicated that they had a good power base within the organization, and that they could permit themselves to do a project where the outcome is uncertain. More on the effect of a well-established powerbase can be found in chapter 4.2.1.7.

C:	In the context of adopting co-creation,
O:	The uncertainty about the adoption can be reduced,
I:	(1) By the organization: by appointing a project leader with a well-established power base
M:	Because such a project leader is more like to get things done in an organization, formal and/or informal
I:	(2) By the project leader and/or organization: By appointing enough resources or by reserving enough resources
M:	So the project doesn't suffer from lack of resources and all involved know that this isn't a limiting factor.

Figure 4-3 CIMO 3: Perceived Innovation Characteristic: Uncertainty

4.2.1.2 Supplier marketing efforts

In the above paragraph, some perceived innovation characteristics proved to be hampering the adoption decision. Although hardly mentioned in the interviews, the supplier tried to reduce the financial risk in almost all cases by giving the initiating organization a discount on their first co-creation project. The supplier also tried to minimize other hampering innovation characteristics like complexity and uncertainty (manpower, time, outcome of the project), by communication. Only two cases explicitly mentioned the effort of the supplier.

C:	In the context of selling co-creation,
O:	The likelihood of a sell can be increased,
I:	By listing and addressing all issues and worries (i.e. the PIC) the initiating organization has,
M:	So the initiating organization has less to worry about.

Figure 4-4 CIMO 4: Supplier marketing efforts

4.2.1.3 Social network

Social network is in none of the cases mentioned as a specific helping or hampering factor in the adoption process of co-creation. I however did noticed that project leaders with a better developed internal network, had it easier to find support in other departments. Also, most project leaders had a medium to well established social network. This often led to the first initial contact with RDM, resulting is the start of a co-creation project.

4.2.1.4 Environmental influences

Competitive pressure proved to be an important enabler for the co-creation initiative in two ways. First, some cases observed co-creation in other organizations and/or competitors. By not wanting to miss out on a possible opportunity, organizations want to try to co-create. Another observation

showed that two cases wanted to do co-creation because a product that previously sold very well, recently didn't sell that well anymore. In both cases, increased competition is 'blamed' for this. Co-creation is than being used as a resort on how to improve the product. This improved product should than form the bases of new or more revenues.

Competitive pressure not only enables co-creation, it has a negative effect as well. In 3 cases, the initiating organization was afraid that competition might see what the initiating organization is up to. Therefore, the online co-creation project was hid from search engines like Google, and participants had to sign a non-disclosure agreement to participate in the online co-creation project. It is very likely that this decreases the number of respondents and the total amount and/or quality of the final results of the co-creation project.

Although environmental influences certainly play a role, they did not play a key role in the decision whether or not to adopt co-creation. There is also not a real mechanism or intervention at work here, so no CIMO is formulated.

4.2.1.5 Personal characteristics

In the original model, personal characteristics are sub divided into demographic, product experience and personality variables. In the sample cases described here, the demographic differences are too small to draw conclusions upon, so they are neglected in this research. There was no direct product experience at all, and product experience with similar products has much overlap with Personal Dispositional Innovativeness, so this is neglected in this paragraph as well. The focus was on the personality variables.

Since this research is about the barriers of adopting co-creation, it makes the most sense to see if there is/are uniting factor(s) among all those who have adopted co-creation. In order to do this, personality variables have been studied. The outcome is represented in Table 4-12. In this so called big five study, or Big five index (John, Donahue, & Kentle, 1991; John, Naumann, & Soto, 2008), respondents have to fill out a questionnaire with questions, see Appendix C. Based on the answers, one can determine how extrovert a person is, where a high score indicates a person as being very social and a low score indicates that a person is more Reserved. Second, one can establish an indication on how orderly the respondent is. A high score indicates that a person is more calm, a low score indicates the respondent tends to be more limbic. Third, Emotional stability can be measured. Here, a high score indicates one is organized, where a low score indicates one is unstructured. Forth, the inquisitiveness of a person can be measured. A high score indicates the respondent is very accommodating, a low score indicates the person tends to be egocentric. Finally, the inquisitiveness of a respondent can be measured. People who have a high score here tend to be inquisitive where those who score low tend to be non-curious.

	Extraversion Social vs. Reserved	Orderliness Organized vs. unstructured	Emotional Stability Calm vs. Limbic	Accommodation Accommodating vs. Egocentric	Inquisitiveness Inquisitive vs. Non curious	SLOAN type
Organization A	0,68	0,52	0,6	<u>0,74</u>	0,28	SCOAN
Organization B	<u>0,7</u>	0,34	0,58	<u>0,72</u>	0,38	SCUAN
Organization C	0,64	0,64	0,48	0,56	0,42	SLOAN
Organization D	0,54	0,6	<u>0,74</u>	0,58	0,42	SCOAN
Organization E	0,6	<u>0,74</u>	0,62	0,58	0,4	SCOAN
Organization F	0,68	<u>0,72</u>	0,4	0,46	<u>0,6</u>	SLOEI
Organization G	<u>0,76</u>	0,68	0,56	<u>0,76</u>	0,46	SCOAN
Organization H	0,56	0,56	0,58	0,6	<u>0,64</u>	SCOAI
Organization I	0,62	0,4	0,4	0,52	0,44	SLUAN
<i>One sample T-test Lower (95% CI)</i>	0,588	0,471	0,467	0,533	0,364	
<i>One sample T-test Upper (95% CI)</i>	<u>0,696</u>	<u>0,684</u>	<u>0,635</u>	<u>0,693</u>	<u>0,533</u>	

Table 4-12 Big five personality test

Based on the scores, a one sample T-test is calculated with a confidence interval (CI) of .95, see Table 4-12. The results of this T-test are non-conclusive; there is no clear pattern among those individuals who were very satisfied with the results of the co-creation project, versus those who were less satisfied.

When categorizing all individuals into the subgroups (see SLOAN type in Table 4-12), there is however a clear pattern. Subgroups just indicate if a person scores above or below 0.5 on a specific trait. I.e. when looking at extroversion, the person is marked as 'social' when the score is higher than 0,5. Below, (s)he is indicated as 'reserved'. Remarkable here, is that every single project leader who engages in co-creation is 'Social'. Furthermore, 8 out of 9 are 'Accommodating', and 7 out of 9 are 'Organized' and 'Non-curious'. Especially this latter is very remarkable, since co-creation is relatively new and one would expect that more inquisitive group of people engage in co-creation, instead of the 'non-curious' type.

C:	In the context of adopting co-creation
O:	It is more likely to get potential buyers of co-creation interested
I:	When a screening is made based on personality type
M:	since social, accommodating, organized and non-curious people are more likely to engage in co-creation.

Figure 4-5 CIMO 5: Personal characteristics

4.2.1.6 Personal dispositional innovativeness

People can have a tendency to use or reject certain types of products or innovation, the so called 'personal dispositional innovativeness' (Frambach & Schillewaert, 2002). It is beyond the scope of this research to fully investigate what types of innovations a project leader likes or dislikes, but a certain parallel between co-creation and social media such as Twitter, Facebook and LinkedIn is apparent: Both require to be active and responsive, in order to gain its maximum potential. A very interesting parallel can be found between how active a project leader is on social media, and how active the project leader is in answering questions and giving feedback during the co-creation project. All project leaders acted as so called 'community managers' on redesignme.com. The role of a community manager is answering questions and give feedback to the community. In result, good feedback often leads to more and better results from the community. Those project leaders that where active on one or more forms of social media, responded much more to the community as those who were not as active on social media.

C:	In the context of adopting co-creation
O:	a more favorable outcome can be achieved
I:	by appointing a community manager who is active on social media
M:	since (s)he is used to post comments on a regular basis. This posting habit is copied when being a community manager.

Figure 4-6 CIMO 6: Personal dispositional innovativeness: Experience with social media

4.2.1.7 Power base

According to Fichter (2009) a persons' power-base can be based on his/her position within the organization (hierarchical power promoter), based on the knowledge someone has (expert promoter), based on the organizational knowhow or communication skills (process promoter) or the power is based on the network competence (relationship promoter) of a person. Also, according to Fichter (2009), one base does not exclude the other.

Even when the project leader is very enthusiastic about co-creation, there can still be a lot of friction regarding the adoption or implementation of co-creation. This can be the case when the project leader cannot convince management or when too little support among colleagues is gathered. The latter is a root cause for friction during the project (Organization B), the first is a cause for rejecting

or delaying the adoption decision (Organization H and Organization I). Not being able to convince management or colleagues can be a sign of a not well established power base. In Table 4-13, an overview of the different powerbases for all project leaders is stated. The scoring is done on a 3 point scale (-, 0 and +) and was done arbitrary based on the interviews and overall interaction with the project leaders and other people involved during the different co-creation projects themselves. Every project leader received a final score based on the sum of the three different kinds of power base.

	hierarchical power promoter	expert promoter	process promoter	relationship promoter	Total score
Organization A	0	+	+	0	2
Organization B	-	+	-	-	-2
Organization C	+	+	0	0	2
Organization D	+	+	+	+	4
Organization E	+	0	-	-	-1
Organization F	+	+	0	0	2
Organization G	+	+	+	+	4
Organization H	0	+	0	0	1
Organization I	0	+	0	0	1

Table 4-13 Powerbase Overview. (- = -1 0 = 0 + = 1)

Project leaders with very well established power base, Organization D and Organization G, indicate that such a power base is very convenient when adopting co-creation. The project leader of Organization D said in the interview: “My boss simply says to me: ‘If you believe in it, it’s oke’. (...) But I earned this reputation, because most of my projects are successful”. This, combined with his authority within Organization D, gave him a very well established power base, resulting in the smooth adoption of co-creation.

The same is true for Organization G, where the project leader is the (partial) owner of the organization, giving him lots of hierarchical power. Second, he is considered a man with great knowledge and experience within the company. Next to that, he has a very competent network of people around himself and tries to involve as many (young) people as necessary within the co-creation project. Again, the result here is a well-established power base and a smooth adoption of co-creation.

C:	In the context of adopting co-creation,
O:	Adoption is more likely,
I:	When the project leader has a well-established power base,
M:	Because (s)he can then convince management and colleagues more easily.

Figure 4-7 CIMO 7: Power base; Convince management

C:	In the context of executing the co-creation project,
O:	Finding support within the organization to help with the co-creation project,
I:	Is more likely found when the project leader has a well-established power base,
M:	because (s)he can then convince colleagues more easily.

Figure 4-8 CIMO 8: Power base; Convince colleagues

4.2.1.8 Organization Characteristics

Based on the size of the organization, no conclusion can be drawn on what is favorable for co-creation. Within RDM, one can see that small, medium and large enterprises engage in co-creation. The same is true for the structure of the organization. It doesn't matter if an organization has a flat structure or not, or if there is a high or low organizational complexity or if bureaucracy is high or low. Every organization can and does participate in co-creation.

Organizational innovativeness however does have an influence on the likeliness that an organization will engage in co-creation. However, a note has to be made about the 'innovativeness' of an organization. Some organizations that participated in to this research, operate in a very traditional market. For them, being innovative can mean that they have to be innovative in the way the sell or market their product, instead of making (radical or incremental) innovations to the product itself. I.e., Organization D makes about 1 radical innovation every 10 or 15 years. 10 years ago, they came with the last radical innovation. This product was very successful generating enormous revenues. Some 30 years ago, they came with their first radical innovation, again generating enormous revenues. However, one can still argue that the way they (try) to sell their products is highly innovative is well: Co-operating with a well-read Dutch magazine, is a good was to increase product awareness among those readers. These readers happen to be a very important target group for Organization D. In Table 4-14, the organizational innovativeness is ranked High, Medium or Low. This is done arbitrary and mainly based on the comments during the interview of the project leaders. Note that organizational innovativeness is not only the number of product innovation an organization has, innovations in marketing, sales, etc. is taken into account as well.

	Org. A	Org. B	Org. C	Org. D	Org. E	Org. F	Org. G	Org. H	Org. I
Organizational Innovativeness	High	Low	Medium	High	Medium	Medium	High	Low	Low

Table 4-14 Organizational innovativeness [Org. = Organization]

C: In the context of adopting co-creation,
 O: Adoption is more likely,
 I: When the initiating organization has a medium or high organizational innovativeness
 M: Because this makes organizations more open minded for other (in this case co-creation) ways of gathering information / trying new things.

Figure 4-9 CIMO 9: Organizational Innovativeness

Although not in the research framework, an interesting impediment mentioned in the within case analyses, is that the culture within the organization is not very well suited for co-creation, since employees are not used to it. The project leader of Organization D explicitly mentioned this and actively tried to change the culture by trying to involve and brief co-workers about the co-creation project, making them aware of the co-creation project itself and the importance of it. Within Organization B it was also very apparent that the organizational culture is not right for co-creation: Some colleagues and departments of the project leader actively resisted and to some level frustrated the co-creation project.

C: In the context of adopting co-creation,
 O: A favorable organizational culture can be created,
 I: By involving co-workers, even if they are not directly related to the project,
 M: Since this makes them aware of what co-creation is, and how this is important to the organization itself.

Figure 4-10 CIMO 10: Organizational culture

4.2.2 Non hypothesized impediments

Besides the thus far hypothesized factors, other factors played a notable role in the adoption of co-creation as well.

4.2.2.1 Adoption strategies

In Table 4-10 and Table 4-11, one can see the various challenges the project leaders faced when adopting co-creation. The individual themes and how their fit in the proposed research model is already discussed. However, often you find that there is no solution to a problem, but the project was executed anyway. To minimize risk, 3 tactics can be identified that were used among the projects: Flying under the radar, operating on an island and operating in a green field.

	Org. A	Org. B	Org. C	Org. D	Org. E	Org. F	Org. G	Org. H	Org. I
Flying under the radar			x	x				x	
Operating on an island	x					x			
Operating in a green field		x			x		x		x

Table 4-15 Adoption strategies

Flying under the radar means that you execute the project with internal support from the organization, often with a small project team of one or two persons. Once people within the organization see that the project is a success, it gathers more and more proponents. It then might get accepted in the organization. The advantage of this tactic is that you can move fast and make quick decisions. The risk is limited by keeping the project very small, until it is successful. When it fails, it fails in an early stage where the project isn't very important yet, awareness is low and thus damage is controlled.

Operating on an island is a second strategy used for adopting co-creation. It embarks the implementation of co-creation in an isolated part or division within the organization. If the project fails or if the product with which the co-creation is done fails, it only affects the isolated division and not the whole organization. Organizations applying this technique, often want to sniff out co-creation to get a feeling about what co-creation is, and what co-creation can do for the organization. However, this tactic still relies (heavily) on (top)management support. Disadvantage of operating on an island is that even when a project is successful, further implementation throughout the organization is difficult, since the process of co-creation is not embedded in key processes within the organization.

Operating in a green field is a third, often used, tactic of introducing co-creation in an organization. Operating in a green field implies that an organization is creating a new feature or new way of acquiring knowledge. New here is defined as 'new to the initiating organization'. Since the organization has no former benchmark to compare the co-creation project to, the project has a sort of carte blanche with respect to the goals it has to meet. This radically changes the risks associated with the project, since expectations can't be justified or checked and often there are limited or no expectations at all. In line with the former tactics of adopting, operating in a green field requires (top)management support as well. By gathering this top-management support, resources can be acquired much more easily.

In two of the above strategies, top management is important in order to be able to implement co-creation in an organization. Besides the 9 cases, this is supported by anecdotal evidence of Organization J and Organization M as well.

C:	In the context of adopting co-creation by "Operating on an island" or by "operating in a green field",
O:	A favorable outcome is more likely,
I:	When (top)management support is gathered,
M:	because this opens doors and budget to means that couldn't be attained otherwise.

Figure 4-11 CIMO 11: Top management

4.2.2.2 Entrepreneurship

Another common aspect within some cases is entrepreneurship. In 7 out of 9 cases (see Table 4-16), the project leader showed entrepreneurial skills by being the one who suggested using / trying co-creation in the first place. In none of the cases, there would have been a penalty if co-creation hadn't been chosen, nor was there a reward for choosing co-creation, other than intrinsic motivations, perhaps.

	Org. A	Org. B	Org. C	Org. D	Org. E	Org. F	Org. G	Org. H	Org. I
Entrepreneurship	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No

Table 4-16 Entrepreneurship

All cases where there was some entrepreneurial spirit involved, state that they were enthusiastic for the idea of co-creation itself. This was often triggered by presentations or meetings, formal or non-formal, with representatives of RDM. Although this has some overlap with 'Supplier marketing efforts', the entrepreneurial aspect of the project leader makes it worth mentioning it in a separate CIMO.

C:	In the context of adopting co-creation,
O:	Stimulating an entrepreneurial attitude towards considering co-creation
I:	Can be done by increasing publicity with regard to co-creation
M:	Because this serves as a trigger towards considering co-creation.

Figure 4-12 Entrepreneurial attitude

5 Discussion

The goal of this master thesis was to understand the impediments of adopting co-creation within medium and large enterprises and to gain insights on how one can overcome such impediments. In order to achieve these goals, a central research question was formulated: “What are the impediments for organization to adopt co-creation and what can be done to overcome them?” Based on this question, a theoretical framework was proposed and the main research question was broken down into several sub questions about factors that could, theoretically, play a role in the adoption of co-creation within an organization.

By finding answers to these questions, this research contributes to scientific literature and knowledge about co-creation by (1) providing insights on what kind of impediments exist, (2) how the found impediments can be overcome and (3) what kind of strategies are used to adopt co-creation. Such in-depth information about the impediments of adopting co-creation is to this day not available in literature. An elaboration on these 3 contributions will be given in the following sections.

5.1 The impediments and how to overcome them

From the within case- and cross case analyses, it is apparent that there are 9 factors from the hypothesized framework that can be converted into a CIMO logic. Beside these 9 factors, there are two supplementary factors that were not hypothesized in the initial framework: Individual entrepreneurial spirit and top management support. These factors can be a potential impediment to the adoption decision. A final overview of all factors found can be found in Figure 5-1. Note that this is based on the original model as being hypothesized in Figure 2-1. Noncontributing factors have been removed from the model and the newly found contributing factors as described in chapter 4.2.2., have been added. All factors in Figure 5-1 have a positive effect, unless indicated otherwise with a [-] or [±]. The latter two indicate respectively a negative effect and an effect that can either be positive or negative.

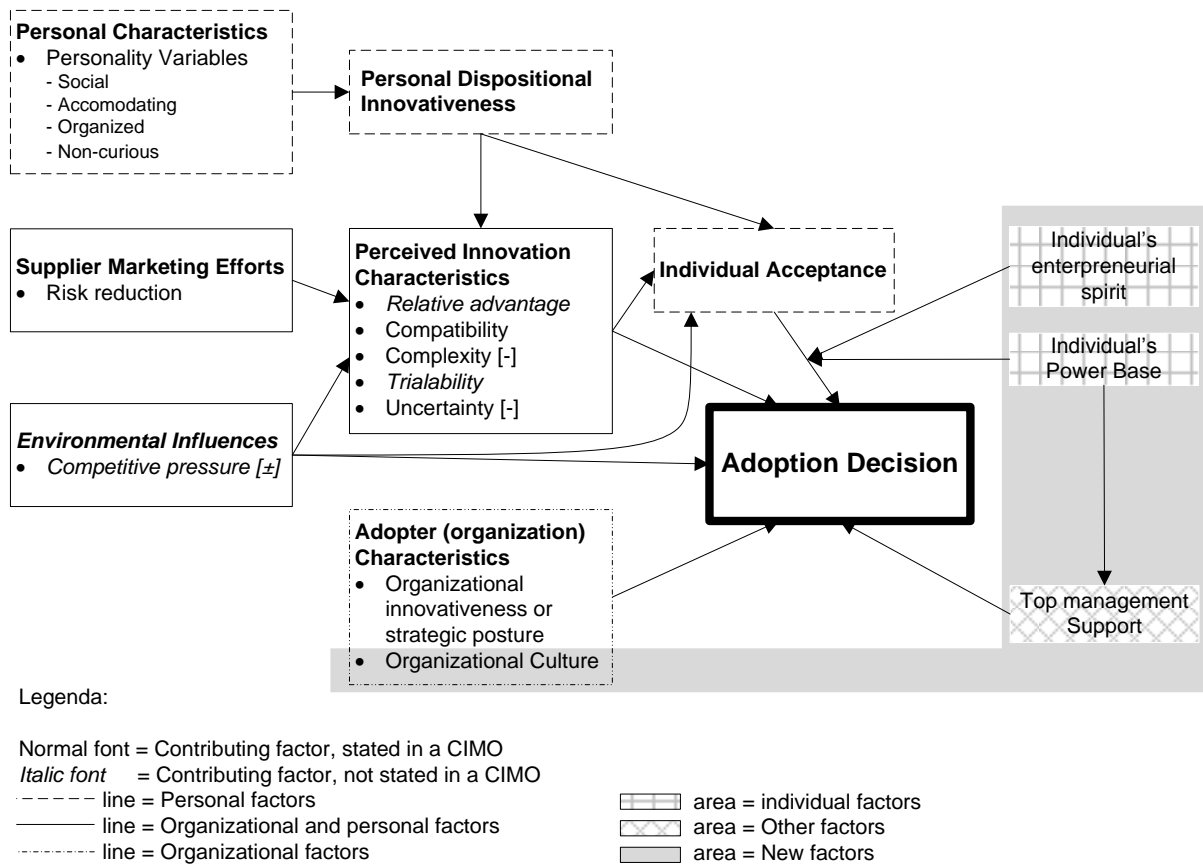


Figure 5-1 Final overview of the impediments

Fortunately, it is possible to tackle these impediments with the CIMOs formulated in chapter 4.2. With these CIMOs, both an initiating organization and a sales person of a company trying to sell co-creation (i.e. RDM), can be aware of possible pitfalls and how to deal with them. An overview of all CIMOs can be found in Table 5-1. This overview can be interpreted as managerial implications, since they focus on what one should do, when facing a (possible) impediment. When doing so, take note that there is no 'best' CIMO. Also, some CIMOs can be used in a specific stage within the process, while others need to be used in an earlier or later stage. Therefore, when implementing or using these CIMOs, it is important to use them throughout the process of co-creation, always checking which CIMO is best used in your specific case, in your specific situation.

	Context	Outcome	Intervention	Mechanism
Perceived Innovation Characteristic: Compatibility	In the context of executing a co-creation	Higher compatibility can be achieved	(1) By making the project leaders aware how much time it takes and what they tasks are (2) By making the project leader aware that he might need other departments as well	So that they know on forehand how much time they have to plan for the tasks associated with co-creation. So he/she can plan and delegate tasks not directly related to that of the project leader.
Perceived Innovation Characteristic: Complexity	In the context of adopting co-creation	The (perceived) complexity can be reduced	By informing / training the project leader	So he/she knows how to keep the community alive (and as a result, increase the number of generated ideas)
Perceived Innovation Characteristic: Uncertainty	In the context of adopting co-creation	The uncertainty about the adoption can be reduced	(1) By the organization: by appointing a project leader with a well-established power base (2) By the project leader and/or organization: By appointing and reserving enough resources	Because such a project leader is more like to get things done in an organization, formal and/or informal So the project doesn't suffer from lack of resources and all involved know that this isn't a limiting factor.
Supplier marketing efforts	In the context of selling co-creation	The likelihood of a sell can be increased	By listing and addressing all issues and worries (i.e. the PIC) the initiating organization has	So the initiating organization has less to worry about
Personal characteristics	In the context of adopting co-creation	It is more likely to get potential buyers of co-creation interested	When a screening is made based on personality type	Since social, accommodating, organized and non-curious people are more likely to engage in co-creation.
Personal dispositional innovativeness: Experience with social media	In the context of adopting co-creation	A more favorable outcome can be achieved	By appointing a community manager who is active on social media	Since (s)he is used to post comments on a regular basis. This posting habit is copied when being a community manager.
Power base; Convince management	In the context of adopting co-creation	Adoption is more likely	When the project leader has a well-established power base	Because (s)he can then convince management and colleagues more easily
Power base; Convince colleagues	In the context of executing the co-creation project	Finding support within the organization to help with the co-creation project	Is more likely found when the project leader has a well-established power base	Because (s)he can then convince colleagues more easily.
Organizational Innovativeness	In the context of adopting co-creation	Adoption is more likely	When the initiating organization has a medium or high organizational innovativeness	Because this makes organizations more open minded for other (in this case co-creation) ways of gathering information / trying new things.
Organizational culture	In the context of adopting co-creation	A favorable organizational culture can be created	By involving co-workers, even if they are not directly related to the project	Since this makes them aware of what co-creation is, and how this is important to the organization itself.
Top management	In the context of adopting co-creation	A favorable outcome is more likely	When (top)management support is gathered	Because this opens doors and budget to means that couldn't be attained otherwise.
Entrepreneurial attitude	In the context of adopting co-creation	Stimulating an entrepreneurial attitude towards considering co-creation	Can be done by increasing publicity with regard to co-creation	Because this serves as a trigger towards considering co-creation.

Table 5-1 CIMO overview

5.2 Adoption strategies

Although it is a little sidestep from the initial research question, three interesting adoption strategies have been found among the invested cases: 1) Flying under the radar, 2) Operating on an island and 3) Operating in a green field. With this knowledge, an organization trying to sell co-creation (such as RDM) can try to identify what kind of strategy an organization uses, and consult this organization as needed.

Of course, even before a strategy is chosen, someone has to come up with the idea of doing co-creation in the first place. I would like to emphasize here that an organization where people have an entrepreneurial state of mind, it is much more likely for them to engage in the co-creation process in the first place. For this entrepreneurial, initiating person within the organization, it is very important to know that there are three adoption strategies to choose. What kind of strategies is chosen is up to the initiating person, who has to determine the best strategy for the specific organization.

Finally, top management support is a very welcome support for the initiating person. It allows him/her to try, experiment and see what the (to the organization) unknown co-creation project will bring.

6 Limitation and future research

In this chapter, the limitations of this research are presented and some suggestions for future research are made.

6.1 Limitations

The results, findings and implications of this research have to be interpreted with the limitations in mind. As stated earlier in this research, the field of co-creation is relatively new. An adoption framework for innovations in general was found, but there is no further theoretical framework that specifically applies for co-creation. This research therefore has a very high exploratory nature.

Second, only a limited number of cases were investigated. All cases were situated in The Netherlands and all cases had more than 30 employees. Strictly speaking, results and findings are bound to these investigated cases. However, there are arguments to generalize the results found in this research beyond these 9 cases and even beyond The Netherlands. Within RDM, there were at the end of the research project more customers participating in co-creation. Many of the CIMOs that were applicable to the 9 investigated cases, could be applied on other, non-investigated, cases as well, both from within the Netherlands, as beyond.

Third, design principles (CIMOs) have only been formulated. This means that the design principle's interventions are not tested. This implies that it is not sure if all interventions lead to the desired predicted outcome. This also means that not all mechanisms are fully understood, nor proven.

Fourth, the non-hypothesized impediments found, are not validated, nor is there relation with other elements in the final model. In my final model, they all have a direct influence on the adoption decision, but it is possible that they first influence other factors which in their turn influence the adoption decision.

These limitations prove that some future research is desired and necessary in this very immature field of research.

6.2 Directions for further research

Despite providing an answer to the central research question and contributing to the literature, this research raises some questions as well. Some areas for further research are presented here.

As an extension to this research, a study about the effects of the different CIMOs and their design principles needs to be further researched. Important in this research would be if these CIMOs work in the proposed field of co-creation and if the interventions will lead to the desired outcomes by their according mechanisms. Also, one might test if the same impediments and resulting CIMOs are found outside The Netherlands.

Second, when studying the personality characteristics of the various PL, it showed that most of them rated themselves as 'non curious'. This is the exact opposite from what one would expect. This is supported by the fact that entrepreneurship was clearly present in most cases and entrepreneurs are most often regarded as being very curious.

Third, I found that PL struggled to find ways to keep the community as lively and active as possible. There is no clear research that states how to best motivate a community to keep participating in co-creation. Different forms of motivation have been studied already, but do these motivations hold for a co-creation crowd as well? How important are intrinsic vs. extrinsic motivations for individuals in a crowd? Also, what is the best way to reward the crowd and individuals within that crowd?

Finally, the relation between the non-hypothesized factors and the already hypothesized factors needs to be validated. The non-hypothesized factors are now placed in the model where they have a relatively direct influence on the adoption decision. It is possible that this influence is less direct than proposed in my final model.

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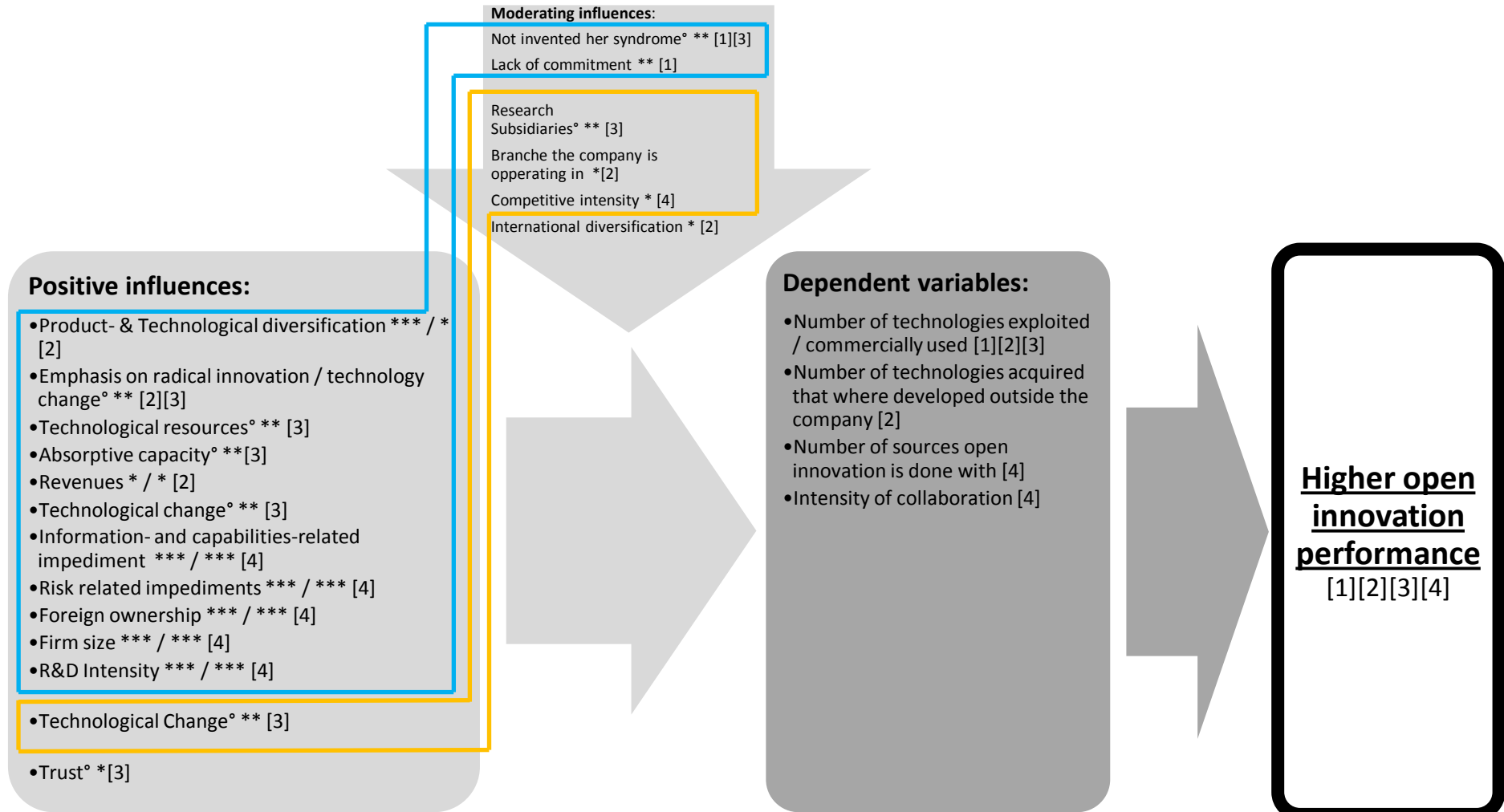
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Appendix A: Positive- and moderating influences on Open Innovation performance



Appendix 1 Summary of positive- and moderating influences on the performance of open innovation. *** = significant levels $p < 0,001$, ** = $p < 0,05$, * = $p < 0,01$, ° = (also) direct influence on higher open innovation performance. Blue = organizational (internal) factors, orange = environmental factors

[1] (Chesbrough & Crowther, 2006), [2] (Lichtenthaler, 2008), [3] (Hamaoka, 2008), [4] (Keupp & Gassmann, 2009)

Appendix B: Interview protocol

- a) Orientatie: (5 min)
 - i. Wat doet de organisatie
 - ii. Wat is de rol van de interviewee binnen de organisatie?
 - b) Beschrijf het proces van co-creatie
- 1) De organisatie zelf:
- a. Grootte
 - b. Structuur van de organisatie
 - c. Wat zijn de innovaties die er in de afgelopen tijd gedaan zijn?
 - d. Wie zijn de concurrenten en hoe gaan deze om met innovatie
 - i. Is de behoefte om co-creatie toe te passen geboren uit de nood van concurrentiedruk?
 - 1. Zijn er concurrenten die gevolgd zijn?
- 2) Beschrijving van het traject Co-creatie binnen de organisatie
- a. Van wie was het idee om te gaan co-creëren?
 - i. Wie was er voor?
 - 1. Rol binnen de organisatie?
 - ii. Wie was er tegen?
 - 1. Rol binnen de organisatie?
 - b. Hoe is dat door de organisatie gegaan? (voor/tegenstanders?)
 - i. Moeilijkheden?
 - c. Rol van geïnterviewde binnen dat traject
- 3) Sociale netwerk:
- a. Kon u al mensen die co-creatie hebben gebruikt voordat u er aan begon?
 - i. Indien ja:
 - 1. Wie zijn dit? (zakelijk of niet?)
 - 2. Wat de relatie?
 - 3. Hoe goed kent u ze?
 - ii. Indien nee:
 - 1. Kent u mensen die het gaan gebruiken? (zakelijk of niet?)
- 4) Waargenomen eigenschappen van Co-creatie (Perceived Innovation characteristics)
(LINK DIT AAN ALTERNATIEVE VOOR CO-CREATIE ALS DIE OVERWOGEN ZIJN)
- a. Relatieve voordeel:
 - i. Wat zijn voor de organisatie de voordelen van co-creatie?

1. Economisch voordeel?
 2. Prestege?
 3. Gemak?
 4. Andere voordelen?
- ii. Wat zijn de voordelen voor de persoon zelf?
- b. Verenigbaarheid:
 - i. Was de verwachting dat het gemakkelijk in te passen was in de huidige manier van werken?
 - ii. Zijn mensen al gewend aan het open innovatie platform?
 - c. Was co-creatie goed uit te proberen?
 - i. Voor het bedrijf?
 - ii. Voor de persoon?
 - d. Is co-creatie zichtbaar in andere organisaties?
 - i. Concurrenten?
 - ii. Overige organisaties?
 - e. Wat zijn de onzekerheden die samenhangen met CC?
 - i. Geld?
 - ii. Manuren?
 - iii. Verwachtingen die gewerkt zijn?
 - iv. Onvoorziene omstandigheden?

5) Waren er nog twijfels over het wel of niet toepassen van co-creatie?

6) Persoonlijke Eigenschappen:

- a. Doet u persoonlijk ook aan co-creatie?
- b. Persoonlijke ervaring met co-creatie?
- c. Kunt u zich goed verplaatsen in andere mensen? Wat ze denken? Hoe ze zich voelen
- d. Bent u iemand die sterk geloofd in zijn eigen waardes en ideeën of bent ben u meer van het toehoren van argumenten en standpunten om vervolgens de juiste keuzes te maken?
- e. Wat is uw hoogst genoten opleiding?
- f. Wetenschap of praktijk?
- g. Laten invullen van de enquête

Appendix C: Measuring Personality

I see myself as someone who...

1. ...Is talkative	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
2. ...Tends to find fault with others	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
3. ...Does a thorough job	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
4. ...Is depressed, blue	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
5. ...Is original, comes up with new ideas	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
6. ...Is reserved	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
7. ...Is helpful and unselfish with others	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
8. ...Can be somewhat careless	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
9. ...Is relaxed, handles stress well	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
10. ...Is curious about many different things	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
11. ...Is full of energy	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
12. ...Starts quarrels with others	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
13. ...Is a reliable worker	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

14. ...Can be tense	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
15. ...Is ingenious, a deep thinker	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
16. ...Generates a lot of enthusiasm	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
17. ...Has a forgiving nature	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
18. ...Tends to be disorganized	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
19. ...Worries a lot	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
20. ...Has an active imagination	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
21. ...Tends to be quiet	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
22. ...Is generally trusting	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
23. ...Tends to be lazy	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
24. ...Is emotionally stable, not easily upset	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
25. ...Is inventive	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
26. ...Has an assertive personality	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
27. ...Can be cold and aloof	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree
28. ...Perseveres until the task is finished	Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

29. ...Can be moody	Strongly Disagree	0	0	0	0	0	Strongly Agree
30. ...Values artistic, aesthetic experiences	Strongly Disagree	0	0	0	0	0	Strongly Agree
31. ...Is sometimes shy, inhibited	Strongly Disagree	0	0	0	0	0	Strongly Agree
32. ...Is considerate and kind to almost everyone	Strongly Disagree	0	0	0	0	0	Strongly Agree
33. ...Does things efficiently	Strongly Disagree	0	0	0	0	0	Strongly Agree
34. ...Remains calm in tense situations	Strongly Disagree	0	0	0	0	0	Strongly Agree
35. ...Prefers work that is routine	Strongly Disagree	0	0	0	0	0	Strongly Agree
36. ...Is outgoing, sociable	Strongly Disagree	0	0	0	0	0	Strongly Agree
37. ...Is sometimes rude to others	Strongly Disagree	0	0	0	0	0	Strongly Agree
38. ...Makes plans and follows through with them	Strongly Disagree	0	0	0	0	0	Strongly Agree
39. ...Gets nervous easily	Strongly Disagree	0	0	0	0	0	Strongly Agree
40. ...Likes to reflect, play with ideas	Strongly Disagree	0	0	0	0	0	Strongly Agree
41. ...Has few artistic interests	Strongly Disagree	0	0	0	0	0	Strongly Agree
42. ...Likes to cooperate with others	Strongly Disagree	0	0	0	0	0	Strongly Agree
43. ...Is easily distracted	Strongly Disagree	0	0	0	0	0	Strongly Agree

44. ...Is sophisticated in art, music, or literature	Strongly Disagree	0	0	0	0	0	Strongly Agree
45. ...Is politically liberal	Strongly Disagree	0	0	0	0	0	Strongly Agree

SPSS Syntax used to calculate the personality scores:

***** REVERSED ITEMS**

RECODE

bfi2 bfi6 bfi8 bfi9 bfi12 bfi18 bfi21 bfi23 bfi24 bfi27 bfi31 bfi34 bfi35

bfi37 bfi41 bfi43

(1=5) (2=4) (3=3) (4=2) (5=1) INTO bfi2r bfi6r bfi8r bfi9r bfi12r bfi18r bfi21r bfi23r bfi24r

bfi27r bfi31r bfi34r bfi35r bfi37r bfi41r bfi43r.

EXECUTE .

***** SCALE SCORES**

COMPUTE bfiE = mean(bfi1,bfi6r,bfi11,bfi16,bfi21r,bfi26,bfi31r,bfi36) .

VARIABLE LABELS bfiE 'BFI Extraversion scale score'.

EXECUTE .

COMPUTE bfiA = mean(bfi2r,bfi7,bfi12r,bfi17,bfi22,bfi27r,bfi32,bfi37r,bfi42) .

VARIABLE LABELS bfiA 'BFI Agreeableness scale score' .

EXECUTE .

COMPUTE bfiC = mean(bfi3,bfi8r,bfi13,bfi18r,bfi23r,bfi28,bfi33,bfi38,bfi43r) .

VARIABLE LABELS bfiC 'BFI Conscientiousness scale score' .

EXECUTE .

```
COMPUTE bfin = mean(bfi4,bfi9r,bfi14,bfi19,bfi24r,bfi29,bfi34r,bfi39) .
```

```
VARIABLE LABELS bfin 'BFI Neuroticism scale score' .
```

```
EXECUTE .
```

```
COMPUTE bfio = mean(bfi5,bfi10,bfi15,bfi20,bfi25,bfi30,bfi35r,bfi40,bfi41r,bfi44) .
```

```
VARIABLE LABELS bfio 'BFI Openness scale score' .
```

```
EXECUTE .
```