Establishing multi-partner alliances in an innovation context

a story of value creation and value capturing

Bollen, M.

Award date:
2014
Establishing multi-partner alliances in an innovation context: a story of value creation and value capturing

By

M. (Maud) Bollen

BSc Industrial engineering – TU/e 2011
Student identity number 0661916

In partial fulfillment of the requirements for the degree of

Master of Science

in Innovation Management

Supervisors:
Dr. M.M.A.H. Cloodt, TU/e, ITEM
Dr. ir. I.M.M.J. Reymen, TU/e, ITEM
TU/e. School of Industrial Engineering.

Series Master Theses Innovation Management

Subject headings: Open Innovation, alliances, value creation, value capturing
Management summary

Introduction

The notion that a single firm cannot innovate in isolation serves as starting point for the open innovation paradigm introduced by Chesbrough (2003). Firms have to engage with other parties to gain access to new ideas or resources in order to improve innovative performance (Dahlander & Gann, 2010). Chesbrough (2006) stated that in order to get the most out of open innovation, companies must open their business models to be more effective in creating as well as capturing value. So far, the concept of open innovation is understood and mostly implemented as a series of collaborations between two organizations with the goal to open up the internal innovation process. Therefore most previous research on strategic alliances has focused on alliances between two firms (e.g. Rothaermel & Deeds, 2006; De Man, 2004).

However today, in many cases it occurs that more players across multiple roles in the innovation process are involved in a new product development project. Involving more parties by forming multi-partner alliances offer partner firms access to complementary resources, market information, technology and investment opportunities (Sakakibara, 2002) and therefore have a high potential for attaining innovation. A multi-partner alliance is defined as a ‘collective, voluntary organizational association that interactively engages multiple members in value creation activities, such as collaborative research, development, sourcing, production, or marketing of technologies, products or services’ (Lavie, Lechner, & Singh, 2007, p. 578). More and more companies are combining complementary assets in order to create unique products and technologies to gain competitive advantage. Therefore this type of alliances is seen by companies as an organizational form to remain competitive in the market places. That is why designing and managing innovation within multi-partner alliances is becoming increasingly important to the future of open innovation (Chesbrough, 2012).

Nonetheless, research on multi-partner alliances has been occasionally, since a lot of researchers have not regarded multi-partner alliances as distinctive from dyadic alliances (Das & Teng, 2002). Only a few authors have focused on investigating multi-partner alliances (e.g. Gomes-Casseres, 2003; Lavie et al., 2007; Thorgen, Wincent & Eriksson, 2011; Zeng & Chen, 2003; Li, Eden, Hitt, Ireland, & Garrett, 2012) and have raised awareness that multi-partner alliances are not an easy option for firms to manage. Involving more partners in a collaboration gives more complexity and additional challenges. Examples of additional challenges include building trust between all the parties that are involved (Thorgren et al., 2011), a higher risk of disagreements and misunderstandings, explicit contracts are more challenging to develop and there is no direct reciprocity between all the parties that are involved in the collaboration (Zeng & Chen, 2003).

It is unclear whether the results of previous research on bilateral alliances are applicable to multilateral ones. For companies that are willing to be involved in multi-partner alliances, it is important to know how to deal with the challenges and how they can create and capture value from the collaboration. As such, new research regarding multi-partner alliances could provide more detailed insights about the establishment of these alliances. This thesis contributes to gaining these insights by posing and answering the following research question:

*How to establish a multi-partner alliance in an innovation context to maximize the value creation and capturing for all the partners?*

Research methodology

Not a lot is written about specifically multi-partner alliances and no specific key variables and relationships are present in literature. Therefore this research had an exploratory focus and intend to clarify concepts. This research was focused on creating hypotheses rather than test them. Overall, this research was broad in focus and the objective was to identify key issues and key variables.
In order to answer the research question, first a literature review has been conducted, revealing research on the topics of open innovation, multi-partner alliances and value creation and capturing. Through this literature review existing knowledge about the three topics were obtained. The findings from literature has resulted in different concepts that remain related to multi-partner alliances. These concepts were examined during the empirical study. Concepts related to the value creation include the added values of the parties, motivations, roles, power dynamics and the configuration of the multi-partner alliance. Concepts related to value capturing include intellectual property, licensing model and the revenue model.

The empirical study consisted of two case studies and a benchmark. The multiple case study design as proposed by Yin (2009) was followed. The two case studies consisted of two multi-partner alliances at Unilever. The benchmark was focused on gaining insights on multi-partners alliances from companies in three different sectors. Data was collected through in-depth semi-structured interviews. NVivo was used to analyze the qualitative data by the method described by van Aken, Berend & Bij (2007).

Conclusion and discussion

It can be concluded that when moving from a bilateral alliance to a multi-partner alliance a layer of complexity is added, which can affect the alliance effectiveness. The findings show that the biggest challenge is the high perceived managerial complexity and the negotiation between the parties. It takes a lot of time to come to agreements, which negatively influences the speed of the collaboration. The collaboration can be speed up if this problem of making agreements is tackled. Moreover, the inequality between the parties, in terms of size, invested money, knowledge and resources, play a big role in multi-partner alliances. It appeared that parties involved in a multi-partner alliance naturally place themselves central in the deal, look at the alliance only from their own perspective and try to get a piece of the pie, which is created together with the parties, as large as possible. Logically, they place their own interests first. Therefore extensive discussions and negotiation periods arise, which slows down the innovation process.

It can be concluded that in multi-partner alliances it is important to balance the value of what a party brings into the alliance and what a party gets out of the alliance. Asking the right questions, making clear agreements and formulizing a common shared vision at the beginning of the alliance is crucial for success. The parties should have a common vision about how value will be created and captured. This can be best done by looking at the alliance from a neutral perspective. Not only looking at the value for one party, but at the values for all the parties involved in the collaboration. Therefore a multi-partner alliance framework is designed which contains the most crucial factors to discuss, determine and agree upon at the beginning of the alliance and helps with the establishment of the alliance. This framework has been designed to help managers set up multi-partner alliances in order to maximize the value creation and capturing for the parties involved in such an alliance. This framework could be valuable for firms who want to open up their boundaries in an attempt to enhance innovative performance. This framework can be found in figure 1.
Multi-partner alliance framework

<table>
<thead>
<tr>
<th>What to discuss and understand</th>
<th>What to choose</th>
<th>What to agree upon (contractual elements)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall goal</strong></td>
<td><strong>Configuration of the multi-partner alliance</strong></td>
<td><strong>Boundaries</strong></td>
</tr>
<tr>
<td>- What are we trying to achieve together?</td>
<td>- Based on these value flow models, which construction do we need?</td>
<td>- What are the limits of the collaboration? Where will we be collaborating and where not?</td>
</tr>
<tr>
<td>- If we were one company, how would we describe the collective goal?</td>
<td>- Do we really need each other? Or can every party perform on their own in a sequential process?</td>
<td><strong>Exclusivity</strong></td>
</tr>
<tr>
<td>- What can we achieve together that we otherwise could not achieve separately?</td>
<td><strong>Configuration of the agreements</strong></td>
<td>- Are we allowed to work at the same time on a similar project with other parties?</td>
</tr>
<tr>
<td><strong>Motivations</strong> of each party to join the collaboration</td>
<td>- Based on the construction of the alliance: what kind of agreements do we need?</td>
<td><strong>Commercial exclusivity</strong></td>
</tr>
<tr>
<td>- What are the motivations of the parties to be part of the multi-partner alliance?</td>
<td><strong>Commercialization intentions</strong></td>
<td>- What kind of exclusive rights does which party wants?</td>
</tr>
<tr>
<td><strong>Values</strong> that each party can deliver (capabilities)</td>
<td></td>
<td>- For which applications and in which areas?</td>
</tr>
<tr>
<td>- What kind of values and capabilities can each party bring into the collaboration?</td>
<td></td>
<td>- What is the exclusivity period?</td>
</tr>
<tr>
<td>- Are these value complementary or are some values conflicting?</td>
<td></td>
<td><strong>Intellectual property</strong></td>
</tr>
<tr>
<td>- Which resources and assets do the firms have which will be relevant for the collaboration?</td>
<td>- How would new created IP emerged from the collaboration typically be allocated?</td>
<td></td>
</tr>
<tr>
<td><strong>Value flow model</strong></td>
<td></td>
<td>- Which rights would the parties need to use each other’s protected technology?</td>
</tr>
<tr>
<td><strong>Roles</strong></td>
<td></td>
<td><strong>Financial pie-split</strong></td>
</tr>
<tr>
<td>- Which firm will logically take which role?</td>
<td>- How will we invest which amount of money into the alliance?</td>
<td>Who will invest which amount of money into the alliance? How are we going to divide the money flows generated by the alliance?</td>
</tr>
<tr>
<td>- Who will take the leading role at which point in time?</td>
<td></td>
<td><strong>Commercialization intentions</strong></td>
</tr>
<tr>
<td><strong>Value flows</strong> (knowledge, financial, IP etc.)</td>
<td>- What are our intentions when the product is on the market?</td>
<td>- What are our intentions when the product is on the market?</td>
</tr>
<tr>
<td>- Which values will flow between the different parties in the different phases of the collaboration?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Multi-partner alliance framework

Visualizing the value flows between the parties and visualizing the roles, based on the value flow model of Den Ouden (2013), in different phases of the alliance is useful for example in seeing which configuration of the parties is needed in the collaboration and what the power dynamics are. Creating IP and the dividing of the IP is key in alliances specifically focused on innovation. Therefore an IP flow can be best explicitly added as a value flow. Preferable is to outsource the task of discussing and negotiating this framework to an external, neutral party, who is specifically focused on balancing the values between the different parties and looks from a neutral perspective. It also appeared that an Open Innovation team, who take the neutral role, is useful in managing such an alliance.

Moreover, although the contractual elements are perceived as most difficult, the crucial success of the alliance lies in the relational aspects. Still alliances are about people collaborating together. Multi-partner alliances focused on innovation encounter a lot of uncertainties, where a lot of technical hurdles have to be taken. Therefore building a strong relationship, based on openness, trust and transparency is key so that the parties are willing to share their expertise, capabilities and knowledge. Parties involved in an alliance should not only focus on contractual but also on relational elements.

However, our study is limited as only alliances where three parties are involved are investigated. Therefore extending the analysis in future research to four or more partner firms should be useful. Further research should address if additional challenges occur when more parties are involved and whether the multi-partner alliance framework designed during this research is applicable for such alliances. Furthermore, this research had an exploratory focus and therefore focused on gaining insights. Further research is needed to verify the results, explain it and evaluate its impact on the success of multi-partner alliances.
Acknowledgements

This report, my master thesis, represents the end of my master Innovation Management at the Eindhoven University of Technology, the Netherlands. This report describes the result of the graduation project I carried out at Unilever, the Netherlands. I am very satisfied with the results of the project and I would not have been able to come to this result without support and help of many people. Therefore I would like to take the opportunity to thank these people.

To start, I would like to thank my supervisors from the university. Firstly, Myriam Cloodt for guiding me through the whole process of this master thesis. In particular for reading my writings thoroughly and for providing crucial feedback. Her expertise and enthusiasm into this project has helped to make this project succeed. Secondly, I would like to thank Isabelle Reymen. Although the contact moments were less frequent, these moments have provided insight into a number of points that could be improved especially about the structure of the report, as certainly has added to the quality of this thesis.

Thirdly, I would like to thank Arthur Fellinger and Graham Cross. Both acknowledged the potential of investigating multi-partner alliances and stimulated further research on this matter. The opportunity that they gave me to perform this research within Unilever is an opportunity which I enjoyed very much. Specifically I would like to thank Arthur Fellinger for giving me new insights by asking critical questions and made me think in a more strategic way. I would like to thank you for always being available to help and for giving me the opportunity to learn more about Unilever in general.

I would like to thank Graham Cross for sharing his experiences on alliance management which was of great importance to this study. I appreciate the enlightening and extensive brainstorm sessions we had about multi-partner alliances and the chance to learn more about the world of negotiations. Additionally, I would like to thank Hilbert Bruinsslot who shared several times his insights with me.

Finally, I would like to thank my friends and family for their unconditional support and trust. Especially my parents, who always took the time for a discussion session with me about several topics regarding my thesis. Moreover, I would like to thank Muriël, who took the time to give feedback on especially the analysis part of this report. In particular, I would like to thank Michiel. You have always been there for me and I really appreciate your ever-present faith and support.

Now that the master thesis is written I look back on a period where I learned a lot in a vibrant working environment whilst working with people who challenged me to get the best out of myself. This has resulted in this thesis and I sincerely hope you will enjoy reading it just as much as I enjoyed writing it.

Maud Bollen

Rotterdam, 2014
# Table of Contents

Management summary .......................................................................................................................... iii
Acknowledgements ............................................................................................................................... vii
List of abbreviations ............................................................................................................................ xi
List of figures and tables ...................................................................................................................... xii
Introduction ........................................................................................................................................ 1

## 1 Research context

1.1 Unilever ........................................................................................................................................ 3
1.2 Open Innovation at Unilever ........................................................................................................... 3
1.3 Partner to Win ............................................................................................................................... 5
1.4 Agreements ................................................................................................................................... 7

## 2 Research design

2.1 Problem definition .......................................................................................................................... 9
2.2 Problem statement ......................................................................................................................... 10
2.3 Research questions ....................................................................................................................... 10

## 3 Literature review

3.1 Open innovation ............................................................................................................................ 13
  3.1.1 Definition of open innovation ................................................................................................ 13
  3.1.2 Different types of open innovation ......................................................................................... 14
  3.1.3 Different levels of open innovation ....................................................................................... 14
3.2 Multi-partner alliances .................................................................................................................. 15
  3.2.1 Definition multi-partner alliance ......................................................................................... 16
  3.2.2 Differences between bilateral and multi-partner alliances .................................................. 17
  3.2.3 Different configurations of multi-partner alliances ............................................................. 19
3.3 Value creation and value capturing ............................................................................................... 21
  3.3.1 The concept value ............................................................................................................... 22
  3.3.2 The value flow model ......................................................................................................... 23
3.4 Conclusion ..................................................................................................................................... 27

## 4 Methodology

4.1 Type of research ............................................................................................................................ 29
4.2 Qualitative method ......................................................................................................................... 29
4.3 Case study approach ...................................................................................................................... 29
4.4 Data collection procedure ............................................................................................................ 30
4.5 Quality of the research .................................................................................................................. 32
### List of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OI</td>
<td>Open Innovation</td>
</tr>
<tr>
<td>SME</td>
<td>Small Medium Enterprise</td>
</tr>
<tr>
<td>PtW</td>
<td>Partner to Win</td>
</tr>
<tr>
<td>JBDP</td>
<td>Joint Business Development Plan</td>
</tr>
<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
</tr>
<tr>
<td>JDA</td>
<td>Joint Development Agreement</td>
</tr>
<tr>
<td>IP</td>
<td>Intellectual Property</td>
</tr>
<tr>
<td>IUA</td>
<td>Innovation Umbrella Agreement</td>
</tr>
<tr>
<td>PC</td>
<td>Project Contract</td>
</tr>
<tr>
<td>NDA</td>
<td>Non-Disclosure Agreement</td>
</tr>
<tr>
<td>CDA</td>
<td>Confidentiality Agreement</td>
</tr>
<tr>
<td>JDA</td>
<td>Joint Development Agreement</td>
</tr>
<tr>
<td>CTC</td>
<td>Commercial Terms Contract</td>
</tr>
</tbody>
</table>
List of figures and tables

List of figures
Figure 1: Multi-partner alliance framework ................................................................. v
Figure 2: Open innovation model Unilever ................................................................. 4
Figure 3: Alliance Framework ......................................................................................... 5
Figure 4: Reasons to believe in Partner to Win ............................................................... 6
Figure 5: Different configurations of multi-partner alliances ...................................... 19
Figure 6: Overview agreements case 1 ........................................................................... 41
Figure 7: Value flow model ideation phase case 1 ......................................................... 43
Figure 8: Value flow model development phase case 1 ................................................ 43
Figure 9: Value flow model commercialization phase case 1 ........................................ 43
Figure 10: Material process case 2 .............................................................................. 56
Figure 11: Overview agreements case 2 ........................................................................ 57
Figure 12: Value flow model ideation phase I case 2 ................................................... 60
Figure 13: Value flow model ideation phase II case 2 .................................................. 60
Figure 14: Value flow model ideation phase III case 2 ............................................... 60
Figure 15: Value flow model development phase I case 2 ............................................. 60
Figure 16: Value flow model commercialization phase case 2 ...................................... 61
Figure 17: Multi-partner alliance framework ............................................................... 83

List of tables
Table 1: Open Innovation Framework ......................................................................... 4
Table 2: Categories of suppliers within Unilever ......................................................... 6
Table 3: Overview agreements within Unilever .............................................................. 8
Table 4: Important concepts related to multi-partner alliances ...................................... 28
Table 5: Coding scheme ............................................................................................... 31
Table 6: Overview findings related to value creation .................................................... 36
Table 7: Overview findings related to value capturing ................................................... 37
Table 8: Overview findings related to other important findings of interest .................... 38
Table 9: Main characteristics case 1 ............................................................................ 39
Table 10: Description parties case 1 ............................................................................ 40
Table 11: Timeline agreements case 1 .......................................................................... 41
Table 12: Value creation and capturing case 1 ............................................................... 42
Table 13: Overview monetary and time investments case 1 ......................................... 45
Table 14: Main characteristics case 2 .......................................................................... 55
Table 15: Description parties case 2 ............................................................................ 56
Table 16: Timeline agreements case 2 .......................................................................... 57
Table 17: Value creation and capturing case 2 ............................................................... 58
Table 18: Investments and throughput times case 2 ..................................................... 63
Table 19: Different configurations compared ............................................................... 70
Table 20: Differences bilateral and multi-partner alliances - Philips ............................. 76
Table 21: Benefits and challenges of multi-partner alliances ....................................... 82
Introduction

Today's consumers want innovative products that are tailored to their specific needs. They are more informed, can choose between a wide array of products and services and have more options in terms of what they buy and whom they buy it from since the world has become a more global playing field with global supply markets.

Consumers are accustomed to products that continually improve and make their life easier. Consequently, companies are constantly seeking opportunities to renew and improve their products and services. Therefore companies are rapidly increasing their investments in innovation in order to gain competitive advantage (Buganzi & Verganti, 2009). However, hardly any firm can fully account for its innovation needs and process individually, due to factors such as globalisation, the unprecedented speed of technological developments and the more scarce availability of natural and human resources. So companies are opening up the boundaries of their organization and do not solely innovate in isolation anymore. The so called change from close to open innovation (Chesbrough, 2003). Engagement with different types of parties is necessary to have access to new ideas or resources (Dahlander and Gann, 2010). Chesbrough (2006) stated that in order to get the most out of open innovation, companies must open their business models to be more effective in creating as well as capturing value.

Overall, firms that are able to rapidly access fresh, new knowledge and integrate it into their current processes are most likely to enjoy a competitive advantage. The quest for this competitive advantage is leading firms to partially outsource their research processes in order to increase efficiency and efficacy and to secure a critical mass of technological know-how (Buganza & Verganti, 2009). The increasing complexity of new innovative and technology-intensive products and services and rapidly-changing industries require high amounts of R&D investment and are associated with high risk. As a consequence, firms in high-tech industries tend to collaborate more with other firms (e.g. Miotti & Sachwald, 2003; Hagedoorn & Duysters, 2002). So the knowledge transfer of a firm often does not only take place within the organization but also between organizations. More than ever, the success of a firm is depended on its strategic collaboration with other organizations and therefore on the acquisition and application of both internal and external knowledge and related intellectual property. In particular, openness towards customers, suppliers and universities can have a positive impact on innovative performance (Inauen & Schenken, 2011).

The concept of Open Innovation is understood and implemented as a series of collaborations between two organizations with the goal to open up the internal innovation process. Therefore most previous research on strategic alliances has focused on alliances between two firms (e.g. Rothaermel & Deeds, 2006; De Man, 2004). Research on multi-partner alliances has been occasionally, since a lot of researchers have not regarded multi-partner alliances as distinctive from dyadic alliances (Das & Teng, 2002). However today, in many cases it occurs that more players across multiple roles in the innovation process are involved in a new product development project. The multi-partner collaborations have a high potential for attaining innovation. Multi-partner alliances offer partner firms access to complementary resources, market information, technology and investment opportunities (Sakakibara, 2002). That is why designing and managing innovation within multi-partner collaborations is becoming increasingly important to the future of open innovation (Chesbrough, 2012).

However, involving more partners in a collaboration can give more complexity and different challenges. This is because not only one other party is involved in the collaboration, but at least two other parties are involved. Therefore examples of additional challenges within multi-partner
alliances are building trust between all the parties that are involved (Thorgren et al., 2011), a higher risk of disagreements and misunderstandings, explicit contracts are more challenging to develop and there is no direct reciprocity between all the parties that are involved in the collaboration (Zeng & Chen, 2003).

At this moment, only a few authors have focused on investigating multi-partner alliances (e.g. Das & Teng, 2002; Gomes-Casseres, 2003; Lavie et al., 2007; Thorgen et al., 2011; Zeng & Chen, 2003). Therefore it is not yet clear how multi-partner alliances can be best established and therefore this requires further investigation. For companies that are willing to be involved in multi-partner alliances, it is important to know how to deal with the challenges and how they can create and capture value from the collaboration. Consequently, this study aims to address the following research question:

**How to establish a multi-partner alliance in an innovation context to maximize the value creation and capturing for all the partners?**

In order to answer this research question, both a literature study and an empirical study are conducted. The literature study is needed to understand the background that is necessary for the empirical study. The remainder of this report is structured as follows. Chapter 1 describes the research context of where the research is conducted. Chapter 2 provides on the research design. Chapter 3 describes the general concepts of open innovation, multi-partner alliances and value creation and capturing and so discusses on the theoretical background. Chapter 4 elaborates the methodological aspects of the empirical study. Chapter 5 describes the analysis and results of the qualitative study. Chapter 6 represents the developed framework for establishing multi-partner alliances, based on both the literature and empirical study. Finally, this report ends with a combined conclusions and discussion in chapter 7.
1 Research context

In this chapter, an overall description of the research context is given. It starts with a general description of the company in which this research is conducted. Thereupon, two related subjects to the research will be described, namely Open Innovation at Unilever and the Partner to Win program. Overall, this chapter will create understanding of the total context of the research.

1.1 Unilever

Unilever is one of the largest consumers goods companies, that produces food, home and personal care products worldwide. The company was formed in 1930 from two companies: the Dutch company Margarine Unie and the British company, Lever Brothers. Two separate legal parent companies maintained, namely Unilever N.V. based in the Netherlands and Unilever PLC based in the United Kingdom. Both companies have the same directors and they operate as a single business.

Today Unilever employs around 173,000 employees worldwide and owns over 400 brands. Their products are sold in more than 190 countries and generated sales were €51 billion in 2012 (Unilever, 2013a). An estimated two billion consumers use Unilever products on any single day. Annually, the company invests approximately €1 billion in research and development. It has key research and development (R&D) facilities in India, the United Kingdom, the Netherlands, China and the United States. R&D is the home for their breakthrough technologies for bigger, better and faster innovations. Unilever realizes that innovation is key to their progress and through science they enhance their brand and improve the nutritional properties, taste, fragrance or functionality.

The mission of Unilever is to create a better future every day, with brands and services that help people to feel good, look good, and get more out of life (Unilever, 2013a). Unilever is organized into four main categories: Food, Home Care, Personal Care and Refreshment. This project will be executed within the food category.

1.2 Open Innovation at Unilever

Unilever faces the challenges of an ever changing economic and environmental climate, which result in a business environment that is becoming more and more complex and tougher. Therefore Unilever sets an ambitious target to double the size of their business, while at the same time it allows to reduce their environmental footprint and increasing the positive social impact, the so called Compass vision (Unilever, 2013a). In order to reduce the environmental footprint, Unilever developed the Sustainable Living Plan. This plan sets out a range of targets to gain sustainable growth. The overall goal is to improve health & well-being, reducing the environmental impact and enhancing livelihoods.

Unilever realizes that they cannot reach this target alone and that building winning partnerships is crucial for growth. Therefore Unilever adopted the Open Innovation concept, coined by Chesbrough (2003) and aligned it in their company. The Open Innovation (OI) team plays an important role in managing innovation within Unilever and their mission is to deliver the Compass vision through partnerships. A key goal of the Compass strategy is to focus on bigger, better and faster innovations (Unilever, 2012a). Important drivers for Open Innovation within Unilever include emerging developments in science and technology, changing consumer demand and new markets. Specifically, the aims of the OI team are accelerating innovation, building world class open innovation capabilities and building new future core businesses (Unilever, 2012b). The OI model, which is presented in figure 2, shows that the focus lies both on letting ideas flow out of Unilever and also to flow into the company. This is in line with the processes mentioned by (Gassmann & Enkel, 2004): the outside-in process, the inside-out process and the coupled process.
As can be seen, Unilever applies different collaboration forms and shares knowledge with different kind of organizations. Unilever works with supplier networks, university and contract research, research consortia, joint ventures, alliances, science parks, scouting networks, corporate ventures and non-governmental organizations.

**Innovation funnel**

Overall, Open Innovation plays a big role in R&D within Unilever and is tightly linked to concepts such as new product development and the innovation funnel. The different steps of new product development are coupled in the innovation funnel. This funnel starts with project ideas and is followed by the project feasibility and project capability and finally ends in a product launch. The aim of any product development project is to take an idea from a concept to a specific product that can meet a market need. A project has to pass through the whole funnel, the different steps have to be completed in order to be launched as a product. The different steps incorporate different activities and challenges.

The different phases that Unilever uses in their collaboration projects are the so called ideation (i.e. idea generation and providing proof of science and proof of product), development, commercialization and launch phase.

The OI team works with the Want, Find, Get, Manage framework from Gene Slowinski (Slowinski & Sagal, 2010) and this framework is called the Open Innovation Framework (see table 1). It describes the life cycle of collaborative relationships. Every step incorporates different activities.

<table>
<thead>
<tr>
<th>WANT</th>
<th>Defining the targets, specific OI needs</th>
<th>Define for Open Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Which capabilities do we need to deliver the innovations?</td>
<td></td>
</tr>
<tr>
<td>FIND</td>
<td>Ideas management in relation to the defined needs and knowing who can provide the solution. Scouting for capability providers</td>
<td>Scouting</td>
</tr>
<tr>
<td>GET</td>
<td>Defining the goals of the alliance and the alliance type with a partner. Thereafter negotiating appropriate Terms and Conditions and ensuring the right contract is put in place at the right time. Key to this is the ability to build an Alliance Framework which requires internal as well as external alignment.</td>
<td>Deal architecture/technology licensing</td>
</tr>
<tr>
<td>MANAGE</td>
<td>Leading external relationships to successfully deliver intended innovations; a crucial part of which is relationship as well as project management</td>
<td>Alliance management excellence</td>
</tr>
</tbody>
</table>

Table 1: Open Innovation Framework (based on: Unilever, 2012a)
Besides these frameworks, one of the main tools Unilever uses in specifically building and managing relationships is the Alliance Framework based on the framework of Gene Slowinski (Slowinski, 2006). This framework shows which factors must be agreed upon when starting an alliance. It helps to bring the parties together and assure respective internal alignment before starting an alliance. It is not a formal agreement, but it helps to prepare for a formal agreement. Elements of which the partners want clarity upfront are present in the alliance framework. This framework is presented in figure 3.

![Figure 3: Alliance Framework (Unilever, 2010a)](image)

As can be seen, before the start of the collaborations the parties agree on strategic elements as well as more detailed commercialization commitments. This framework could help also in setting up a collaboration where multi-partners are involved. It presents which factors are important in collaborations to agree upon in the beginning of an alliance.

### 1.3 Partner to Win

As can be concluded from the OI model, an important source of new ideas are the suppliers. Unilever noticed that they need to work closely with their suppliers in order to co-create new capabilities, sustainable practices and faster, bigger and better innovations.

That is why three years ago, Unilever Procurement launches the Partner to Win program. Partner to Win (PtW) is a way of working with suppliers aiming to create partnerships that draw on the strengths of the suppliers in order to create mutual sustainable competitive advantage (Unilever, 2013b). The program focuses on building strong value relationships with well-selected key suppliers in order to achieve mutual growth for both partners. Moreover it is a path to become the preferred customer of choice for their suppliers, which is important to receive preferential access to resources, ideas and innovations. Additionally, strong partnerships allows to create an infrastructure for suppliers to bring innovations and their know-hows, which eventually can lead to sustainable competitive advantages for Unilever.

So suppliers have the solutions for industry-leading innovation, cross-industry expertise in sustainability and infrastructure in countries where Unilever has not (Unilever, 2013b).

To let the suppliers see why a close partnership can be beneficial for both Unilever and themselves, five reasons to believe are formulated. These five reasons are shown in figure 4.
Sustainability is an important reason, because Unilever wants that 100% of their resources to be of sustainable resource materials. And to gain these target, suppliers also need to be on board and adopt the Sustainable living plan. World class services is an important reason, because outsourcing services will gain quality in for example courses for employees. Another reason is value, because the supply chain can be best seen from end to end if Unilever wants to deliver efficiency in terms of materials and savings. It facilitates the right quality at the right time. The next reason is capacity, because if Unilever wants to double the size of the company, suppliers also need to double their size.

However, this research will be focused on the innovation part of Partner to Win. This because growth also comes from innovations. Unilever expects that two third of their innovations will come from suppliers. So it is crucial that Unilever is the first for the suppliers to discuss their new concepts, especially when the concepts are focused on breakthrough innovations.

Unilever has thousands of suppliers divided into three different categories: routine suppliers, collaborative suppliers and strategic suppliers. This is shown in table 2.

<table>
<thead>
<tr>
<th>Lean procurement</th>
<th>Partner to Win suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine suppliers</td>
<td>Collaborative suppliers</td>
</tr>
<tr>
<td>Thousands of Suppliers</td>
<td>Hundreds of Silver suppliers</td>
</tr>
<tr>
<td></td>
<td>A few Strategic Innovation Suppliers</td>
</tr>
<tr>
<td></td>
<td>Dozens of Platinum suppliers</td>
</tr>
<tr>
<td></td>
<td>Dozens of Gold suppliers</td>
</tr>
</tbody>
</table>

Table 2: Categories of suppliers within Unilever

The partner to win suppliers (which include the collaborative and strategic suppliers) are selected based on potential to drive growth and/or to fuel growth. The more impact they will have on growth, the higher they will be classified. The aspirations that Unilever has with their Platinum strategic supplier are formalized in a Joint Business Development Plan (JBDP). This JBDP contains the strategic business plan and focuses on one or more of the five reasons to believe. It forms a long-term basis for co-operation. Governance of the relationships is based on jointly agreed key performance indicators (KPI’s). With the Strategic Innovation Suppliers also an Innovation Umbrella Agreement is signed. This framework agreement is specifically based on aspirations concerning joint R&D and commercializing innovation. It can pursue game-changing innovation or ideas that will make a considerable impact in the marketplace. The agreement regulates the basic principles and terms for the partnership including confidentiality, ownership and usage rights of arising intellectual property (IP) in joint projects, the expected commercialization model, and the partnership governance structure. These strategic innovation suppliers are the focus of this research.

All of the commercial contracts and contacts with suppliers is led by procurement. However the contracts and contacts with strategic innovation suppliers is led by R&D. Additionally, R&D has a key role in providing business cases and in helping to develop the portfolio of joint projects within the JBDP. That is why Procurement and R&D go hand in hand when it comes to innovating with suppliers.
For this reason, the research of this thesis will be executed within the procurement as well as the R&D department of Unilever in the Netherlands.

As said before, the research of this thesis focuses on the innovation part of the Partner to Win program. However, innovations do not only come from strategic suppliers, but can also come from collaborative and routine suppliers. For example developing new ingredients and more efficient packaging with suppliers such as chemical companies and packaging companies. An example of co-creation that is common within Unilever is with enzyme manufacturers (Decter, Mather, & Garner, 2011). Unilever does not conduct enzyme discover in-house, but relies on deep relationships with a range of biotech companies to create the innovation pipeline for enzyme technologies. However, it is expected that the most ideas will come from strategic suppliers, because there is a closer relationship with them and these suppliers are more willing to come first to Unilever to present the idea. And besides that, the strategic suppliers are the partners to whom Unilever turns first to check if they have the capabilities and skills to fulfil the Want (as described in table 1) that Unilever has.

In conclusion, the world is becoming increasingly complex. For a company like Unilever it is impossible to master all these technologies that deliver innovation. Therefore Unilever focuses on their own expertise areas and form partnerships with the best experts in those fields that Unilever does not want to cover themselves. So more and more partnerships are build.

1.4 Agreements

As described before, Unilever has different relationship with their partners and therefore different agreements to formalize these relationships. A short overview of the different agreements are shown in table 3. Only the agreements that are related to this research are included in the table.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Agreement</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| IUA          | Innovation Umbrella Agreement | Define how the partnerships work around:  
 – The partners and their affiliates  
 – The products (categories) covered  
 – Project, Working & Steering Teams  
 – Disputes  
 – Ideation  
 – Confidential Information  
 – Intellectual Property  
 – Commercial Exploitation - the risk / reward ground rules for joint development  
 Recognition that there will be project contracts under which project work happens |
| PC           | Project Contract             | Often used under an IUA. Specifies the project details, the specific difference to the IUA and the contract boundary scope                  |
| JBDP         | Joint Business Development Plan | The JBDP formalise the aspirations (strategic intent) of both parties and forms a long-term basis for co-operation, leveraging the strengths of each partner. It is a strong resource commitment for specific initiatives to deliver on the defined aspirations of both parties. Not legally binding  
 However, when projects are started, specific agreements are needed. Therefore there exists different agreements that can be set up between partners. |
| CDA          | Confidentiality Agreement    | An agreement prior to any exchange of confidential information. Is needed as soon as sensitive information is disclosed or received from a third party For example about prices, the manufacturing process. Not meant for brainstorming, building on ideas or executing R&D. |
| JDA          | Joint Development Agreement  | Covers the terms and conditions of development and ownership of rights. Co-invent or co-develop with partner.  
 2-way JDA: Two parties are involved and included in the contract  
 3-way JDA: Three parties are involved and included in the contract |
| CTC          | Commercial Terms Contract    | Commercial agreement                                                                                                                        |

Table 3: Overview agreements within Unilever (Unilever, 2012c)
2 Research design

In this chapter, the research design is discussed. In order to come to the final research question a process of scoping took place. First the current situation within Unilever was investigated where after a problem definition was derived. This initial problem definition was discussed and verified by performing a qualitative analysis of oriented interviews and by studying existing documents. The challenges and discussion points were compared with topics and questions that are presented in literature regarding multi-partner collaborations. An overview of these discussion points are shown in appendix A. This led to a final project statement and research assignment. All this information, delivered input for defining the research question and its sub questions.

2.1 Problem definition

Initial project definition
As stated before, Unilever aims to double the size of their business, while at the same time it aims to reduce their environmental footprint. To achieve this goal Unilever is working closely with external parties such as suppliers and different innovative organizations. Unilever indicated at the start of the project a desire to have more access to knowledge and technologies, shorter time-to-market and innovate better and faster, by working closely with multiple parties in a collaboration. This desire originates in the strong ambition of Unilever to grow. Moreover, this interest is related to one of the goals of Unilever that is focused on creating customer needs through breakthrough suppliers innovations and the goal to be the best in co-innovation (Unilever, 2013b). Possible collaboration parties can include research institutes, SMEs, technology providers or suppliers. As described earlier in the research context, especially suppliers are a strong source for innovation. Unilever expects that two third of their innovations will come from suppliers.

However, at this moment it is not clear how Unilever can efficiently work together with multiple partners in a project that is focused on innovation. It is clear how one-to-one relationships with Unilever and suppliers or innovation parties can be arranged, but insights on multi-partner alliances are lacking. This is due to the fact that setting up such alliances and bundling different capabilities together is perceived as a difficult challenge. At this moment Unilever does not have a lot of experience with multi-partner alliances and there are no basic frameworks that are used to establish a multi-partner alliance. In summary, Unilever wants to accelerate growth by the co-creation of better and new products, but there are no specific insights on how to establish a multi-partner alliances.

Verifying the initial problem definition
To get grip on the current situation and main challenges around multi-partner collaborations, different interviews were held with employees, that work within different departments and functions in Unilever and that are involved with new product development, strategic alliances and multi-partner collaborations (an overview of the interviewees is presented in appendix B). In doing so the initial problem definition is verified (Van Aken et al., 2007). The results coming from desk research have also served as input for describing the current situation. The list of consulted documents is presented in the appendix C.

From general desk research and especially from the supplier survey that Unilever held among their suppliers in 2012, it appeared that suppliers find that Unilever is slow in responding to proposals of new innovations and that Unilever’s IP agreements are too one sided. Therefore it is less attractive for supplier to co-create new products. So it should be clear for Unilever as well as the partners that choices in co-innovation have to be made together. Suppliers advise to simplify and speed up the collaboration processes. From interviews it became clear that there is a need to create multi-partner alliances, but that setting up and managing such alliances is perceived as a challenge and high complexity is involved.
Especially, the negotiations with two other partners and keeping the parties satisfied during the whole process is complex. Moreover, it turned out that issues on multi-partner collaborations ultimately have a direct and indirect negative effect on the efficiency of the process and end up in project delays, ending of projects or splitting up the multi-partner collaboration and causes bilateral agreements. Furthermore it became clear that there is only a little experience in dealing with multi-partner alliances in an innovation context. An important point is that it is not known in which kind of situation it is useful to configure all the partners more in a network, where all the parties are related to each other and one contract is signed or more in a chain, where pairs of partners are related to each other and multiple bilateral contracts are signed. At this moment multi-partner alliances are negotiated one-to-one. This causes a lot of discussion before arrangements are set up and contracts are signed. Unilever wants to know whether it is possible to generate a generic framework for multi-partner collaborations so that it takes less time to do the negotiation part of the alliance.

Furthermore, during the interviews it is discussed which elements within multi-partner alliances are essential in comparison with bilateral alliances. It appears that there are a lot of questions that need to be answered before starting a multi-partner alliance. This resulted in a problem mess of different concepts to investigate. This has been structured into main questions that appear from practice. Next related factors from literature where connected to these questions and finally assigned to an overall perspective from literature. The results are shown in appendix A. When looking at the important factors that relate to these perspectives it can be seen that value creation and sharing, the revenue model, roles, responsibilities, power dynamics and intellectual property rights are key according to practice.

2.2 Problem statement
The conclusion of the research definition is that it is unknown how the different factors that are perceived as important in a multi-partner alliance, determine the optimal design of the alliance management. Especially, for Unilever the link between alliance management and strategy is missing.

More specifically, there is no insight how a multi-partner alliance can be best established in terms of configuration, value, power, roles and revenues. Furthermore there is a need to know whether it is possible to have a general method to support multi-partner alliance management.

2.3 Research questions
Based on the important elements provided by oriented interviews and the problem statement, the research questions are defined. Unilever wants more access to knowledge and technologies, shorter time-to-market and innovate better and faster by working closely with multiple parties in a collaboration. There is no insight of how these collaborations can be best established. Therefore the main research question is:

*How to establish a multi-partner alliance in an innovation context to maximize the value creation and capturing for all the partners?*

In order to provide a grounded answer to this research question, a set of more specific research questions need to be addressed first.
Part 1: Literature review
This first part of the research is a reflection of the current state of literature on multi-partners alliances. By synthesizing the existing literature, the following questions will be answered:

1) What are multi-partner alliances?
2) What are the differences between bilateral and multi-partner alliances?

Part 2: Research in practice
By collecting and analyzing empirical evidence, in three different phases orientation, analysis and design, the following questions will be answered:

3) What are perceived benefits and challenges of multi-partner alliance in practice?
4) What are different configurations of multi-partner alliances?
5) What determines which configuration should be applied to a multi-partner alliance?
6) What are the lessons learned from multi-partner alliances in practice?

Specifically regarding the following subjects that are related to the business model,

6.1) What can be the added value of a party involved and how can this value be measured?
6.2) How can the parties share or divide the value that is created?
6.3) What kind of roles can parties play and what determines which role a party should play?
6.4) Which partner has often the most power and why?
6.5) Which criteria determine how the IP model should be configured?
6.6) What are possible revenue models?

Part 3: Design
Following answers of sub-questions, a framework is developed that can help organizations to set up a multi-partner alliance.
3 Literature review

This chapter describes current literature concerning multi-partner alliances that is necessary to answer the research question. The objectives of this literature review are to describe and clarify the accumulated knowledge regarding multi-partner alliances from literature, including core concepts and identifying the gap in literature by laying the foundation for the study's rigorous value.

In order to reach these objectives, the study is structured as follows. The structure contains three main parts. In the first part the broader concept Open Innovation will be described. In the second part alliances and specifically multi-partner alliances will be described and discussed. In the last part value creation and capturing will be described and discussed and will be related to the first two parts.

3.1 Open innovation

3.1.1 Definition of open innovation

In the past, innovation activities were only performed internally and distributed by the firm itself (Chesbrough, 2003). This closed approach implied that a firm should control the creation and management of ideas and that successful innovation requires control and ownership. In previous years, R&D related projects could only enter and exit the company in one way; entering at the beginning of the company’s’ internal based and exiting by going into the market.

However, nowadays in order to continue the growth of the company and sustain competitive advantage, companies must continuously find new ways to retain and attract customers. Economic pressures, such as the ever increasing technology complexity and shorter time-to-market makes it harder to innovate (Chesbrough, 2003). Nowadays innovation derives not anymore from one’s great mind full of new ideas. Modern innovations come from systematic, often very comprehensive and expensive research which requires cooperation of many parties in the value chain with different fields of knowledge. The global competition forces companies to innovate more efficiently and quickly. It shortens product life cycles, while the growing integration of different technologies makes innovation riskier and more costly. Companies internationalize knowledge-intensive function such as R&D, and at the same time open up their innovation process to collaborate with external partners such as suppliers and universities. This to generate more commercial value by research and development.

So companies increasingly change the closed innovation approach to an open innovation approach. More companies are responding to the so called ‘erosion factors’ that undermine the closed innovation approach. The erosion factors include the increasing availability and mobility of skilled workers, the increased number of venture capitals (financial capital provided to start-up companies), the increased number of qualified suppliers and available ways to access markets and sell ideas that are normally on put on the ‘shelf’ of a company, waiting until they can be used internally (Chesbrough, 2003). These erosion factors have loosened the linkage between research and development, have created a variety of possible research inputs available outside the firm and have rearranged the landscape of knowledge, where knowledge is distributed among different companies and institutes. Therefore since recent years companies have a more open approach regarding R&D. From earlier on, companies are applying some kind of form of Open Innovation, but since 2003 the term of Open Innovation exists. This term is coined by Henry Chesbrough and formulated as “The use of purposive inflows and outflows of knowledge to accelerate internal innovation, and to expand the markets for external use of innovation, respectively” (Chesbrough et al., 2006, p. 1). The main principle behind this definition is to utilize more of the knowledge that is available within and outside the company, especially with the goal to advance technologies and create commercial value. It implies a more open approach to the R&D process. External sources or organizations can be used
as inputs in R&D projects. So the company does not have to be dependent only on internal knowledge, but can create opportunities to assess external knowledge by entering partnerships for example with suppliers and universities.

3.1.2 Different types of open innovation

There are three core processes that can be differentiated in open innovation, namely the outside-in process, the inside-out process and the coupled process (Enkel, Gassman, & Chesbrough, 2009). The Outside-in process (also called inbound process) is focused on improving the knowledge base of an organization through the integration of external knowledge from suppliers, customers and research institutes (Enkel et al., 2009). It allows firms to get ideas from outsiders and to see technological opportunities. The inside-out process (outbound) is focused on earning profits by transferring ideas to the outside environment by bringing ideas to the market, out-licensing and selling IP and multiplying technology through different applications (Enkel et al., 2009). In that way companies can externalize their knowledge and technologies to bring ideas to the market faster, because other external parties are better equipped to commercialize the innovations and technologies.

The coupled process is focused on coupling the outside-in and inside-out processes by the co-creation of innovation through alliances, collaborations, and joint ventures. Combining the outside-in and inside-out processes can result in the development and commercialization of innovation.

The coupled process of Open Innovation as described by Gassman and Enkel (2004) is covered by the growing literature on joint ventures and alliances. This process is getting an increasing importance in the innovation process and is becoming widely recognized in the literature of Open Innovation. Researchers show that it can be beneficial for competitive advantage in the sense that most partnerships are difficult to imitate.

Co-creation refers to the joint development of knowledge and technologies through relationships with other organizations. Prior research submits that it can be beneficial for the innovation performance of company to interact with different partners. The innovation performance can be increased, by collaborating with suppliers and customers because then a diversity of external information sources (Laursen & Salter, 2006) and a combination of complementary capabilities is acquired (Un, Cuervo-Cazurra, & Asakawa, 2010). But the innovation performance can also be increased by collaborating with research institutes and universities because they have for example new and complex knowledge available (Chiang & Hung, 2010).

Therefore companies are more and more involved in co-operative arrangements. They source proprietary technology and know-how abroad both through their own R&D facilities and through contractual agreements, such as joint R&D agreements. Besides, companies are setting up more collaborations with suppliers, customers and universities as part of their innovation strategy. These linkages can take forms such as, vertical relationships, research consortia, joint ventures and strategic alliances.

There is a lot of research based on how the outside-in and inside-out process can be beneficial for companies. However, there is less evidence on how strategies that are based on innovative growth and the coupled process can be put into practice (Livierator, Papoulias, & Petit, 2012). Specifically, there is not a lot of literature that emphasize on how open strategies that are based on the coupled process can be translated into practice and therefore there is more need for analytical frameworks. Furthermore, the coupled process brings many challenges. For example, Gassman and Enkel (2004) argue that give and take in this process is crucial for success, but challenging. So because of the lack in literature about how the coupled process should be applied and managed in companies, the further sections of this literature review will be focused on this coupled process.

3.1.3 Different levels of open innovation

There exist a number of levels at which Open Innovation can be analyzed (Vanhaverbeke & Cloodt, 2006). Most studies have examined Open Innovation at the firm level. This is because innovation is seen as the outcome of actions of a single firm and because technical invention is realized through the business model of the firm. Nevertheless, the research on Open Innovation is not limited to the
level of the firm. To get a broader scope of Open Innovation also other levels should be analyzed (Vanhaverbeke & Cloodt, 2006).

When analyzing Open Innovation from the inter-firm level, also called dyad level, the interests of two firms that are tied together are considered. For instance, through equity alliances, corporate venturing investments etc. Research within the dyad level focuses on how to select partners, how to assess the return and risks, how to evaluate the fit between partners and how to structure the agreements and manage it over time (Vanhaverbeke & Cloodt, 2006). As open innovation is mainly about non arm’s-length relations between firms, where parties to a transaction are dependent and on an equal footing, firms can take advantage when analyzing the dyad level and learning from alliance management and their management lessons. These dyadic relations, where two parties are involved, has been explored in depth in literature. However, relations where more than two parties are involved, are under researched and not fully understood (Lavie et al., 2007; Li et al., 2012). Especially, the situations where only three parties are involved in a closer relationship. Therefore this study will focus on the situation where multiple parties are involved in a closer relationship, especially where three parties are involved because this is the first step to a multi-partner relationship. So there will be a shift from the dyad level to the triad level.

The relationship between three parties can be investigated at the inter-firm level. However, a collaboration with three partners can be seen as a network and therefore also studied at a network level. Consequently, this study can also be related to the level of inter-organizational network level. Inter-organizational network are understood as three or more organizations undertaking joint activities and constantly seeking for realigned objectives (Provan, Fish, & Sydow, 2007). This level is focused on the fact that firms are embedded in broader networks and that the success of a firm is also determined by the way it integrates its external relations and manages the durable structure of inter-firm relations. However, this study will be only focused on the triad itself as a network and not the whole network where it will be embedded in.

### 3.2 Multi-partner alliances

A lot of research has focused on alliances. Currently, the importance of strategic alliances is widely recognized (Hoang & Rothaermel, 2005). Many companies are depending on their alliances for their innovative power and competitive advantage. Additionally, by setting up alliances, firms can focus more on their main competences and search for partners that can supplement their core business. Many benefits can also be reached by having a tight relationship with the supplier (De Man, 2004). Companies can learn a lot about how other industries have used alliances to grow their business, especially by looking a strategic alliances. So alliances are associated with the opportunity to gain competitive advantage by developing unique competences, in combination with the relevant organizational resources and technological capabilities, in order to better satisfying the needs of the customers for products and services (Prhalad & Ramswamy, 2004). Therefore doing further investigation on alliances can be very useful.

Today, in many cases it occurs that more players across multiple roles in the innovation process are involved in a new product development project. The multi-partner collaborations have a high potential for attaining innovation. Multi-partner alliances offer partner firms access to complementary resources, market information, technology and investment opportunities (Sakakibara, 2002). That is why designing and managing innovation within multi-partner collaborations is becoming increasingly important to the future of open innovation (Chesbrough, 2012). However, involving more partners in a collaboration can give more complexity and different challenges. This is because not one other party is involved in the collaboration, but at least two other parties are involved.
Therefore first a clear definition of the multi-partner alliance is given. Hereafter, the differences between two-partner alliances and multi-partner alliances especially regarding their benefits and challenges are discussed.

3.2.1 Definition multi-partner alliance

In literature an alliance with two partners is called bilateral alliance. However in literature, for an alliance with more than two partners, different designations are used. Such as multiple partner alliance (Lavie et al., 2007), multifirm alliance (Hwang & Burgers, 1997), alliance constellation (Das & Teng, 2002; Gomes-Casseres, 2003; Lazzarini, 2007) and multilateral alliance (Li et al., 2012; Doz & Hamel, 1998; Gulati, 1995; Gulati & Singh, 1998). But there are also other concepts that are related to these multilateral alliances, such as Strategic Research Partnerships (Siegel, 2003).

It is common for new terms to evolve before they are clearly defined and before there is found consensus in literature. However there is the need to be unambiguous about the type of collaboration which is examined in this research, because all the above term describe different types of collaborations and are often confused. For example, the term constellation, refers to a group of firms that compete within a specific domain and that are linked through alliances. Whereas a multilateral alliance refers to a single cooperative arrangement involving three or more partner firms.

Besides these terms, also authors investigated concepts that are related to these terms, namely alliance blocks (Vanhaverbeke & Noorderhave, 2001), alliance networks (Axelsson & Easton, 1992) and collection of alliances (Nohria & Garcia-Pont, 1991). Such networks can relate to a collection of bilateral alliances, a collection of multilateral alliances, or a combination of these two. Sometimes these terms are confused with the earlier mentioned terms. Nonetheless, these concepts are focused on entire networks with a lot of actors that are interrelated to each other, instead of just one alliance.

So there is a difference between bilateral alliances, multilateral alliances and alliance networks in the number of arrangements that are involved (Li et al., 2012). An alliance network is a collection of several alliances, whereas a strategic alliance is one cooperative arrangement involving two or more firms, such as in equity joint ventures, joint R&D, and joint production (Das & Teng, 2002). Instead of accumulations of independent bilateral alliances, multi-partner alliances have unique dynamics that emerge from multilateral interaction, where all the partners that are involved in the alliance interact to some extent with every other partner in the alliance.

In this study the term multi-partner alliance is used and the definition is based on the definition of Lavie et al. (2007), because it is the most comprehensive and explicit definition. Multi-partner alliance in this review is defined as a ‘collective, voluntary organizational association that interactively engages multiple members in value creation activities, such as collaborative research, development, sourcing, production, or marketing of technologies, products or services’ (Lechner et al., 2007, p. 578). Often multi-partner alliances entail a single overarching contractual agreement, shared management, and the pursuit of a common objective.

The number of partners that are involved in a multi-partner alliance can be different. For both theoretical and practical reasons, this study is limited to trilateral alliances, where only three partners are involved. Triadic alliances are the simplest form of multi-partner alliances. One must understand the processes that occur in these alliance before exploring more complex forms. Krackhardt (1999) argues that the radical change occurs when moving from dyads to triads rather than from triads to larger groups. When moving from triads to larger groups only the complexity and number of relationship patterns increases. Moreover a trilateral R&D alliance is the most common type among multilateral R&D alliances and represent 65% of all multilateral R&D alliances (Li et al., 2012).
Besides the limited number, the focus of this study will also lie on the agreements that interactively engages in multi-partner R&D activities and therefore on innovating with other parties. Firms that compete in dynamic, knowledge-intensive industries often form these R&D alliances in order to build and leverage technological capabilities (Duysters & Hagedoorn, 1996; Narula & Duysters, 2004). More often firms combine their resources and capabilities to develop new technologies and technological capabilities.

It can be concluded there exists different definitions in literature and there exist different kind of alliances. However, in this study the term multi-partner alliance is used and the study is specifically focused on trilateral alliances that are focused on R&D activities.

3.2.2 Differences between bilateral and multi-partner alliances

It is useful to investigate in which way multi-partner alliances are different from bilateral alliances. Therefore this section focuses on describing the differences between the two types of alliances. As stated before, not a lot of literature is available specifically on multi-partner alliances. Nonetheless, the literature that focuses on this type of alliance and described the differences between bilateral and multi-partner alliances in terms of additional benefits and challenges.

3.2.2.1 Differences in benefits

Prior research has found various benefits of bilateral alliances including risk sharing in innovation and access to technology and market information (Duysters & Hagedoorn, 1996). The major motivation for engaging with external sources of innovation is to speed up the innovation process by tapping into knowledge from research institutes, suppliers and other companies. These benefits apply also to multi-partner alliances. However, multi-partner alliances have additional benefits. First, a higher number of partners imply more and potentially complementary resources that are accessible to the firm (Gong, Shenkar, Luo, & Nyaws, 2007). Secondly, there is a higher potential volume for knowledge sharing between the firms. Thirdly, the pooling of managerial expertise from all partners encourages faster recognition of more potential market opportunities and threats (Beamish & Kachra, 2004). Sampson (2007) concluded that a greater capability pool leads to greater innovative performance. Fourthly, because innovation development can be more complex in multi-partner alliances, there is on the other side more sustainable competitive advantage that can be gained (Beamish & Kachra, 2004). Companies can combine their strengths to compete with a large competitor (De Man, 2013). Lastly, multi-partner alliances, especially vertically multi-partner alliances, enable firms to cover a larger part of the value chain (De Rochemont, de Man, & Van de Veen, 2007). This can increase the customer value, because there is a greater sum of resources that come from unique resources that partner bring to the cooperation. Examples of different resources are machines, production facilities, technical skills or deployment of personnel.

However these additional benefits also implies more challenges in comparison to bilateral alliances.

3.2.2.2 Differences in challenges

Partner firms face similar challenges and risks in bilateral and multi-partner alliances. Examples are partner opportunism, asymmetric bargaining power, and incompatibility (Doz & Hamel, 1998; Arino, Ragozzino, Reuer, & Pearson, 2008). However, authors that investigated the multi-partner alliances, concluded that multi-partner alliances cannot be seen similar as bilateral alliances, because they encounter additional challenges (e.g. Garcia-Canal, 1996; Lavie et al., 2007; Li et al., 2012). Das and Teng (2002) point out that the formation and structure of multi-partner alliances are more complex than just the summation of dyadic relations. Researchers have identified essential differences between bilateral and multi-partner alliances by applying different theoretical perspectives, such as game theory, social exchange theory and network perspectives.

The first additional challenge when more than two partners are involved in a collaboration is the higher degree of managerial complexity and coordination costs (Garcia-Canal, Valdes-Llaneze &
Arino, 2003; Gong et al. 2007). Consensus is often difficult to reach when more partners are involved and therefore decision making is a big challenge (De Man, 2013). Many multi-partner alliances have a dominant partner or partner group that guides the decision making in a direction they want. Moreover, power dynamics are more complex in multi-partner alliances. In dyads a firm can unilaterally leverage its power over the other partner, however in multi-partner alliances this is not directly possible because there at least two other partners are involved. Similarly, weaker parties in a triad pursue to leverage their weakness into strength by forming coalitions. The distribution of power and internal competition within a multi-partner alliance is substantially more complex in comparison with bilateral alliances (Das & Teng, 2002; Zeng & Chen, 2003). The dominant partner should understand its specific role and exercise restraint in using its power by taking into account the interest of the others (De Man, 2013). Thereupon, when the number of alliance partners increases, economic exchanges between the firms are more difficult. Each partner has its own strategy and goals. The chance that all the strategies of the partners fit together decreases as more partners join (De Man, 2013). Therefore, multi-partner alliances find it difficult to define project that is beneficial for all the partners. As a result, the scope of such alliances tend to be narrower than the scope of bilateral alliances and the projects have often longer-term strategic effects rather than an immediate effect on competition in the sector.

Besides this challenge, explicit contracts to govern the partner relationships are more challenging to develop. There is more risk of disagreements and misunderstanding, more potential discord among the partners and in general more interdependent between the partners. For this reason the social dimension becomes also more important. Therefore researchers that focus on multi-partner alliances often use the social exchange theory as theoretical framework (Das & Teng, 2002; Muthusamy & White, 2005)). For example Das and Teng (2002) argued from a social exchange perspective that multilateral alliance should be treated as a distinctive type of alliance, because the exchange relationships are essential divergent in multi-partner alliances from bilateral alliances. Zeng and Chen (2003) exploited similar arguments, but from a game theory perspective: games of multiple partners are fundamentally different from the games played by two partners. Effective mechanisms for solving problems in multi-partner games can be applied in games with two partners, however the reverse does not hold (Zeng & Chen, 2003).

This social exchange theory distinguishes generalized and restricted social exchanges, which indicates the difference between bilateral alliances and multi-partner alliances. Both exchanges differ in how risk is perceived and monitored. Restricted social exchange occurs when two parties directly exchange with each other in a dyadic exchange (Ekeh, 1974), which means that there is direct reciprocity between the two firms. Partner A and partner B exchange resources and expect reciprocity from each other. In this kind of exchange the partner can directly monitor the other partner for uncooperative behavior (Zeng & Chen, 2003) and can punish the other for noncooperation. Any harm from noncooperation is absorbed by the other partner (Ekeh, 1974). In contrast to restricted social exchange, generalized social exchanges occur among a group of at least three parties and there is no direct reciprocity among them. Partner A contributes resources to the alliance (one or more partner could benefit from them) and expect reciprocity from the alliance and not specific with any partner. Partners expect a quid pro quo relationship within the alliance. Direct monitoring of the partners’ contribution is more challenging, and collective sanctions for opportunistic behaviours are more difficult to realize. It is difficult to detect who did what in the collaboration. The harm from a lack of cooperation is diffused across several partners. Therefore in generalized exchanges the risks for the firms are higher (Takahashi, 2000) and the level of complexity is greater in multi-partner alliances (Hwang & burgers, 1997; Lavie et al., 2007). Because of the no direct monitoring by all the partners there is a higher risk of free-riding. A work avoiding partner feel less guilty when not actively incorporate in the collaboration. A solution to this challenge is to increase control, however this makes the alliance less flexible and increases the coordination costs (De Man, 2013). Trust is therefore an important mechanism in this type of
collaboration. It helps to reduce uncertainty with potential free-riding and enhance the overall benefits of the group. However, trust building can be a big challenge in multi-partner alliances (Thorgren et al., 2011). For example, partner can be unknown to each other and not necessarily chosen by all other members. Thereupon, by the indirect reciprocity, firms are more free to choose their own level of activity and commitment in the alliance. Furthermore, because the potential volume for knowledge sharing increases when more partners are involved in a collaboration, knowledge management becomes more complex and challenging. This increased challenge occurs mainly when going from restricted to generalized exchanges, because knowledge is not flowing by direct reciprocity. There is a lack of one-to-one communication between the giver and the receiver (Das & Teng, 2002). Overall, the relationship building becomes more complex in multi-partner alliances, since each partner must build a relationship with all other partners in the alliance (De Man, 2013). Moreover, in contrast to bilateral alliances, multi-partner alliances can be configured in different ways, which has influence on the social and economic exchange complexity.

3.2.3 Different configurations of multi-partner alliances

A distinction can be made in the types of configurations multi-partner alliances are set up, namely the net-based setting and the chain-based setting (Li et al., 2012). The two different types are shown in figure 5. As can be seen model A presents a net-based configuration such a configuration all the partners have a relation to each other and there is a multi-partner agreement. Within such a setting each individual party acts in a relationship with the group as a whole and derive directly from the group. Model B presents a chain-based configuration, in such a configuration there is one party that has connections to all the other parties and where the other parties only has a connection with one other party involved in the alliance. Within such a setting the individual parties in the group are positioned such that they operate as a chain of univocal reciprocal relationships to each other as individual units. So the partner firms are positioned such that innovations are developed and largely or wholly commercialized in sequence (Li et al., 2012).

![Net-based alliance](model A)

![Chain-based alliance](model B)

**Figure 5: Different configurations of multi-partner alliances (based on Li et al., 2012)**

Differences between net- and chain based alliances affect the governance mechanisms (Li et al., 2012). Moreover, knowledge sharing is different within these different types. In a chain-based alliance knowledge exchange takes place between pairs of partners, in a net-based alliance knowledge input by one partner is shared with all the partners. However, this implies intensive coordination because effective exchange is then more challenging. In addition, monitoring of each partner’s activities is more difficult.

In summary, when shifting from a dyad to a triad and therefore to a multi-partner collaboration, an additional layer of complexity is added and a different situation occurs.
Main additional challenges include:
- Higher degree of managerial complexity and coordination costs
- More power dynamics complexity
- Chance of coalitions within alliance
- Harder to find strategic fit between all the parties
- More economic exchange complexity
  - Explicit contracts are more challenging to develop
  - Higher risk of disagreements and misunderstandings
- More social exchange complexity
  - Restricted social exchange vs. generalized social exchange (direct monitoring and reciprocity vs. no direct monitoring and no direct reciprocity)
- Higher risk opportunistic behavior and free riding
- Harder to build trust
- More complexity in knowledge management (leakage)

Because of all these additional challenges it can be concluded that multi-partner alliances entail more than a simple collection of bilateral alliances and therefore can be best treated as a distinctive type of alliance for theoretical development and practical implications, especially in case of alliance management and coordination. The additional layer of complexity as a result of having more partners in a collaboration, may affect the alliance effectiveness. Research on multi-partner alliances can therefore make an important contribution to the limited understanding of this organization form. Besides that, it can be concluded that not a lot of research is done on the topic multi-partner alliances. Even when multi-partner alliances are included, the research is mostly focused on the social exchange and social network perspective. However, it could be valuable to look at different perspectives, as these perspectives are also considered in bilateral alliances, but have to be viewed differently in a multi-partner context. There is little evidence on how strategies that are based on innovative growth and alliances can be put into practice (Livierator et al., 2012). There is more need for analytical frameworks.

As described earlier in this section, a challenge within multi-partner alliances is that each partner has its own strategy and goals and that the change that all these strategies fit together decreases as more partners join. Therefore multi-partner alliances find it difficult to define projects that benefit all members. Moreover, consensus is difficult when more partners with different interests are involved.
Das and Teng (2000) argue that strategic alliances possess internal tension of cooperation defined as the pursuit of mutual benefits and competition defined as the pursuit of one’s own interest at the expense of others. Cooperation is crucial in achieving the objective of an alliance. However, competition is also required to protect the resources of the own company and learn more from its partners to maximize the benefits from the alliance (Hamel, 1991). This tension in alliances is related to the issue of value creation and value capturing (Oxley & Silverman, 2008). While value is created through collaborative efforts, the created value is allocated though competition among partners. The understanding of value creation and value capturing in strategic alliances is important because it can help firms to achieve potential benefits while maintaining cooperative relationship with their partners for future collaboration (Kang, 2013). Moreover, alliances are formed to create new value by pooling resources each partner possess. But besides this value creation, value capturing is important since the ultimate objective of each party in the alliance is not just to create value but to capture value and make it profitable for earning economic rent (Oxley & Silverman, 2008).

The concept of value creation and capturing is even more important and challenging within multi-partner alliances, since value has to be created, exchanged and shared amongst more parties, different configurations are possible to let the values flow amongst the parties and more parties
have different interests. The business model describes this creating and capturing of value. The way in which open innovation relates to business models in multi-partner alliances will most likely differ from that in bilateral alliances. Therefore in the next chapter the concept of value creation and capturing is described and related to multi-partner alliances.

3.3 Value creation and value capturing

Engagement in open innovation activities, and therefore in alliances, has remarkable effects on the business model of a firm. Chesbrough (2003) argued that one of the key principles in open innovation is the importance of business models in commercializing innovation. Technology only has economic value if it is commercialized in some manner (Chesbrough, 2006a). Business models allow companies to capture part of that economic value of innovation. Every new product development effort should be coupled with the development of a business model, in which the way the product will be go to market and capturing value strategies are defined. Technological innovation by itself does not automatically guarantee business or economic success (Teece, 2010).

In recent years, the business model has been considered as the core of value creation and appropriation for businesses and an important mean of gaining competitive advantage (Matthyssens & Berghman, 2006; Teece, 2010). Although the business model is widely used and appears in literature for a lot of years, there is no generally accepted definition of the term ‘business model’. There is no identical view of the definition, which is not surprising because authors often take different perspectives. For example, Amit and Zott (2001) focus on e-business whereas Chesbrough and Rosenbloom (2002) take an innovation perspective. There are common elements in the widely distinctive definition of the business model. These element can be described as a method of doing business, generating revenue, creating value, the logic of earning money, architecture of the firm, generating profitable revenues and offering value for customer segments. What becomes clear from this overview of definitions is that two elements are key. The first element is that a business model implies how value is created for the company and the second element is how value is captured. Within this research the definition for business model is based on the definition of Osterwalder, Pigneur and Clark (2010), because it is specifically based on these two elements and the definition can be clearly adjusted in the context of innovating through multi-partner collaborations. Therefore within this review the following definition is used: “A business model is a conceptual tool that describes the rationale of how organizations create, deliver, and capture value.” (Osterwalder et al., 2010, p. 14).

In many cases of open innovation, the solution is not just a single product or service but a system of combined products and services from different organizations. This requires a sound business model to ensure a sustainable overall value proposition, as well as sustainable value for all the parties involved. The business model should be built on the interests of the various stakeholders and the related exchange values (Den Ouden, 2012). The business model canvas of Osterwalder (2010) is a common used and appropriate canvas to structure the business model. However, within this canvas it is not possible to visualize the flows between the offerings and interactions of the organizations involved. When multiple parties are involved in realizing an innovation, a different structure can be used. Therefore, Den Ouden (2012) developed the value flow model. This value flow model is mainly focused on designing a business eco-system, a network of interlinked companies who interact with each other in offering a value proposition. A multi-partner alliance can be seen as a small eco-system and therefore a lot of linkages between the eco-systems and a multi-partner alliances can be found. Consequently, it is argued whether the value flow model is applicable in multi-partner alliances. The value flow model is discussed later in this section.

So within a multi-partner alliance, every company has its own business models and ways of making money. It can be useful before starting a collaboration on a specific new product development
project, to understand the way in which the parties create and capture value and to see whether the values of the parties are complementary to each other or conflicted.

3.3.1 The concept value

When talking about value within alliances, it is often about the value of an offering. Some define value in businesses monetarily, whereas others use a broader value definition, which also includes non-monetary revenues. Porter (1985) defines value as the amount buyers are willing to pay for what a firm provides them. When an offering is expressed in monetary value it is more an objective measure of value and this value can be measured. However, some regard value not as a monetary concept. According to Walter, Ritter and Gemunden (2001) value is a trade-off between benefits and sacrifices. So this includes the idea of value being a subjective perception of what has been gained when weighted in relation to what has been sacrificed. This implies that there is no value if it is not valuable for someone. In this way value is dynamic and changeable over time. When using this view on value, perceived value in an alliance can then be expressed as the difference between perceived benefits and perceived sacrifices.

Nevertheless, it remains difficult to determine the value of a joint research in advance, because the results of the project can be very unpredictable. Timing plays an important role, since an invention that is patented just one day earlier by a competitor can provide the alliances’ research entirely worthless. This timing influences the value.

One of the main reasons to participate in alliances is to create value and therefore achieving competitive advantage. Value creation is defined as the process by which the resources of two (or more) companies are combined in order to achieve something that one of the parties could not achieve alone. So through co-create value, resources of the companies involved are combined and new combinations of capabilities are developed. Therefore enabling the parties to achieve something that cannot be achieved by only one party. Thereby, the capabilities of firms in relationships are more than the sum of individual firms’ capabilities because of the existence of distinct relationship capabilities, tying together and interacting with the capabilities of individual firms (Foss, 1999). Amit and Zott (2012) notify the importance of value creation and stated that regarding business model innovation it is important to ask the question how value is created for each stakeholder.

Porter (1985) argues that new value is created when firms develop new ways of doing things using new methods, new technologies, or new forms of raw material. So innovation activities influence the value creation process. Porter’s model of value chain is one of the best known and widely applied models of a company’s value-creation processes. Porter (1985) introduced the concept of value chain as the basic tool for examining the activities a company performs and their interactions. It separates the activities of a firm into a sequential stream of activities and is used to analyze and establish the importance of the different activities in delivering the final product or service. This value chain framework helps to analyze these activities in order to create value and competitive advantage.

However, this traditional value chain thinking is more and more expanded to the more complex value network, which consists besides the firm itself of direct suppliers, possible contributors and co-creators of value (Prahalad & Ramswamy, 2004). This higher focus on value networks is due to the fact that there is a shift from ownership of resources to sharing and getting access to resources (Prahalad & Krishnan, 2008).

So important questions to consider when forming multi-partner alliances are: what is the added value of the alliance for each party involved in the alliance? How can that value be measured? How can the parties share or divide the value that is created through the alliance?
3.3.2 The value flow model

Descriptions of business models in literature include the key partners and resources needed to realize a specific value proposition. They are used to indicate ‘who is offering what to whom and expects what in return’. The central notion of the business model is to create value for customers, and to capture a portion of that value for the organizations offering the value proposition.

However, Den Ouden (2012) stated that in the more complex situation of multi-party value networks, the business model also deals with the creation and addition of value, as well as the exchange of value between the actors. Since a multi-partner alliance can be seen as a closed multi-party value network, the business model in a multi-partner alliance also deals with the value creation as well as the value exchange between the parties involved. The design decisions in a business model for a multi-partner value network include: what offerings from which parties are provided to which other parties; what are the elements of those offerings; and which value-creating or value-adding activities are performed by which parties. Therefore Den Ouden (2012) developed the Value Flow Model, which not only indicates the offerings and interactions of an organization with its customer, but also the flow of value between multiple members of the network. ‘The value flow model visualizes specific interactions within the network to provide a perspective for understanding value-creating roles and relationships, and to offer a dynamic view of how both financial and non-financial assets are converted into negotiable forms of value’ (Den Ouden, 2012, p.154). The model helps in explaining how value is realized for each role, how tangible and intangible assets of value creation are utilized and helps in understanding the risks that are crucial.

Elements of the Value Flow Model

The model integrates different elements to provide a comprehensive view of how the value propositions is being created out of complementary added values of different parties, and how the related value flows through the network. Those elements are discussed that are relevant for a multi-partner alliance.

Actors and their roles

There are different actors in the network. Regarding the trilateral alliances, there are three main actors involved. Besides these actors that are part of the alliance, other actors can be important in delivering the value proposition, such as customers and stakeholders. All these actors can play different roles, like provider of goods, provider of systems, marketing & communications, supplier etc. A comprehensive overview of roles applicable to multi-partner alliances and their descriptions are shown in the appendix D.

Motivations

The different parties can have different motivations to be part of the alliance. For example a party found it important to increase the quality of life, while another party may look for the cheapest solution. Or a manufacturer may aim to create a higher margin, while another may want to focus on volume and economy of scale. Understanding these differences is important in the design of the network (Den Ouden, 2012). Moreover, it is important to choose parties that have aligned motivations.

Compatibility and influence

Another aspect which is important is that the motivations and the behaviors of the parties are compatible with the value proposition and the motivations of the other parties involved. Moreover, different parties can have different influence on the decision-making process of the network. This influence is related to the power (Den Ouden, 2012). So power dynamics play also a role in the network.
The power and dependence of firms collaboration within a multi-partner alliance varies based on what a firm brings in the alliance by way of its expertise and capabilities. The power structure derived from the resources contribution within multi-partner alliances are complex in comparison with two-partner alliances (Inkpen & Beamish, 1997). Truly equal contribution within an alliance becomes less likely when the number of firms increases. Therefore power dynamics becomes more important in a multi-partner alliance. The power structure can influence how firms are willing to share their expertise and knowledge with the other partners.

Van der Vegt, Bunderson and Oosterof (2006) found that partners with less knowledge become dependent on those who have more knowledge. Those partners who are rich in knowledge can help those lacking knowledge in order to succeed in other environments. So members with relatively greater knowledge gain power over those with relatively little knowledge. Because of their dependence, partners weaker in expertise within a multi-partner alliance are more likely to proactively assist other members and to share their limited knowledge. In contrast, partners who are rich in knowledge are less willing to share because they are less dependent on the relationship to succeed.

So when a firm within a multi-partner alliance holds substantial power due to their collective expertise relative to the other firm, it could be that they are less dependent and committed to the firm, and will be less willing to share their expertise. Then the knowledge flows from the resource rich firm to the resource poor firm.

Within multi-partner alliances that is technology focused, technological expertise is often the critical currency to be used as a source of power. Stronger partners in terms of technological expertise perhaps contribute a greater absolute amount of knowledge toward the common goals of the multi-partner alliance. In brief, other parties can be dependent on a party if this party has an unique technology to offer. The central position enable that party to bargain for a higher share of the total value produced by the alliance.

As a results of this, important question within multi-partner alliances could be: Which partner has which resources and has therefore most power?

**Investment and throughput time**

For the different parties it is useful to make a rough indication of the investments required to develop and realize their parts of the value propositions.

An understanding of where the big investments need to be made will help to make sure there is a balance between investment and revenue streams at the end of the collaboration.

**Transactions**

This element relates to the activities that are performed between parties or to resources, information or items that are shared or exchanged between parties.

There are different resources that firms can contribute to an alliance. Important resources can be physical, financial, human, technological, managerial, and organizational resources (Das & Teng, 1999). There are different ways to classify these resources, such as the distinction between tangible and intangible resources. Tangible resources are machinery, human and financial resources. Intangible resources are skills, managerial expertise and reputation (Barney, 1991).

Den Ouden (2012) included the following types of transactions and resources in the value flow model: goods and services, money and credits, information (knowledge, advice) and intangibles (experience, reputation, exposure, attention etc.).

**Intellectual property**

When viewing the literature it appeared that intellectual property (IP) is a very important aspect in especially alliances that are focused on innovation.
When the Open Innovation concept was introduced, the concept of IP became more and more important for companies. So one of the core elements in open innovation theory, is how to manage and protect the IP to realize maximum benefits for the organization (Alexy, Criscuolo, & Salter, 2009). Therefore an important resource within an alliance is intellectual property. The IP-model determines the value appropriation potential for the partners and is therefore crucial in driving successful collaborative innovation initiatives (Leten, Vanhaverbeke, Clerix, & Van Helleputte, 2013). Organizations want to benefit from the development of the IP. Nonetheless, within innovation networks theft of intellectual property is seen as the most important risk (De Backer, 2008). So a relevant aspect is the protection of important intellectual property of the different partners in the alliance (Campione, 2003). Since knowledge has become increasingly important for competitiveness and innovation, companies seek the most appropriate protection of their interests when collaborating with external partners. They usually adopt both formal methods (such as patents or copyright) and informal ones (lead time or first mover advantage).

The most common method to protect the knowledge is by patents. Patents are the most tangible form of IP rights and experience the strongest legal protection in comparison to other types of IP. According to (Cohen, Goto, Nagata, Nelson, & Walsh, 2002) the main reasons, for especially patenting, is to prevent copying, prevent blocking, prevent lawsuits, enhance reputation, to gain licensing revenue and measuring performance.

The sharing of IP became more popular, since the term Open Innovation was coined. Sharing of IP can be formalized through licensing. A license agreement is a contract under which an owner of IP (called the licensor) permits another person (called the licensee) to engage in activities and get the legal rights attaching to the IP. It prevents companies from having to reinvent the wheel and makes it profitable for companies because it is possible to get money or other forms of value for your inventions. So IP can be seen as an opportunity for value creation (Alexy et al., 2009). Instead of using Intellectual Property Rights (IPR) as a defensive mechanism, companies engaged in open innovation practices often organize licensing activities and strategic alliances as part of proactive intellectual property strategy that aims at sharing technologies. So licensing has evolved as a part of the management strategy and exploited as a financial asset. This licensing is mostly preferred in more downstream alliances, where technology plays a big role.

So opening up the innovation process requires a shift from the traditional patent protection approach towards a wider approach that considers patents also as tradable assets (Ziegler, Ruether, Bader, & Gassman, 2013). Within this context, firms have started to commercialize their patents externally through activities such as out-licensing and selling patented technologies. The technology licensing payments have increased in the last years and can be due to the fact that there is more competitive pressure which forces firms to find ways to keep pace the environmental changes and to increase their effectiveness of IP management (Granstrand, 2004).

When a multi-partner alliance is focused on innovation, new IP can be created, because new technologies and products are developed. In this collaborative innovations, shared IP arises. Therefore there exists different forms of IP. Especially useful within collaborations is background IP and arising IP or so called joint development IP. Joint IP could be defined as any IP that is developed by either party during the term of the joint development agreement (JDA), and is related to the subject matter of the project (Sobieraj, 2003). It does not matter if the IP was developed independently by either party. It is based on opinions how much information from the other party is used within the joint development project. However, the above definition is often not accepted by all the parties involved in a collaboration because a company may want to maintain separate ownership over rights that are developed independently during the joint development project. Therefore it is important to consider in a very practical way how IP is organized within an alliance and how it relates to timing, pricing and overall value. For example agreeing to develop a product
together it is necessary to decide about issues related to IP rights (IP license), or who will have a license to manufacture it or what price one party will buy units.

According to Sobieraj (2003) there is no right way to address the discussions and issues around IP, as it depends on the particular circumstances of the parties and the project. However, it is important for the agreement between the parties, to define as clearly as possible what is and what is not joint IP and is depended on the needs, expectations and ability to compromise of the parties involved.

Overall the management and protection of IP, internal in the company as well as in an alliance, is an important element.

Besides the protection of the IP, another issue is the IP distribution between the alliance partners. The IP could be owned by either the partners of the alliance or the alliance itself. Leten et al. (2013) describe how IP is arranged in a partnership were different partners among different positions in the value chain are involved. They argue that ownership of and access to IP-protected knowledge should be determined before the start of the collaboration. In the case that they describe a research institute orchestrates the collaboration as a neutral player among the different partners. At the start of the project different agreements were made about IP. The research institute made bilateral IP arrangements with the partners, based on their IP-model and taking into account the needs and contributions of the specific partner. Generally, the technology end-users get access to arising IP, which is IP generated during the course of the collaboration, related to design and manufacturing. The other partners get access to a smaller, more specific set of IP. For instance, the equipment suppliers get access to IP that is related to their piece of equipment. Additionally, the equipment and material suppliers also negotiate about the restrictions regarding the access of others to knowledge on the performance of their specific pieces of equipment and materials.

When working closely with external partners, uncertainty about the appropriation of the benefits of technology collaboration can appear. For SMEs often perceives more risks because they typically have fewer resources and limited expertise in IPR issues. Therefore before entering a multi-partner alliance it is good to realize what type of partners are involved and what additional challenges can arise in the field of the IP.

However, besides the IP, het partners should also be aware of the knowledge that a partner brings in that cannot be protected by different kind of IP rights. This knowledge is referred to as tacit knowledge. This type of knowledge is difficult to transfer to the other party by means of writing it down or verbalizing it and so is difficult to convey. Tacit knowledge in a R&D alliances can be for instance knowledge about particular processes or how a technology can be implemented in a specific kind of product field.

It involves insights that are not amenable to codification and are influenced by personal experiences and values. So transferring such knowledge involves the development of trust, information sharing and joint problem solving. The transfer of tacit knowledge requires greater trust between partners than does explicit knowledge (Collins & Hitt, 2006). Within multi-partner alliances, partners should be aware of these differences between explicit and tacit knowledge and the differences in which it best can be transferred among the partners.

In conclusion, different questions regarding IP are useful be answered before entering a multi-partner alliance. Questions include who has which kind of IP?, How is IP going to be shared among the partners? Who owns the joint developed IP?, Who controls the IP rights during the alliance? So how do we manage the IP within the multi-partner alliances?

Therefore it would be useful to explicitly define IP as a transaction between the parties, since it can have a lot of value for the parties involved, can be transferred by terms of licensing and is associated with money. Within the value flow model these transactions are indicated by arrows, which also show the direction of the flows.
Revenue model

Profit aspiration is a key driver of any business. In the recent research literature, a revenue model is seen as an inseparable element of business models (Rajala & Westerlund, 2007). Profit aspiration describes the ways in which a company captures value and transforms it into revenue. Discussion of revenue models has traditionally been difficult, because the cost structure that exists within the open innovation context is radically different from that which exists in closed innovations. Traditionally, the revenue model was solely used to capture the value from a developed product or service. In this model the consumer pays for the products or intellectual property which is owned by the company which provides the product or IP. Nowadays business models and their revenue models are widely innovated to receive the ultimate profit from the delivery of the service or goods. The applied configurations go far beyond the traditional ones. Innovative manners are developed to improve commercialization and the financial efficiency and as argued in the earlier section licensing becomes an important revenues stream, in an alliance which is technology focused.

According to Chesbrough and Rosenbloom (2002) technology managers must regard ‘the architecture of the revenues’ as a crucial and necessary element of capturing value from technology. There are many situations possible where it comes out that the management of revenues is important. For instance, the more knowledge the firms share, the greater the chance of achieving success, but if there are no clear arrangements in place with respect to sharing the revenue, the greater, also, the chance that the partner will forge ahead on his own. Another example of when the distribution of revenue may take a turn for the worse for a particular company is when one company sells a machine and another company sells the consumables and the sales of the consumables are less than expected. It has to be clear before the alliance is formed whether this loss will be shared among the parties or compensated in other manner. Where it concerns direct financial returns, it is important to share these as much as possible proportionate to each partner’s contribution. It is all a matter of negotiation and of calculating the various options.

Within an alliance often the parties that are involved can be seen as each other ‘customers’. All the parties want to develop a new or better product, where in a R&D alliance, the technology is crucial. Therefore the questions Osterwalder et al. (2010) formulated within his canvas can be seen in a different way such that for what value are the other partners willing to pay for my technology? How much does each revenue stream contribute to the overall revenues? And how much does every party gets from the revenues? So what is the revenue model of our alliance? Besides that, questions as the what if’s are important? What will happen, for example, if a joint project disappoints and there is no money to fully compensate each partner’s contribution?

3.4 Conclusion

Within the field of Open Innovation there is a growing interest in multi-partner alliances in order to co-create value. But at the same time, there is a surprising lack of research directed at investigating such alliances. From literature it can be concluded that multi-partner alliances entail more than a simple collection of bilateral alliances and therefore can be best treated as a distinctive type of alliance for theoretical development and practical implications.

From the researches that are available in literature it can be concluded that multi-partner alliances can give additional benefits over bilateral alliances, but also have additional weaknesses. Additional benefits include: more complementary resources accessible to the firm, higher potential volume for knowledge sharing, faster recognition of market opportunities and threats, higher innovative performance and sustainable competitive advantage. Additional weaknesses include: higher degree of managerial coordination costs, power dynamics complexity because there is no direct power over two partners, chances of coalition forming, explicit contracts are more challenging to derive and there can exist social exchange complexity, such as harder to build trust, knowledge leakage, high
risk of opportunistic behavior. Overall, it can be concluded that when moving from a bilateral alliance to a multi-partner alliance a layer of complexity is added and that this may affect the alliance effectiveness.

Furthermore, the business model and value flow model is described and related to multi-partner alliances. This because the business model and the value flow model describe the way value is created and captured. It can be concluded that looking at the business model and value flow model can be of high value and can create structure within managing multi-partner alliances. It appears that formulating clear roles, being aware of the power dynamics and risks, managing and protecting IP, and developing clear revenue models are key in forming multi-partner alliances. Moreover, the important factors derived from the oriented interviews and derived from literature are linked with each other and related to the following perspectives: strategic, governance, IP and relational. The table which gives an overview of these links is shown in appendix A. The following list of important concepts related to multi-partner alliances shown in table 4 are derived, which will be used in the empirical study:

<table>
<thead>
<tr>
<th>Multi-partner alliances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business model</td>
</tr>
<tr>
<td>Value flow model</td>
</tr>
<tr>
<td>Value creation</td>
</tr>
<tr>
<td>- Added values</td>
</tr>
<tr>
<td>- Motivations</td>
</tr>
<tr>
<td>- Roles</td>
</tr>
<tr>
<td>- Power dynamics</td>
</tr>
<tr>
<td>- Configuration</td>
</tr>
</tbody>
</table>

Table 4: Important concepts related to multi-partner alliances
4 Methodology
This section elaborates on the research methodology. By deriving such a methodology, the quality of the study will be enhanced (Yin, 2009).

4.1 Type of research
There exists different types of research, namely exploratory, descriptive, explanatory, which all have different aims and own relations to theory. The exploratory study focuses on building theory and are conducted to formulate research questions and hypotheses. The objective of exploratory research is to identify key issues and key variables. The explanatory case study seeks to link an event with its effects and are suitable for investigating causality. It looks for explanations of the nature of certain relationships. Descriptive case studies are often used to illustrate events and their specific context. It is typically concerned with determining the frequency with which something occurs of the relationship between two variables and are guided by initial hypotheses.

Multi-partner alliance is a very new and recent topic. As concluded from the literature review that is conducted for this research, not a lot is written about this topic and no specific key variables and relationships are present in literature. Therefore this research will be exploratory. The goal will be to clarify concepts and form hypotheses about the topic. No attempt will be made to examine big random samples of a populations, but instead, it will be looked for individuals who are knowledgeable about the topic. So this research seeks to create hypotheses rather than test them. Overall, exploratory research is broad in focus and the objective of exploratory research is to identify key issues and key variables.

4.2 Qualitative method
Data collection methods can be classified into qualitative and quantitative methods. A useful way to distinguish between the two methods is to see qualitative methods as providing data in the form of words or visuals, and quantitative methods as generating numerical data. Quantitative and qualitative methods of data collection are often employed in support of each other. Researchers employing case study research often make use of multiple data collection methods (Woodside and Wilson, 2003).

Within this research the main focus will lie on qualitative methods, the objective is not to test hypotheses, but to discover and enclose meanings. Moreover, the qualitative research can provide descriptions of motivations and behaviour of individuals and offers richly descriptive of the perceptions and views of individuals and how these can be put together into frameworks, which are based on their experiences.

4.3 Case study approach
A case study is a useful research method when the research focus is a contemporary phenomenon and where the boundaries between phenomenon and the context are not clearly apparent. This is clearly the case in this research. Open innovation, specifically multi-partner alliance, is a very variable concept and its importance for companies directly depends on their strategies and structural characteristics. So the study cannot be separated from its context.

Moreover, a case study approach can be advantageous when the research questions are focused on ‘how’ and ‘why’ aspects and in the case when the researcher has limited control over the phenomena. Yin (2009) describes a case study as relevant when the research objective is to identify underlying motivations and relations, while at the same time taking an open and broad range of potential influences into account. Within case study research a limited number of cases, which can be organizations, business units or for example projects, is investigated in depth by means of observation or interviews, in order to draw a detailed picture of qualitative concepts.
(Eisenhardt & Graebner, 2007) argue that articles based upon case study research are considered most interesting and provides interesting new insights.

Since multi-partner alliances are in the early stages of research, there is a lack of sufficient understanding of the problem to formulate specific hypothesis. Therefore this study will mainly be focussed on exploratory case studies, since the research will concentrate on gaining ideas and insights. Such research is particularly helpful in breaking broad, vague problem statements into smaller, more precise sub problem statement. So company case studies will be undertaken to assess how multi-partner alliances are implemented in practice. The aim is to understand how multi-partner alliances are set up and managed and how this can be improved.

4.4 Data collection procedure
As described in the previous section, the focus of this research lies on the qualitative method and specifically on the case study method. In this section a more detailed description is provided about how data is collected.

Documents viewing
First the available documents of the cases are viewed: available contracts, agreements and meeting documentations are analysed.

Semi-structured interviewing
Within this study semi-structured interviews are used. Such interviews are possible when there is pre-existing knowledge on the concepts under investigation. This pre-existing knowledge is gathered by literature review and the oriented interviews. The semi-structured interviews follow an open and informal interview style. They allow to explore the possibilities of improvement in the cases and the reasons why things occur and are decided. The interviewer can continue to ask questions until the situation is fully understood. In addition to the amount of detail that can be generated, it is also a flexible method. It allows the respondent to talk freely about issues and does not constrain the response through the need to answer all the predetermined questions.

However, this method also has some disadvantages. For example the honesty of the participants cannot be guaranteed, flexibility of the interview may result in less reliability and the answers, especially those on open-ended questions are difficult to compare and analyze. Also the quality of the interview is depended on the skill of the interviewer and the ability to anticipate and think of questions during the interview.

To reduce these influences on the quality of the interview an interview protocol was set up, which include topics where the interview focuses on and key questions. When thinking upfront about topics that can be discussed and about possible questions related to these topics, it is more easy during the interview to anticipate on the answers of the interviewee. The interview protocol can be found in appendix E.

As can be seen, a lot of questions were formulated. The main questions were the same for all respondents, but there were separate questions on the specific roles of the respondent, and follow-up questions on the emergent issues.

The questions of the interview protocol were discussed with the Open Innovation manager and were discussed and tested on the director of Supplier Innovation and Commercial Alliances. This was done to check whether questions were understandable and to check whether some questions should be formulated in a different way. Also an introduction of the interview was generated and sent to the interviewees before the interview took actually place. This in order to make clear what the goal was of the research and what the goal was of the interview.
Benchmarking
Multi-partner alliances are quite new within Unilever and therefore not a lot cases which are stated in the end phase of the innovation funnel are present within the company. Therefore also interviews were held with persons from other industries who have experiences with multi-partner alliances. Companies included in the benchmark were Philips, ASML and Holst Centre. By doing this different perspectives on the topic were obtained.

Analysis of the data
Most of the interviews were recorded and transcribed from tape to text. Text that was in Dutch was translated to English and divided into evidence for the central research questions posed. Relevant pieces of text were selected, irrelevant data was removed. In doing so, it formed the data used to present the two case studies. After that, the data was analyzed for three main aspects: the presence of the researched topics; the presence of the relations between the topics; and the presence of new elements and relations between the elements.

For the analysis of the data, the program NVivo was used. This program allows for large quantities of qualitative data to be analysed and allows for extensive pattern matching. It further helps to improve the rigor of this research. Each interview was coded, where after each case was analyzed and described and a cross-case comparison was made.

Van Aken, Berends and van der Bij (2007) describe different strategies to analyse qualitative data. Within this study both the grounded theory approach as well as the template approach is used. First, the template approach is used, which focuses on in advance known phenomena from literature into which we want to create insights. So this approach uses existing codes. Secondly, the grounded theory approach is used in which was started with an open perspective. This approach was needed for the concepts that were mentioned during the interviews, but where not derived upfront based on literature and oriented interviews. Pieces of data that were not coded by using the template approach were coded by means of open coding. This method is especially useful for exploratory purposes. By combing the template approach as well as the grounded theory approach the coding scheme given in Table 5 is derived.

<table>
<thead>
<tr>
<th>Codes based on template approach (based on literature and oriented interviews)</th>
<th>Codes based on grounded theory approach – open coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value creation</td>
<td>Risks</td>
</tr>
<tr>
<td>Added values</td>
<td>Relationship</td>
</tr>
<tr>
<td>Motivations</td>
<td>Knowledge sharing</td>
</tr>
<tr>
<td>Roles</td>
<td>Negotiation process</td>
</tr>
<tr>
<td>Power dynamics</td>
<td>Success factors</td>
</tr>
<tr>
<td>Configuration</td>
<td>Co-opetition</td>
</tr>
<tr>
<td>Value capturing</td>
<td>Communication</td>
</tr>
<tr>
<td>IP model</td>
<td></td>
</tr>
<tr>
<td>Licensing model</td>
<td></td>
</tr>
<tr>
<td>Revenue model</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td></td>
</tr>
<tr>
<td>Interdependency</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Coding scheme
4.5 Quality of the research

This section will explain the criteria that assess the quality of the research. Literature has mentioned three general criteria that can be used to assess the quality: controllability, reliability, and validity (Yin, 2009). These criteria will be described below, along with the actions that will be taken to increase the quality.

4.5.1 Validity

Validity can be divided into three types: construct validity, internal validity and external validity (Yin, 2009). Construct validity refers to establish the right operational measures for the concepts that are studied in the research. This research mainly relied on the information provided by the respondents of the case study. But to improve the construct validity in this research also other data sources of evidence were used, such as work documents and agreements. Moreover, the quality of the applied instrument influences the construct validity. Therefore, the interview protocol was carefully constructed and discussed with different persons within Unilever and with the supervisors of the university. In conclusion, different sources of data were used, which resulted in multiple sources of evidence, which minimizes the perception bias through triangulation.

The internal validity is of less importance in this study, because it refers to establishing a causal relationship. This research is mainly focused on exploratory research and not on providing causal claims. The external validity refers to establishing the domain to which the findings of the study can be generalized. This validity is critical in case study approach; the case study method is often criticized for the limited number of investigated cases which is said to limit the generalizations of the findings. Yin (2009) however stated that these critics often refer to statistical generalization which is often present in survey research. In contrast, case studies rely on analytical generalization in which the researcher strives to generalize a particular set of results to a broader theory.

So external validity is mainly important for theory-orientated research. Case studies are not sufficient to draw general conclusions on the basis of only a few cases. So this study is mainly focused on making a design solution for a specific problem, therefore external validity is of less concern.

Moreover, this study investigates a topic that is very recent and new. Therefore this study focuses only on creating first insights that can be tested afterwards by other researchers in different companies. However, contributions to research are also possible and should not be ignored and therefore theory is used and the link with literature is discussed in the thesis.

4.5.2 Reliability

Reliability refers to the extent the results of the study are independent of the characteristics of the study and whether the results can be replicated in other studies when the same case is considered (Yin, 2009). There exist four sources of reliability: the researcher, the instrument, the respondents, and the situation (Van Aken et al, 2007). Regarding the researcher, there is a potential bias that people have the tendency to interpret the results in the way which confirms their (prior) beliefs, the so called confirmation bias (Van Aken et al., 2007). It is accounted for researcher reliability by having multiple appointments with all the supervisors, both from the company as from the university, to discuss the findings of the case study.

The second potential sources of bias is the research instrument. A study is reliable if with another type of instrument the same results are obtained. To cope with this problem, different types of instruments should be used and different sources of information should be researched (Yin, 2009). As described earlier in this section, to decrease the influence of the research instrument on the outcomes, not only interviews are the source of information.
The third potential source of bias are the respondents. During the interviews respondents can unintentionally provide incorrect or incomplete answers. So unreliability caused by the respondents appears when the outcomes are different when other respondents are used. Therefore in this study respondents from different roles, departments and groups are interviewed. Also not only people from Unilever are interviewed, but also persons from the other two parties involved in the multi-partner alliance are interviewed in order to get insights from different perspectives. In this way people who are involved in the problem area are represented in the study.

The last potential source is the situation. Differences in circumstances under which the study has been conducted can give unreliable results. For instance, recent negative experiences or specific moments on the day can be of influence (Van Aken et al., 2007). To prevent this, the study is spread across multiple days at different time settings.

The next chapter is focused on the analysis of the research, both the case studies as well as the benchmarking are described and analysed. In this way additional information is sought for and an in-depth process of data gathering and analysis is performed in an effort to answer the main research question.
5 Multi-partner alliances: insights from practice

This chapter focuses on the analysis of the two case studies and benchmark performed in order to answer the main research question. Where in the first chapters conclusions were drawn based upon indicative findings from literature and oriented interviews, in this chapter conclusions are drawn based upon contextual data and information derived from the analysis. In order to make this possible, first a description and the findings of the case studies are given, where after a comparison is made between these two case studies by a cross-case analysis. Thereafter the main recommendations of the interviewees about managing a multi-partner alliance are given and followed by the findings of the benchmark.

Since the case descriptions and benchmark description are very detailed, the key points on each concept are given in tables 6, 7 and 8. These table gives an overview of the key points related to the conceptual framework on value creation and capturing. Moreover, since in-depth semi-structured interviews were held, there was the possibility to also explore important concepts that were not explicitly found in literature. So these last findings are not directly related to the aspects found in literature, but remain important within multi-partner alliances.

By viewing these tables the findings of case 1, case 2 and the benchmark can easily be compared. It appeared that the main challenge of a multi-partner alliance in order to maximize the value creation and capturing for the parties lies in the negotiation process. Moreover, the cases differ in the way they are configured in both the development as well as the commercialization phase. A more detailed comparison between specifically the two cases is given in the cross-case analysis section.
Table 6: Overview findings related to value creation

<table>
<thead>
<tr>
<th>Conceptual framework</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Benchmark</th>
</tr>
</thead>
</table>
| **Added values**     | • The added values of the parties should be complementary  
                       • Everyone has to add value to make it work – all parts of the puzzle  
                       • The added values of the parties should be complementary  
                       • The added values of the parties should be complementary |
| **Motivations**      | • Motivations are compatible with the value proposition and the motivations of the other parties involved  
                       • Hard since not all the parties have the same objectives all the time  
                       • Motivations are compatible with the value proposition and the motivations of the other parties involved |
| **Roles**            | • Most of the roles are naturally determined  
                       • Leading role assigned to  
                       - The one who invests, initiates the collaboration or is the customer  
                       • Someone has to drive the collaboration  
                       • Most of the roles are naturally determined  
                       • Leading role assigned to  
                       - The one who invests  
                       • Leading role is played by the customer and the one who invests  
                       • Leading role can be best played by a neutral (external) party |
| **Power dynamics**   | • Parties often think power lies at parties who are big and invest the money  
                       • Knowledge can give the parties power  
                       • Depends on size of the company and who invests  
                       • Knowledge can give the parties power  
                       • All parties should have some power in the collaboration at some point, otherwise it is not going to work  
                       • Power of money can overrule power of knowledge  
                       • Power is especially important when parties of unequal sizes are involved  
                       • It is about becoming equal partners |
| **Configuration**    | • More net-based in development phase, more chain-based in commercialization phase  
                       • More chain-based in both the development phase as well as the commercialization phase  
                       • Case dependent whether to apply net-based or chain-based |
### Value capturing

<table>
<thead>
<tr>
<th>Conceptual framework</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value capturing</strong></td>
<td>• Parties had different interpretations on the IP and commercialization aspects. Not the same understanding of how the value would be divided • All the expectations of the parties should be valued and appreciated • Not necessarily benefit for biggest party – but balance and split the values based on what the parties think is fair • Agreements and visions needs to be clear from the beginning</td>
<td>• All the values of the parties need to be balanced • Agreements and visions needs to be clear from the beginning</td>
<td>• Difficult since each party wants to try to get a bigger piece of the cake • Have to balance the values such as knowledge, reputation in comparison with money • Clarity from beginning on in contracts (roles, responsibilities, IP rights)</td>
</tr>
<tr>
<td><strong>IP model</strong></td>
<td>• Creating and dividing IP is perceived as important and difficult • IP split is based on what is most closely to the own business of the parties, but still inventor ship plays a role • Parties are focused on trying to get ownership of the IP, however only getting IP is not always biggest gain to get • Exclusivity is important, but difficult to agree, since then block each other’s business - co-opetition plays a role • Parties do not want to have shared IP</td>
<td>• Creating and dividing IP is perceived as important and difficult • IP split is based on what is most closely to the own business of the parties, but still inventor ship plays a role • Exclusivity is important • All parties are focused on trying to get ownership of the IP • Parties do not want to have shared IP</td>
<td>• Most important questions are about IP in such collaborations • Exclusivity agreements are important • IP can be shared when you are in a research phase, not when you are in a commercial phase • The IP model is case dependent</td>
</tr>
<tr>
<td><strong>Licensing model</strong></td>
<td>• The want to have the control influenced the licensing models and the possibility for Unilever to roll out with other suppliers</td>
<td>• Licensing model is based on the logical sequence of the value chain</td>
<td></td>
</tr>
<tr>
<td><strong>Revenue model</strong></td>
<td>• Not clear who is going to get which benefits – slowed down development process</td>
<td>• Small parties have to find revenue faster – determine structure agreements</td>
<td></td>
</tr>
</tbody>
</table>

**Table 7: Overview findings related to value capturing**
<table>
<thead>
<tr>
<th>Conceptual framework</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>Trust and give space is crucial for success</td>
<td>Trust is a prerequisite for the success of the collaboration</td>
<td>Trust and joint value proposition are needed to share ideas and knowledge</td>
</tr>
<tr>
<td>Interdependency</td>
<td></td>
<td></td>
<td>Collaboration work efficient if parties are interdependent</td>
</tr>
<tr>
<td>Relationship</td>
<td>What made the most contribution to the success of are factors like the relationship itself, openness and trust</td>
<td>History relationship: makes collaboration between those parties easier – understanding of each other’s motivations, clearer path, less formal agreements needed</td>
<td>Focus on building relationship instead of only writing agreements, Culture fit between parties is important</td>
</tr>
<tr>
<td>Knowledge sharing</td>
<td>Still competitors at the end – therefore parties encounter difficulties in what can I say and what can I not say – afraid to loose knowledge</td>
<td>Parties have fear of losing important information</td>
<td></td>
</tr>
<tr>
<td>Risks</td>
<td>Every party took risks, Unilever took most of the risk → need to value what is the value of taking that risk and how to compensate</td>
<td></td>
<td>Sharing risks and results is easier when parties of same size are involved</td>
</tr>
<tr>
<td>Negotiation process</td>
<td>Perceived as most complex and difficult</td>
<td>Perceived as hardest and most time-consuming part of the collaboration</td>
<td>Moderator/external party can help in managing the collaboration, especially during the collaboration phase, Do not have a multi-partner contract: takes forever to get it, Clear leadership is needed, Fast decision-making</td>
</tr>
<tr>
<td>Success factors</td>
<td>Believe in the technology</td>
<td>Believe in the technology</td>
<td></td>
</tr>
<tr>
<td>Co-opetition</td>
<td>Solving technical hurdles together</td>
<td>Combining expertise of the different parties</td>
<td>Time to time parties will team up and time to time they will compete</td>
</tr>
<tr>
<td>Communication</td>
<td>Too many people involved makes it hard to communicate</td>
<td>Communication is not self-evident— no reciprocity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parties do not speak same language all the time</td>
<td>Different geographical locations makes it hard to communicate</td>
<td></td>
</tr>
</tbody>
</table>

Table 8: Overview findings related to other important findings of interest
5.1 Case studies
In this paragraph two case studies are described. Both case studies describe a multi-partner alliance where three parties are involved: Unilever, a supplier and a technology provider. The analysis of the cases is based on the interviews performed with all the parties involved in the alliance and on documentation such as contracts and presentations.

Each case study starts with a general description of the case. Secondly, an overview of the agreements between the parties is given. Thirdly, both the value creation as well as the value capturing of the case are described. Each case study ends with a representation of important findings in other areas of interests.

5.1.1 Case study 1

5.1.1.1 Description of the case
The detailed case description can be found in appendix F. The case contains much confidential information and therefore only a general description of the case is given in this paragraph, whereas the involved parties are anonymized. There are three parties involved in this collaboration: Unilever, a supplier and a technology provider. A description of these parties are shown in table 10.

With this collaboration Unilever aimed at reducing materials in their packaging. This could be realized by implementing a new technology in the manufacturing process of packaging. This technology is owned by a small company, but not yet applied and proven in this specific field. Unilever saw an opportunity to use this technology in the manufacturing process of packaging. The advantage of applying the technology is that it reduces the amount of material that is needed for the packaging, and therefore saves material costs and gives advantages regarding sustainability. This was the first time that the technology was applied in this process. However, the technology provider did not have the knowledge to implement the technology in this specific manufacturing process. So a supplier was needed to apply and adjust the technology in order to make the technology suitable for the manufacturing process of the supplier. Therefore, Unilever brought the technology provider and the supplier together. At this moment, the new technology is fully developed, deployed and launched in products of Unilever. The collaboration is perceived as a successful multi-partner collaboration. The main characteristics of this case are shown in table 9.

<table>
<thead>
<tr>
<th>Case 1 – Main characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td><strong>Innovation type</strong></td>
</tr>
<tr>
<td><strong>Duration</strong></td>
</tr>
<tr>
<td><strong>Phase</strong></td>
</tr>
<tr>
<td><strong>Aim (for Unilever)</strong></td>
</tr>
<tr>
<td><strong>Short description</strong></td>
</tr>
<tr>
<td><strong>Parties involved</strong></td>
</tr>
<tr>
<td><strong>Initial relationships</strong></td>
</tr>
</tbody>
</table>

Table 9: Main characteristics case 1
5.1.1.2 Agreements

Earlier in this report the type of agreements were explained. The agreements visualize what kind of relationship the parties want to have and what the involved parties negotiated in terms of value creation and capturing.

The types of agreements that are signed in this case within the different phases are described in figure 6. The correlated dates of the contracts can be found in table 11. As described in the previous section, Unilever noticed the technology of the technology provider. Both parties signed a CDA to make it possible to exchange knowledge and to look for possibilities for collaboration. But in order to make it possible to apply the technology also a supplier was needed. Unilever chose this specific supplier, because they are the biggest supplier in their field and have the ability to supply globally. At the start of this project, Unilever did not work with the concept of strategic suppliers. However, at this moment the supplier is a strategic supplier of Unilever, which means that both parties have the aspiration to work closely together in innovation projects.

A CDA was signed also with the supplier so that the parties could talk about a collaboration together. The CDA allows the parties to exchange confidential information related to the project. The parties discussed on which points the parties could complement each other. The parties decided to set up a 3-way JDA, which consists of one document linking the three parties together. This agreement covers the terms and conditions of development and the ownerships of rights of each party. Ideas could be built and research and development could be executed.

Table 11 shows that in the period from the mid of year 3 till the mid of year 4, the parties kept working together but there was no agreement that covered the collaboration. This was due to carelessness. Once the parties figured out the JDA had expired, the parties decided to extend the JDA. After this extension expired, there was a period of 8 months where the parties were busy with negotiating the commercial agreements. During this period the parties already started with
producing the new packaging, while no commercial agreements were in place yet. After a period of 8 months commercial agreements were signed between the technology provider and Unilever as well as between the supplier and Unilever. The commercial agreement between the supplier and Unilever is less formal then the commercial agreement between Unilever and the technology provider.

5.1.1.3 Main findings: value creation and capturing

5.1.1.3.1 Value creation

This section will focus on the value creation between the parties.

Added values of the parties

The interviewees of the different parties mentioned the values that the parties could add and deliver to the collaboration. An overview of these added values can be found in the first column of table 12. As can be seen, the parties bring different values to the collaboration.

Next to the different added values, the parties also have different motivations to join the collaboration. Every party sees opportunities in the project, but these opportunities are all different (see second column table 12). Unilever stated that a multi-partner collaboration can only work if all parties see an opportunity in the collaboration.
### Table 12: Value creation and capturing case 1

<table>
<thead>
<tr>
<th>Value creation</th>
<th>Value sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Important value that can be delivered</td>
<td>Motivations &amp; opportunities that the parties see in joining the multi-partner collaboration?</td>
</tr>
<tr>
<td>What can the parties bring into the multi-partner collaboration?</td>
<td>What kind of value do the parties want to capture at the end of the multi-partner collaboration?</td>
</tr>
<tr>
<td><strong>FMCG company (Unilever)</strong></td>
<td></td>
</tr>
<tr>
<td>• Access to consumer market – Brands</td>
<td>• First to Market (exclusivity)</td>
</tr>
<tr>
<td>• Knowledge about consumer market</td>
<td>• Sustainable packaging</td>
</tr>
<tr>
<td>• Insights about packaging specifications and the business</td>
<td></td>
</tr>
<tr>
<td><strong>Supplier</strong></td>
<td></td>
</tr>
<tr>
<td>• Knowledge on the manufacturing process</td>
<td>• Owner arising IP – related to systems, equipments, materials</td>
</tr>
<tr>
<td>• Possibility to manufacture: machines, equipment</td>
<td>• Use technology for other non-competitors</td>
</tr>
<tr>
<td>• Global market</td>
<td></td>
</tr>
<tr>
<td><strong>Technology provider</strong></td>
<td></td>
</tr>
<tr>
<td>• IP on technology</td>
<td>• Selling technology - licensing fee</td>
</tr>
<tr>
<td>• Knowledge about technology</td>
<td>• Owner arising IP - able to use created knowledge/IP with other non-competitors</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Value flow models and roles**

As described in the previous section, a value flow model can be useful in visualizing multi-partner alliances. It visualizes specific interactions within the small network to provide a perspective for understanding value-creating roles and relationships, and to offer a view of how both financial and non-financial assets are converted into negotiable forms of value. Therefore the value flow models for this case are visualized. The value flows are based on what is described in the agreements as well as what the different persons from the parties describe as value creation between the parties. The value flows are visualized for different phases in the multi-partner alliances. In this way, the dynamic of value creation is clarified. The value flow models can be found in figures 7, 8 and 9. Knowledge flows are marked blue, financial flows are marked red, goods and services are marked green and IP flows are orange.
Figure 7: Value flow model ideation phase case 1

Figure 8: Value flow model development phase case 1

Figure 9: Value flow model commercialization phase case 1
Ideation phase (figure 7)
In figure 7 it can be seen that at the beginning of the collaboration the parties shared knowledge between each other. The parties discussed what kind of capabilities every party could bring in and how to structure the collaboration.
In this case, the roles that the different parties played are mainly related to the field of expertise of the partners. Unilever had the role of marketing and communication during all the phases. For example, Unilever provided information about the consumer needs to the other parties and tested the packaging with the consumers. During the collaboration, Unilever also played the role of customer and godfather. Unilever had the want to apply the technology in the specific manufacturing process. The supplier stated the following: “If Unilever did not exist and did not have the want, this project was not important for us. Now after 4 years we found out that it was a kind of breakthrough technology, but we would not have treated it that way if we did not had a customer behind it.
Moreover Unilever was the pusher and the so called steering wheel of the collaboration. For example, Unilever brought both parties together and set the right behaviour and the relationship between the two other parties. Unilever stated that at the beginning it was important to have a driver in the collaboration: “There were two other parties involved who are intellectual different, so at the very beginning, one of the biggest things we did was to make sure to fix the attitude. We fixed it with some strong language and some strong meetings and they become more of a team. I think in the early part of the development, it is really important that you as the owner are heavily involved in everything. So you really got to drive the development and their behaviour.”
Furthermore, if Unilever would have stopped the development, then the collaboration would have to stop as well for all the parties involved. So Unilever had the lead from a business perspective.

The supplier played the role of the provider of goods and the provider of systems. The supplier provided knowledge about their equipment, their technologies related to the manufacturing process and about their materials.
The technology provider played the role of the provider of systems and the provider of content, since the technology provider provided their technology and their know-how in how to apply the technology.

Development phase (figure 8)
Once the three parties decided to work together, Unilever became the sponsor of the development and the innovation project. Therefore the role financier is assigned to Unilever in this phase. This is related to the fact that they are the customer of the whole project. Unilever stated: “We have the business case that says, if the technology is successful we will launch it in the market and will be successful. We will save money”. Especially, the supplier and technology provider had to investigate in this phase how the technology could be applied to the specific manufacturing process. Adjustments to the machines had to be made and they had to solve technical hurdles. Mainly knowledge was exchanged between the parties about the manufacturing process, the technology and the packaging specifications. Unilever had to investigate whether the new packaging could be applied to their lines of filling the bottles.

In this phase the most value was created between the supplier and the technology provider. However, still Unilever played the role of godfather, mainly because Unilever is the customer and the financier of the project. Unilever stated: “If you pay it, you drive it. If you put 1 million Euros in it, it needs to be my way.”

Commercialization phase (figure 9)
At the time of this research, the parties were still in the commercialization phase. The parties agreed already that Unilever will license the IP of the technology from the technology provider. This
decision will be further explained in the later section about the IP model. In exchange for the technology, Unilever will pay a licensing fee to the technology provider. The price of this licensing fee will be reduced by the investments that Unilever already made for the collaboration. Unilever will then sub-license the technology to the supplier. The supplier will provide the packaging to Unilever for a specific price, Unilever will fill the packaging and sell the filled packaging to the retailer. The retailer will sell the filled packaging to the consumer.

**Investments and throughput times**

Den Ouden (2012) suggested to give an indication of the investments and throughput times required by each party to develop and realize the value proposition. This can help to make sure that there is a balance between investment and revenue streams at the end of the project. It can also trigger a discussion about sharing risks and investments between the partners.

In table 13 the monetary investment level is indicated by euro’s and an estimation of the throughput times are indicated by hours.

The amount of investments and time the parties are just an estimation and are relative, in order to give a representation of the difference of investments between the parties. As can be seen Unilever invested the most money in the project. This is due to the fact that they are the customer of the whole project and have the primary want of getting the new packaging.

Unilever funded most of the costs that the supplier and the technology provider are making for the development. Unilever invested also a lot of time in negotiating, leading the collaboration and doing research. The role of doing marketing and communications takes a lot of time in the commercialization phase. The supplier also invested money and especially invested a lot of time. The supplier had to adjust the machines and equipment and had to solve technical hurdles. The technology provider invested time in providing their knowledge about the technology. The technology provider did not invest a lot of money, since the company is too small to do big investments in R&D projects.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Unilever</th>
<th>Supplier</th>
<th>Technology provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideation (figure 7)</td>
<td>€little investment €medium investment €very high investment</td>
<td>Negotiation, research</td>
<td>€negotiation, research</td>
</tr>
<tr>
<td>Development (figure 8)</td>
<td>€little investment €medium investment €high investment</td>
<td>Research, developing, funding the collaboration</td>
<td>€research, developing, manufacturi ng, buying equipment</td>
</tr>
<tr>
<td>Commercialization (figure 9)</td>
<td>€little investment €medium investment</td>
<td>Marketing &amp; communications, manufacturing, negotiation</td>
<td>€negotiation, manufacturi ng</td>
</tr>
</tbody>
</table>

Table 13: Overview monetary and time investments case 1

**Configuration**

In this case was chosen for a 3-way JDA that links the parties together. Since most of the value creation in the development phase was between the supplier and technology provider, another option in this case would have been to set the parties in a configuration were Unilever was less involved in the project. So a configuration where mainly the technology provider and supplier were
linked with each other. However, the interviewees mentioned several reasons why the decision for a 3-way JDA was made.

Having the three parties together, kept everyone involved in the collaboration. It also kept Unilever more involved and committed. The supplier stated the following: “Unilever had to decide whether the project goes further or not when technical hurdles occur, since Unilever invested the money. In this configuration, they were more engaged and therefore they could understand why things were not working. That is important. Otherwise the project would have stopped after 1,5 year. It is about the commitment with the project.”

Furthermore, having the three parties together stimulated the knowledge sharing between all the parties and the possibility to make use of the technical capabilities from all the parties. Not only from the supplier and technology provider, but also the technical capabilities from Unilever. For instance, when technical trails were performed all the three parties were able to be present in order to see whether the technology worked and what had to be changed and adjusted. Unilever stated that it was important that the other two parties understood the function of the packaging and the design that Unilever wanted to roll out. Unilever stated the following: “To develop the technology in isolation, it would have taken a lot longer. They could have made adjustments to the packaging that might have been wrong.” The technology provider stated that if Unilever is involved from the start, it takes risks out, since the parties then know that if the product is in place the two steps to the market will be realized.

Moreover, the technology provider and supplier mentioned that it gave them confidence that Unilever was involved. Unilever gave them the confidence that the technology could work. The technical people of Unilever recognized problems which they have seen before and gave indications for possible solutions. The supplier then anticipated on this and came also with solutions. The technology provider mentioned that these little technical things actually drove the collaboration forward. Also the pressure and the push to work on the project from Unilever drove the collaboration forward.

However, the parties also noticed that having a three way JDA makes the collaboration complicated. The three parties did not always have the same objective. Therefore separate negotiations were going on. That slowed down the development of the technology. The parties spend a lot of time talking about who gets which benefits.

For the commercial agreements, two new contracts were made between Unilever and Supplier and between Unilever and Technology provider. This decision was made by Unilever mainly because Unilever did not want to be dependent on one supplier in the future. They wanted to keep control. For Unilever it is of great value whether they can roll the technology out with other suppliers or not.

**Power**

As den Ouden (2012) described, also compatibility and influence play a role in collaborations. The influence someone can have in the decision-making process depends on the power the party has in the alliance. In this case the power is perceived differently during negotiating and the collaboration itself. In the negotiation phases, Unilever tried to use their power being a big company. However, the parties agree that being the biggest company in terms of revenue and number of employees does not necessarily imply that this company has the most power in the collaboration. Unilever stated: “The negotiation power depends on the project and which kind of partners are involved. But we as Unilever are never weak, because we have the volumes, the money and the access to the market. The difficulty for us is to understand that we do not have all the power. That is sometimes a
mistake in Unilever: we think we have all the power and that the other parties will agree with what we want. But that is not the case.”

Also the technology provider confirms that Unilever often thinks they had the power: “I had the feeling that Unilever thinks that they are a big company and have a lot of power in the market and have therefore the expectation that they would get there way at the end of the day. At some people of the organization it is quite obvious that if they did not get what they wanted, they did not know what to do.” Moreover, Unilever stated to the other parties in the collaboration process that they are a big company and that the other parties should be grateful to have Unilever in the relationship. The supplier stated that it does not help to use power in the collaboration, especially not when it is used top down and a party states ‘this is what I want’. Then there is the risk that every party involved is not willing to share their know-how.

Nonetheless, sometimes it also helped that a big company was involved to keep driving the collaboration forward. The supplier described that during the collaboration there were situations in which the technology provider had to be pushed, because they did not always deliver on time. The supplier described the following: “Sometimes we did not get response from the technology provider and we took Unilever as a pusher. Then size matters.” There were also situations where Unilever was relying on the supplier and put pressure on them. Then the supplier had to give the pressure to the technology provider.

Furthermore, the technology provider stated that not perse the size of Unilever influenced the commercial negotiations, but the fact that Unilever was the financier of the project. They funded the project almost entirely on their own. Therefore Unilever has more power in the negotiation process.

Moreover, besides the size of the company also the technological expertise and knowledge was a source of power. Unilever described that the supplier has a lot of power in the end, because they have influence on the availability of the equipment and the packaging. So the supplier had more control on what happened. Furthermore, the technology provider has the unique technology and knowledge. Unilever described that at different stages, different parties had different power at different times.

5.1.1.3.2 Value capturing

The third column in table 12 depicts the values that are important for the parties to get as a result of the collaboration. These values are different for each of the parties.

The parties agree in this multi-partner collaboration that the collaboration has to yield a measurable value at the end for all the parties involved in the collaboration, otherwise the parties would not join the collaboration. The technology provider described that the parties should be clear about the value creation and that at least some outline agreements of how that value should be shared, should be formulated. The supplier mentioned that it was not always clear what the parties would get at the end of the collaboration. All the expectations of the parties should be valued and appreciated. An interviewee from Unilever said that Unilever can learn a lot around value capturing within multi-partner collaboration: to not only look for what is in it for me as a big company and what kind of maximum benefit is there to gain, but to also look at what is in it for the other partners.

“Unilever has been quite bad in the past with that, because as a big company we wanted to have the most benefit ect. Once again, the target should be to reach the market. If you reach market, it is a success. You might have not the best deal that you could ever had, more money ect. but still you are first to market. That is a better value.”

The supplier also had this opinion: “There Unilever is quite though from this perspective. Unilever expectation is that they own everything.” Too him, in a multi-partner collaboration the parties have to make sure that every party involved in principle gets what it want, to make it an active
collaboration. The technology provider stated: “The value split was not very generic. Every benefit and saving that comes out of the project is for Unilever.” Moreover, Unilever mentioned that regarding innovation you have to take into account that maybe the parties can work again together in the future. If a company deliberately disadvantages a party once, the other party will not come back for a second project. So all the parties agree that it is important to have a winning situation for everyone. The collaboration would otherwise not have worked.

**Value measurement**

But how do the parties measure the value that every party brings into the collaboration? Is the time that the supplier invested in the project of more value than the investment in money Unilever made? Or does the unique IP of the technology provider have the most value? The parties agree that this is very hard to determine.

Unilever stated the following: “It is hard to determine what the value is of a party in such an innovation project. For instance, the technology provider bought the IP rights for the technology. But to what extent should we as Unilever pay that amount back? Maybe it is just their business risk that they bought the technology. That is very difficult to determine and entirely dependent on the project. But we map it and try to get it clear.”

**IP model**

The sharing of the created IP between the parties is received as the most complex part of the negotiation in the collaboration. Unilever stated the following: “When IP was generated, the collaboration started to become really complex.” The technology provider stated: “the IP dividing is by far the longest discussion and negotiation”. It depends on the case who gets what. The legal person from Unilever says that there is only an approach and no right answer: “If a party sees the IP as a benefit, the risk of agreements should follow the benefit. Or the benefit should follow the risk.” In this case, the IP is shared according to the parties own field and expertise. The companies will get the IP most closely related to their own business.

Briefly said, Unilever gets the IP on the application of the new packaging. Every IP related to the process and the machine belongs to the supplier and every IP related to the technology is for the technology provider. However, the process of the supplier is closely related to the process of the technology provider, because the technology has to be implemented in the manufacturing process of the supplier. Therefore both parties were closely working with each other and had to combine technical capabilities. So a strict distinction had to be made of what will be the IP owned by the supplier and what will be the IP owned by the technology provider.

It was decided that inventorship would be of predominance. If one of the two parties would invent something during the collaboration process, the party would have the ownership of the IP related to that. Unilever mentioned that, regarding the IP, they do not earn a lot in this project since the chance of getting a patent on the application is usually quite low. However, if Unilever has this patent, it is a very strong patent and of high value for Unilever. So in this case, Unilever has to take a risk in order to get IP rights of applying the developed technologies in their products at the end of the collaboration.

The technology provider described that all the parties are properly incentivized. However, the technology provider had the feeling that they will not get a lot of the IP. They feel they have limited capability to get advantage of the IP that is created. The technology provider described that both the supplier and Unilever are in a better position, because they have an ongoing product to sell. So the actual transaction to make the product is handled by others. The technology provider described that this fact makes this collaboration different from other negotiations where there parties are involved.
Unilever describes that the technology provider has a strong patent to protect their background IP. Therefore Unilever will always need to license the technology from the technology provider.

Some persons in Unilever described that the IP is not the main value to get for Unilever and therefore should be not too strict in striving for the IP. The value for Unilever is not to get the IP, but to be the first on the market and this does not start when Unilever has the IP: “For me purely focused on getting the IP is something from the past. Because it was really working well when the business was that when you know something you grow, you have the IP and exclusivity and you have certain time to make the money. Because you can make margin on it and you have certain time before the competition comes. In the past this was the product life cycle. But this time is finished. The product life cycle goes down more quickly. The value for Unilever is more to be the first on the market. It is an illusion that with the IP you can be the only one.

The parties did not want to have shared IP or so called co-ownership of IP. Unilever stated that when something is invented, they aim to have free access to the IP. When parties share IP, they are dependent on each other for several years. The interviewees mentioned several disadvantages of having shared IP. For instance shared IP brings the difficulty of who is going to defend the IP when someone is doing something around the patent. All the parties should defend the IP, but external lawyers need to be hired for defending the IP and that costs a lot of money.

**Licensing process**
As can be seen in figure 9, Unilever will license the technology from the technology provider and will sub-license the technology to the supplier. The benefit for Unilever in this configuration is that they are not restricted to only using this specific supplier. If they want to use another supplier, they can sublicense the technology to another supplier in the future. If this supplier is not able to supply the market, because there is a technical issue, then Unilever has the possibilities to get the packaging from another supplier. In this configuration Unilever is less dependent on this specific supplier and has more control over the price of the packaging.

**IP protection**
Only getting the value of IP is sometimes not enough, it also has to be captured and even protected in order to make it valuable. If other companies also have the possibility to implement the IP or built around the IP, then having the IP is of less value for the company. Therefore IP protection and exclusivity play a big role in this multi-partner collaboration.

As described in the previous section a method to protect IP is by patents. However the parties involved noticed that it is not always beneficial to patent the IP.

As soon as IP is patented, it becomes public and other organizations have then the opportunity to look for similar but different technologies. When IP is patented, parties should be careful whether the patent is broad enough. If the patent is not broad enough, then other organizations can build around the patent and stop the party from using the patent.

So Unilever described that for suppliers it may sometimes not be useful to patent their IP, since their knowledge and experiences can be very valuable if they do not share it with anybody. This way they can gain more a competitive advantage. In some cases it can be more efficient to protect the knowledge by keeping it secret, for example regarding the setting of the machines. In this case, the supplier can protect themselves by keeping the knowledge inside the company. If parties never have seen a machine of the supplier, then they do not have an idea of how it works. Then the supplier has the advantage that it does not have to defend patents.

So according to Unilever sometimes it is better to do not have the patent yourself, but that it is enough to have access to the patent in the area of your application.
Exclusivity

Another aspect that was extensively discussed in this case was the exclusivity on using and implementing the new developed technology. Exclusivity means that a party has the solely right to use the technology or to apply the technology. In this case the parties face the difficulty that the value of having exclusivity rights, conflicts with the value of other parties to sell or use the technology with other parties. For instance, for Unilever it is of high value that they are the first to the market. But being first to the market and having the exclusive rights for the technology license, means for the technology provider that it is not possible for them to implement the technology in other companies. So then they are blocked in their business of licensing their technology. These values are then conflicted. Especially when the development was extended for an extra year, this was difficult for the technology provider, since they then could not license their technology to other parties for another extra year. The technology provider felt that Unilever could provide more effort to understand their business model and what this meant for the technology provider.

The same applies to the supplier. Unilever does not prefer to have the supplier produce the packaging with the new technology for other FMCG companies short after the collaboration. The supplier does not prefer to have Unilever copy the technology and apply it at other suppliers short after the collaboration. Since all the parties invested a lot of time and effort in developing the technology. In this case the parties overcame this problem by assigning exclusivity for a specific period of time. Unilever had to pay a price for the exclusivity they wanted to have to compensate that the other parties cannot make revenue during the exclusivity period.

Revenue model

The revenue model is different for each party, based on the business models of the parties. Unilever will earn money by selling the filled packaging to the retailer, who will sell the product to the consumer. However, in this case Unilever will also ‘earn money’ by saving money, because Unilever does not have to pay for a high amount of material that will be used for making the packaging. The technology provider will earn money by getting a license fee for their technology. They also will get a percentage of the savings Unilever achieves. The amount that will be paid for the licensing fee is dependent on the value of the license in terms of uniqueness.

The question in this case was, what was in it for the supplier? The supplier invested a lot of time, effort and resources in making the technology work. However, they will not sell a much higher amount of packaging to Unilever then before the start of the collaboration. This because they already provide a high volume of the packaging that Unilever needs. In addition to that, Unilever will try to negotiate a low price for the packaging with the supplier. Therefore Unilever realized that they cannot block the supplier entirely in selling the packaging to other companies. Therefore the exclusivity is agreed for a specific period of time.

Furthermore, the moment that the parties will earn money is different, because of the different positions in the value chain and different business models the companies have. Also the risks that the parties took have influence on the earnings. For example Unilever spend a high amount of money investing in the project and therefore will have a return on investment period of several years. So every party has its own metric of success. Still the success of the collaboration is a binary result. The parties will only make money if the end product is sold to the consumer.

What yields specifically for this case is that if the technology is applied it means that another party will have lower dollars volume, since less material is needed to make the product. This is usually the party who makes the product. The technology provider stated that it is important to make sure that such a party is incentivized enough. However, the technology provider also stated that that the two
other parties always will have a greater impact of the benefit from the value creation, because they have an ongoing thing and specific product to sell. The value for the technology provider is to create an environment where new IP can and will be created by the parties.

It must be noted that the discussion of who is going to get which benefits from the costs slowed down the development. The technology provider stated: “When you find unexpected delays or unexpected problems. Then your process slows down because there is a commercial discussion between two parties where the third party is not involved in.” Moreover, the parties found it not always clear who is going to get the benefits.

5.1.1.4 Important findings in other areas of interest

Risks
A main question in this multi-partner collaboration was: who has to bear which risks and should the risks that a company takes be compensated? Unilever had the risks of losing a lot of their invested money. The supplier had the risk of losing time from people who invested time in the development. For the technology provider yields the same, they lose time from employees who invested time in the development. Those employees could not spend time on other projects. And the technology provider was not allowed, due to the made agreements, to build on the technology with other companies in the specific field. The project took longer than expected, which was a big frustration for the technology provider. However, the parties agree that Unilever took the biggest risk, by investing a high amount of money and time into the project. But as a result, the parties believe that Unilever also gets all the benefits. Therefore an interviewee stated that it needs to be defined what are the risk the parties take and what is the value of taking that risk.

Relationship
Unilever and the supplier had a long-term relationship before the start of the collaboration, since the supplier is a big supplier of Unilever. Both parties perform different collaboration projects together. The agreements between Unilever and the supplier were more informal and sometimes based on trust. However, with the technology provider there was no relationship before the start of the collaboration. Therefore the agreements with the technology provider were more formal, since there was not already built trust between the parties. Moreover, no other collaboration projects are going on between the parties. This makes that the technology provider can be more strict in what they want, since having disagreements or conflicts do not have influence on other projects that the two parties have together.

Nonetheless, what made the most contribution to the success of the project were the factors that cannot be described in an agreement, like the relationship itself, the openness and the trust between the parties.

Knowledge sharing
The supplier explained that during the collaboration a difficult aspect is the knowledge sharing between the parties, since there is still competition in the collaboration. Not all knowledge was shared during the collaboration. An example is that the technology provider is not aware of the whole manufacturing process of the supplier. If the technology provider can sell the technology to other companies, they do not have to get all the knowledge that the supplier has of making a better packaging for free. So if the information is not crucial to make the project work, then the parties withheld the information and do not share it. In this case the parties respect the confidentiality of the knowledge.

However, during the collaboration and working on implementing the technology together, the supplier felt sometimes uncomfortable. This difficulty for the supplier was in questions like what can I say and what is secret? What can my counterparts give to my competitors? So the supplier felt
difficulties in balancing the knowledge sharing. Which information can be given, without restricting
the collaboration and without giving crucial knowledge free to the other parties. The same applies
for the technology provider. The technology provider was scared about losing their technology:
“Anyone who is innovative is very scared about large companies wanting to take the technology and
lock it up. That is the biggest issue that I see.” For them it is really important to make sure that their
technology is protected, since that is their business. They have to make sure that the license
conditions are right so that it does not allow people to use the technology and not pay for it.

Moreover, the supplier mentioned that they had some frustrations about the fact that Unilever was
not always transparent in giving their view on the business, for example in which categories the
packaging would be launched. Unilever did not share knowledge on when they were planning to put
the new packaging into the market. The supplier felt that they were not involved as they were hoped
to be involved.

Negotiation process
The interviewees describe that the most difficult part of the multi-partner collaboration was the
negotiation. Unilever describes that it was sometimes “really a painful process” and that
“negotiation can kill the collaboration, even if the technology works.” It is remarkable that after the
development phase there was a period of 8 months were the parties discussed the commercial
agreements. The technology provider as well as Unilever stated that this was due to the fact that
elements were added to the commercial discussion, that were not discussed earlier in the
collaboration. The outline of the initial agreement was quite short, especially about the
commercialization. When the parties were technical capable to produce the new packaging and
were already producing the new packaging, there was not a commercial deal in place. An
interviewee stated that this was in fact unacceptable. Unilever stated the following: “If people do not
start early enough and if they are not experienced enough to recognize major stumbling blocks, then
those discussion points remain pushed forward.” The parties did not realize that the negotiations
took a lot of time and effort to do. There were even times that the technology provider wanted to
step out of the collaboration. The technology provider described that everyone was looking only
from their own perspective and that the parties were pushing things on each other which were from
the technology provider view unreasonable. The technology provider mentioned that when persons
from the Open Innovation team became involved, it became more reasonable, since they were
looking carefully on what the business models and interests of all the parties were and were trying
to fit all the values of the parties.

It would have speed up the collaboration process if difficult subjects were discussed early in the
collaboration. Unilever stated that in retrospect it was better to have the commercial deal in place,
before the parties are technically capable to commercialize the packaging. It was better to pre-agree
to some scenarios and have a common understanding of everyone’s position before going into the
project.

Nonetheless, an interviewee from Unilever describes that such an multi-partner innovation project is
like a hurdle race, with different difficult hurdles that have to be taken. The complexity is so high,
that it is difficult to predict how the collaboration process will go. Therefore it is only possible to
speculate and set hypotheses about how to commercialize the product and how to share the value
at the end of the process. The parties described that agreements are not just documents, it is more a
continuous process of making agreements especially in multi-partner collaborations. In retrospect, it
would have been useful to have someone who is responsible from the business, who can make fast
decisions and has a view on what is relevant for the business.
Another reason for the long period of negotiating between the development and commercialization phase was due to the understanding of the commercial agreements and how the value would be divided amongst the parties was not the same for all the parties involved. All the parties had different interpretations of the IP and commercialization aspects. Furthermore, an interviewee mentioned that another reason which slowed down the collaboration process, was the fact that additional development time and additional costs were needed than was estimated at the beginning of the collaboration. What was initially a two year collaboration plan became a 5 years collaboration plan. Therefore there were a lot of additional discussions about who bears these extra costs, which slowed down the collaboration increasingly.

The negotiations were done one-to-one as well as with the three parties together. Most of the discussions were one-to-one. The supplier noticed that it was not always good to have the three parties together on the table. It was tried during the commercial discussions between the supplier and Unilever. The technology provider was then also involved. However, the supplier felt that during those discussions it occurred that pressure was given on the supplier from two sides, both Unilever and the technology provider. This was not right in his opinion, since the technology provider did not know the insights of the general business relationship between Unilever and the supplier. So a third party challenged the supplier without knowing the background of the relationship between the other two parties. So it got tricky when some party influence somehow the business relationship and the setup of the other two parties.

Moreover, Unilever mentioned that when adjustments were made on the agreements it started to be really complex. Unilever solved this by first agreeing with the first party and then agreeing with the second party. So a proposal was given, and then the party received feedback from two sides and aligned between them. He felt that it was best to start with a proposal and then the other parties can comment on that.

However, another person from Unilever described that the crucial discussions happened with the three parties together. Transparency is very important in such discussions. Discussion with the three parties were also used to solve disputes between parties. A third party sometimes functioned as arbitrator in a discussion between the other two parties. Also the involvement of Unilevers’ Open Innovation team was very useful in the collaboration. The technology provider stated that the OI team looked carefully to the wants and needs of the other two parties. Or as the technology provider described: “I think when the OI people came in and we explained our issues to them, they solved it very quickly. I think there were six open discussion points, that became down to only one open discussion point.” The team helped in solving issues around agreements. The OI team really looked at the fit between the parties and what their needs were. Unilever stated: “Patent lawyers cannot solve all the issues, since they are only focused on obeying the law. So a lot of negotiations in multi-partner collaborations are solution focused, it is an intellectual game.”

Communication
The parties also stated that the communication is a challenge in a multi-partner collaboration. The parties perceive it as complex to talk the same ‘language’. Unilever stated it as following: “It is easier to find the harmony of language when you are two. With the more you are, the more difficult it is.” When there are only two parties, the communication is easier. The technology provider outlined a situation where there was a delay in the project and did not receive any information or feedback on why there was a delay. Moreover, the supplier and Unilever were discussing for a long time who pays the extra costs and how the project would go forward, without involving the technology provider. Therefore it was hard for the technology provider to understand and be committed.
Furthermore, the culture of the company had an influence on the communication. The parties had to be adaptive when working with more partners.

The parties also faced the difficulty that not every person involved could be informed all the time. The supplier expressed that too many people were involved in the collaboration, especially from Unilever. A lot of departments were involved and this made the communication difficult.

**Trust**

Unilever described that in such multi-partner collaborations it is important to give space to the other parties and trust the other parties. Sometimes it is needed to give the right direction and agree on milestones, but sometimes it is also needed to step out for a moment and give the other parties space to do their job. So at the one hand being able to have the right collaboration level that the parties can propose things and on the other hand that every party is still accountable for their own part, can help in the success of the multi-partner collaboration.

Unilever and the technology provider did not have a relationship before the collaboration and therefore trust was not built yet between the parties. The technology provider explained that the reputation of Unilever and the supplier played a big role in having trust: “*For us Unilever and the supplier both have a good reputation. So we had no fears. The reputation plays a very big part, in companies like ours. When there is trust and openness and the parties do not hold back anything that comes to life, that is a position where we really want to be in. We want to be able to be in the position where we can say any fact and anything that we have learned, that you can be a complete open book. That is when we drives fast. With no fear that the other parties take it and it is out there.*”

**Success factors**

The biggest success factor of this multi-partner collaboration is the believe in the technology. Moreover, also the expertise that the parties brought to the collaboration and solving technical hurdles together added to the success of the collaboration.

Moreover the technology provider stated, that although there are some points of improvement in managing the multi-partner collaboration, it was mentioned that Unilever did a good job: “*We are doing one in another market and that is not run as close as good as Unilever runned theirs.*”

5.1.2 Case-study 2

5.1.2.1 Description of the case

The detailed case description can be found in appendix F. This case is just in the end stadium of the ideation phase. The case contains much confidential information and therefore only a general description is given in this paragraph. The following three parties are involved in this collaboration: Unilever, a supplier and a technology provider.

As can be seen in table 14, the aim of the project for Unilever is to develop a new material structure that can be applied in a product which will result in a healthier product for the consumer. Unilever is doing research how to get this specific material structure. It has patented a technology to get a sub-material into the specific material structure. Unilever has a strategic supplier and both parties work together under an innovation umbrella agreement. Under this innovation umbrella agreement the parties have different project contracts. The supplier uses a raw material and extracts from this raw material a specific kind of material. As a result of this process a side stream of a specific by-product emerges (see figure 10). At this moment this by-product is not used in a very profitable way.
Unilever saw an opportunity to valorise this side stream, since the by-product can be useful in the process of getting a healthier product. Both parties signed a project contract in order to investigate whether the by-product could be processed to a sub-material and to investigate whether the sub-material can be produced in the specific material structure by using Unilever’s technology (technology 1). During the research the supplier and Unilever encountered the problem that technology 1 is not scalable and therefore not cost effective. So a different technology was needed.

A small technology provider, a spin-off of a university, has the IP of an alternative technology (technology 2) to give the sub-material a specific material structure. This technology has some advantages. It is easier than technology 2, it is scalable and it is therefore more cost effective. The technology is used for different materials, but not yet applied to this specific material. Unilever became aware of this technology since it has a close relationship with the university who initiated the spin-off. So Unilever set up an agreement with the technology provider in order to investigate the feasibility of using technology 2 for the preparation of the specific material structure.

In summary, Unilever sees the opportunity to use a specific material structure in their product, the supplier can extract a sub-material and the technology provider has a critical and scalable technology that might help in the process to give the sub-material a specific structure. More information on the three parties can be found in table 15. Since this collaboration is just at the end of the ideation phase, it cannot be concluded whether the multi-partner collaboration is really successful or not.

### Case 2 – Main characteristics

<table>
<thead>
<tr>
<th>Name</th>
<th>‘Case 2’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation type</td>
<td>Breakthrough innovation</td>
</tr>
<tr>
<td>Duration</td>
<td>Is running for two years already.</td>
</tr>
<tr>
<td>Phase</td>
<td>Ideation</td>
</tr>
<tr>
<td>Aim (for Unilever)</td>
<td>Better product by applying a specific material structure.</td>
</tr>
<tr>
<td>Short description</td>
<td>Unilever has the wish to have a healthier product. The supplier has a side stream of by-product that they want to valorize and the technology provider has a technology that can be useful in the process.</td>
</tr>
<tr>
<td>Parties involved</td>
<td>Unilever, supplier, technology provider</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initial relationships</th>
<th>Two existing relations</th>
</tr>
</thead>
</table>

The supplier is a strategic supplier of Unilever.
The technology provider is a spin-off of an university. Unilever has a close relationship with this university.

Table 14: Main characteristics case 2
### Table 15: Description parties case 2

<table>
<thead>
<tr>
<th>Short company description</th>
<th>Unilever</th>
<th>Supplier</th>
<th>Technology provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast-moving consumer goods (FMCG) company. Unilever is one of the leading suppliers of Food, Home and Personal Care products.</td>
<td>*Confidential</td>
<td>*Confidential</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># Employees</th>
<th>174,000</th>
<th>&lt; 10,000</th>
<th>&lt; 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual revenue</td>
<td>€ 49.8 billion (2013)</td>
<td>&lt; € 10 billion</td>
<td>&lt; € 1 million</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relative company size</th>
<th>Very big</th>
<th>Big</th>
<th>Very small</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location (for this project)</td>
<td>The Netherlands</td>
<td>*Confidential</td>
<td>*Confidential</td>
</tr>
</tbody>
</table>

---

**Figure 10: Material process case 2**
5.1.2.2 Agreements

In this paragraph the process of signed agreements related to the case is discussed.

In figure 11, the subsequent phases of the agreements can be found and in table 16 the correlated dates of the contracts are shown. In this way the formalised relationships of the three parties during the ideation phase is shown.

As mentioned in the previous section, the supplier and Unilever have an IUA together and Unilever has a close relationship with the university who initiated the spin-off of the technology provider. The collaboration started with a project contract between the supplier and Unilever. When Unilever encountered the limitation of technology 1, Unilever also set up a CDA with the technology provider to make it possible to exchange knowledge and to look for possibilities for a collaboration. Unilever and the technology provider decided to negotiate a services agreement. In the meantime the project contract between Unilever and the supplier was extended. The services agreement was signed more than a year later than a project contract was set up between Unilever and the supplier. Moreover also a CDA between the supplier and the technology provider came in place, to make it possible to talk about the project with the three parties together. When the services agreement between Unilever and the technology provider came to an end, Unilever thought that it would be better that the supplier took over the role of Unilever and it was decided to transpose the service agreement to the supplier and the technology provider. Still the three CDA’s make it possible that the three parties can talk openly with each other. What the agreements will be in the next phases, the development and commercialization phase, is not known at this moment.

Figure 11: Overview agreements case 2

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>j f m a m j a s o n d</td>
<td>j f m a m j a s o n d</td>
<td>j f m a m j a s o n d</td>
</tr>
<tr>
<td><strong>Unilever &amp; Supplier</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unilever &amp; Technology provider</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Supplier &amp; Technology provider</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 16: Timeline agreements case 2
### 5.1.2.3 Main findings: value creation and capturing

#### 5.1.2.3.1 Value creation

This section will focus on the value creation between the parties.

**Added values of the parties**

The interviewees of the various parties mentioned the values that the parties can gain for themselves and deliver to the collaboration. An overview of these added values can be found in the first column of table 17. As can be seen, the parties bring different values to the collaboration. In addition to the different added values, the parties also have different motivations to join the collaboration. Every party sees an opportunity in the project, but these opportunities are all different (see second column in table 17).

<table>
<thead>
<tr>
<th>Value creation</th>
<th>Value capturing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Important value that can be delivered</strong></td>
<td><strong>Motivations &amp; opportunities</strong></td>
</tr>
<tr>
<td>What can the parties bring into the multi-partner collaboration?</td>
<td>What are the motivations and opportunities that the parties see in joining the multi-partner collaboration?</td>
</tr>
</tbody>
</table>
| Customer - FMCG company | • Access to consumer market  
• Brands  
• Insights about functionality and specific material structure  
• Capability to validate and test in specific product  
• Knowledge about important process step | • Healthier product | • First to Market (exclusivity)  
• Healthier product |
| Supplier | • Knowledge about material production process  
• Part of technology, experience in important process step  
• Possibility to manufacture and distribute material | • Valorise side stream: Take low value by-product and extract a higher value more functional product for sale to Unilever  
• Opportunity to sell more  
• create new business | • Owner arising IP – related to systems, equipments, materials  
• Use technology for other non-competitors of Unilever and the technology provider |
| Technology provider | • IP of technology 2  
• Knowledge about (implementation of) technology 2 | • Opportunity to sell technology through licensing  
• Benefit from pay-off perspective by working with other non-competing industry (once proven by this case)  
• building credibility of technology | • Selling technology  
• Owner arising IP  
• able to use created knowledge/IP with other non-competitors of Unilever and the supplier |

Table 17: Value creation and capturing case 2
**Value flow models and roles**

Like in the first case, it can be valuable to visualize the value flow models of the collaboration. Specific interactions within the small network provide a perspective on the value creation and roles in the collaboration. The value flows are based on what is described in the agreements as well as what the various persons from the parties describe as value creation between the parties.

The value flows are visualized for different phases in the multi-partner alliances. In this way, the dynamics of value creation are illuminated. Since this alliance is in the end of the ideation phase, the value flow models for the development phase and commercialization phase are based on what probably will be the value creation between the parties as described by the interviewees. Moreover, the roles fulfilled by the parties in the various phases are also visualized in the value flow models. The value flow models can be found in figures 12, 13, 14, 15 and 16.

Knowledge flows are marked blue, financial flows are marked red, goods and services are marked green and IP flows are orange.
Figure 16: Value flow model commercialization phase case 2
Ideation phase

Ideation phase – figure 12
In figure 12 it is shown that in the very beginning there was a two-way knowledge flow between Unilever and the supplier. Unilever played the role of godfather and customer. This was due to the fact that Unilever is the initiator of the project, brought both parties together and had the primary need of having the specific material structure. Without the need of Unilever for a specific material structure, the collaboration would not have started or as the technology provider stated: “The collaboration starts with a need, the ultimate customer is the consumer but Unilever sells it to them. It starts with a need from Unilever. At the end of the day they are the customer. It is about satisfying Unilever’s need.” Also the supplier stated: “The project is based on the wants and needs of Unilever. From the initial start of the project it is basically a case of us trying to meet the requirements of Unilever.” In this phase, the supplier plays besides the role of supplier, the role of provider of systems and the role of provider of goods. The supplier has the machines and equipment related to the material process and delivers the material to Unilever in this particular case.

When Unilever encountered the limitation of technology 1 they came in contact with the technology provider and there was a two-way knowledge flow between both parties. The parties exchanged knowledge and discussed whether it would be useful to work together. The technology can provide the needed technology 2 and the related content to this technology. Therefore the roles of technology provider are described as the role of provider of systems and the role of provider of content. These roles are the same during all the phases.

Ideation phase – see figure 13
After Unilever and the technology provider came together, as can be seen in figure 13, an additional flow appeared, namely the financial flow from Unilever to the technology provider. This flow appeared when Unilever and the technology provider decided to sign a services agreement. The parties agreed that Unilever would fund all the project costs the technology provider would make for this project. So Unilever has now the additional role of financier. In this phase also a CDA was signed between the technology provider and supplier, so that knowledge also could flow between those parties. It became more clear that the role of godfather was assigned to Unilever. The technology provider stated: “Whoever controls the money, controls the deal. This is not a bad thing, it is what it is.”

Ideation phase – see figure 14
After a period of time, Unilever thought it would be better if the supplier took over the role of financier from Unilever. This decision was made because the supplier should use and implement the technology of the technology provider. Due to the change of the role of financier also the role of godfather changed from Unilever to the supplier. This because most of the tasks were performed by the supplier. The project leader from Unilever describes the change in godfather role as follows: “At this moment the supplier is the spider in the web and the driver of the project in this phase.” Still Unilever provides knowledge to the technology provider mainly about the characteristics of the material. So there is a one-way knowledge flow from Unilever to the technology provider.

At this moment the situation is like figure 14. However, soon the proof of science will be delivered. The proof of science describes the technical feasibility of the project and the related risks. After the delivery of the proof of science the parties have the possibility to go into the development phase.

Development phase – figure 15
In the development phase Unilever and the supplier have to investigate the important process step that is needed to get the material ready to apply in the product. Both Unilever and the supplier have knowledge about this process step. Moreover, the supplier can carry out this process step on a large scale. The technology provider cannot put knowledge into the collaboration at this phase and therefore they have to ‘wait’ till the commercialization phase to get involved again.
Commercialization phase – figure 16
The expectation for the commercialization phase is that the IP of the technology is flowing to the supplier. The supplier will pay a license fee in exchange for the use of the technology. The supplier will process the material with the specific structure and deliver this to Unilever. Unilever will pay a price for this material. In this price also the price the supplier has to pay for the licensing will be included. Unilever will manufacture the product including the material with the specific structure and deliver it to the retailer. The retailer will pay Unilever for the product and the product can be bought by the consumer for a specific price.

Investments and throughput time
Den Ouden (2012) suggested to give an indication of the investments and throughput times required by each party to develop and realize the value proposition. This can help to make sure that there is a balance between investment and revenue streams at the end of the project. It can also trigger a discussion about sharing risks and investments between the partners. In table 18 the monetary investment level is indicated by euro’s and an estimation of the throughput times are indicated by hours.

Unilever and the supplier invest most of the money and time into the project. This will be probably compensated by the fact that both parties will get more revenues then the technology provider once the improved product is on the market.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Unilever</th>
<th>Supplier</th>
<th>Technology provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideation phase I</td>
<td>€</td>
<td>Research, negotiation</td>
<td>€</td>
</tr>
<tr>
<td>(figure 12)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ideation phase II</td>
<td>€€€€€</td>
<td>Paying the technology provider, research</td>
<td>€€€€€</td>
</tr>
<tr>
<td>(figure 13)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ideation phase III</td>
<td>€€€€€</td>
<td>Paying the technology provider, research</td>
<td>€€€€€</td>
</tr>
<tr>
<td>(figure 14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development</td>
<td>€€€€€</td>
<td>Research, developing, manufacturing</td>
<td>€€€€€</td>
</tr>
<tr>
<td>(figure 15)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercialization</td>
<td>€€€€€€€€€</td>
<td>Marketing &amp; communications, manufacturing, negotiation</td>
<td>€€€€€</td>
</tr>
<tr>
<td>(figure 16)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 18: Investments and throughput times case 2
Configuration
First, Unilever thought that it was better just to shift the services agreement from the technology provider and Unilever to a services agreement between the supplier and technology provider. This because Unilever assumed that they did not have to be involved in what the supplier and technology provider agree. However, Unilever does give crucial knowledge to the technology provider, for example about the characteristics of the sub material and the application requirements. Therefore Unilever still has to be involved in the collaboration. The supplier and technology provider noted also that it is important that Unilever is involved because at the end they are the customer, they have the perspective of the consumer market and in that way a material can be delivered that Unilever wants to buy and sell.
The supplier stated the following: “We have to be able to talk to Unilever and test customer desires. If you do not know what they want you do not develop a good product. Therefore it is important to talk to each other.” An option was to sign a 3-way JDA between the three parties. However, this was not possible because the technology provider did not want to do a negotiation process where two bigger companies are involved. The technology provider does not have a legal department like the bigger companies. The technology provider stated the following: “We wanted to lower the burn of lawyers. Any kind of three way agreement was too hard to get through the bureaucracy of the big companies. 3-way JDA is a cosmic loop of lawyering that you never get out of”.
So Unilever decided to move the services agreement to the supplier and the technology provider. Moreover, Unilever found it more easy to just move the 2-way agreement instead of setting up one document that covered everything. Also the fact that there was a need to establish an agreement very quickly to continue the research work played a big role in the decision for the 2-way configuration. The parties expect that a 3-way JDA takes a lot of time to negotiate. So mainly because of speed and simplicity it was decided to sign only 2-way agreements. The supplier pointed out that it was maybe more desirable to sign a 3-way agreement. It is more efficient to have all three parties talk and communicate together. Unilever decided to do it in this specific configuration.
The existing CDA between all the partners, allows that the three parties can talk with each other about the project under confidentiality. The OI agreement between Unilever and the supplier makes it possible that information and results are shared with Unilever.

There are some limitations and disadvantages related to this configuration. In the CDA only the background IP of the parties is stated. Under the CDA’s, the parties can share their knowledge and talk about solutions, but they cannot work on the solutions under only the CDA. Also the rights of the parties are not described in detail. So Unilever faces the risk that it loses some rights because they cannot be formulated in just only the CDA. Unilever brings ideas in, the other parties use this to develop things and as a result new IP can emerge. This arising IP will probably be then shared between the supplier and technology provider. But what will happen with the input from Unilever? If it is only used for particularly this sub material, then it is okay for Unilever. But what if the idea will also be applied in other projects and materials? Those rights cannot be regulated in a CDA. Unilever stated: “It is harder to be involved in the IP dividing”. Moreover, the supplier mentioned that when the activities are done in sequent, it takes much more time. If the activities are done simultaneously, it is possible to get the result faster. Being open in communication, delivers speed.

So the question for Unilever was: Do we have to be involved during the whole project? And is an OI agreement between all the partners necessary?
Power
As den Ouden (2012) described, also compatibility and influence plays a role in collaborations. The influence someone can have in the decision-making process depends on the power the party has in the alliance.

In this case power plays a big role, especially in writing agreements and doing negotiation. This is mainly due to the fact that there is one very small company involved. The power is perceived differently when negotiating and during the collaboration itself.

Regarding negotiation, the power lies at the two biggest companies. Unilever mentioned that when the parties are talking about agreement, the technology provider feels lost because they are a very small company in comparison with the two big companies. The technology provider does not have a lot of experience with negotiating and does not have a handful of lawyers to support them. Also the supplier agrees that it makes a difference in the negotiation that one small company is involved: “Litigation between a small party and a big party is very unfair, it always favors the large party. The smallest party have to obey the rules. The power is definitely at the biggest parties.”

Regarding the collaboration itself, all the parties have power but at different phases in the collaboration. The technology provider stated the following: “In a three party deal, nobody is really controlling the deal. The technology provider controls in the way that the other parties can’t do anything without him. The supplier is in control because they are manufacturing and selling it. We all have some power in some way. If you have a party involved with zero power, it is probably not going to work.”

5.1.2.4 Value capturing
In table 17 in the third column are shown the values that are important for the parties to get as a result of the collaboration. They are different for each of the parties.

All the parties agree that the multi-partner collaboration should create value for all the parties involved. If a party does not capture value out of the collaboration the partnerships will fail.

The technology provider stated: “If you want to have a successful multi-partner collaboration, each of the parties needs to obtain at least some shared value, not necessarily equally shared. If no value is created for one of the partners involved, the partnership will fail. If there is no right balance and fairness in the value that partners get out of the collaboration, then no agreement will be signed. Even if the parties do sign agreements, if one party is being mistreated you are giving them reason to get out there and found other ways to disadvantages you.”

The technical project leader from Unilever stated: “In this kind of collaborations yields: nothing goes for nothing. You want something back for what you bring in and the effort that you deliver.”

The parties agree that what the parties get out of the collaboration does not have to be the same for all the parties. Different kind of value are important for different parties. For some companies getting the IP rights is of more value than short term cash. But in multi-partner collaboration, every party should get at least a significant part of the value.

IP model
As described in the literature section, especially in collaborations that are focused on innovation, IP plays a big role. IP is an important object to get value for the parties. A lot of partnerships, even in bilateral collaborations are struggling with sharing the value of created IP.

In the agreements between the parties can be read that the IP created together will be split related to the business of the different parties. The parties get the IP that is closely related to their field of expertise. For example Unilever will solely own arising IP that is related to the use and/or application
of the material in consumer products and IP that is related to the manufacturing of the consumer product with the specific material structure. The supplier will solely own all arising IP related to manufacture and use and/or applications of the material. The technology provider will solely own all arising IP related to the process for manufacturing of the specific material structure and to the use and/or application in products, but to the extent that the specific material structure is not produced from the specific by-product. In that way it is not conflicted with the IP from the supplier. Moreover, the technology provider has also the IP to apply specific material structure into products, but only in those products other than the products defined in this project. In this way the IP does not conflict with Unilever’s IP. Arising IP that does not fall under the IP of the parties, will be divided according to the inventor ship of the IP. The technology provider stated: “The inventor ship is crucial when dividing IP.”

For the supplier, getting a lot of IP is less important: “We do not add most of the background IP. Most of background IP is Unilever IP. At this point I do not know IP that we would obtain from the project. This is okay because our customers are interested in buying a product from us. Our interest is to sell this product to the customer. The project was not initiated to generate IP, but the project was initiated to be able to supply the product to a customer that wants to buy it”.

As can be seen from table 17, for Unilever it is important that they get exclusive rights, at least for a specific period of time, to apply the material into their products. If other Fast-moving consumer goods companies get also the rights to apply the material within a short time, Unilever does not have a competitive advantage. Therefore in the commercial agreement the period of time Unilever gets the exclusive rights has to be negotiated.

Especially when IP is shared with a very small company, it is uncertain whether the company exists next year. Open innovation is a dynamic world, companies switch partners all the time. Maybe the technology provider will be owned by a competitor from Unilever in the future. Then you have shared IP with a competitor and you do not want to be in that position.

**Revenue model**

The revenue model is different for each party, based on the business models of the parties. Unilever will earn money by selling the healthier consumer product to the retailer. The supplier will earn money by selling the material with specific structure to Unilever, and the technology provider will get license fees for their technology from the supplier.

The parties involved describe that at the end of the project, in the commercialization phase, the supplier will negotiate a license with the technology provider to practice the technology. The reason why the supplier will negotiate a licensing and not Unilever is because the supplier will manufacture the material and use the technology in their process. Unilever will not use the technology in their manufacturing process. So Unilever concluded that the supplier should do this negotiation and not Unilever. The cost that the supplier will make for licensing will then be taken into account in the price for the material for Unilever. In that way Unilever will indirectly pay a part of the licenses fee.

In this case the technology provider describes that in terms of money Unilever has by far the largest benefit, thereafter the supplier and the technology provider will benefit the least in terms of money. The technology provider explained it as following: “It is another order of magnitude at each step in the value chain. Revenues are not equally shared, but in every multi-partner collaboration some value split should be realized. For us a million benefit is the same as billion for Unilever. It is relative. In reality, there are strategic reasons that makes sense in dividing the revenue.”
Furthermore, the moment that the parties will earn money is different, because of the different positions in the value chain and different business models. So every party has its own metric of success. Still the success of the collaboration is a binary result. The parties will only make money if the end product is sold to the consumer.

In innovation projects, it can take years before a new product is on the market and money will flow back to the companies. Big companies, can take this risks. However, for small companies this is a very difficult point. The technology provider describes this as follows: “We have to find revenue faster, because of our instability in size. This makes difference in how agreements have to be structured. The other parties do not have to worry that they will be there next year.”

5.1.2.5 Important findings in other areas of interest

Interdependency
The parties describe that they are all interdependent on the other parties. The material cannot be sold to anyone else, unless Unilever is interested in it. Only a supplier can manufacture the material. The technology provider is the only one who has the specific technology and the knowledge about this technology. The technology provider states: “The collaboration will not work as well and efficient, if the parties are not interdependent of each other.”

If the supplier for example knew what the customer want, then it is preferable to do the research on their own and not involved other parties, since then it is possible to immediately offer the product to all Fast moving consumer goods companies. The suppliers then does not have to make commitments on exclusivity.

Relationship
The fact that Unilever and the supplier have a long relationship, makes the collaboration between those parties more easy. The long relationship takes risks out, there is more understanding of the motivation of each other and the path forward is more clear. Moreover, the supplier describes that identifying each other’s need and writing agreements goes more fluently. The agreement between Unilever and the supplier is far more concise than the agreements with the technology provider. This is influenced by trust.

Trust
Unilever and the supplier have a long relationship and therefore there is a lot of trust between the parties. The relationship with the technology provider is new and therefore trust has to be build up during the collaboration. The parties describe that in finding a third party trust is important. You can do a lot with making legal agreements, but they cannot do everything. And those agreements cannot be written without elements of trust. Unilever stated: “The collaboration can only work when there is full trust between all the parties that are involved. Trust is a prerequisite of the multi-partner collaboration.”

Knowledge sharing
Another important factor that plays a role in this multi-partner collaboration is the sharing of knowledge between the parties. Although the parties have agreements and work closely together in the research field, all are careful about sharing information, because there is the fear of losing important knowledge.

The parties talk openly about science, but the technology provider notices that it is the business where it gets tricky. For example, the supplier does not want Unilever to know exactly what the cost are of manufacturing the material, otherwise Unilever can be more aggressive in negotiation the commercial agreement. At this moment the supplier and technology provider do not know what the business plan of Unilever is. The amount of material Unilever is going to buy is not known.
Technology provider: “The reality is that there are side conversations going on about agreements. That is the business side. Scientists naturally share, but it would be more efficient if also the business plans are shared. It would be better to be open and hold hands.”

The supplier describes that they only share information with the technology provider that is related to the process of making the material and that they do not share more than is needed for the purpose of the project.

**Negotiation process**

In the perception of the parties in this multi-partner collaboration one of the hardest and most time-consuming parts are the negotiations. The interviewees mention that negotiating takes a lot of time and that simplicity in agreements is needed. Once the paper work is sorted out, the collaboration tends to go pretty well. Interviewees mentioned the following: “It is structuring the collaboration that is the burning of the baby”. “It is the hardest and most stressful part of the multi-partner collaboration.” “We spend several months only for negotiating, that is ridiculous”. The technology provider indicated that more structure is needed and good leadership to be able to handle like entrepreneurs instead of bureaucratic wheels. What takes several months, should be able in several weeks if someone really drives the negotiation phase and pushes to get the agreements in place. The technology provider advises to have a person that is positioned in a high (senior) level in the organization to help to speed up the negotiation process.

**Communication**

In this case the communication is harder because a lot of different people are involved and the parties are at different geographical locations. This brings an additional complexity into the multi-partner collaboration. Unilever mentioned that direct reciprocity in communication is not self-evident when you are with two. Moreover Unilever stated: “You have to manage the role between the three parties and what needs to be done between you and the other party, but also what needs to happen between the other two parties.” So managing the collaboration takes more effort to do.
5.1.3 Cross-case analysis

Following the discussion and analysis of the individual cases, this paragraph presents the cross-case analysis. A case analysis describes individual cases and provides answers on ‘how’ and ‘why’ questions of individual cases. A cross-case analysis generates more general conclusions based on the comparison of the two individual cases. The findings of the two cases are compared and evaluated in this paragraph in order to identify similarities and differences. Hereby it is searched to provide further insights into challenges concerning multi-partner alliances by generalizing the case study results. The findings are reflected and patterns are explored to explain the differences between the cases. This discussion follows the same structure as applied in the discussion of the individual cases.

5.1.3.1 Value creation

In both cases, Unilever brought the parties together because the parties all have different values to add to the collaboration. The values were not conflicted, but complementary. It seems that a multi-partner alliance only can work if the values of the parties are complementary. Moreover, the parties also have different motivations to join the collaboration.

The roles that the parties played were in both cases naturally determined and clear. The roles were mainly assigned regarding the expertise of the partners. Unilever was the initiator to bring the three parties together in both cases. This resulted in the fact that Unilever had the leading role and therefore the role of godfather in the beginning of both cases. Unilever made it possible for both parties to share their knowledge. In both cases Unilever had the main need of developing the new product or packaging and therefore was the customer in both cases. Mainly because they had the main need, Unilever also invested most money into the collaborations. According to the interviewees, the party who puts most of the monetary investments in the project, leads the project. This view is underlined by remarks of the interviewed parties: “If you pay it, you drive it.” “Whoever controls the money, controls the deal.” That is why in the second case at the time the financier role moved to another party, also the role of godfather moved. So it seems that the leading role is determined by who invests the most money, who is the initiator of the alliance and who is the customer.

In both cases knowledge flowed between all the parties. Therefore an agreement was needed that linked the parties together. What is remarkable is that in both cases the parties choose for a different configuration to involve Unilever in the collaboration. During the ideation and development phase in the first case, the 3-way JDA held the parties together which resulted in a net-based configuration. During the ideation phase in the second case the CDA’s connected the parties which resulted in a more chain-based configuration. The reasons, advantages and disadvantages mentioned by the different interviewees for the different configurations are presented in table 19.
## Table 19: Different configurations compared

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ideation &amp; Development phase</strong></td>
<td><strong>Reason</strong></td>
</tr>
<tr>
<td><strong>Net-based configuration</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• One party already brought in background IP (otherwise concerned IP goes to somebody else)</td>
</tr>
<tr>
<td></td>
<td>• Clear frame who owns what</td>
</tr>
<tr>
<td></td>
<td>• To make the relationship open</td>
</tr>
<tr>
<td></td>
<td>• To stimulate knowledge sharing between the parties</td>
</tr>
<tr>
<td></td>
<td>• Interdependency in knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>More chain-based configuration</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Technology provider did not want to do negotiation with two big companies</td>
</tr>
<tr>
<td></td>
<td>• 3-way configuration, not needed, since the knowledge of the parties did not had to be there at the same time. More sequential process. So different parts of the solution were not needed at the same time.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

So the main reason why in the second case the parties were configured in a more chain-based setting, is because the technology provider did not want to negotiate together with two big companies. It appeared that the technology provider felt weak in terms of negotiations, because of the size of the company. Moreover, timing played a role. The parties want to come to an agreement
quickly and therefore choose bilateral agreements since they are perceived as less complex. So timing is also essential and becomes a qualifier to do business and sign an agreement. In the first case, the technology provider felt more trust in the way that the bigger parties would make fear agreements. Moreover, the configuration of the multi-partner collaboration also depends on whether the knowledge of the parties are needed at the same time in the innovation process. In the second case, it was more a sequential process of knowledge transfer and therefore it was possible to split up the collaboration in different agreements. However, it appeared that regarding the openness of the parties, the stimulation of knowledge sharing and the easiness of dividing the IP, the net-based setting is more advantage then the chain-based setting. Moreover, a big role plays the perceived complexity of agreeing a multi-partner agreement.

In these particular cases a very small company was involved in comparison with two bigger companies. Since a small party cannot afford to do a very high monetary investment, the bigger companies have to do the monetary investments. Therefore the bigger parties have the power based on money. Moreover, it appeared that Unilever is used to a leading position in such relationships. Unilever has still a traditional way of thinking: if you are big, you can determine how the collaboration goes. The interviewees felt that the big companies have more power in the sense that they also have the ability to involve lawyers. So the big companies have the negotiation power. However, in multi-partner collaborations it appeared that also the value that the parties bring into the collaboration can give a party some power. The technology provider had the unique knowledge and therefore this party has the power based on technology and knowledge. Because of that unique technology, the technology provider still had a big influence in the collaboration and compensated the fact that they cannot make high monetary investments. Because of the difference in expertise and capabilities, the parties had different power at different times in the collaboration. So different kind of power plays a role in both cases.

5.1.3.2 Value capturing

The findings show that all interviewees find it important that the collaboration creates value for all the parties involved in the collaboration. If not all the parties are incentivized, then the collaboration would not have worked. Expectations need to be valued and appreciated. Especially in the first case, the discussions about capturing the value increasingly slowed down the development process. The interviewees indicated that the focus has to be changed from only focusing on what gets my company out of the collaboration to a broader focus what get the other parties out of the collaboration and what does the collaboration bring as a whole. Moreover, in both cases all the parties had complementary values to add to the collaboration and none of these values were conflicted. It seems that this is very important within a multi-partner alliance. Besides the importance of looking at the value capturing for all the parties, the findings of the two case studies have also brought to light the importance of IP in the multi-partner collaboration. The discussion about capturing value that slowed down the development process, especially in the first case, was mainly focused on the dividing of the IP. IP is perceived crucial in innovation projects. It is remarkable that all the parties are focused on getting ownership of the IP that comes out of the collaboration. In both cases the IP is divided according to the field of expertise of the partners. However, also inventor ship plays a role in dividing IP. The parties do not want to have shared IP for several reasons. Although the focus lies heavily on getting the IP, some interviewees stated that IP is not always the best value to get. For Unilever for example it is of high value to be the first on the market and to be this for a specific time period as long as possible. Related to the importance of IP is the importance of getting exclusive rights to implement the technology, to produce the product or put it into the market. However, what became clear is that having exclusive rights for one party, can mean that another company is ‘blocked’ in their business since they cannot do business with other parties in the specific field.
What is remarkable is that during the commercialization phase, the two cases have a different configuration than in the development phase. In the commercialization phase knowledge is not exchanged anymore, but capabilities and goods, like IP and specific products. A net-based setting is not perceived as needed anymore, but the setting follows more the supply chain of the product. The settings of the two cases in the commercialization differ. In the first case, value flows between Unilever and the technology provider and the supplier. In the second case, value will flow between the technology provider and the supplier and between the supplier and Unilever. This is mainly determined by the flow of the licensing of the IP of the technology provider. In the first case Unilever wants the control and the possibility to license the technology also to other suppliers. In the second case, Unilever does not want to have the license of the IP. Unilever argues that the supplier applies the technology, so they should arrange the license and the financing for the license. So the willingness to control the value flows and the willingness to have the access to the IP is important in the configuration of the parties where the parties capture the value.

5.1.3.3 Other important findings of interest

The suppliers were becoming part of the collaboration, since they are preferred partners of Unilever. In both cases there was already a strong relationship with the supplier, which resulted in less formal agreements between Unilever and the supplier. This relationship was more based on trust. So the quality of relationship with the supplier plays a role, which makes it easier to make agreements.

It appears that knowledge sharing does not always proceed smoothly in a multi-partner alliance, since the parties still feel a bit of competition. In case 1, the supplier found it difficult to determine what can I say and what do I have to keep as a secret. If knowledge is not protected well the parties tend to be less open. Moreover, the parties only share knowledge to what is strictly needed for the project, since they have the fear that the other parties will walk away with their knowledge.

All parties in the two cases had limited experience in multi-partner collaborations and especially in negotiating with two different parties. The extensive procedures and process and negotiations embedded in the biggest parties placed a burden on the collaboration. All interviewees have made negative remarks about the negotiation process. Therefore a lot of learnings were mentioned by the interviewees. Firstly, the findings brought the importance of structuring the collaboration in a clear way and doing negotiation at the beginning of the collaboration. Make sure every party understands upfront their position and value that they will get at the end of the collaboration. From the very beginning, the initiator of the alliance, should set the right behavior to and between the other parties involved. Secondly, the sharing of the created values were not always properly communicated with the parties. Little attention was being paid to the commercialization agreements in the beginning of the collaboration. Therefore the technology provider in case 2 as well as Unilever in case 1, found it necessary to have a clear leader, positioned in a high (senior) level in the organization that can speed up the negotiation process. So the overall learning is that the negotiation period should be faster and made more efficient. It can be improved by negotiating the crucial terms very early in the collaboration.

Besides the importance of establishing a multi-partner alliance on the formal level, also the importance of the informal level became clear. One of the most important aspects of a successful multi-partner collaboration appears to be trust. All interviewees indicated that for the success of such a collaboration, trust is crucial. In addition to trust, also the interdependency between the parties determines to a large extend the success of the collaboration. By looking to the value flows between the different parties, it can be
seen that every party brings in crucial knowledge to make the collaboration work. This view is underlined by remarks of the interviewed parties who indicate that interdependency is a condition for parties to come together, since they are dependent on each other. For example in terms of knowledge, money and risks.

Based on the within-analyses, it appears that the performance of a multi-partner collaboration is related to the believe in the technology that all the parties have. All parties involved in case 1 are satisfied with the end result of the collaboration. Even though the development process did not go without technical hurdles, the parties kept collaborating. The business goal and the business opportunity kept the parties together in a multi-partner alliance. In case 1, especially in the beginning of the collaboration, Unilever transferred this technology believe to the other parties. Even though case 2 is still in the ideation phase, the overall feeling of the interviewees is that the multi-partner collaboration is performing well, based on the research that is already performed by the parties.

5.1.4 Recommendations of the interviewees

In addition to the findings and analysis discussed in previous sections, the interviewees also were engaged in a discussion about their recommendations for a successful multi-partner collaboration and gave recommendations for Unilever in general about the innovation process. These later recommendations can be found in the appendix.

The first recommendation is to make agreements and the position of the parties clear before the start of the collaboration. The interviewee recommend to make already agreements about the commercialization of the product at the very beginning. There is a high risk and uncertainty at the beginning of an innovation project, however every party has knowledge upfront. Based on this knowledge already useful agreements can be made at the beginning. Moreover an interviewee involved in case 1 stated that no ‘what if’ rules and compensation rules were defined. He recommended to make clear what happens if a party steps out of the collaboration. An interviewee from Unilever mentioned that the alliance framework of Unilever helps in getting things clear at the beginning of the collaboration for all the parties, but that more time should be spend to make this alliance framework clear.

Several recommendations were made about speeding up the negotiation process. One recommendation is to agree with the parties how long the negotiation period may last by setting together a specific period for negotiation. Then if the negotiation period has expired and there is no deal, the parties can review the situation. If for example one party does not agree and is not willing to comply to commercialization, it is possible to look for another party who can create the commercial value that is achieved together. Another recommendation regarding the negotiation process is to start with a document were people can comment on and criticize. If the parties start directly in one meeting, then it is a mess. The interviewee recommend to start with a sort of summary of the different positions of the parties and to start with finding the sweet spots between the different parties. Possible points were the parties could agree. Next, when the parties have reached 95% agreement, the last 5% can be done together in one meeting.

A third recommendation concerns the space for other parties involved. An interviewee from Unilever stated that other parties might know better how to solve a particular problem than your own organization. If you give the parties space to bring in their own ideas this is beneficial for the project since it can give the right result. The recommendation is to trust them and give them space in doing it their own way. Moreover, giving space to all the parties in terms of agreements is also important. If everything is described in the agreements, then there is no room for creativity. Then the parties are not able to collaborate and be open. Having a balance in clear agreements as well as room for creativity can help in having a successful multi-partner collaboration.
Another recommendation is related to clear leadership and management. A supplier mentioned that bottom up management is a must. It does not work to come from a top level, state what the parties should do and every three months the manager checks it and gives some advices. It really has to be managed and senior managers should be involved to make crucial decisions about the continuation of the project. Moreover the supplier mentioned that not too many people has to be involved in managing the project. The problem at big companies is that too many layers in the organization are involved. An authorized single project manager can drive the collaboration in a right way. Connections to senior management and between different departments (R&D, Supply Chain and Marketing) have to be well aligned. Furthermore, the involvement of people from the legal and Open Innovation department can help in managing the multi-partner collaboration.

The interviewees also recommended to have many face-to-face contacts. Make always sure to visit the other parties in the beginning of the project and during the project. This is also a proof for the parties, that everyone is committed to the collaboration and the project.

Some more recommendations were made by the interviewees that fall out of the scope of this research. These recommendations are shown in appendix G.

5.2 Benchmarking

Since Unilever does not yet haves a lot of experiences in multi-partner alliances, it is useful to investigate how other organizations manage their multi-partner collaborations and investigate what were their best practices and learning points. In this way, the way of working from different organizations can be compared, in order to improve the process of Unilever. Besides this external benchmark, it is also useful to look at experiences within Unilever to try and determine the best practices for conducting multi-partner alliances.

5.2.1 Internal benchmark

Employees within Unilever already held some interviews around the topic multi-partner alliances. They call it complex collaborations and formulate it as follows: “Partnerships or agreements between 3 or more parties who collaborate to deliver added value in any area of the five reasons to believe. The complexity is driven by the number of parties involved but also by the field in which they operate due to sharing of specific know-how/technology/information.” (Unilever, 2013c). The five reasons to believe include capacity, value, sustainability, word class service and innovation, as discussed earlier in the research context. So they not focused solely on innovation collaboration but took a broader perspective. The team mainly held interviews with Unilever employees from Supply Chain as well as R&D (Open innovation) and they interviewed two suppliers. The team focused on investigating the value of complex collaborations for the organization and what change needs to take place. They mainly wanted to understand the field of complex collaborations. For this research it is useful to code and analyse these interviews executed by Unilever and see what are insights regarding multi-partner alliances. This section focused on these findings and first discusses what are the opportunities of multi-partner collaborations perceived by the interviewees, what needs to change within Unilever and what are essential elements for successful multi-partner collaborations mentioned by the interviewees.

It appears that Unilever’s experience in multi-partner collaborations is limited. However, the interviewees see a huge potential in the complex collaborations, since there is a trend of products becoming more and more complex and there is a higher pressure on costs. Therefore parties have to combine their resources and knowledge. The biggest opportunities the interviewees mention include gaining great competitive advantage and gaining exclusive rights. The potentials for the partners are getting more business opportunities and the possibility to benefit from long term relationships.
A comprehensive overview of the improvement points on multi-partner collaborations for Unilever and the essential elements of a successful multi-partner collaborations can be found in appendix H.

In summary, the main improvement points for Unilever include: more transparency in sharing key information, more bottom up management instead of top down, clear leadership, more clarity from beginning in roles, responsibilities and IP rights, not be overly dominated in the relationship, evolve more as facilitators instead of customer role, involve more functions from the organizations such as procurement, and more open communication.

In summary, the main elements for successful multi-partner collaborations mentioned by the interviewees include:

- Trust and transparency
- Clear leadership
- Fast decision-making
- Open mindset
- Managing confidentiality
- Sharing benefits
- Having complementary values
- Culture fit between the partners
- Clarity from beginning on in contracts (roles, responsibilities and IP rights)
- Win-win-win approach
- Balancing values
- Having a joint set target
- The right collaboration spirit
- Enjoyable for partners and employees
- Become equal partners
- Sharing strategies
- Focus on long term goals
- Empowered to manage conflict
- Flexibility
- Focus on building relationship instead of only writing agreements
- Set objectives before engagement on the outcomes such as IP

5.2.2 External benchmark

Since multi-partner collaborations are quite new within Unilever, also interviews were held with companies in other sectors. People from Philips and ASML and a person who worked for SMEs that are focused on Open Innovation were interviewed, in order to see in what stage they are with multi-partner alliances, what challenges they face and what their main learning points are. An overview of the interviewees can be found in the appendix B.

5.2.2.1 Philips

Philips is a technology company, that is focusing on improving people’s lives through innovation in the areas of healthcare, consumer lifestyle and lightning.

Alliances are a key innovation driver for Philips, since it gives access to new technologies, it is possible to set technology standards, it is possible to exploit unused developed technologies and it is possible to combine portfolios. Philips described that there is a trend in collaboration. It is not anymore about how can the organization develop it themselves, but how can my organization give access to their knowledge, so that other organizations can create new value propositions from it. There is not one company that is not talking about partnerships, according to one of the interviewees.

Most of the alliances within Philips are bilateral. A lot of those bilateral alliances are focused on co-branding. However, Philips is willing to be more involved in multi-partner alliances. They are willing to move from vertically integrated partnering to horizontally partnering and business ecosystems, whereby a network of organizations are involved in the delivery of a specific product or service through both competition and cooperation. Their objective is to deliver end to end and holistic solutions for customers. So the main reason why Philips is having multi-partner alliances, is because they can deliver a solution to the customer which is not possible to deliver with only two organizations.

Multi-partner alliances means for Philips being part of a business eco-system or consortium. An example of a recent consortium where Philips is involved in is the Almere Smart Society program,
where Cisco, IBM, Liander, Living PlanIT and Philips are planning to create a smart society within Almere through smarter deployment of ICT, people and resources in urban management and development. Philips encounters different kind of complexity generated by multi-partner alliances in comparison with bilateral alliances and realizes that therefore different competences are needed to manage these alliances. An overview of these challenges and competences are shown in table 20.

<table>
<thead>
<tr>
<th>Perceived complexities derived from presentation and interviews</th>
<th>Bilateral alliances</th>
<th>Multi-partner alliances</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Same partner</td>
<td>Cooperate not always with same partner</td>
</tr>
<tr>
<td></td>
<td>Complementarity</td>
<td>Co-opetition</td>
</tr>
<tr>
<td></td>
<td>Manage dependence</td>
<td>Manage trust and credibility while not being exclusive</td>
</tr>
<tr>
<td></td>
<td>Focused interactions</td>
<td>Complex, many connections/interactions</td>
</tr>
<tr>
<td></td>
<td>Easier to agree on joint objectives</td>
<td>How to ensure joint objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Often part of multiple network alliances at the same time, with sometimes conflicting objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More discussions take place</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More agreements that have to be made</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negotiations take longer, so collaboration is slower</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Governance is different</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Challenge is to keep parties aligned</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The risk that a partnership will fail is higher than when there are only two parties involved.</td>
</tr>
</tbody>
</table>

| Competences needed for multi-partner alliances                | Multi-party diplomacy and influencing |
|                                                               | Trust and credibility |
|                                                               | Empathy with multiple simultaneous perspectives |
|                                                               | Insights into and understanding of complementary / overlapping industries and business models |
|                                                               | Legal: understanding how, when and where to deploy multi-party and bi-lateral agreements |
|                                                               | Clarity on each company’s choices, goals, concerns and benefits (upside) - do not hesitate to objectively explain: address the elephant in the room |
|                                                               | Frequency and structure of communication (informal and formal) |
|                                                               | Clear structure and agreements |
|                                                               | Clear about boundaries were collaboration stops |

Table 20: Differences bilateral and multi-partner alliances - Philips

Most of the multi-partner alliances that Philips has with their suppliers are primarily focused on standardization, which is the process of developing and implementing technical standards. Philips is moving from a very transactional relationship with their suppliers to joint propositions, however still most of those alliances are one-to-one. Alliances focused on joint R&D are most of the time bilateral in the departments were the interviewees are working in.

Philips mentioned that there is a big difference between alliances that are focused on marketing activities and alliances that are focused on development activities, since in the later often new IP is
generated. In alliances were suppliers are involved, often the structure is more chain-based. Only when Philips wants also to have control on the supplier of the supplier (the so called sub supplier), then a 3-way relationship will be preferable.

In alliances the IP model differs per case. Philips only wants the ownership of the IP if they want to have the competence. The ownership lies at the other organization, if the IP is not close to the core-business of Philips. Philips does not prefer to have shared IP.

For Philips exclusivity agreements are of importance. Often a few years of exclusivity is agreed, in order to be first-to-market. After the exclusivity period the parties can share their knowledge with other organizations. However, Philips mentioned that it is important that parties are not blocked in their business.

Philips encountered that alliances were suppliers are involved are tougher, since there is dependency between the partners and price negotiations are part of the deal.

A win-win-win situation is very important to make the collaborations work. Therefore Philips uses a standard needs contributions framework within their alliances. The needs of the partners are compared with what Philips can contribute to those needs and the needs of Philips are compared with what the partners can contribute to Philips’ needs.

One of the interviewees mentioned that Philips does not have multi-partner contracts, since it takes forever to get it. It takes too much time. And in his experience all the parties involved want to have one-to-one agreements, since it is easier and faster to agree. Another reason is that there are different IP agreements between the parties and different nationalities. It otherwise can take you 2 years to sign it. So in multi-partner alliances were Philips is involved, there are multiple bilateral contracts. For example, they team up with ten different companies and make 10 different agreements.

At the end of the day you can have shared IP with all the parties involved, but still have one-to-one discussions. IP can be shared when you are in a research phase, not when you are in a commercial phase.

Usually in multi-partner alliance within Philips, one company plays the leading role or the customer is playing the leading role. However, Philips encountered that the most efficient way is to have an external party doing the coordination of the multi-partner alliance. Philips often hires a consultant, who functions as an integrator and is paid by the different parties involved in the collaboration. The consultant then has to make sure that the need of the customer is translated properly and has to make sure that the individual parties deliver their promises. Philips described that sometimes parties have conflicts and therefore you need to have somebody that is neutral and drives the collaboration from the customer side. People otherwise act in their own interest. Each party wants to have a bigger piece of the pie that we are creating together and that is not working. For example Philips encountered a situation where a party was playing the central player of the collaboration. The party was a supplier and put the other parties behind him. This did not work well, since they lost basically 6-8 months on negotiating. The roles of the parties were not always clearly defined at the beginning and that is where sometimes alliances fail. So according to Philips the roles should be determined from the beginning. Philips is going to deliver this and company B is going to deliver that etc. If this is not clear from the beginning there is no transparence and the collaboration becomes a kind of hidden game. So Philips mentioned that it is better to have the tough discussions at the beginning.

Moreover, Philips noticed that creating trust and a joint value proposition contributes to the success of a multi-partner alliance. The interviewee described it as first you start to dance and create trust. When trust is created and the partniers have a good strategy fit, this can take the collaboration a step further and partners can then share their roadmap and IP. It takes a lot of time to create trust, but only in a small amount of time trust can be destroyed. So creating and retain trust is of high importance in collaborations.
Another aspect mentioned by Philips is **co-opetition**. In the world of multi-partner alliances, time to time parties will team up and time to time they will compete. And in specific regions parties can be competitors and in other regions they can team up. Philips stated that if the parties make clear agreements about this at the beginning, then it is okay, since there are no surprises then. For example Philips experienced a situation where the boundaries of the collaboration were blurry and the parties needed to check all the time. When the boundaries became clear the collaboration started to work.

In summary, Philips performs joint R&D mostly with two parties, and seldom with three parties. However, Philips has experienced multi-partner alliances in the field of joint development towards an end solution for the customer, mostly in eco-systems and consortium. The main learnings from Philips regarding multi-partner alliances include that multi-partner alliances are far more complex than one-to-one alliances, but Philips will need it more and more in order to gain competitive advantage. Moreover boundaries between companies are becoming more blurry, therefore the boundaries of a collaboration should be clearly defined upfront. An external partner can be helpful in leading a multi-partner alliance. The risk that a partnership will fail is higher than when you are with two parties. Clear structures and agreements have to be made. Roles have to be defined from the beginning on and the parties have to talk about sharing the cake at the beginning of the collaboration.

In summary, Philips performs joint R&D mostly with two parties, and seldom with three parties. However, Philips has experienced multi-partner alliances in the field of joint development towards an end solution for the customer, mostly in eco-systems and consortium. The main learnings from Philips regarding multi-partner alliances include that multi-partner alliances are far more complex than one-to-one alliances, but Philips will need it more and more in order to gain competitive advantage. Moreover boundaries between companies are becoming more blurry, therefore the boundaries of a collaboration should be clearly defined upfront. An external partner can be helpful in leading a multi-partner alliance. The risk that a partnership will fail is higher than when you are with two parties. Clear structures and agreements have to be made. Roles have to be defined from the beginning on and the parties have to talk about sharing the cake at the beginning of the collaboration.

5.2.2.2 **ASML**

ASML is market leader in semiconductor lithography machines. ASML operates in a market with high entry barriers due to the complexity of the involved technology, speed of technology development and investment capabilities. ASML has taken a position as final integrator working together with partners supplying complete integrated subsystems. The partners are sharing in development and production and ASML works closely with some partners in co-innovation. So ASML is highly dependent on collaborations with suppliers, including multi-partner collaborations. ASML is dependent on their supplier based on meeting tomorrow’s technological challenges. They mostly work together with partners for their knowledge and technology, because timely availability is crucial in their market. ASML need specific competences from suppliers and therefore select their supplier based on their competences, the quality and their costs. Innovations with suppliers happens throughout the whole supply chain. ASML goes as deep into the supply chain as where it is crucial and where developments are difficult. ASML sends their technology roadmap to their suppliers, so that they know way ahead of what ASML needs and wants in the future. They make sure that there is a fit between the business strategies.

The innovations within ASML are very competence driven. It is about speed and what is technical capable. ASML knows what the customer wants. So the bottleneck lies in what is technological possible, what can the suppliers deliver. It is a very R&D driven company.
The interviewee mentioned that one of the most important aspects of multi-partner collaborations are the value flows and how the values between the parties are balanced. It is all about balancing values such as knowledge, and reputations in comparison with euros. The reputation of ASML plays a big role for the suppliers. If a supplier works with ASML it is easier for them to gain new clients. It is case dependent how these values are balanced. The interviewee described that it is all about being able to, willing to and to be allowed to (in terms of risk-taking) collaborate with multiple parties. Small companies can take less risk in terms of money and have to earn their investments back in a shorter term to survive.

ASML is sharing risks and rewards with their suppliers. The one who pays the development, is the owner and has the access to the IP. The IP model within the collaboration is totally dependent on the case. However, ASML strives at least to have co-ownership of the IP or otherwise wants to have free access to the IP and the related patents.

Often the leading role is at ASML, since they are the customer and they apply the components or subsystems. ASML has a lot of power: the network is highly centralized, with ASML dictating to the partners. The effect is that knowledge sharing is essentially centralized and controlled by ASML. Nonetheless, if the supplier has something unique, then ASML is dependent on that supplier.

In summary, ASML performs a lot of multi-partner collaboration with their suppliers, since the market is very R&D driven and ASML is therefore dependent on their suppliers. However, they can dominate the collaborations, since they exactly know what the customers wants. Their main learning is that values have to be balanced. The IP model is totally dependent on what kind of suppliers are involved in the collaboration.

5.2.2.3 Holst Centre

Holst Centre is an independent open-innovation R&D centre that develops generic technologies for Wireless Autonomous Sensor Technologies and Flexible Electronics. The key element in their organization is the partnership model that they utilize with industry and academia based around shared roadmaps and programs. Organizations can invest in a specific field of research were researchers from Holst Centre as well as researchers from the business are performing research together. The interviewee stated that it is important that researchers from the business are involved, since they know better what the final application should do. The goal of partnering is to share ideas and efforts, cost and risk of R&D and to reduce the time to market of new product generations. It al is about co-creating results.

The IP model of the collaboration led by Holst Centre is as follows. The background IP will always remain at the company who brought in the background IP. The co-created IP will be co-owned by the persons or organizations who invested in the research. The organizations get a non-exclusive license to the background IP. However, normally it occurred that different organizations want to participate and invest at different points in time. Therefore the organizations who participate later, have to pay a participation fee based on which phase in the research they step in. The organizations can step out the collaboration at each point in time, however they only are part-owner of the IP thus far.

The interviewee stated that interaction between the researchers is important. There has to be trust between the researchers, since only then the researchers will share their ideas and knowledge. It is important to create moments that the researchers can actually work together.

Regarding multi-partner alliances that are focused on also commercializing the product, the interviewee mentioned the importance of power when different types of parties and difference in size are involved. Power of money can overrule the power of knowledge. For example when a small
party has a specific kind of knowledge, but not the possibility to invest in protecting that knowledge. The other parties arrogate their knowledge. Bigger parties can invest in protecting their knowledge by patents and can defend those patents with lawyers. Therefore those who invest, have often the leading role. It not often happens that a SME takes the leading role in multi-partner collaboration where bigger parties are involved. Moreover, small companies do not have the possibility for substantial investments in R&D and cannot take a lot of risks in terms of investments. Therefore sharing risk and results is easier in a collaboration were parties of the same size are involved. In addition, the interviewee stated that the difference in type of partners also play a role. For example when customers and suppliers of those customers are involved in the collaboration it gives distinctive dynamics. Open innovation for the interviewee is not just a traditional way of working with suppliers in the setting of a client and contractor relationship. It is being equal partners. However, in the end, the customer will buy the new product from the supplier. The customer can put pressure on the supplier to supply the products at a low price. The interviewee stated that the parties involved should take into account that they are collaboration partners as well as each other’s client. The interviewee stated that greed and individualism will always play a role, since that is in the nature of the human being.

The most important questions mentioned by the interviewee is how to handle the co-created results, how to manage the created IP and who will be the owner of the IP? The parties look in each other business, so you have to make clear agreements upfront. The background IP remains at the party who is bringing in the background IP. Not all the organizations can afford to patent their knowledge, especially not the small organizations. And if they patent something, they cannot defend their organization if someone ‘steels’ their patent. Especially small organization are vulnerable in a multi-partner alliance. So the parties have to create an environment of trust, and make sure that everything is covered and protected by a non-disclosure agreement. Still the intentions of a party can be 100% good, but dependent on the role you are playing, parties can be trustful or not. Therefore a neutral orchestrator, who manages the expectations of the parties and does the negotiating, can help in the success of a multi-partner collaboration.

If the supplier can sell the new product also to other organizations, it is interesting to share risks. Taking risks is part of the deal when performing open innovation.

Furthermore, according to the interviewee the drivers of the companies have to be considered. Some organizations want to collaborate because the result can reduce impact on the environment and others want to collaborate because they can say to their family that they are successful. In addition to the organizational drivers, the personal drivers play a role. It is not the organization that innovates, it is about people who are innovating together. So the role of the persons itself are important for the success of the project. The human factor is often underestimated. There has to be a culture change, that people do not feel afraid to share. So the internal culture has to be set in a right way. There has to be a specific mindset that will result in the right behavior. That behavior needs leadership. People are afraid to be part of a failure, they prefer to play it save. Chaos is needed in open innovation, however it is needed to create some structure in the chaos. The interviewee qualified multi-partner collaborating as “an all but romantic story”. Collaborations not only focused on R&D, but also on commercialization should start at a small perspective.

In summary, the interviewee states that a neutral party who manages the multi-partner collaborations can help in the success of the collaboration, since all the parties have different kind of interests. Moreover, trust, interaction, leadership, personal drivers and the culture are crucial for the success of the collaboration.
5.2.3 Summary of the findings

In summary, the interviewees perceive multi-partner collaborations as complex. Especially, the negotiation within multi-partner collaborations are perceived as difficult. They mentioned different relational aspects as well as governance aspects important for successful multi-partner collaborations. Relational aspects include trust, open mindset, transparency, culture fit and building a relationship. Governance aspects include, clear agreements from the beginning, clear leadership and fast-decision making. Especially discussing topics like objectives, roles and IP is pointed important by the interviews. Also important is the sharing and the balancing of the values coming out of the collaboration. Equalized partnership and a win-win-win situation are crucial.

Competition is often involved. The parties can have conflicted objectives and then a collaboration does not run smoothly. Co-opetition can play a role. Therefore complementary values are a necessary condition for a successful collaboration.

The IP model depends on the specific case and the parties that are involved in the collaboration. However, it often appears that the parties get the IP that is closely related to their own business. Besides that, it is important that the parties involved have at least access to the IP.

The leading role is often played by the customers or the one who does most of the investments. Power influences the multi-partner collaboration when parties of different sizes are involved. Small parties are often more vulnerable than big parties, since they have less resources to protect their knowledge and less money to invest. Moreover the type of the parties influences the collaboration. When suppliers are involved the price negotiations at the end of the collaboration will influence the relationship.

Since the parties foresee complexity in negotiating, conflicting values and sharing values, Holst Centre as well as Philips mentioned that it can be useful to have a neutral external integrator doing the negotiation.

5.3 Conclusion

In literature various benefits and challenges of multi-partner alliances are described. The findings show that these benefits and challenges are also present in practice. However, some additional benefits and challenges are found. An overview is given in table 21. The findings are separated into two groups: literature and practice. In the left column the benefits of multi-partner alliances are presented and in the right column the additional challenges when going from bilateral to multi-partner alliances are presented.
### Perceived benefits and challenges of multi-partner alliances

<table>
<thead>
<tr>
<th>Benefits of multi-partner alliances</th>
<th>Additional challenges when going from bilateral to multi-partner alliances</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>From literature</strong></td>
<td></td>
</tr>
<tr>
<td>• More complementary resources accessible to the firm</td>
<td>• Higher degree of managerial complexity and coordination costs</td>
</tr>
<tr>
<td>• Higher potential volume for knowledge sharing</td>
<td>• More power dynamics complexity</td>
</tr>
<tr>
<td>• Faster recognition of market opportunities and threats</td>
<td>• Chance of coalitions within alliance</td>
</tr>
<tr>
<td>• Higher innovative performance</td>
<td>• More economic exchange complexity</td>
</tr>
<tr>
<td>• More sustainable competitive advantage</td>
<td>• Explicit contracts are more challenging to develop</td>
</tr>
<tr>
<td>• Cover a larger part of the value chain (in case of vertical alliances)</td>
<td>• Higher risk of disagreements and misunderstandings</td>
</tr>
<tr>
<td><strong>From practice</strong></td>
<td></td>
</tr>
<tr>
<td>• Access to new technologies</td>
<td>• More social exchange complexity</td>
</tr>
<tr>
<td>• Explore unused developed technologies</td>
<td>Restricted social exchange vs. generalized social exchange (direct monitoring and reciprocity vs. no direct monitoring and no direct reciprocity)</td>
</tr>
<tr>
<td>• Creating new value propositions</td>
<td>• Higher risk opportunistic behavior and free riding</td>
</tr>
<tr>
<td>• Delivering end solutions for the customer</td>
<td>• Harder to build trust</td>
</tr>
<tr>
<td>• Reducing risks</td>
<td>• More complexity in knowledge management (leakage)</td>
</tr>
<tr>
<td>• Speed of innovation</td>
<td>• Cooperation not always with same partner</td>
</tr>
<tr>
<td></td>
<td>• More co-opetition</td>
</tr>
<tr>
<td></td>
<td>• Harder to manage trust and credibility</td>
</tr>
<tr>
<td></td>
<td>• Higher complexity in terms of many connections/interactions</td>
</tr>
<tr>
<td></td>
<td>• Harder to ensure joint objectives</td>
</tr>
<tr>
<td></td>
<td>• More often part of multiple network alliances at the same time, with sometimes conflicting objectives</td>
</tr>
<tr>
<td></td>
<td>• More discussions</td>
</tr>
<tr>
<td></td>
<td>• More agreements have to set up</td>
</tr>
<tr>
<td></td>
<td>• Negotiations take longer, so collaboration is slower</td>
</tr>
<tr>
<td></td>
<td>• Governance is different</td>
</tr>
<tr>
<td></td>
<td>• Trust is more critical</td>
</tr>
<tr>
<td></td>
<td>• Challenge to keep parties aligned</td>
</tr>
<tr>
<td></td>
<td>• Higher risk of failure</td>
</tr>
<tr>
<td></td>
<td>• Inequality between the parties</td>
</tr>
</tbody>
</table>

Table 21: Benefits and challenges of multi-partner alliances

The findings show that the biggest challenge is the high perceived managerial complexity and the negotiation between the parties. It takes a lot of time to come to agreements, which negatively influences the speed of the collaboration. The collaboration can be speed up if this problem of making agreements is tackled. Moreover, the inequality between the parties (in terms of size, invested money, knowledge, resources) play a big role in multi-partner alliances. Furthermore, at the beginning of this chapter the tables were given in which the different findings of the cases and benchmark are stated. In the next chapter these findings are used and combined to come up with a design of a multi-partner alliance framework that can help parties to set up a multi-partner alliance.
6 Design

Based on the previous chapter it appeared that the most complex part of multi-partner alliances is setting up agreements between the parties. Once the right agreements are in place, the collaboration tends to go pretty well. The process of negotiating can be speed up if agreements are more clear from the beginning. Therefore it appeared that it is crucial to ask the right questions at the beginning of the multi-partner collaboration and that applying a neutral perspective to the collaboration is helpful in setting up the alliance. It is about making agreements and doing negotiation without negatively influencing the relationship between the parties. Therefore a multi-partner alliance framework is developed which contains the most important questions to ask at the beginning of the alliance and focuses on the overall perspective of the whole alliance. This framework is partly based on the alliance framework that is already used within Unilever (figure 3) and partly based on the findings from literature, the benchmark and the case studies. This framework is useful for the process of planning and negotiating a multi-partner alliance. The goal of the framework is to quickly develop a high quality deal or to make a fast conclusion that a deal between all the parties is not possible or useful.

The framework of Unilever was mainly based on alliances between two parties. Therefore the framework is adjusted to the specific situation whereas more than two parties are involved in an alliance.. What especially appeared important within alliances between more parties is the value that flows between all the different parties, the different roles that the parties play and the choice for a specific construction. So this is specifically added to the framework. The multi-partner alliance framework is depicted in figure 17. The framework will be explained in more detail in the following sections.

Multi-partner alliance framework

<table>
<thead>
<tr>
<th>What to discuss and understand</th>
<th>What to choose</th>
<th>What to agree upon (contractual elements)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall goal</strong></td>
<td><strong>Configuration of the multi-partner alliance</strong></td>
<td></td>
</tr>
<tr>
<td>- What are we trying to achieve together?</td>
<td>- Based on these value flow models, which construction do we need?</td>
<td></td>
</tr>
<tr>
<td>- If we were one company, how would we describe the collective goal?</td>
<td>- Do we really need each other? Or can every party perform on their own in a sequential process?</td>
<td></td>
</tr>
<tr>
<td>- What can we achieve together that we otherwise could not achieve separately?</td>
<td><strong>Configuration of the agreements</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Motivations</strong> of each party to join the collaboration</td>
<td>- Based on the construction of the alliance: what kind of agreements do we need?</td>
<td></td>
</tr>
<tr>
<td>- What are the motivations of the parties to be part of the multi-partner alliance?</td>
<td><strong>Boundaries</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Values</strong> that each party can deliver (Capabilities)</td>
<td>- What are the limits of the collaboration?</td>
<td></td>
</tr>
<tr>
<td>- What kind of values and capabilities can each party bring into the collaboration?</td>
<td>Where will we be collaborating and where not?</td>
<td></td>
</tr>
<tr>
<td>- Are these value complementary or are some values conflicting?</td>
<td><strong>Exclusivity</strong></td>
<td></td>
</tr>
<tr>
<td>- Which resources and assets do the firms have which will be relevant for the collaboration?</td>
<td>- Project exclusivity</td>
<td></td>
</tr>
<tr>
<td><strong>Value flow model</strong></td>
<td>- Are we allowed to work at the same time on a similar project with other parties?</td>
<td></td>
</tr>
<tr>
<td><strong>Roles</strong></td>
<td>- Commercial exclusivity</td>
<td></td>
</tr>
<tr>
<td>- Which firm will logically take which role?</td>
<td>- What kind of exclusive rights does which party wants?</td>
<td></td>
</tr>
<tr>
<td>- Who will take the leading role at which point in time?</td>
<td>- For which applications and in which areas?</td>
<td></td>
</tr>
<tr>
<td><strong>Value flows</strong> (knowledge, financial, IP etc.)</td>
<td>- What is the exclusivity period?</td>
<td></td>
</tr>
<tr>
<td>- Which values will flow between the different parties in the different phases of the collaboration?</td>
<td><strong>Intellectual property</strong></td>
<td></td>
</tr>
<tr>
<td>- What to agree upon (contractual elements)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- How would new created IP emerged from the collaboration typically be allocated?</td>
<td>- For which applications and in which areas?</td>
<td></td>
</tr>
<tr>
<td>- Which rights would the parties need to use each other’s protected technology?</td>
<td><strong>Financial pie-split</strong></td>
<td></td>
</tr>
<tr>
<td>- What to choose (configurations)</td>
<td>- Who will invests which amount of money into the alliance?</td>
<td></td>
</tr>
<tr>
<td>- What to discuss and understand (value flow models)</td>
<td>- How are we going to divide the money flows generated by the alliance?</td>
<td></td>
</tr>
<tr>
<td>- What to agree upon (contractual elements)</td>
<td><strong>Commercialization intensions</strong></td>
<td></td>
</tr>
<tr>
<td>- What are our intensions when the product is on the market?</td>
<td>- What are our intensions when the product is on the market?</td>
<td></td>
</tr>
</tbody>
</table>

Figure 17: Multi-partner alliance framework
6.1 What to discuss

For successful collaboration, the parties must understand each other and each other’s needs (Lee, Park, Yoon & Park, 2010). It is important that the different involved parties interpret the business model in the same way.

Overall goal

What firstly needs to be discussed is the overall goal of the alliance. This relates to the strategic elements of the alliance. What are we trying to achieve together? If we were one company, what would be our collective goal? What can we achieve together what we otherwise could not achieve separately?

Vandendriessche (2002) describes the management funnel as well as the conflict pyramid, which both cover three stages (strategic, tactical and operational). He argues that on the strategic level, where the goal is formulated, the chance on conflict are small, but if there is a conflict on the strategic level it runs deep. On a more tactical level (how to reach the goal) the chances of conflicts are increasing whereas on an operational level the chance on a conflict are the biggest. So it is best to first focus on the first two levels, before going to the third. If conflicts arise at this strategic level, it may be not the best combination of partners to start an alliance. A shared vision is a prerequisite for a successful alliance. So the goal needs to be clear and related to the needs of the different parties involved.

Motivations

This element of the framework is related to the interests, intentions, and aims of achievements of the parties. These motivations do not have to be the same, but should be somehow related to each other and aligned. An example of differences in motivations is that some parties may want to focus on quality while others may look for the cheapest solution. It is important to understand these differences and whether it is possible to collaborate given these differences in motivations.

Values that each party can deliver

There are different values that a party can add in a multi-partner alliance. These added values can include knowledge (IP, consumer needs), capabilities (possibility to manufacture product) and resources (technology, goods, money). According to this study, a multi-partner alliance best works if these added values are complementary and not conflicting. Lazarinni (2008) argued that multi-partner alliances only occur if there is a high diversity in resources which are complementary. The bigger the organization, the bigger the chance that there is underlying competitiveness. In some fields parties can be non-competitors and collaborate, in other fields they are each other’s competitors. For the parties it is important to be aware of the fact that they are competitors in some fields, since it can influence the willingness to share knowledge between the parties.

Therefore it is important to define what different values a party can add to the alliance.

Also by defining these values, the parties can see whether the right capabilities and knowledge are present in the alliance to make the collaboration viable. Moreover, the multi-partner alliance should create value for all the parties involved in order to make the collaboration a success. These values do not have to be equally shared but there has to be a right balance and fairness of what the parties brought into the collaboration and what they get out of the collaboration as an individual party. Different values are important for different parties.

Discussing what kind of values the parties can deliver, can help in the discussion of what the parties capture as value in the end of the collaboration. It is important that every party should get a significant part of the value, that is created together.

From this study it appeared that explicitly measuring the delivered values of the parties is not possible. Therefore the parties can best map these values in order to see how these values can be balanced.
**Value flow model**

A value flow model, as described by Den Ouden (2013) visualizes specific interactions within the collaboration to provide a perspective for understanding value-creating roles and relationships. The value flow model offers a dynamic view of how both financial and non-financial assets are converted into negotiable forms of value. Moreover it changes the view from a company-centered perspective into a solution driven network perspective. So there is a shift in focus from the company itself to its offerings to the customers. As a result, not one company plays the central role, the network as a whole becomes important. Therefore it is useful to design and discuss the value flow models during the alliance. The value flow models can be different for different phases of the alliance, especially when going from ideation to development and finally to commercialization, since these phases encounter different dynamics. For each phase it is useful to define the value flow models.

**Roles**

First, the roles that are needed for the development of the innovation can be defined. Thereafter these roles can be assigned to the specific parties. An overview of possible roles is given in appendix D. The findings of this study illustrates that most of the roles are naturally determined according to the field of expertise of the parties. For example, the supplier naturally has the role of the provider of goods. It is important to clarify who will take the leading role and the role of financier or whether all the parties take the role as financier.

The biggest companies within the multi-partner alliance often have the role of financier. The findings represent that often the customer and the one who makes the most investments for the alliance has the leading role. However, it appears that it has a lot of advantages to assign the leading role to an external party, especially at the beginning of the collaboration. This person must be trusted by all partners, explores the various ambitions and can manage the negotiations between the parties. This person operates as a mediator and a trailblazer. In multi-partner alliances conflicts can occur because of the different interests of the parties. An external party can manage the different interest from a neutral perspective and discusses the multi-partner alliance framework with all the parties. Later on, when the innovation process is running, a senior project manager of the biggest company might take over the leading role. In case of new conflicting decisions the external party could join again.

**Value flows**

After discussing the roles, the value flows between the parties can be defined. The value flows are values that are shared or exchanged between the different parties and can be seen as transactions. They can be indicated by arrows that also show the direction of the flow and the content of the transaction. It is useful to make a distinction between goods & services, money & credits, knowledge/information, IP and intangible values (experience, reputation, exposure etc.) if needed.

In the last phase of the alliance, the incurred costs (including intangible assets) will have to be recovered by value flowing back to the parties that invested, with at least slightly more value flowing in than was invested. This to ensure that all the parties are satisfied and willing to collaborate and share knowledge.

**6.2 What to choose**

Something that is specific for multi-partner alliances in comparison with bilateral alliances is the way the parties want to configure themselves in the alliance. Therefore the parties should make a choice which configuration can best be applied.

**Configuration**

The relationships among the partners can take various forms. From practice as well as from literature (Lit et al., 2012) it can be concluded that parties can be configured in a net-based setting.
or in a so called chain-based setting. In a net-based setting the parties are configured in a way such that each individual party acts in a relationship with the group as a whole and benefits directly from the group. In such construction the parties pool their resources together for the R&D activities and benefit from the innovation derived from the collective contributions of all partner firms. In a chain-based setting the individual parties in the group are positioned in such a way that they operate as a chain instead of as more individual players. The parties are positioned such that innovations are developed and largely or wholly commercialized in sequence.

It can be concluded from this research that configuration both have advantages as well as disadvantages. There are different factors that play a role in the choice of the configuration. Firstly, the phase of the innovation process where the alliance currently is located, has an influence on the configuration. For example in the ideation and the development phase a different configuration can be appropriate than in the commercialization phase. Moreover, the findings of this study illustrates that speed, simplicity, type of partners, openness, knowledge exchange, control and complexity play a role in the determination of the configuration of the multi-partner alliance.

Based on the different value flows between the parties, the most appropriate configuration can be determined. In the following we present some considerations.

The findings of this study show that a net-based configuration is perceived as complex. Especially negotiating a 3-way agreement takes a lot of time. This results in the fact that parties prefer to agree bilateral agreements and that parties often choose for a more chain-based configuration. However, in particular, during the ideation and development phase of the innovation project, a net-based configuration is preferable. Advantages include a more open relationship, higher degree of knowledge sharing, more sure that own knowledge/IP is protected, and it is more easy to divide the values amongst the parties that result from the collaboration such as IP. The configuration promotes knowledge exchanges and protects the partners’ (technological) knowledge against others. Only when the knowledge or expertise of the three parties are not needed at the same time in the innovation process and can be performed in a more sequential process, a chain-based configuration may be considered.

Therefore important questions at the beginning of the alliance are: Do we need each other at the same time in the alliance? And can the alliance be performed in a more sequential process?

Agreements

Based on the value flow models and chosen configuration the parties have to decide which kind of agreements are needed at which time in the alliance. Knowledge is very valuable for companies and parties do not want to give away their knowledge. Knowledge is vital for the competitiveness for companies. Partners within multi-partner alliances can be rivals in other markets or may become competitors in the future. So mutual gain requires appropriate strategic alignment. Therefore it is of high importance to make clear agreements.

For a net-based alliance one document which includes the three parties can be appropriate. For a chain-based alliance the parties can choose to set up different bilateral agreements between the parties. Nonetheless, it is efficient to have agreements that link the parties together in some way such as a CDA so that the parties are able to talk to each other under confidentiality. An overview of possible agreements can be found in table 3.

Moreover, if (some of) the parties within the alliance are strategic partners or have already a relationship with each other in some way, it is useful to look at already existing agreements between those parties. This to see whether there are overlapping aspects and to prevent conflicting agreements. Furthermore, if some parties already have strategic relations it seems to be easier to make agreements, since there is more trust between the parties and a better of understanding of each other’s needs. If the parties are new to each other, this seems to be more difficult. It can then be useful to involve an external party who plays the neutral role as orchestrator.
6.3 What to agree upon

The innovation needs to provide value, tangible and/or intangible, to each member of the alliance. So the revenues and values generated by the total solution will have to be divided and distributed among the various members of the alliance. How the values should be shared can be best agreed upon at the beginning of the collaboration. It seems to be crucial for the success of the alliance to not only look at what is the perceived value for my organization, but what is the perceived value for all the other parties involved. Therefore different agreements should be made about the boundaries, exclusivity, intellectual property, financial pie-split and commercialization intension. Nonetheless, at the beginning there are a lot of uncertainties, so the agreements are based on what is already known and can be foresee. More detailed agreements can be made later in the process.

Boundaries

It is important to agree upon the boundaries of the collaboration and in which particular field the alliance is meant for in order to prevent misunderstandings and conflicts later in the process of the alliance. Partner relationships are highly ambiguous, and today’s partners may be tomorrow’s competitors. Partners can be non-competitors in one field, but competitors in another field. Setting boundaries can help in making the field clear of where to collaborate and were not. The boundaries can be defined according to the field of technology, the application areas/markets, product field and geography.

Exclusivity

Project exclusivity

This exclusivity has to do with the exclusivity during the alliance. The parties can agree upon the extent of freedom with reference to entering similar or overlapping relationships with other (sometimes) competitive parties. An project exclusivity can stabilize a business relationship and can make the whole process more predictable, thereby easing the strain of all the parties involved. It helps to move out the competition. However, the partners become also more dependent on each other and the outcome of the alliance.

Commercial exclusivity

This exclusivity has to do with the exclusivity at the end of the development process, when the new product is put into the market. From this study it appeared that parties want the exclusive rights to for example put the new developed product on the market. This in order to gain competitive advantage. The supplier is then not allowed to supply the product also to other parties outside the alliance and the technology provider is not allowed to license the technology to other parties. So exclusivity for a party can mean that another party is blocked in their business. Therefore it is important to discuss this topic and the intentions of the parties at the beginning of the alliance. It is common that parties agree a specific exclusivity period, where after the parties are for example allowed to license the technology to another party or to supply a product to other parties.

Intellectual property

What became clear during this research is that the main difficulty in the multi-partner alliance specifically focuses on innovation and managing of the IP. So one of the core elements in the multi-partner alliance is how to manage and protect the IP to realize maximum benefits for the parties. The IP model determines the value capturing potential for the partners and is therefore crucial in driving successful innovation alliances. The IP model totally depends on the background IP brought in by the parties, the protection of IP, the kind of created IP and to what kind of IP the parties want to have access. It is challenging to already think of dividing the IP when no IP is yet created and there is no insight whether IP would be created and what kind of IP that is. Therefore the parties should not go into too much detail and drown into long discussion about the IP model.
The parties can best limit the discussion to simplicity and basics of the IP. There exists only an approach and no right answer to divide the IP. There are some guidelines that appeared to be useful. A possibility is to agree that the IP is co-owned by the parties, the so called joint or shared IP. In this case it does not matter whether the IP is developed independently by either party. It is based on opinions how much information from the other party is used within the joint development project. However, this is often not accepted by all the parties because parties do not want to be dependent on each other and a party may want to maintain separate ownership of rights that are developed during the joint development project. Another possibility, what appeared to be practical by investigating the case studies, is that the parties get the IP that is most closely related to their own business and field of expertise. This is possible if the parties do not have similar fields of expertise. Often invention is of predominance at the IP model. If a party invents something during the joint development project, the IP goes to that party. However, it is not always clear who invented something and how much information of the other parties is used in the invention.

Moreover, it appeared that all the parties are focused on getting the IP. This because IP nowadays is seen as a tradable asset when protected by a patent. Companies commercialize their patents externally and sell patented technologies to others. However, it also appeared that the IP is not always the most valuable thing to get for a party. It is mainly dependent on the business model of the party whether IP is important is an important value to get for the party. Getting exclusive rights to implement the technology, to produce the product or to put it on the market can also be of high importance.

Furthermore, it appeared that knowledge sharing does not always proceed smoothly in the multi-partner alliances, since the parties still feel a bit of competition. Persons found it difficult to determine what can I say and what do I have to keep as a secret. If knowledge is not protected well the parties tend to be less open. Therefore the right agreements for protecting the knowledge and IP is crucial.

**Commercialization intensions**
The parties should agree upon what will be the vision for the last phase of the alliance and therefore for putting the product on the market. The commercialization has to do with the development of the product concept, the successful launch and interaction with potential buyers. Successful commercialization is crucial in transforming an invention into innovation. The commercialization intensions are related to the financial pie-split and therefore to the revenue model. The revenue model depends on the specific project and the business models of the parties involved. In a collaboration focused on innovation, not only the flow of the goods determines the revenue model but also the flow of the IP. Therefore it is important that the parties discuss who will license which IP from which party, since this also determines the money flows. For example which company license the technology from the technology provider. From this research it appeared that the configuration in the commercialization phase is depended on the willingness to control the value flows and the willingness to have the access to the IP.

**Financial pie-split**
Monetary value is the most crucial aspect of innovations, so a good understanding of the revenue model and how the parties are foreseeing to earn money is important to clarify at the beginning. The term ‘value formula’ can be useful if the aim is to deliver more value than financial profit alone with the innovation. The value formula is de revenue model including extra non-financial value. For example reputation or improving the natural environment.
6.4 Important aspects related to the framework

Nonetheless, the discussing of only the multi-partner alliance seems not to be enough for a successful collaboration. It appeared to be crucial to also focus on aspects that cannot be defined in agreements, such as trust, setting the right (open) mindset, transparency and communication. Moreover, multi-partner alliances deal with a continuous process of negotiating, since alliances regarding innovation encounter a lot of (technical) uncertainties. By having trust between the parties it also seems to be easier to make agreements and solve things together.

History of partners

If companies lack a common history, they did not have the time to build a strong relationship and to build trust. Then the collaboration on innovations is particularly challenging. So if there is no relationship between the parties at the start of the alliance, the parties should be aware of the fact that trust building needs more time and that they should spend more time on the understanding of each other’s business models, their wants and needs.

If there is already a relationship between the parties, it can have influence on the negotiations. From this research it can be concluded that if the parties have already a good relationship based on earlier collaboration, it is easier to set up agreements and these agreements can be less formal. This because there is a better understanding of the motivations of each other. However, on the other side, if there are conflicts between the parties during this alliance it can have negative influence on other projects. As a consequence the parties are more dependent on each other.

Type of parties

Besides the history of partners, it is also important to be aware of the type of parties that are involved in the multi-partner alliances since this can give other dynamics and might need a different approach. For example SMEs have fewer resources and experience in IPR issues and are therefore often more vulnerable. Due to the complexity of protecting IP, larger companies depend heavily on specialized lawyers. Large companies often have an internal Intellectual Property department. Typically these companies expect smaller companies to act at the same juridical level and specialization as they start to cooperate. However, smaller companies and starting entrepreneurs often lack people, time and money to face these complicated IP issues. Moreover, small companies do not always have a long term vision and need a short return on investment in order to survive. Therefore parties in a multi-partner alliances should be aware of the fact that the difference between the type of parties, especially in size, entail a different approach in making agreements.

Power

Power dynamics are also of influence on the multi-partner alliance. Power embedded in interaction creates dependencies among the parties in the alliance whereby a more dependent firm often becomes a follower that adapts to the wishes of a more powerful firm. Consequently, a more powerful firm becomes highly effective in gaining network support for the operations this firm advocated for the alliance. It appeared that power is mainly determined by the size of the company and the money investment. If the party is big or if it invests a high amount of money into the alliance, it gives the party power especially in the negotiations. However, having knowledge or technology that is unique can also give power to a party. The parties are then dependent on that knowledge or on that technology. To make the alliance effective and successful every party should have some power at some point in time in the alliance.

It could therefore be useful to make the power dynamics visible for the parties. This can be realized by defining a power time line, where is defined which party has which kind of power during the collaboration.
**Interdependency**
A necessary conditions is that the parties need each other in some way. Therefore interdependency plays an important factor in multi-partner alliances. The interdependency between the parties can positively influence the success of the collaboration.
7 Discussion and conclusion

In this chapter the conclusions of this research will be presented. This chapter starts with giving the main findings and providing an answer to the main research question posed in the beginning of this report. This main research question is answered with the input from the sub research questions, which have guided this research. Subsequently the implications for both manager and literature are discussed. Next, a reflection on the findings is given in the discussion section. Finally, the limitations and suggestions for future research are presented.

7.1 Main findings

Within literature multi-partner alliances are defined as a ‘collective, voluntary organizational association that interactively engages multiple members in value creation activities, such as collaborative research, development, sourcing, production, or marketing of technologies, products or services’ (Lavie, Lechner, & Singh, 2007, p.578 ). Often multi-partner alliances entail a single overarching contractual agreement, shared management, and the pursuit of a common objective. This type of alliances are more and more seen by companies as an organizational form to remain competitive in the market places. Multi-partner alliances offer firms access to complementary resources, market information, technology and investment opportunities (Sakakibara, 2002) and therefore have a high potential for attaining innovation. That is why designing and managing innovation within multi-partner settings is becoming increasingly important to the future of open innovation (Chesbrough, 2012). However, literature and conclusions from the oriented interviews have raised awareness that multi-partner alliances are not an easy option for firms to manage. One of the main reasons is that firms do not have enough multi-partner alliance experience, nor have they built up adequate capability to manage such alliances. It is unclear whether the results of previous research on bilateral alliances are applicable to multilateral ones. As such, new research regarding multi-partner alliances could provide more detailed insights about the establishment of these alliances.

Therefore, this study aimed to address the following research question:

How to establish a multi-partner alliance in an innovation context to maximize the value creation and capturing for all the partners?

It can be concluded that when moving from a bilateral alliance to a multi-partner alliance a layer of complexity is added, which can affect the alliance effectiveness. The findings show that the biggest challenge is the high perceived managerial complexity and the negotiation between the parties. It takes a lot of time to come to agreements, which negatively influences the speed of the collaboration. The collaboration can be really speed up if this problem of making agreements is tackled.

Moreover, the inequality between the parties, in terms of size, invested money, knowledge and resources, play a big role in multi-partner alliances. Parties involved in a multi-partner alliance naturally place themselves central in the deal, look at the alliance only from their own perspective and try to get a piece of the pie, which is created together with the parties, as large as possible. Logically, they place their own interests first. Therefore extensive discussions and negotiation periods arise, which slows down the innovation process.

However, it appeared that in multi-partner alliances it is important to balance the value of what a party brings into the alliance and what a party gets out of the alliance. Asking the right questions, making clear agreements and formulating a common shared vision at the beginning of the alliance is crucial for success. The parties should have a common vision about how value will be created and captured. This can be best done by looking at the alliance from a neutral perspective. Not only looking at the value for one party, but at the values for all the parties involved in the collaboration. Therefore a multi-partner alliance framework is designed which contains the most crucial factors to discuss, determine and agree upon at the beginning of the alliance and helps with the establishment
of the alliance. This framework is depicted in figure 17. Visualizing the value flows between the parties and roles in different phases of the alliance is useful for example in seeing which configuration of the parties is needed in the collaboration and what the power dynamics are. Creating IP and the dividing of the IP is key in alliances specifically focused on innovation. Therefore an IP flow could be best explicitly added as a value flow. Preferable is to outsource the task of discussing and negotiating this framework to an external, neutral party, who is specifically focused on balancing the values between the different parties and looks from a neutral perspective. It also appeared that an Open Innovation team, who take the neutral role, is useful in managing such an alliance.

Moreover, although the contractual elements are perceived as most difficult, the crucial success of the alliance lies in the relational aspects. Still alliances are about people collaborating together. Multi-partner alliances focused on innovation encounter a lot of uncertainties, where a lot of technical hurdles have to be taken. Therefore building a strong relationship, based on openness, trust and transparency is key so that the parties are willing to share their expertise, capabilities and knowledge. Parties involved in an alliance should not only focus on contractual but also on relational elements.

### 7.2 Managerial implications

By providing a better understanding of decision making and configurations in multi-partner alliances, the present study provides managers with useful insights. This research underscores the need for managers to look at the value creation and capturing for all parties involved in such an alliance. The research also underscores the significance of making clear agreements upfront in the collaboration. Organizations should actively manage the relationships in order to increase the performance of the collaboration. Organizations need not only focus on formal agreements, but also on managing the informal relationship with the partners involved to maximize the leverage of knowledge and capabilities of the parties involved. Trust is crucial for knowledge sharing and coordination as well.

It is important to set the right behaviour at the beginning. Bringing in external managerial power at the beginning can accelerate the process. The multi-partner alliance framework can help managers to determine how the multi-partner alliance should be configured and governed.

### 7.3 Recommendations for Unilever

This research was mainly executed within Unilever and therefore specific recommendations for Unilever are derived:

- Assign an external neutral party, trusted by all partners, who explores the various ambitions and operates as a mediator and a trailblazer and manages the negotiations.
- Focus on asking the right questions at the beginning of the collaboration and make clear what are the different values that the parties can bring in, what are the motivations and what do the parties want to capture at the end of the collaboration.
- Make time to go through the alliance framework.
- Focus integrally on the benefit for all the parties involved and therefore for the total value creation for all the parties.
- Understand the interest and the business models of the other parties and what they want to achieve with the collaboration and create a common understanding of everyone’s position before going into the project.
- Not only focus on getting the value of IP, but also on other values like being first to market and exclusivity rights.
- Create the right open mindset and set the right cooperative behaviour at the beginning of the collaboration.
• More open innovation perspective on the collaboration: not traditional client – customer perspective
• Clearly manage the three parties discussion and the two parties discussions
• Leadership could best include persons from all the parties
• Align early between the Unilever layers in the organization, like supply chain and R&D
• Assign one single project manager, accepted by all parties who controls the process and has the competences and possibilities to make decisions
• Be more transparent about the ideas for launching the product
• Give space to the other parties to bring in their expertise and to do their job, this can stimulate creativity of the parties and create commitment to the project

7.4 Theoretical contributions and implications
Although the number of alliances focused on co-innovation has increased, a review of the literature revealed a relatively limited number of studies focusing specifically on the issue of innovating and developing new products with multiple partners. Many papers have been published on alliances. Notwithstanding, only a few have been dealing with multi-partner alliances and are mostly focused on only the social perspective. Multi-partner alliances are a popular topic in the pharmaceutical and computer industry, but are not yet described in other types of industries. Moreover, those alliances are mainly focused only on performing research with different parties and do not take into consideration the development and commercialization aspect.

As such the present research contributes by looking specifically at multi-partner alliances outside the pharmaceutical and computer industry which are focused on developing and commercializing a new product together with all the parties of the alliance. Moreover the present research gives extra insight in how these multi-partner alliance should be established in order to create and capture value for the partners involved. Overall, this study contributes to both alliance and innovation literature. First, we contribute to the innovation literature by showing the need for and implications of combining capabilities and expertise for (technological) innovation. While the role of strategic alliances on innovation has been extensively studied, little is known about how multi-partner alliances impact innovation. We showed that multi-partner alliances are challenging yet necessary in addressing major technological changes.

Next, we contribute to the alliance literature by concentrating specifically on this type of collaboration. A lot of research is done on alliances and how these alliances should be managed. Less attention is paid on what the different dynamics are between bilateral alliances and multi-partner alliances and whether the findings in bilateral alliances can be applied to multi-partner alliances. It appeared that several characteristics differentiate multi-partner alliances focused on innovation from bilateral alliances and other types of partnerships.

Another contribution is linking the value flow models of Den Ouden (2012) to the multi-partner alliances. Previously, these models were only used in designing eco-systems, however this study showed these models also are a valuable application for the design of multi-partner alliances. This study contributes to literature by applying this value flow model for setting up multi-partner alliances and adding the role of godfather (the leading role of the alliance) and adding a specific flow to visualize the IP.

7.5 Discussion
In this section the findings of this research are placed in a broader perspective and compared with literal findings and observations. The findings show that clear agreements need to be made at the beginning of the collaboration, but that also building a strong relationship and trust is crucial for the success of the alliance. It is concluded that the parties should not only focus on contractual but also on relational elements.

However, within literature different researchers argue that formal contracts and relational governance are substitutes, rather than complements of each other. Scholars focusing on formal
governance mechanisms tend to downplay the role of informal governance and other scholars studying informal mechanisms tend to downplay the importance of formal mechanisms or threat them as functional substitutes.

In the field of strategic management, most empirical studies which focus on relational governance expresses it as a self-enforcing mechanism. Most authors view formal contracts as a more costly substitute for relational governance. For example, Gulati (1995) argues that trust can substitute hierarchical contracts in many exchanges. If one party trusts the other, there is little need for contractually specifying actions. Dyer and Singh (1998) argue that informal self-enforcing agreements which rely on trust and reputation often replace the formal controls characteristic of formal contracts. Formal contracts may signal distrust of the exchange partners and so indicate a lack of trust (Goshal and Moran, 1996). However, making agreements about value creation and creating explicit boundaries improves the relational ties among the parties, and so enhances social commitment which is required for effective alliance performance (Cullen, Johnson & Sakano, 2000; Das & Teng, 1998). If partners know which tasks are defined and if they have a clear understanding of the decision-making process, this can decreases the ambiguity and lead to commitment of the parties. Moreover, alliance effectiveness is likely to strengthen the trust building between the parties. On the other hand, it is imaginable that relational governance could also have a positive effect on formal governance. For example, as Das and Teng (2001) argue, the presence of social mechanisms such as commitment and trust can reduce the resistance and can bring harmony to the controller-controlee relationship. Nonetheless, the findings of this research suggest that both formal contractual elements as well as relational aspects should be used as complementary aspects. This difference in finding can be related to the fact that this study is specifically focused on multi-partner alliances, whereas literature mostly focuses on only bilateral alliances and interorganizational exchanges. Especially in multi-partner alliances, both agreements as relational aspects are important since there is no direct reciprocity between the parties. Multiple partners make developing trust particularly problematic in multi-partner alliance. Yet, the need for trust is especially high in exchanges which are not based on direct reciprocity. Trust not only reduces the costs of writing and policing contracts but also encourages the partners to adhere to the cooperative spirit and go beyond the contract when facing (technical) uncertainties and ambiguities (Das and Teng, 2002). Only customized contracts do not guarantee the intent of mutuality and continuance when conflict arises. Relational governance complements such adaptive limits of contracts by fostering continuance of the exchange and entrusting all the parties with mutually agreeable outcomes. Moreover, only trust does not guarantee a successful collaboration, since misunderstandings and conflicts can occur when agreements are not clearly formulated. So parties in multi-partner alliances need to go beyond direct reciprocity and therefore both contractual and relational aspects seems to be important for success. Further research should explore more carefully and predict more cautiously the relationship between formal contracts and relational governance in multi-partner alliances. In addition, further research could focus on the understanding of in which phases of the multi-partner alliance one approach is superior to the other.

Furthermore, the findings show that IP is of high importance within multi-partner alliances focused on innovation. This is in line with what is described in literature. IP is important (Alexy et al., 2009) since it determines the value appropriation for the partners (Leten et al., 2013). Our findings corresponds to Sobieraj (2003) who stated that the IP model is depended on particular circumstances of the parties and the project and should be clarified from the beginning of a multi-partner alliance. Parties seem to focus on getting ownership of the IP, namely because IP can be licensed and therefore can be converted into cash flows. The IP is then licensed in a more closed manner. These discussions about IP take a lot of time during multi-partner alliances. On the other hand, it appeared that in some industries patents are made available and licensed to other parties to stimulate that they study, change and distribute on the patent. For example in the computer industry open-source software is a comprehensive studied topic (West & Gallagher, 2006). But not only in the computer industry this open sourcing seems popular. Recently, Tesla published his
patents on electric vehicles and others can (freely) license this patent. In this way Tesla tries to stimulate other companies active in the automotive sector to get involved in the business of electric vehicles, since Tesla realized they benefit if the whole industry of electric vehicles increases. So more open licensing seems to be beneficial in some situation and that IP models are related to the kind of industry and the type of innovation. Future research could further investigate what kind of possibilities regarding IP models are useful for multi-partner alliances in which situation.

7.6 Limitations and recommendations for future research

This research carries several limitations, which are discussed in this section. Firstly, this research is explorative and was only focused on gaining insight. Therefore further research is needed to verify the results, explain it and evaluate its impact on the success of multi-partner alliances.

Secondly, the choice for two case studies has some limitations. Although the case studies show how value is created and captured amongst the parties involved in a multi-partner alliance, the number of cases is rather small. Furthermore, the case studies selected for this research are all within the context of one company and thus in a very limited industry. Although an external benchmark was performed in other industries, future research could focus on multi-partner alliances in other industries. Moreover, both case studies involved the same type of parties, namely a supplier, technology provider and customer. Future research should address, based on this thesis, whether findings are the same for multiple case studies in diversified setting, diversified type of parties and of different sizes and whether the framework is applicable for such cases.

Thirdly, the data of the case studies are collected and coded by one researcher. Although also secondary data are used, collected by other interviewees, there is no validation of these results and the findings could be subject to retrospective bias. If multiple researchers had performed the coding, the results would be more reliable, which would strengthen this research. Future research could address this issue by letting multiple researchers perform the coding process.

Next, the focus of this research was limited to alliances where three parties were involved and therefore on trilateral alliances. Trilateral alliances are the simplest form of multi-partner alliances. One must understand the processes that occur in these alliance before exploring more complex forms. In addition, radical change occurs when moving from dyads to triads rather than from triads to larger groups. However, extending the analysis in future research to four or more partner firms could also be useful. Further research should address if additional challenges occur when more parties are involved. The indication will be based on this study, that the more parties the more complexity is involved.

What appears to be also important in multi-partner alliances is the partner selection. Which skills are needed to choose and which external capability is the right one for the organization? Another direction for future research lies in the effect of research institutions on multi-partner alliances. Companies are increasingly focusing on stimulating multi partner alliances which include research institutions and private parties, to improve the flow of R&D and academic knowledge to society. Future research could examine the governance mechanisms and structures of such alliances.

Next, the multi-partner alliance framework designed in this research is not tested in the field due to time constraints. It would be very valuable to test this framework and see whether additional concepts should be added. Furthermore, future research could address the challenge of measuring value explicitly and assigning for example monetary value to all the intangible values in order to concretely balancing the values.

Overall, future research focusing on improving the just mentioned limitations could lead to results with a greater internal and external validity concerning the antecedents of performance in multi partner alliances.
References


98


## Appendix

### A. Discussion points in multi-partner alliances from practice related to literature

<table>
<thead>
<tr>
<th>Discussion points from oriented interviews</th>
<th>Related factors From literature</th>
<th>Related perspectives From literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do we share or divide the added value that is created? How does everyone earn their money from the collaboration and when? What are the money flows and flows of investments? Who bears the financial burdens and risks? How exclusive is the collaboration? How interdependent are the partners? What are the positions of the partners in the value chain? Can you create a win-win-win situation in a multi-partner alliance?</td>
<td>Business models Value flow model Value creation and capturing Revenue model</td>
<td>Strategic perspective</td>
</tr>
<tr>
<td>What is the role of each partner? Does this differ over time? What are the responsibilities of each partner? Who is in the lead? What kind of approach is better to use: trust or control?</td>
<td>Kind of governance type Trust vs. control Roles &amp; responsibilities Power dynamics</td>
<td>Governance perspective</td>
</tr>
<tr>
<td>What kind of rights are there in the alliance? Rights to use, Rights of the technology, Right of application What is the flow of the patents? Who owns the final IP that is created? What if someone leaves the alliance? What are applicable compensation rules? What kind of license model exists?</td>
<td>Intellectual Property (IP) Rights Licensing models Licensing patterns</td>
<td>IP perspective</td>
</tr>
<tr>
<td>How to deal with group dynamics? How to keep everyone motivated in the collaboration? Are the (business) culture differences of influence? Do the partners trust each other?</td>
<td>Commitment Motivation Group dynamics Trust</td>
<td>Relational perspective</td>
</tr>
</tbody>
</table>
B. List of interviewees
This appendix has been removed because it contained confidential information.
C. List of consulted documents
This appendix has been removed because it contained confidential information.
## D. Overview roles – value flow model

<table>
<thead>
<tr>
<th>Role</th>
<th>Role description (Den Ouden, 2012) – applicable to eco-systems</th>
<th>Role description – applicable to multi-partner alliances</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supplier</strong></td>
<td>Delivering components to providers of goods or systems that will be integrated and delivered to the customers.</td>
<td></td>
</tr>
<tr>
<td><strong>Provider of Systems</strong></td>
<td>Business actor integrating different goods and services into complete systems</td>
<td></td>
</tr>
<tr>
<td><strong>Provider of Goods</strong></td>
<td>Business actors providing physical goods directly to the customers, either as a part of the core value proposition or complementary goods</td>
<td></td>
</tr>
<tr>
<td><strong>Provider of Content</strong></td>
<td>Business actor providing specific services in the value proposition</td>
<td></td>
</tr>
<tr>
<td><strong>Marketing &amp; Communications</strong></td>
<td>Business actor who is dedicated to the commercial communications and marketing activities to promote the new value proposition</td>
<td></td>
</tr>
<tr>
<td><strong>Customer</strong></td>
<td>User, buyer: the target of the new value proposition who receive the value but also may contribute by co-creating or delivering information.</td>
<td></td>
</tr>
<tr>
<td><strong>Godfather</strong></td>
<td>Person with political influence who can shield the project from undesirable intervention</td>
<td>Business actor who has the leading role: drives the collaboration</td>
</tr>
<tr>
<td><strong>Financier</strong></td>
<td>Investors, who enable the development and implementation of the new value proposition with financial support</td>
<td></td>
</tr>
<tr>
<td><strong>Intermediary</strong></td>
<td>Business actors like retailers, who have direct contact with customers in selling products and services of other providers</td>
<td></td>
</tr>
</tbody>
</table>

### Extra roles regarding multi-partner alliances

<table>
<thead>
<tr>
<th><strong>Consumer</strong></th>
<th>Person or group of people, such as a household, who are the final users of the product or service</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturer</strong></td>
<td>Business actor who produces/ manufactures (part) of the product</td>
</tr>
</tbody>
</table>
E. Interview protocol

Introduction

Research motive:
My name is Maud Bollen and I am graduating at the Technical University of Eindhoven within the field of industrial engineering. This research is the concluding part of my master Innovation Management. The research is about multi-partner collaborations that are focused on innovations and is executed within the open innovation department, for Graham Cross as well as the procurement department, for Arthur Fellinger of Unilever in the Netherlands.

Research objective:
The aim of the study is to increase insights on multi-partner collaborations, that are especially focused on innovation. With these insights, recommendations can be made to Unilever how to structure such alliances and what are important points that have to be taken into consideration.

Interview objective:
First, to learn about experiences from multi-partner collaborations and to learn from different views on multi-partner collaborations. Secondly, to learn what are important success factors and challenges within multi-partner collaborations. So my interest is in learning from your experiences. Specifically regarding the following topics:

- Value creation and capturing
- Interdependency
- Agreements/negotiation
- Intellectual property
- Roles of all the partners involved
- Power
- Revenues

Lastly, to have an open-ended discussion about general experiences and insights of the interviewee.

Interview procedure:
Asking questions about the topic. These questions will provide the interview with structure, however elaboration and digression to some extent is permitted and sought after. The details of your answers are left to your discretion.

Permission to record the interview and the level of confidentiality
If it is okay with you, I will record the conversation. This recording has only as goal that I can focus on asking the questions. I assure that all your comments will remain confidential. I will make a transcript of the interview and will remove the record after and will only work with the transcript for the research. I will send the transcript to you, so that you can add or adjust things and can check whether I understood things right and what I am allowed to use in my research.

Duration and location of the interview
The interview will take approximately 45 minutes and can be performed by Skype or teleconference.

Result for you
When my final report is finished, I can send a copy to you by mail so that you can see the results of my research and see the recommendations for companies when they want to establish multi-partner collaborations.
Interview questions

Role and aim of the project
- Can you tell me some more about the role you had in the project
- Could you describe the aim of the project for your company?
- What was for your company the main motivation to be involved in the multi-partner alliance? What was the added value for your company to be involved in this multi-partner alliance?
- What does your company want to achieve with this collaboration? (the goal of the project)
- What are the main benefits of working with more parties?

Value creation
Related research question: What can be the added value of and for a party involved in a multi-partner alliance and how can this value be measured?
- What value did your company bring into the collaboration? (which capabilities?)
  What value did the other partners bring into the collaboration? (which capabilities?)
  (What can be the added value of a party involved in a multi-partner alliance?)
- How was this value measured?
  In your opinion, is it possible to measure the value that every party brings into the collaboration?
  On what should the measurement be based? How can it be measured?

Value sharing or division
Related research question: How can the parties share or divide the value that is created through the alliance?
- How is the total value divided amongst the different parties?
  • Financial value
  • Arising/together created IP
  • Other value?
- In your opinion, did the alliance create substantial value for all the parties?
- What do you think is important when sharing or dividing the created value?
  What determines what partners get at the end of the project?
- What would be the total generated value of the project and how is the value divided amongst the partners?
  Was there a shared vision of what the project would gain in total?
  Or was looked how the individual parties could gain value out of the collaboration?

Different configurations
Related research question: How are the design characteristics affected by different types of configuration of multi-partner alliances?
- Explain the different configurations to the interviewee (net-based and chain-based)
  In a triangle were every party has connections with every other partner.
  Or a chain, were only one party has connections with the two other.
What was in your opinion the configuration?

- What were reasons to choose for this configuration you think (and not for another configuration)?

Interdependency
- Where the partners interdependent of each other and in which way?
- What determines whether partners are interdependent?
- How does the interdependency influence the collaboration?
  Does it has a negative or positive impact on the course of the project and negotiation?

- Why was chosen to do this with these particular partners and not with other partners?
  (Why not another FMCG company/ converter/ technology provider)?

- Was it possible to do this project with other partners and why (not)?
- Was this project possible with only two partners?

Intellectual property
Related research question: Which criteria determine how the IP model of a multi-partner alliance should be configured?

- Why was chosen for this particular IP model? Which criteria determine the IP model/ how the IP is divided?

- What kind of IP (broadly) was for your party important and why?
- What were important IP for the others and why?
- What are in your opinion useful methods to divide the arising/ created IP among the different partners?

- Can you describe the relevance of managing the IP within this project?
- In your opinion, what are important IP agreements that have to be made in a multi-partner alliance?

Roles and responsibilities
Related research question: What kind of roles can parties play in a multi-partner alliance and what determines which role a party should play?

- What was the role of each partner in the process and why?
  Did this differ over time? Where is it dependent on? (for example the phase the alliance is in)
  Which partner was the driving force in the collaboration project? Why?
  Who was in the lead and why?

- In your opinion, was there a clear understanding of the roles and responsibilities of each partner? Do you think this is important at the start of the collaboration? Why?

  Example roles: leader, someone who enhanced the trust, focusing on satisfying the needs and interest of each partner.
**Power dynamics**

**Which partner has often the most power in the multi-partner alliance and why?**

*Explain: Power dynamics looks at how power is maintained over time.*

- In your opinion, were the three parties of the alliance equal partners?
- Or were one or more partners dominant in the alliance?
  - How did this influence the collaboration?

- What is in your opinion ‘having the power in the collaboration’?
- What determines the power a partner has in a collaboration?
- In this project, who had in your opinion the most power, why and did this differ over time?

- Did partners use their power, how, why, in which way?

**Revenue model**

**Related research question: What are possible revenue models of the alliance?**

- Revenue model
  - How does everyone earn their money and in which moment in time?
- Where do you want to earn money? How do the other parties earn their money?
- How are revenues shared between the partners?

**General**

- Can you name three things that in your opinion went especially well in this project?
- Can you name three things that could be improved in this project?
- What are in your opinion the main differences between a bilateral collaboration and a multi-partner collaboration?
  - What made this project different then projects were only two parties were involved?
- In summary, in your opinion, what are key elements for an effective and efficient multi-partner collaboration?

**Agreements (only with people who were involved in writing the agreements)**

**Discuss what is meant with agreements**

- Did the agreements changed over time?
  - If yes,
- How did these agreements changed over time and why?
- What were your experiences with the negotiation phase?
- What would have helped to make this process more efficient/easier?

- What is for you the meaning of a contract?
  (something you use when it goes wrong or also how roles ect. are divided?)

- Which issues are core to agree upon in the beginning, which agreements can wait?
  - What are important factors to agree in the ideation phase,
    and in the development phase and in the commercialization phase? And why?

- What were challenges in formulating the commercial agreement?
Other (extra)
- Are there other important issues about multi-partner alliances that were not included in this interview?
- Do you think it makes a different when competitors are involved in the collaboration? What is different and why?
- Was there enough clarity?
- Where all the project objectives clear, at each point in time?
- Does it matter that you also commercialize the product? In which way different then from only a research multi-partner alliance?
- In your opinion, a clear overview upfront could be helpful to see where value is created for all partners? A strategic framework would be helpful?
- What hurdles had to be tackled to achieve a successful multi-partner alliance?
  - How and why did these hurdles occur?
  - How were these hurdles solved?
  - How did these hurdles affect the performance of the multi-partner alliance?

Results/performance
- Are you satisfied with the result of the project?

Experience from other multi-partner alliances
- Do you have experience with other multi-partner alliances?
- What were lessons learned from this multi-partner alliances?
- In which way was this collaboration different from the other?
F. Case studies descriptions
This appendix has been removed because it contained confidential information.
G. Additional recommendations for Unilever out of the scope of the project

From interviews additional recommendations are derived that are not within the scope of the project. For Unilever these recommendations can be of importance when managing innovation processes and setting up multi-partner alliances:

- Create more structure in breakthrough innovation. There has to be more pressure on it. Somebody should be responsible for estimating the feasibility, the potential and applicability of a project.
- Adding stage-gate is interesting. This is not always used. Interviewees had sometimes the impression that when Unilever enters into a partnership it is difficult to stop the alliance. Sometimes people keep working until the moment the project is fading away by itself, which cost a lot of money and time. Sometimes ending the project earlier is better.
- Good patent search upfront is important.
- Unilever does not often use ideas from others. (not invented here syndrome), because they are from others. Unilever could focus on improving the process of gaining ideas from the outside. This involves a change in mindset
  - Partner to Win is mainly driven by procurement so far. The suppliers are selected based on the five reasons to believe and are not only selected based on their innovation power. That is sometimes a challenge, since for example a supplier can be good for the growth, footprint etc., but can be not so open for innovation.
  - Therefore alignment between procurement and R&D is crucial in Partner to Win
H. Improvement points and essential elements derived from internal benchmarking

<table>
<thead>
<tr>
<th>Improvement points within Unilever</th>
<th>Essential elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Not enough transparency sharing key information</td>
<td>- Trust is key</td>
</tr>
<tr>
<td>- Lack of steering from leaders</td>
<td>- Clear leadership — most of interviewees think that Unilever has to drive</td>
</tr>
<tr>
<td>- Contracts are discussed at the end and not at the beginning</td>
<td>- Fast decision making is critical</td>
</tr>
<tr>
<td>- Sharing more upfront - Greater clarity in beginning on: Roles, responsibilities, contracts, intellectual property rights</td>
<td>- Change mindset of the people in the organization: open mindset</td>
</tr>
<tr>
<td>- More bottom up management instead of top down</td>
<td>- Carefully manage confidentiality</td>
</tr>
<tr>
<td>- Lack of empowerment</td>
<td>- Environment where sharing is the key word: Sharing of the benefits</td>
</tr>
<tr>
<td>- Unilever discusses and does not manage</td>
<td>- Ensure face-to-face time, not only virtually</td>
</tr>
<tr>
<td>- Decision-making is slow</td>
<td>- Partners need to be in a non-competitive area (Collaborations with competitors are not going to work)</td>
</tr>
<tr>
<td>- Processes do not run smoothly</td>
<td>Only work when they have complementary values</td>
</tr>
<tr>
<td>- Unilever should not be overly dominate in a relationship</td>
<td>- Culture fit</td>
</tr>
<tr>
<td>- Process needs to be jointly performed, not only supplier driven.</td>
<td>- Over-coming barrier of legal requirements</td>
</tr>
<tr>
<td>- Less power driven persuasion</td>
<td>- Clarity in beginning: Discussing contracts in beginning, roles, responsibilities, intellectual property rights</td>
</tr>
<tr>
<td>- Less ‘managers, need more team members who contribute, otherwise too many opinions</td>
<td>Clarity on who is going to take the lead and who decides</td>
</tr>
<tr>
<td>- Structure in such collaborations is needed</td>
<td>It is critical to define exactly who need to act, who needs to be informed, who needs to know what;</td>
</tr>
<tr>
<td>- Unilever went more for a divide and conquer type of approach; one to one relationship to control the balance of the power.</td>
<td>- Have clear what is the value for every single one taking part of the collaboration</td>
</tr>
<tr>
<td>- Unilever has to step out of the mindset that we are the customer. Unilever needs to evolve more as facilitators and catalyst to create these multi-partner networks.</td>
<td>- Win-win-win approach: must be something in for everyone. The business case has to be based on everybody gain and has to spell this out transparently</td>
</tr>
<tr>
<td>- Don’t just assume that Unilever have all the answers. Partnering with experts because they are experts in their fields and they know it better</td>
<td>- Results have to be balanced: As it is very easy to get into a situation where the ‘weight’ is moving more to two parties and there is a weaker element in the chain; so situations where there a two parties going quicker than the other one have to be avoided not to fail.</td>
</tr>
<tr>
<td>- Procurement approach is still transactional and pricing focused. We need to move to broader dialogue to extract value from the suppliers and needs to have other functions involved. We need to channel the dialogue. Open communication.</td>
<td>- Adapt to the type of companies that are involved. Consider carefully case by case</td>
</tr>
<tr>
<td>have entrepreneurial spirit.</td>
<td>in creating multi-partner collaborations.</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>- <strong>Having a joint set target</strong></td>
<td></td>
</tr>
<tr>
<td>- Have people who can work together in <strong>the right collaboration spirit</strong></td>
<td></td>
</tr>
<tr>
<td>The spirit should be: if we are good with each other, it is more profitable for both and there is joint revenue sharing</td>
<td></td>
</tr>
<tr>
<td>- <strong>Make it enjoyable</strong> for partners and employees working together</td>
<td></td>
</tr>
<tr>
<td>- <strong>Become an equal partner</strong> at the multi-partner table:</td>
<td></td>
</tr>
<tr>
<td>not the typical divide and conquer UL approach</td>
<td></td>
</tr>
<tr>
<td>- <strong>Transparency is key and sharing of strategies</strong></td>
<td></td>
</tr>
<tr>
<td>- <strong>Focus on long term goals</strong> not the short term financial opportunities</td>
<td></td>
</tr>
<tr>
<td>- <strong>Empowered to manage conflicts</strong> or escalating quickly to the right people</td>
<td></td>
</tr>
<tr>
<td>- <strong>Flexibility</strong> in managing relationship</td>
<td></td>
</tr>
<tr>
<td>- <strong>Intellectual property</strong> is a critical element, specific rules therefore need to be agreed</td>
<td></td>
</tr>
<tr>
<td>- Involving R&amp;D, Supply Chain and Procurement is a must have</td>
<td></td>
</tr>
<tr>
<td>Engagement from categories and brand teams</td>
<td></td>
</tr>
<tr>
<td>- Have to be clear were the <strong>power</strong> lies for all the parties involved</td>
<td></td>
</tr>
<tr>
<td>- Super <strong>transparent communication</strong></td>
<td></td>
</tr>
<tr>
<td>- <strong>Clear objectives</strong> for all the parties</td>
<td></td>
</tr>
<tr>
<td>- Early stakeholder engagement from with the organization</td>
<td></td>
</tr>
<tr>
<td>- <strong>Focus on building relationship:</strong></td>
<td></td>
</tr>
<tr>
<td>Signing contracts does not mean the contract translate itself automatically into business behavior. So still manage relationship.</td>
<td></td>
</tr>
<tr>
<td>- <strong>Set objectives before engagement on outcomes of IP, technology, innovation etc.</strong></td>
<td></td>
</tr>
<tr>
<td>- Shared values and common goals have to be aligned</td>
<td></td>
</tr>
</tbody>
</table>