

# **A Sweet Tooth for Innovations**

- A Case Study of Upstream Collaboration at Leaf

Lina Bengtsson  
Anna Walberg

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Department of Food Technology  
Faculty of Engineering, Lund University  
Box 118  
SE---22100 Lund  
Sweden

Department of Business Administration  
Lund School of Economics and Management, Lund University  
Box 7080  
SE---22007 Lund  
Sweden

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## Abstract

- Title:** A Sweet Tooth For Innovations - A Case Study of Upstream Collaboration at Leaf
- Authors:** Lina Bengtsson  
Anna Walberg
- Advisors:** Thomas Kalling – Professor, *Institute of Economic Research, Lund School of Economics and Management, Lund University.*  
  
Malin Sjöo, Associate Senior Lecturer, *Department of Food Technology, Faculty of Engineering, Lund University.*  
  
Tina Algotsson, Team Leader Front End Innovation, *Leaf Sweden AB.*
- Issue of study:** To keep up with the rapidly changing business landscape of today, innovation has become an essential ingredient in any organisation’s recipe towards bringing new value to the market. Though a lot has been said about the importance of managing innovations and, in this context, to open up the same, less has been said about how upstream collaboration can contribute to this. More research was therefore considered needed in order to shine further light on the subject, in terms of contributing factors to successful innovation in an upstream collaboration.
- Purpose:** The purpose of this thesis is to improve the understanding of the innovation process in the front end with a particular focus on upstream collaboration. The aim is to analyse how such interorganisational collaborations can foster successful innovations, resulting in the development of a framework that supports those particular findings.
- Methodology:** An exploratory case study has been conducted on Leaf, where observations of the innovation process were made together with interviews with the departments of innovation and procurement as well as with suppliers. The thesis has been carried out in an abductive approach where application of a theoretical framework derived from theories regarding front-end innovation, open innovation and strategic alliances resulted in the refined L.A. Framework.

**Conclusions:** This thesis has resulted in *The License to Ally Framework*, which can be used as a guiding model for companies when entering strategic collaborations in the upstream with the purpose to nurture innovation. The L.A. Framework shows how knowledge and capabilities can be made available and transferred between the parties in a relationship. The three dimensions *Availability*, *Cognitive Abilities* and *Cultural Abilities* constitute the framework and each dimension includes factors and activities contributing to successful innovation. In addition to the three dimensions three capacity abilities have been incorporated in the model and are to be seen as facilitators to collaboration.

The main lesson when it comes to the front end of innovation, is how one of the main benefits with supplier cooperation lies within radical innovations. At the same time, the confectionary industry is characterised by an environment where the potential for radical innovations in the upstream is limited. This may seem contradictory, but even further stresses the need for effective collaboration since it is in this integration that true innovation potential lies.

Moreover, a main conclusion that has come out of this study is how the intangible factor of intuition plays a major role in collaborations where added value to a great extent is determined by personal relationships.

**Key words:** Innovation, front end, open innovation, strategic alliances, relationship, collaboration.

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Lund, May 31<sup>st</sup> 2012

Lina Bengtsson

Anna Walberg



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# 1 Introduction

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*The first and introducing chapter provides the background to the thesis, which leads to the issue of study as well as the purpose with the same. Delimitations and target audience are then presented, followed by the disposition of the thesis.*

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## 1.1 Background

*“Innovation is now the primary driver of growth, prosperity and quality of life”*

Carlson and Wilmot, 2006

In order to keep up with the rapidly changing business landscape, where product life cycles and time to market seem shortened by the minute and consumers wish to fulfil needs they did not even know existed, innovation has become an essential ingredient in any organisation’s recipe towards bringing new value to the market. Therefore, innovation is, and most certainly will remain, an inevitable subject on a company’s strategic agenda in its strive for long-term success and future growth. Though a lot has been said about managing innovations questions remain on how to give rise to successful innovations in an industry that seems to have reached the limit of how innovative it can be.

The global confectionary industry is facing a stagnating consumption of sweets why the ability to stay competitive is crucial. Perhaps even more important is to beat the competition in order to increase the company’s share on what many argue is a soon to be declining market. What is obvious is that in order to bring value to the market companies must offer new and exciting products that attract both new customers and existing ones. Therefore, companies within the confectionary industry clearly must shift their focus towards radical ideas rather than those incrementally ones usually seen. Given the fact that consumers strive for new experiences it is simply not enough to develop a new flavour of a product or repackage or change the design of it to meet what the consumer truly desires.

In order for radical ideas to evolve that in turn might result in innovative product concepts, a company must take a broader approach on innovation and open up the commonly closed innovation process. (Chesbrough, 2003) The logic behind this open approach to innovation is that innovation cannot be developed in isolation thus it requires knowledge and resources to flow freely in and out of organisations in order to find those particular grain of gold, that is, ideas that can be develop into truly successful innovations. Though companies have begun to exploit this insight by further addressing the early phases of the innovation process, often referred to as front end of innovation which is better at handling the conversion of external and often fuzzy and undefined ideas into real product concepts (Koen, Ajamian, Boyce,

Clamen, Fisher & Fountoulakis, 2002), the fact remains that focus is primarily on innovation activities downstream, that is, towards a company's customers. What has been seen to a lesser extent is that of companies turning their innovation activities upstream in the value chain, presumably to its suppliers. (Deschamps, 2009)

Though one might assume that consumers have the best insights in what products might address their unmet needs, they seldom have the knowledge of how to develop such innovations. Given this, the confectionary industry is of certain interest to study as most manufacturing companies have outsourced their complete production and development of raw material and ingredients to their suppliers. This means that suppliers presumably possess the most valuable competencies and expertise on what can be made within confectionary, why this input should be of great interest for their manufacturing customers to get hold of. This input is possibly of even greater importance in an industry where companies yearn for innovative ideas, from which they can develop recipes and products that can meet present and future consumer needs and by that get a bigger share of the confectionary market.

*"Product innovations are a key driver and a totally decisive success factor in the confectionary industry"*

Cloetta AB, 2011

Given the above reasoning, there are several incentives for both buyers and suppliers to establish some sort of collaboration through which they, together, can generate radical ideas that result in innovative products, that in turn enhances their respective position on the market. However, smudging the boundaries between organisations by allowing information, knowledge and resources to flow freely put certain demands on the collaboration, especially when it comes to those evolving around innovation and product development activities as they are often associated with high risk and uncertainty. Consequently, this raises questions about factors necessary for an upstream collaboration to evolve and to function well, and in particular, what is needed for such interorganisational collaboration to create innovations that truly bring new value to market.

## **1.2 Issue of Study**

To understand how suppliers can partake in innovation, particularly in the early phases of that certain process, theories concerning traditional perspectives on innovation were supplemented with newer approaches in terms of theories regarding front end of innovation and open innovation, upon which theories on strategic alliances were added and studied. What preceded this extensive study of theories was the insight that understanding of the phenomena seemed incomplete. Though a lot has been said about the importance of managing innovations and, in the same context, to open up the innovation process towards actors outside the firm boundaries, there exists a somewhat predominance in both theory and in practise in terms of downstreaming such innovation activities compared to upstreaming the

same. More research was therefore considered needed in order to shine further light on the subject, in terms of contributing factors to successful innovation in an upstream collaboration.

As discussed, the recent focus and recognition of the importance of innovation has resulted in endless literature handling the matter. However, this literature does not care for theories concerning alliances, especially strategic such, why this thesis has focused on the theoretical gap in the understanding of how the theories of strategic alliances, open innovation and front end of innovation fit together (figure 1). Contact points between the theories were therefore studied and used in order to shine additional light on the purpose of this thesis.

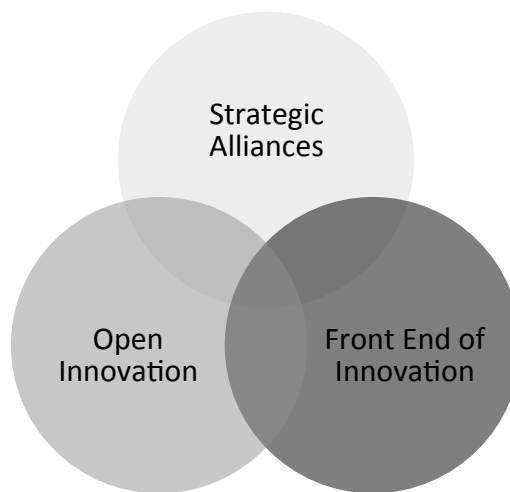


Figure 1. *Theoretical perspective of the thesis*

### **1.3 Purpose**

The purpose of this thesis is to improve the understanding of the innovation process in the front end with a particular focus on upstream collaboration. The aim is to analyse how such interorganisational collaborations can foster successful innovations, resulting in the development of a framework that supports those particular findings.

### **1.4 Delimitations**

The focus of this study has been one company in the confectionary industry. This focus was chosen in order to enable an in-depth study and observations and conclusions are specific for the case. However, conclusions are considered valid for companies similar to the studied one, acting in the same or similar industry.

## 1.5 Target Audience

The target audience for this thesis consist mainly of academics and researchers with an interest in the studied area. The thesis can contribute to increased understanding regarding supplier cooperation in the early phases of innovation and provide Leaf with insights important for the company's future work. Moreover, the thesis would be of interest for other companies in the confectionary industry with an interest for adopting open innovation and upstream supplier cooperation.

## 1.6 Disposition

This thesis is divided into seven chapters (figure 2), where each of the seven begins with a brief summary of the focus and content of the chapter that follows.

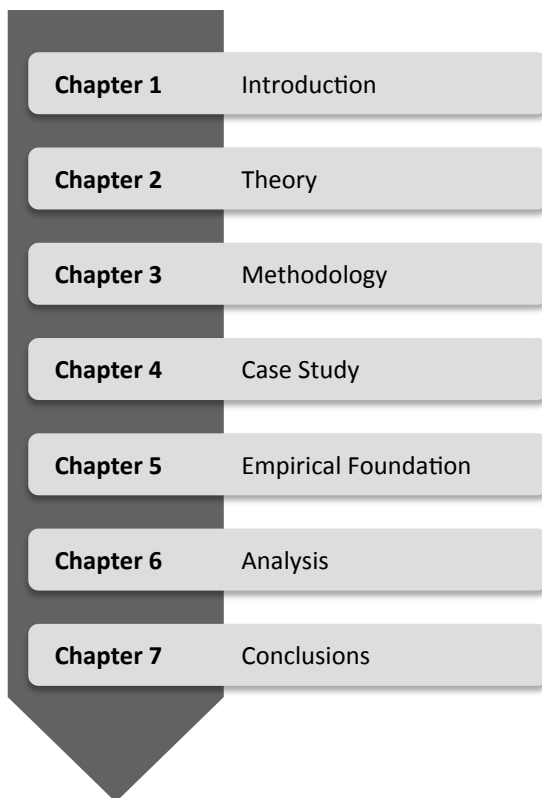


Figure 2. *Thesis disposition*

## 2 Theory

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*The following chapter will cover theories within the field of innovation, and especially the early phases of the same as well as open innovation. Moreover, theories of strategic alliances are described. Finally, the chapter is summarised and results in the theoretical framework of this thesis.*

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### 2.1 Innovation

On the endless list of citations concerning innovation, a majority of these imply the importance of, benefits coming from and possibilities that may arise when incorporating innovation into a company's business activities. But what is a *true* innovation? There are probably as many answers to this question as there are people who have tried to answer it. One answer, suggested by *The Centre for Innovation Studies* (in Carlson & Wilmot, 2006), states "*Innovation is the process of creating and delivering new value to the market place.*" However, realising innovations and bringing new value to the market, which could be described as *successful* innovation, is not something that is done in a snap. As a step on the way towards such innovations, several models and processes have been developed. A handful of those will now be presented, starting with the traditional perspective on the innovation process, which is followed by more recent theories on innovation and product development.

#### 2.1.1 Traditional View on Innovation Processes

The most widely implemented innovation model, at least when referring to the manufacturing industry, is the *Stage-Gate process* developed in the early 1990s by Dr. Robert G. Cooper. (Christensen & Kreiner, 1991) Cooper's initial purpose with the model was to improve the process of product development, why the starting point for the Stage-Gate process is to move new-product projects from idea to launch. (Stage Gate International, 2011) As the name reveals, the model consists of various stages, such as *Scoping, Build Business Case, Development, Testing & Validation* and *Post-Launch Review*. Each stage includes activities that are based on best practise within product development, through which a project leader is responsible for bringing specified deliverables to an upcoming gate. As the gates separate the different stages of the model, an approval from the steering group is required for a project to proceed to the next stage. Otherwise, if the project cannot meet the deliverables specified, it might be put to an end. Given that, Stage-Gate is based on the assumption that projects are discrete and can therefore be stopped or continued without affecting other projects. Another assumption is the one of projects and innovation having well defined boundaries in terms of goals, resources and time efforts, why projects that cannot be limited within a company's walls might not be suitable for the Stage-Gate model. (Cooper, 1990)

The *Waterfall model* is another innovation model, frequently used in the manufacturing industry and characterised by a linear and sequential approach to the development process. (Berggren & Lindkvist, 2001) Similar to the Stage-Gate process, the Waterfall model is divided into separate phases through which the project has to pass on its way towards the goal. The different phases of *Requirements specification, Design, Implementation, Integration, Testing, Installation* and *Maintenance* includes distinct criterions that have to be fulfilled in order for the development to proceed to the next phase. Like a steadily flowing waterfall there is no chance of turning back once a new phase is entered, thus a project will be rejected if it cannot meet the criterions set for each phase. (Lyytinen, Shiv & Thummadi, 2011) The model encourages much effort, in terms of both time and money, put in the earlier phases since corrections in those phases are much cheaper than changes in the latter ones. Therefore, the requirement specification should be set in stone before the second phase begins. (SearchSoftwareQuality, 2006)

As the descriptions above indicate, both the Stage-Gate process and Waterfall model are rather structured and sequential methods for handling innovation and product development. Some newer perspectives will now be discussed, that of *Front End of Innovation* and *Open Innovation*, suggesting a more iterative approach to innovation and product development.

### 2.1.2 Front End of Innovation

More recent studies suggest a new approach on innovation by dividing the innovation process into three parts: *Front End of Innovation (FEI)*, *New Product Development (NPD)* and *Commercialisation* (figure 3). (Koen, Ajamian, Burkart, Clamen, Davidson & D'Amore, 2001)

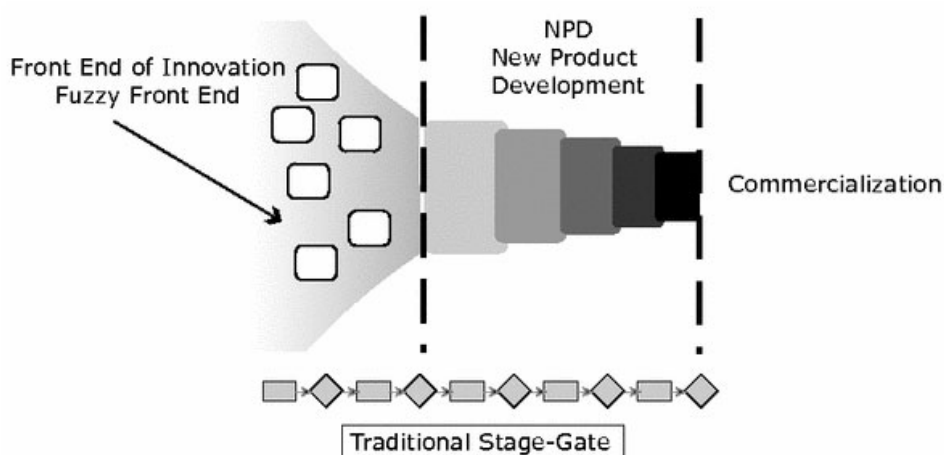


Figure 3. A new approach to innovation process (Koen et al., 2002)



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The idea behind this newer approach is to refine potential ideas into a product concept in the FEI, manage it in the NPD phase through a traditional Stage-Gate model and finally commercialise the product in the final phase. (Koen et al., 2001)

Although a lot of the development takes place in the NPD, the real key to success is alleged to lie within the FEI as that is where ideas, the foundation and engine to all innovations, are created. (Davila, Epstein & Shelton, 2006) For that reason, the following section will focus on the front end of innovation, also called Fuzzy Front End (FFE), rather than the later parts of the innovation process.

In short, FEI is about generating ideas and deciding on which ideas to conceptualise. An idea generally starts off as an identification of a gap where a new product feature or business model might fit. Unsurprisingly it is of great importance to find these gaps but the work does not end there by far, as the challenge of coming up with ideas, what is called idea generation, to fill the gaps remains. (Davila et al., 2006) For a successful idea generation to take place, firstly the company and its employees must understand the reason for and importance of innovating. Secondly, the organisation must foster, encourage and stimulate creativity and allow the employees to be truly innovative. In that sense, culture seems to be an influencing factor as well as the possibility to work relatively free and agile thus within some sort of guidelines, for example a business strategy. This combined with insights of which gaps to fill, and why, will presumably result in ideas for further evaluation. (Martins & Terblanche, 2003)

When screening ideas in FEI, it is important to know the differences between ideas resulting in *incremental* innovations and *radical* ones, as they need to be addressed in different ways. Shortly, incremental innovations are those improving an existing product, feature or service while radical innovations break barriers and have the potential to recreate complete organisations or industries if commercialised. (Davila et al., 2006) Davila et al. (2006) argues that ideas with the least answered questions, typically those associated with radical innovations, should not be instantly dropped due to uncertainty but rather tended to in a different manner. In that sense, the FEI applies well as the ability to transform fuzzy ideas into radical product concept lies within the iterative and rather chaotic nature of FEI. In turn, FEI is not necessarily, or even at all, a suitable process for handling incremental innovations.

Although it has been said that successful innovations fall out when practising chaos within guidelines (Martins & Terblanche, 2003), a more structured process, similar to NPD, might handle the often uncertain and unpredictable outcome of FEI better (Khurana & Rosenthal, 1998). One way of addressing this is by implementing the *New Concept Development model*, developed by Koen et al. (2001).

**New Concept Development Model**

The New Concept Development model (NCD) aims to provide common terminology to the iterative and somewhat complex FEI. The NCD model is best viewed as a non-linear process and involves relationships between a number of key components (figure 4). (Koen et al., 2002)

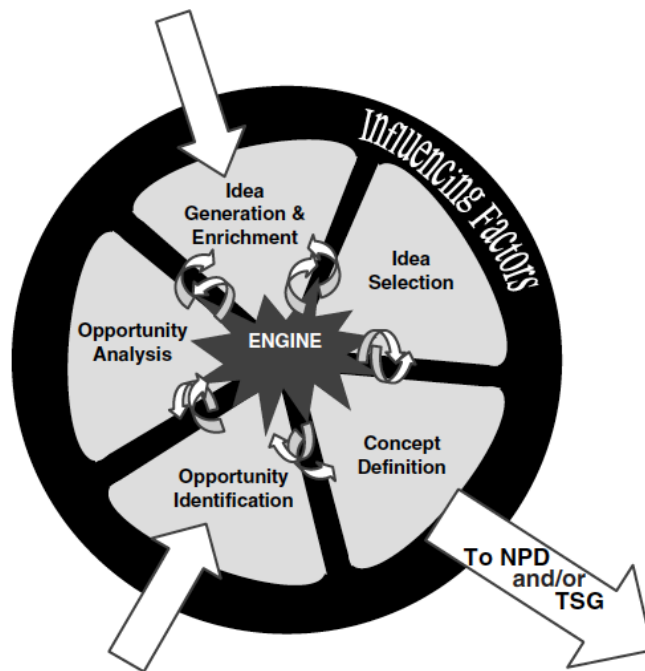


Figure 4. *New Concept Development model* (Koen et al., 2002)

The model consists of three main parts: an “engine”, activities in the front end and influencing factors. The engine in the middle represents *leadership, culture and business strategy*, in other words factors that influence the process internally. The inner circle includes front end activities such as *opportunity identification, opportunity analysis, idea generation & enrichment, idea selection and concept definition*. These front end activities are the most central elements of the model and are described in more detail in Table 1.

The third part of the NCD model, influencing factors, refers to factors that are relatively hard to control by an organisation, thus influencing the process both internally and externally, such as *organisational capabilities, outside world (distribution channels, law, government policies, customers, competitors, political and economic climate) and enabling sciences*. (Koen et al., 2002)

Table 1. *Activities in the front end in the New Concept Development model* (Koen et al., 2002)

<i>Opportunity Identification</i>	In this step an opportunity is identified and the gap that exists between the as is situation and the situation to be is described. This element is typically driven by business goals and opportunities aim to allocate resources for example market growth.
<i>Opportunity Analysis</i>	Market analysis and technology available are scanned. These early estimations are often uncertain and preliminary, but can give an overview of the feasibility of identified opportunity.
<i>Idea Generation &amp; Enrichment</i>	This element focuses on the concretisation of the idea and may be a formal process. Close contact with consumers or suppliers often enhances the activity and the element is seen as an evolutionary and iterative process, where ideas are broken down, developed and improved.
<i>Idea Selection</i>	Lack of ideas is seldom a problem, it is selecting the ideas most valuable for business that is the challenge. The lack of information this early in the front end makes it difficult to base decisions on financial calculations and hence the possibility to use a formalised model to evaluate ideas is limited. The choice of an idea over another can be impacted by a single individual and a so called “gut feeling”. Although, it is important to understand that with no formal process for idea selection, many ideas go unseen. For best results, a formal process needs to be visibly supported by management and include a process owner.
<i>Concept Definition</i>	Quantitative and qualitative information about the selected concept is included in this step and forms the outline for a go or no go decision into NPD.

According to Koen et al. (2002) there are four significant differences between the FEI and the NPD process. Firstly, FEI involves experimental and unstructured work rather than a fully defined and structured process like the NPD. Secondly, revenues and commercialisation dates cannot be determined, which is usually a criterion in the NPD process. Thirdly, FEI funding is varied and the outcome of FEI is strengthening a concept and not achieving a milestone, like the NPD process strives for. (Koen et al., 2002) When looking at the innovation process as whole, this means that there are more opportunities to improve the FEI than there are of improving NPD, which makes the fourth difference between the two processes. One particular area of improvement, which was mentioned earlier, is that of managing uncertainty (Khurana & Rosenthal, 1998) why this factor will be addressed in the following section where factors affecting performance in the FEI are presented.

**Factors Affecting FEI Performance**

In addition to what Koen et al. (2002) observed as factors affecting the performance in the FEI, Herstatt and Verworn (2001) present high level of uncertainty as a main limitation to the FEI. Figure 5 describes the level of uncertainty in market (y-axis) and technology (x-axis) in the context of radical and incremental innovations.

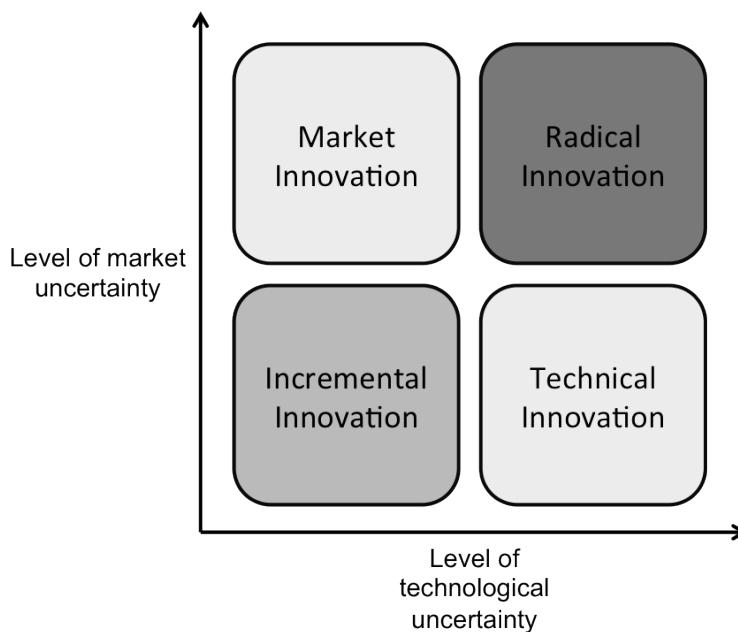


Figure 5. *Uncertainty affecting innovation* (Herstatt & Verworn, 2001)

As the model implies, radical innovations evolves in an environment with high uncertainty, both market and technology wise. The reason behind this uncertainty might become clearer when comparing to incremental innovations, which are easier to define the outline of, hence this can be done in an earlier stage and to a greater extent than with radical innovations. High market- and technology uncertainty is more or less always associated with high level of risk and low certainty of return on

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investment, which is something that the FEI has to manage in order to commercialise radical ideas. (Davila et al., 2006) Best practice within the FEI is found to be a formal process, without being too rigid and affecting creativity. That means maintaining a balance between structure and chaos in order to create successful innovations. (Khurana & Rosenthal, 1998) This can be summarised in the quote below, stating the difficulty in balancing the level of structure in the FEI.

*“The optimum balance between chaos and order is tacit”*

Khurana and Rosenthal, 1998

Moving on to internal factors influencing FEI performance, business strategy is one factor that needs to permeate the entire innovation process. This notion is further supported by those saying that all companies do not need a lot of innovations, but all need to have innovations aligned with the company's core competencies and strategy. When speaking of core competencies, which will be addressed in the second part of the theory chapter, those as well as technical capabilities, organisational capabilities, funding, top management vision and current success are factors affecting the organisation's approach to innovation and by that the outcome of FEI. (Davila et al., 2006)

Moreover, there seems to be difficulties in translating business strategy to product strategy, resulting in poor base for decisions in the front end. In that sense, the front end of innovation must be integrated in the NPD process rather than being seen as an independent part of activities. (Zairi, 2000) This is supported by the fact that issues in the NPD process, and more specific those coupled with FEI, are generally within areas of product strategy, product definition, project definition and organisational roles. Lead words in those kinds of issues are more than often unclear or inadequate such, which gives an indication of what factors to struggle with when entering the NPD phase, at least if FEI is not integrated with it. (Khurana & Rosenthal, 1998)

In line with the reasoning above is the need for management support and role allocation throughout the process, and not only in the latter phases of it. The same goes for involving functions in as early stages as possible, for example the supply chain, which is normally not involved until the process enters the development stages. Thus an active participation from other functions besides R&D, combined with a supportive value chain, might result in a smoother transition into the NPD. (Zairi, 2000) In a similar context, it is also argued that most companies have a structured way of downstream work in terms of converting selected opportunities into winning concepts, but often lack in the equally important upstream processes, where focus should be on sensing and creating opportunities. (Deschamps, 2009) Those opportunities are directly affected by external factors such as networks, industry structure, competition and rate of technology exchange. With that being said, success in the front end might lie in synergies and cross-fertilisation through

exchanges (Becker & Dietz, 2003), horizontal or vertical, with companies or people outside the company's typical borders. This type of external exchange will now be discussed in the light of open innovation, one of the more recent theories on innovation.

### 2.1.3 Open Innovation

*"In today's world, where the only constant is change, the task of managing innovation is vital for companies of every size in every industry."*

Chesbrough, 2003

As Chesbrough's quote implies, handling innovation is a must to succeed and stay competitive on today's quickly changing markets. Today's reality of shorter time to market as well as shorter product lifecycles, upon that increased supplier power, simply calls for more agile companies with the ability to respond quickly to changes in their surroundings. According to Chesbrough (2003), one way of improving the ability to handle market changes, and at the same time facilitate innovations, is through a new approach on innovation called *open innovation*. The logic behind open innovation is that a single organisation cannot innovate in isolation, thus it needs access to resources and knowledge outside the firm boundaries in order to be innovative.

When comparing open innovation to the former and, according to some, out-dated *closed innovation* paradigm, external ideas are valued equally as those internally developed. Furthermore, while closed innovation views internal R&D as a strategic asset and therefore somewhat an entry barrier to industries, open innovation regards R&D as an open system where knowledge should, resolutely, flow in and out of organisations. Therefore ideas, resources and knowledge, can, and most certainly should, emerge outside as well as inside the firm. (Chesbrough, 2003)

For a fruitful sharing and absorption of ideas, resources and knowledge to take place, which in turn might lead to successful innovations, there is a rather obvious need for some sort of relationship or collaboration. In that sense, the open innovation approach puts collaboration in a new context as it argues that collaborations formed around R&D will result in new and, hopefully, radical ideas and by that new possibilities to innovate. (Chesbrough, 2003) Of course, there are several ways for companies to collaborate thus all affecting the permeability of firm boundaries. (Dahlander & Gann, 2010) Firstly, a company can collaborate both downstream and upstream, that is, either with its customers or together with its suppliers. (Davila et al., 2006) There is obviously a third option as well, that of collaborating sideways, for example with competitors though it will not be the focus in this section. Once the decision on downstream or upstream collaboration is taken, Davis (2006) suggests two ways towards formalising the relationship: *partnership* or *partial outsourcing*. In short, a partnership can be seen as a rather long-term

relationship between companies, often based on common goals and supported by the respective company strategy. Partial outsourcing in open innovation should not be confused with traditional outsourcing, where an external partner supplies a company with complete functions, for example R&D. Instead, partial outsourcing is about a company deciding on which part of the innovation that can be outsourced and which part the company itself can take on. (Davis, 2006)

### **Towards Successful Open Innovation**

The reasoning above supports the notion that collaboration in the innovation process makes a potential foundation for building future competitive advantages. However, there are several aspects to take into consideration when striving for successful relationships in the context of open innovation.

First and foremost, a company must be careful in the choice of collaborating partner as it most certainly requests a strategic partner that fits the company's needs. Parameters that need certain attention when entering a relationship are differences in terms of goals, incentives, metrics, conflict resolution and governance, as they will all affect the outcome of the collaboration. (Davila et al., 2006) Secondly, the centre of attention should be on new ideas, reduced risk, speed and leverage as those are the main reasons, and also benefits, for open innovation. A better understanding of ideas and technologies, for example through insights of what has been already tested on the market, lowers the risk and speeds up the innovation process. (Davis, 2006) Thirdly, there must be a resource- and knowledge fit between the collaborating organisations, as cumulative and organisational learning arise from synergies. (Becker & Dietz, 2003) Moreover, knowledge and expertise must be transparent and easily transferred. For example, it has been shown that sharing of what can be called valuable information, uncensored market information and consumer insights for instance, fosters innovation in the right direction. (Ragatz, Handfield & Scannel, 1997) Furthermore, success is highly dependent on know-where and know-who, besides know-how that is, (Cohen & Levinthal, 1990) which further highlights transparency as an important factor in the collaboration.

Leadership and management are other important factors when it comes to open innovation, as it requires leaders that inspire innovation and know the difference between the right kind of ideas, and those draining resources. In addition, good leaders provide the right strategic directions for new ideas and support both internal and external relationships. (Zairi, 2000)

*“Effective leadership is more than making decisions and directing people to execute them. The leader’s ability to harness relationships inside and outside the firm is at least as important for the success of the organisation.”*

Jarvenpaa and Tanriverdi (in Harryson, 2006)

In line with this is the level of bureaucratisation and control, where research has shown that low level of trust affects innovation and organisational learning negatively. (Harryson, 2006) Furthermore, low level of trust increases opportunistic behaviour. (Williamson, 1975) Opportunistic behaviour, which will be addressed in the second part of the theory chapter, is a challenge in all forms of collaboration, so are challenges connected with organisational culture. The degree of cultural fit affects the employees' mind-set towards open innovation, which means that the company cultures must be aligned thus not necessarily alike. Likewise, efforts against the "not invented here" syndrome are important as the syndrome, which in short can be described as unwillingness to utilise another company's knowledge or resources due to cultural differences, raises suspicion and insecurity about being open in a relationship. (Ragatz et al., 1997) Suspicion and insecurity might also result in less information sharing, which often tends to be the case when companies see a risk of information getting in the hands of its competitors thus losing their competitive advantages and control of the situation. (Davis, 2006)

Although it probably sounds easier than it actually is to overcome the issues discussed, once it is done the companies might experience the true benefits of open innovation. That is new idea generation, speed in the innovation process, reduced risk and ready to go solutions. (Davis, 2006) In turn, these benefits might give rise to competitive advantages due to newer technologies, new product- or market segments or more efficient production as a result from companies collaborating rather than working in isolation. Though different forms of collaboration comes with different prerequisites and outcomes, all approaches discussed holds innovation as merely too important to entirely put it in the hands of someone outside the company. Therefore, the question is not whether a company should innovate or not, rather to what extent and through which kind of collaboration form. In this regard, the second part of the theory chapter will discuss what has proven to be a successful form of collaboration, namely that of *strategic alliances*.

## 2.2 Strategic Alliances

The conviction that cooperation between firms enhances their competitiveness on the market is something that has been confirmed repeatedly over the past century. During this time, a wide range of cooperation forms between firms has occurred. Barney (1997) divides the many ways of firms collaborating to reach a common goal or objective into two broad categories: *collusive strategies* and *strategic alliances*. The difference between these categories lays in their respective industry output. Whereas a collusive strategy, either a tacit or an explicit, reduces industry output below the competitive level and raises prices above competitive level, the objective of a strategic alliance does not include any output reduction. Consequently, for a collusive strategy to work out accordingly it is applied among firms in a single industry. Strategic alliances on the other hand, exist both between firms in the same industry and between firms in different industries. (Barney, 1997) Though both forms of interfirm cooperation is of interest for this study, the focus will be on the



latter form as strategic alliances appear as one of the most prominent topics in recent decades' literature on strategic management. This fact implies strategic alliances to be of even bigger strategic importance for a company than ever before. (Mowery, Oxley & Silverman, 1996)

A broad definition of strategic alliances is the one saying that *"a strategic alliance exists whenever two or more independent organizations cooperate in the development, manufacture or sale of a product or a service."* (Barney, 1997) Another definition, which further emphasises the strategic dimension of the concept, is the one by Bengtsson, Holmqvist and Larsson (1998), referring to strategic alliances as interorganisational means for achieving strategic objectives by working across corporate boundaries. Similarly, Devlin and Bleackley (1988) suggest that *"strategic alliances take place in the context of a company's long-term strategic plan and seek to improve or dramatically change a company's competitive position"*. The latter definitions of strategic alliances reflect the term's strategic undertone as a strategic alliance only can be categorised as strategic if its ulterior motive has a clear link to the companies' overall objectives, and by that to the companies' business strategies. (Bengtsson et al, 1998) Before addressing different business strategies, which in turn will lead us into underlying theories behind strategic alliances, one must understand the logic behind the concept.

### **Incentives Behind Strategic Alliances**

The most fundamental incentive behind strategic alliances appears whenever the net present value of the companies' resources and assets combined is greater than the value of their resources and assets separately. (Barney, 1997) By that, the basis for a strategic alliance is to utilise and experience the advantages of sharing across company borders.

*"[...] no firm holds all the necessary knowledge resources to produce goods or services regardless of its size and financial capabilities."*

Culpan, 2008

There are several reasons of why a strategic alliance is initially established, however, every one is directly related to different opportunities represented by interfirm synergies and competitive advantages that companies might experience in this type of cooperation. (Barney 1997) Furthermore, these opportunities have been divided into *market-, production-, development- and financial* related aspects. (Mowery et al., 1996; Forrest & Martin, 1992; Håkansson et al., 1993)

Starting with production related aspects, a company can improve its production economy and/or technology by exploitation of economies of scale, increased flexibility, stronger positions towards suppliers or by getting access to resources that the company itself does not dispose of. Also, when combining different activities, for example development, manufacturing or distribution activities, the cost of these activities might end up lower than the costs of performing those activities

individually. (Barney, 1997) The second reason for establishing a strategic alliance serves to enhance the market position alternatively to enter a new market, new industry or new segment. That is, by offering a better assortment of products or services, streamlining the supply chain, strengthen the position towards distributors or by extending the company's marketing resources. (Forrest & Martin, 1992; Barney, 1997) To continue with the third aspect, researchers argue that the foundation for innovation and successful R&D might lay in the collaboration between companies rather than within a company, as it has been proven that innovation more often comes from strategic collaborations and more rarely from a company's individual efforts. Consequently, a strategic alliance might emerge due to development reasons. (Bengtsson et al., 1998) For that to work effectively and generate learning and development for both partners, requirement of openness and ability to both receive and transmit knowledge and competence within the alliance is needed. (Cohen & Levinthal, 1990; Barney, 1991; Grant, 1996). According to Doz (1996), strategic alliances constitute a very strong factor when it comes to transferring knowledge between companies. Finally, a strategic alliance might emerge due to financial reasons as projects related to R&D are often connected with large investments, uncertainty and high risk. A mutual dependency is then formed as risks, uncertainty and costs are spread between the companies. (Håkansson et al., 1993; Barney, 1997; Powell, 1996)

### **Strategic Alliances and Business Strategies**

*“Strategic alliances appear to have become the single most commonly adopted strategy.”*

De Rond, 2003

Though strategic alliance can be seen as a business strategy itself (Barney, 1997), business strategies are generally based on either one of the following purposes: company growth or increased focus on the company's core business. However, one strategy does not have to exclude the other. (Bengtsson et al., 1998)

A company can achieve growth organically, through acquisition or by establishing a strategic alliance with one or several companies. (Bengtsson et al., 1998) Common to these are the extension of a firm's boundaries, transforming the relation with its surrounding as the company partly or fully includes resources that were previously outside the organisation. When comparing the different ways for a business to grow, Bengtsson et al. (1998) argues that strategic alliances result in the more cost-effective growth since the company will not have to own or produce the resources itself. This opens up for more effective business integration and greater synergies between companies, and by that the possibility to shorter time to market. (Burt, Petcavage & Pinkerton, 2010) However, strategic alliances also result in less control as a, more or less mutual, dependency is created between the companies. Therefore, becoming a part of a strategic alliance means accepting a new way of organising the company since the power over a substantial part of the business is

now in the hands of another company. (Barney, 1997) Additionally, both companies have to face the fact of sharing the profit from growth with each other. The second business strategy mentioned, the strategy of focusing on the company's core business, means disposal of resources and activities that no longer are, or never have been, related to the core competencies of a company. (Teece, Pisano & Shuen, 1997) This is usually done through closures or divestments, alternatively through outsourcing, where the latter is seen as a more collaborative way of improving a company's business focus. (Bengtsson et al., 1998)

Before moving on to the different forms of alliances, there is a need for understanding the underlying theories behind the concept, which core, to summarise what has been said above, lays in the conviction that competitive advantages are created and fostered through collaborations, horizontal or vertical, between companies rather than from companies working in isolation.

### **2.2.1 Theories behind Strategic Alliances**

Literature on strategic alliances revolves mainly around the theory of transaction cost economics (TCE) and the resource-based view (RBV). One prominent difference between these theories is the approach on what the business should be focusing on. The theory of transaction costs focus on what a company benefits from buying or divesting parts of its business that the market can do to lower cost, while the resource-based view centres on core competencies and by that which activities the company should maintain and further develop internally. (Das & Teng, 2000) However, the linkage between the theories is obvious as one theory describing what the company should perform in-house automatically implies what the company should get hold of externally and vice versa.

#### **2.2.1.1 Transaction Cost Economics**

The transaction cost approach on organisations regards efficiency as the fundamental element when determining which type of institutional form is to prefer when an organisation is in need of resources that it does not possess over internally. (Williamson, 1975) In that sense, there are two alternatives of institutional forms: markets and hierarchies. This concept, stated by Williamson (1975), has been further developed to include the institutional form of strategic alliances as it fits somewhat in between the perfect market where there are no entry barriers and the information flows freely and the perfectly integrated hierarchical company. This means that a company can get access to a resource by either producing it on its own, through collaboration with other companies in the making of it or by purchasing resources from the market. (Bengtsson et al., 1998) Strategic alliances will be further discussed later in this section, since the logic behind this institutional form is justified through an initial clarification of the other two forms with a transaction costs economics approach.

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To return to the fundamental element of efficiency, the degree of efficiency is directly related to transaction costs, meaning costs of using the market mechanism. That is, costs arising from the exchange coupled to purchasing or selling of a product or service, and that in addition to the cost of the product or service itself. According to Williamson (1975), the choice of institutional form should be based on the option that is associated with the most efficient transactions, resulting in the lowest transaction costs. By that, the core of transaction cost economics is to answer the question of which type of institutional form is correlated with most efficient transactions. For that matter, Williamson (1975) suggests an analysis of trading which in turn requires understanding of sources to market failure as well as transactional limits of internal organisation. This is achieved by identifying a set of *environmental factors* and a set of related *human factors* (figure 6). The environmental factors include *uncertainty/complexity* and *small-numbers* while *bounded rationality* and *opportunism* are considered human factors. Together these factors clarify under which conditions it is efficient to let the market handle the transactions, and vice versa when it is more efficient to manage the transactions internally.

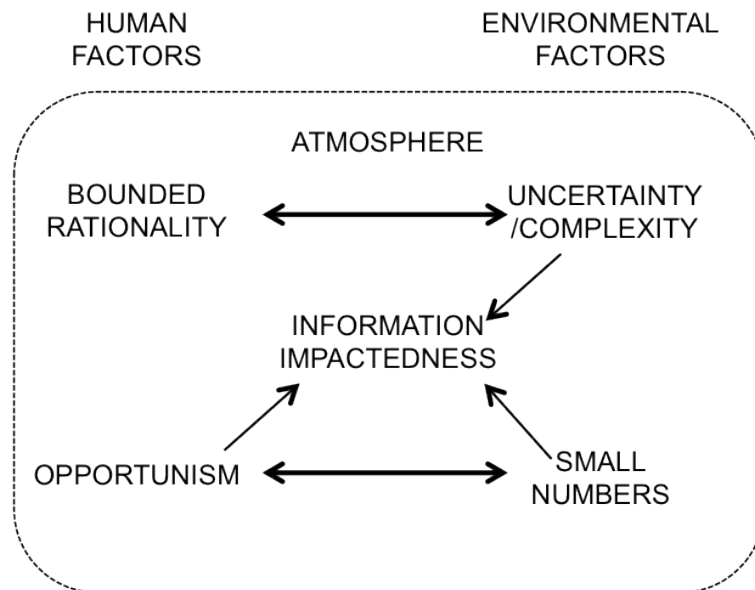


Figure 6. *Organisational Failures Framework* (Williamson, 1975)

The logic behind this conceptual framework is to question whether all transactions can be mediated entirely through the market, and then identify what types of circumstances that will cause market failure to the extent that hierarchy should replace the market. (Ouchi, 1980) Although, one must understand that environmental factors that are not joined with human factors must not hinder market exchange as Williamson (1975) states that *“it is always the joining of human with environmental factors, not either taken by itself, that poses transactional*

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*problems*". In that sense, it is of special interest to highlight the pairing of uncertainty/complexity with bounded rationality and small numbers with opportunism, as those pairings give rise to market failure. To exemplify, opportunistic behaviour is fostered through small numbers, as a situation with low level of competition will put one player in a more advantageous position of power compared to the other. *Information impactedness*, another term developed by Williamson (1975), is a derived condition that arises in situations where it is difficult to determine the costs of information, mainly because of uncertainty/complexity and opportunism and to some extent small-numbers.

#### **Uncertainty, Frequency, Specificity and Trust**

As an extension of the reasoning above, Williamson (1975) enhances the degree of *uncertainty*, *frequency* and *specificity* when analysing transactions. The degree of uncertainty and specificity reflects the risk of opportunistic behaviour in a transaction, while the variable frequency tells how often the transaction is made. (Williamson, 1975) Hierarchy is to prefer when the exchange is of high importance alternatively unique to one company, meaning there is a high degree of specificity coupled to the transaction. This form of coordination is also preferable when transactions are influenced by a low degree of trust, when transactions are made often and when the cost of hierarchy is lower than the cost of market exchange. The market is efficient at handling single, secure and general transactions but is otherwise less efficient. Especially frequent and uncertain transactions, requiring significant investments, give rise to opportunistic behaviour that the market cannot guard against. (Bengtsson et al., 1998)

Bengtsson et al. (1998) states that heavy reliance on hierarchy might become too expensive while heavy reliance on the market is too unsecure for companies in general. In that sense, a strategic alliance can in some way be seen as a favourable compromise, or interorganisational coordination, between markets and hierarchies. Strategic alliances are in favour when the transaction is associated with high degree of uncertainty, specificity and frequency. However, for any collaboration to be successful Williamson (1975) emphasises trust as an important aspect as high degree of trust reduces the risk for opportunistic behaviour. Trust in relation to dependencies in a relationship will be addressed more thoroughly but it goes without saying that trust is crucial in order for a company to experience the fruits of hierarchy and market exchange and at the same time avoid their respective drawbacks. Before going further into this the second underlying theory will now be described in the section that follows.

#### **2.2.1.2 Resource-Based View**

In the short term, a firm's competitiveness is determined by the quality and performance of the business. In a longer perspective, the critical factor to stay competitive is a firm's ability to develop its *core competencies*. Core competencies can be described as accumulated knowledge and resources that determines a firm's

existence by either creating customer value or by enhancing the way of how that value is created. (Teece et al., 1997) Researchers argue that firms can achieve significant benefits if they start focusing on their core competencies and activities connected to those competencies rather than trying to do everything in-house. By selling off parts of a firm's business that are not connected to its core competence and instead procuring those competencies, activities or resources through alliances or collaborations, the firm might become more cost efficient, gain a stronger strategic focus and achieve a better market position as it becomes less rigid and bureaucratic. This reasoning is in line with the resource-based view on organisations, where a company is equal to the set of tangible and intangible resources that it possesses over. The starting point for this theory is to maintain those resources and activities connected to the firm's core competencies internally, and to acquire the other ones externally. This can be done through a strategic alliances where a company gets access to another company's valuable resources without having to own or produce them internally, resulting in enhanced focus on core competencies and activities that the company is best at. (Das & Teng, 2000) From a value chain perspective, Prahalad and Hamel (1990) emphasize the importance for a company to focus on its core competencies and to relate to other actors in the value chain in a way that best supports and promote its core competencies. The basis for this approach is that the final value created is a result of the system as whole, meaning how external actors are linked to each other, rather than from individual efforts. (Simchi-Levi, Karminsky & Simchi-Levi, 2000)

### **Strategic Capabilities**

Core competencies are closely related to *capabilities* of a firm, which means a firm's ability to utilise its resources efficiently. (Barney, 1991) For those capabilities to be categorised as dynamical, a firm must have the ability to integrate, develop and change its internal and external competencies with regards to changed conditions in the company surrounding. By that, a company has to manage internal resource allocation while having the ability to extend or combine its core competencies with external resources. This in turn might result in new forms of competitive advantages. (Teece et al., 1997) For that to happen, Barney (1991) and Seufert, von Krogh and Bach (1999) highlight internal structure, control systems and management as important aspects to take into consideration.

### **Absorptive Capacity**

According to Powell (1998), companies cannot have access to all knowledge and resources internally why firm capabilities have become more and more dependant on the creation and the search for knowledge outside the firm. To fill this existing resource and knowledge gap, and to foster innovations, a company must develop its ability to absorb knowledge through integration with other companies. (Håkansson et al., 1993) Kogut and Zander (1992) supports this statement as they argue that *"firms are better than the market in sharing and transferring knowledge, where firms learn new skills by recombining their current capabilities"*.

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According to Lane and Lubatkin (1998), for a company to generate innovations it must have “*the ability to recognise the value of new external information, assimilate it, and apply it to commercial ends*”. The three abilities mentioned can be summarised in the term *absorptive capacity*. The ability to recognise external knowledge means that companies collaborating must learn the basics related to the specific field of knowledge of which the collaboration evolves around. However, dissimilarities in the knowledge base, which can also be described as a fit or matching between knowledge and resources, are a prerequisite for an effective and creative utilisation of knowledge to appear as too many similarities reduce the likelihood to *organisational learning*. Organisational learning is a broad term and there is no definitive or uniform explanation behind it why this study will not examine the concept in more detail. However, Davenport and Prusak’s (2000) description of the term as the process of continuous innovation through the creation of new knowledge applies well in this study. The ability to assimilate external knowledge is directly affected by the ability to internalise the new knowledge, while the ability to commercialise the knowledge depends on the degree of which the companies are overlapping in terms of know-what, know-how and know-why. Cohen and Levinthal (1990) argues for the importance to know where the knowledge is, who has it and also to be aware of what type of knowledge the partner holds. Furthermore, a company’s absorptive capacity is dependant on the members of the organisation where it is crucial to transfer the knowledge to the right person or unit and to make sure that the knowledge is applied properly. (Lane & Lubatkin, 1998)

A similar reasoning to the one above underlines internal structure and culture as important aspects in the creation and spreading of knowledge. (Seufert et al., 1999) Regarding the former, researchers argue for the implementation of processes that facilitate accumulation and sharing of know-how throughout an organisation. For those processes to work accordingly, a dedicated alliance committee and committed top management is needed as well as a supportive task force willing to absorb and disseminate knowledge. One can, without difficulty, understand how company culture influences employee attitudes towards learning and by that, how well the collaboration will work out. (Simonin, 2004) Though it will not be discussed in detail, there is an evident need for cultural alignment in a strategic alliance, even if the company culture, as in values, norms and routines in an organisation, might differ between the companies. It means that companies in a strategic alliance must have a rectified vision of the culture permeating the relationship. Also, it is important to have a common understanding of the purpose, aims and goals of the relationship and not least, how the relationship itself as well as how each company adds value to it. (Inkpen, 1998) Otherwise, the ability to interpret a company’s strategic intent is probably lowered which in turn might result in less effective communication, or even eliminated such, thus ending up in significantly reduced knowledge sharing. (Clegg, Pitsis, Rura-Polley & Marosszeky, 2002)

To avoid a situation of restricted knowledge sharing, as the one described above, an understanding of each other's businesses is somewhat required. That involves understanding of each other's objectives, long-term plans and strategies as well as internal processes and way of working and also access to uncensored market information and consumer insights relevant for the collaboration. The spreading of this critical information is facilitated by well functioning, common and linked information systems, however, for this to turn out successfully there is a clear need for transparency, openness and trust throughout the relationship (Ragatz et al., 1997), which leads us to different forms of alliances and dependencies in a strategic alliance.

## 2.2.2 Different Types of Alliances

Barney (1997) groups strategic alliances into three broad categories: *nonequity alliances*, *equity alliances* and *joint ventures*. Whereas the two latter categories supplement contracts with equity exchange, nonequity alliances do not include equity positions in any company, neither is an independent organisation formed in which the companies can invest. Rather, nonequity alliances are managed through various forms of contracts. Contracts will be addressed later on when discussing alliance dependencies, however, to provide a short introduction Barney (1997) suggest three types of agreements which a strategic alliance can be built upon: licensing agreements, supply agreements and distribution agreements. A licensing agreement means that one company is allowed to sell the other company's products or to use that company's brand name. Supply agreements and distribution agreements mean that one company agrees to perform some activity for the other, in this case to either supply or to distribute the products of the other company. (Barney, 1997)

When deciding on which type of strategic alliance, as well as which type of contract, to base the collaboration on, both companies' strategic goals and objectives must be taken into consideration. (Barney, 1997) Otherwise, there is a risk that the alliance will not work out accordingly and by that, not result in the incentives that initially were the reasons for establishing the alliance. Some of the incentives mentioned earlier, as in those related to market-, production-, development and financial aspects, would not be achieved unless the companies share the same goals and objectives. On the other hand, there are incentives that can only be realised through diverse goals and objectives. The former is called a *symmetric alliance*, meaning all companies involved in the alliance are seeking the same advantages. An example of a symmetric alliance is the one with incentives of economies of scale. An alliance that includes disparity in the strategic dimension between the companies involved is called an *asymmetric alliance*. This type of alliance is suitable when there are incentives to enter a new market, industry or segment or when companies want to learn from competitors. Besides symmetric and asymmetric alliances, there is a type of alliance called *mixed alliances*. Companies in a mixed alliance share similar or different interests, and the reason for establishing such alliance is often related to



difficulties in managing uncertainty or risks. (Barney, 1997) This breakdown brings clarity to the question of which industry structure is most suitable for the different types of alliances. Firstly, it is most likely for a symmetric alliance to exploit advantages, for example economies of scale, in mature or fragmented industries with strategic groups. That is because companies in a symmetric alliance are very similar in terms of products, customers or technology. Asymmetric alliances, on the other hand, are better off in an environment of emerging industries, fragmented such without strategic groups or in declining or global industries. In those industries, there are better opportunities for entering new markets or to learn from competitors. Finally, mixed alliances are suitable in all generic industry structures due to the fact that uncertainty and risks permeate every industry. (Barney, 1997)

### 2.2.2.1 Alliance Dependencies

Companies entering a strategic alliance will presumably strive to be competitive together and therefore the alliance must include a balance and distribution of power between the allied. To understand the dimension of power in a relationship, one must first understand the connection between power and the position one company holds in an alliance. To gain this understanding, power will now be discussed in the context of Porter's Five Forces Framework, which describes how factors in the company's environment as well as its position in the same environment affects the competitiveness of the company. (Porter, 1979)

To begin with, the framework includes threat of new entrants, meaning how easy it is for a new company entering the market, measured by the height of entry barriers, which depends on level of advanced technology or the need for economies of scale. The bargaining power of buyers indicates if buyers have a lot of power relative to the company. A measure indicating the level of buyer power is *switching cost*, that is to say how much it would cost for the buyer to switch from one company to another. Also affecting the environment and a company's competitiveness is the level of substitutive products or services. In contrast to bargaining power of buyers we find bargaining power of suppliers and the distribution of power between the company and its suppliers. This factor will be covered in more detail in the next section. Central in Porter's framework is the internal rivalry among existing competitors, which is influenced by all surrounding factors. (Porter, 1979, 1980)

In the context of strategic alliances with upstream direction, and the distribution of power in this type of relationship, the most central part of the five forces model is the bargaining power of suppliers. By increasing prices or decreasing quality suppliers can transfer profits in the industry to themselves. By that, a company that is not an important part of the suppliers' customer base can suffer the threat of those price increases or lower quality of service. (Porter, 1980) The level of power in the hands of suppliers depends on the number of suppliers available on the market, similar to Williamson's (1975) reasoning about small numbers, as well as the uniqueness and differentiation of the supplier itself. (Porter, 1980) The level of

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supplier substitutes lowers supplier power and remains the company in a good bargaining position. Finally, suppliers can also bargain with the advantage of vertically integrate forward in mind, and by that become a rival besides a supplier. This is credible when barriers to entry are low and suppliers possess technology and sufficient know-how to take this leap. Although, costs of forward vertical integration are high and thus this treat can be regarded as low. (Barney, 1997)

To view the distribution of power from the supplier point of view it is of importance to discuss the power of buyers, the company in this matter. When buyers are few and supplier products are standard and not differentiated, the power of buyers increases. (Porter, 1980) When not making enough profit, buyers are also more sensitive to both price and quality and might put pressure on suppliers. Based on the same arguments as to why suppliers might vertically integrate forward, buyers have the opportunity to vertically integrate backward and capture profits on supplier market. Again, the reality of this threat depends on barriers to entry. (Barney, 1997)

*"Power is the heart of all business to business relationship"*

Cox, 2001

Managing the distribution of power and balancing the dependencies can be done by the formation of various types of contracts. Mowery et al. (1996) suggest two types of contracts: *unilateral contracts* and *bilateral contracts*. Unilateral contracts include licensing agreements, distribution agreements and R&D agreements. These types of contracts are characterised by well-defined transfer of property rights and they are often complete and specific as the alliance partners are expected to carry out their obligations independently, without much need for collaboration or coordination. Moving on to bilateral contracts, as opposed to unilateral contracts these contracts are characterised by a relatively high level of integration. Bilateral contracts require the alliance partners to work together and to share resources, knowledge-based first and foremost, on a regular basis. As a result of this, bilateral contracts are usually incomplete and flexible. (Das & Teng, 2000) Alliances of joint R&D, joint production, joint marketing and promotion or enhanced supplier partnership are usually bilateral contract-based. (Mowery et al., 1996)

Although contracts to some extent insure alliances from opportunistic behaviour, due to fewer imbalances of power and control in the relationship, there are other, perhaps more intangible, aspects for a well-functioning collaboration. Trust is one of those aspects, which will now be discussed together with the phenomenon *partner protectiveness*.

#### **Trust and Partner Protectiveness**

Trust is said to be fundamental for relations characterised by high degree of exchange between collaborating partners, as it affects to what extent the partners feel secure in the relationship and by that how willing they are to adapt to each other. (Seyed-Mohamed, 1995) This willingness is obviously very important since it

results in greater understanding for one another, which in turn supports an efficient knowledge and information flow throughout the relation.

Trust has been defined in a number of different ways where Mora-Valentin (2004) describes it as *“the willingness to believe in the other partner within a context where the actions taken by one partner make the other vulnerable”*. Shaw (in Harryson, 2006) suggests another definition of trust by dividing the term in three measures. Firstly, to achieve business results is crucial in relationship based on trust, meaning it is impossible to attain trust if expectations and results are not fulfilled. In this regard, results, and ultimately profit, will always be number one priority in business. The second measure stressed is the one of acting with integrity, which requires a clear strategic vision based on performance targets as well as operating principles. The third measure covers more fuzzy aspects such as building a common culture and vision, showing confidence in the individual and communicating with an open dialogue. This final measure is in line with Drucker’s (1999) thoughts on trust, summarised in the sentence that follows, *“Existence of trust between people does not have to mean that they like one and other, but that they understand each other.”*

The opposite of trust can be described with the term *partner protectiveness* as it arises from the lack of trust. This phenomenon is common in situations where companies in a partnership are not willing to share their knowledge with their partners, and that for strategic reasons. Therefore, partner protectiveness can be seen as a collaborative barrier. (Simonin, 2004) The reason behind this restrictive knowledge sharing is primarily based on concerns that the knowledge, which is linked to the company’s competitive advantages, might be disseminated to the company’s competitors. Moreover, there is a risk that the counterpart in the collaboration becomes a future competitor. (Inkpen, 1998)

Trust can obviously be seen as a mean to avoid partner protectiveness thus there are several other aspects that have positive influence on a relationship. One aspect is the length of the relationship, where Dyer and Ouchi (1993) argue for the importance of sharing a history together. This means that knowledge, insights and understanding of each other and each other’s businesses cannot be stressed as it is accumulated over time.

### **2.3 Theory Summary and Theoretical Framework**

Traditional theories on innovation as well as more recent ones emphasise the ability to innovate as crucial for a company’s future success and possibilities to gain competitive advantages. However, as theories concerning the front end of innovation and open innovation imply, there is a need for a different and more iterative approach on innovation opposed to former and more structured processes. (Davila et al., 2006, Koen et al., 2002, Chesbrough, 2003) Nowadays, companies have started to realise that innovation cannot evolve from work in complete isolation. Instead, companies must open up their innovation process by allowing ideas,

knowledge and resources to flow freely, in and out of the organisation. (Chesbrough, 2003) Those companies have simply understood the importance of acquiring valuable information outside their traditional borders, resulting in greater possibilities to become truly innovative, and by that, increase their chances to create and bring new value to the market. (Carlson & Wilmot, 2006)

As every innovation starts off with an idea, the initial focus in the innovation process should be on generating ideas that, when conceptualised, fill existing or future gaps in the market. One way of handling this is by focusing on the front end of innovation, an iterative process that precedes the more structured New Product Development process. (Koen et al., 2002) Though FEI is, and most certainly will remain, somewhat chaotic and complex compared to traditional models of Stage-Gate and Waterfall, efforts have been made to organise it in order to make it less fuzzy and more comprehensible for one to undertake. (Khurana & Rosenthal, 1998) In that sense, the New Concept Development model describes a number of key components, which, both individually and in relation to each other, affects the non-linear process of the front end. Those components are divided into three categories: (1) factors influencing the process internally, (2) activities in the front end and (3) surrounding factors influencing the process externally. When comparing these categories, activities in FEI are clearly the most important elements in the model. Those activities include opportunity identification, opportunity analysis, idea genesis, idea selection and concept & technology development. (Koen et al., 2002)

In order for a company to identify opportunities in terms of market gaps and generate ideas that can fill these gaps, which is a good foundation to build innovations on, the company must look outside its own four walls. That is, ideas that might lead to innovations and competitive advantages do not necessarily evolve within a company thus valuable ideas can emerge outside the firm boundaries as well. In that sense, certain attention needs to be drawn towards radical ideas as those ideas often represent groundbreaking such, on which true innovations can evolve. (Davila et al. 2006) However, it does not matter whether an idea is radical or incremental, the chances of spotting one are still better if screening both internally and externally. In this manner, open innovation holds external ideas as important as internal ones. As described, the logic behind open innovation is to utilise those opportunities to innovate that may arise from collaborations, downstream as well as upstream such. (Chesbrough, 2003) This notion is further supported by research showing that competitive advantages are created and fostered through collaborations, horizontal or vertical, between companies rather than from individual efforts. Those advantages are usually a result of new ideas, spreading of risk and speed and leverage in the innovation process. (Davis, 2006) To summarise, the outcome that comes from collaborating is greater than the sum of the outcome from each company working separately.

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There are probably as many ways of collaborating, as there are incentives to do so. However, a decision was taken to focus this study on a collaboration form named strategic alliances thus a major incentive for establishing such is that of improving a company's ability to innovate. In fact, it has been proven that innovation more often comes from strategic collaborations and more rarely from a company's individual efforts. (Barney, 1997, Mowery et al. 1996; Forrest & Martin 1992; Håkansson et al., 1993) Though there are several other reasons for building a strategic alliance, every one is directly related to the synergies, competitive advantages and value that is created when companies work together rather than apart. (Barney, 1997)

Given the reasoning above, the link between strategic alliances and its underlying theory of transaction costs economics becomes clear, as there exist incentives to establish a strategic alliance whenever the transactions associated with this alternative are more efficient, thereby resulting in lower transaction costs, than those costs of using the market mechanism or the alternative of integrated hierarchical company. However, the decision of institutional form is also highly dependant on human and environmental factors, such as opportunism, bounded rationality, uncertainty/complexity and small numbers. (Williamson, 1975) Continuing with the second underlying theory of strategic alliances, the resource-based view, this theory focuses on the company's core competencies and its ability to develop them. A company should acquire resources externally if those in-house are not connected to the company's core competencies. By that, and similar to the reasoning on transaction costs, a strategic alliance is a good alternative if the alliance supports the companies with tangible and intangible assets in a more efficient manner than the market or the alternative of a company owning or producing them itself is able to. (Das & Teng, 2000) In that sense, the theory emphasises a company's absorptive capacity, as it enhances the basis for strategic alliance, namely to utilise the advantages of sharing across company borders, which would not be possible if acting in isolation. (Barney, 1997)

Moving on, an alliance is defined as a strategic one only if the motive behind the relationship is supported by the companies' respective business strategy and overall objectives. (Bengtsson et al., 1998) In that sense, there is a rather obvious need for compatible strategies between the companies involved. However, those companies must not share the same strategies, goals or even strive for the same advantages, as there are different forms of strategic alliances besides a symmetric one. Furthermore, strategic alliances can be divided with regards to those investments needed. By that, there are three broad categories of strategic alliances: (1) nonequity alliances, (2) equity alliances and (3) joint venture. Where the two latter categories include equity positions in the other company, nonequity alliances are only managed through various forms of contract. (Barney, 1997) Though an alliance is governed through contracts and agreements, which reduces the risk of opportunistic behaviour for example, there are additional factors, both tangible and intangible such, to take into consideration when entering a strategic alliance. Upon

this, there are several, even more complex dimensions, to bear in mind when establishing a strategic alliance for innovation purposes. These dimensions are summarised in our developed theoretical framework that follows, which aims to describe what the theories of study suggests as factors affecting successful upstream collaboration in the early innovation process.

The theoretical framework of this study is built upon traditional theories on innovation as well as more recent ones, such as front end of innovation and open innovation, combined with theories on strategic alliances. Given the issue of study, the theories were screened with regards to factors and activities that gave some sort of indication on how to realise innovations in a company, both in a more general perspective and through different forms of collaborations, as the more recent theory suggests. Though several factors were found, not every one of them implied how to create successful innovations and at the same time create a successful alliance. In that sense, the theoretical framework takes a holistic approach on innovation and interorganisational collaboration as it is based on synergies between the different theoretical approaches.

The theoretical framework (Table 2) is based on three parts: (1) *Necessities*, (2) *Relationship Structuring* and (3) *Innovation Facilitation*, under which the identified factors have been categorised with regards to level of influence. The level of influence refers to in what stage of the process, that of innovating in an upstream collaboration, the factors have the most influence to affect the relationship.

Factors categorised as “Necessities” builds a necessary foundation for interorganisational collaboration, meaning they are vital for the existence of the relationship and for it to function at a somewhat “basic” level. Given this, necessities are not necessarily factors that guarantee success in a collaboration, however, if not present they most certainly hinder prospective success from arising. Necessities include factors such as *contracts and governance* (confidentiality and non-disclosure agreements), *strategic purpose* (link between alliance and corporate strategies), *formalised process for supplier selection*, *low transaction costs*, *clarity of targets* and *risk spreading*.

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Table 2. *Theoretical Framework*

<p><b>Necessities</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Contracts and governance</i></li> <li>▪ <i>Strategic purpose</i></li> <li>▪ <i>Formalised process for supplier selection</i></li> <li>▪ <i>Low transaction costs</i></li> <li>▪ <i>Clarity of targets</i></li> <li>▪ <i>Risk spreading</i></li> </ul>	<p>Koen et al, 2002; Davila et al, 2006; Barney, 1997; Mowery et al, 1996; Das &amp; Teng, 2000 Bengtsson et al, 1998; Davila et al, 2006 Barney, 1997; Davila et al, 2006; Davis, 2006 Williamson, 1975; Ouchi, 1980; Das &amp; Teng, 2000 Davila et al, 2006; Inkpen, 1998 Håkansson et al, 1993; Barney 1997; Powell, 1996</p>
<p><b>Relationship Structuring</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Communication</i></li> <li>▪ <i>Understanding and transparency</i></li> <li>▪ <i>Commitment</i></li> <li>▪ <i>Power distribution</i></li> <li>▪ <i>Cultural alignment</i></li> </ul>	<p>Ragatz et al, 1997; Clegg et al, 2003 Cohen &amp; Levinthal, 1990; Barney, 1991; Grant, 1996; Inkpen, 1998 Koen et al, 2002; Zairi, 2000; Davila et al, 2006; Barney, 1991; Seufert et al, 1999 Porter, 1979; Barney, 1997 Martins &amp; Terblanche, 2003; Koen et al, 2002; Simonin, 2004; Seufert et al, 1999</p>
<p><b>Innovation Facilitation</b></p>	<ul style="list-style-type: none"> <li>▪ <i>Absorptive capacity</i></li> <li>▪ <i>Resource and knowledge fit</i></li> <li>▪ <i>Information sharing</i></li> <li>▪ <i>Synergies and cross-fertilisation</i></li> <li>▪ <i>Focus on core competencies and activities</i></li> <li>▪ <i>Trust building</i></li> <li>▪ <i>Long-term relationship</i></li> <li>▪ <i>Supportive internal structure</i></li> </ul>	<p>Lane &amp; Lubatkin, 1998 Teece et al, 1997; Davenport &amp; Prusak, 2000; Becker &amp; Dietz, 2003 Chesbrough, 2003; Cohen &amp; Levinthal, 1990; Barney, 1991; Grant, 1996; Doz, 1996 Davis, 2006; Teece et al, 1997; Becker &amp; Dietz, 2003; Burt et al, 2010 Teece et al, 1997; Das &amp; Teng 2000; Prahalad &amp; Hamel, 1990 Khurana &amp; Rosenthal, 1998; Chesbrough, 2003; Harryson, 2006; Williamson, 1975; Seyed-Mohamed, 1995; Shaw, 1997; Inkpen, 1998 Dyer &amp; Ouchi, 1993 Davila et al, 2006; Martins &amp; Terblanche, 2003; Khurana &amp; Rosenthal, 1998; Koen et al, 2002; Zairi, 2000; Deschamps, 2009; Barney, 1991; Seufert et al, 1999</p>

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The second category, “Relationship Structuring”, includes factors that facilitate relationship formation and development in the context of a strategic alliance. That is, *communication* (internal, external and direct), *understanding and transparency* (insight into each company’s businesses and markets, understanding of how each company and how the relationship adds value), *commitment* (partners contributing as expected, top management commitment), *power distribution* and *cultural alignment*. These factors will help in the effort to expand firm boundaries and integrate the collaborative partners, which in turn can be seen as a prerequisite for idea generation and concept development in a relationship. Therefore, factors of relationship structuring are more or less “enablers” for a fruitful sharing of knowledge, resources and information, which leads us to the final category of “Innovation Facilitation”.

Factors facilitating innovation are those of *absorptive capacity* (know-how, know-where and know-who), *resource and knowledge fit* (expertise transfer, cumulative and organisational learning), *information sharing* (common and linked information systems, knowledge of internal processes and information systems, ability to plan for future product development efforts and to develop in advance by having the necessary capabilities), *synergies and cross-fertilisation* (heterogeneous partners, active involvement from other functions besides R&D), *focus on core competencies and activities* (internal resource allocation, ability to extend or combine core competencies with external resources), *trust building* (absence of partner protectiveness, flexible relationship), *long-term relationship* and *supportive internal structure* (formalised innovation process, sufficient degree of structure and chaos, risk taking, supportive value chain, coordination of distinct organisational routines). Although absence of these factors does not automatically mean absence of innovations, they are essential means in the strive towards truly successful innovations and the possible competitive advantages that might come along.



## 3 Methodology

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*This chapter describes the research approach of the thesis. Differences between quantitative and qualitative data are explained, together with an argumentative discussion regarding the choice to perform a case study as well as the choice of study object. The chapter is summed up by a critical discussion in which regards have been taken to increase the validity and reliability of the study.*

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### 3.1 Starting point

The purpose of this thesis emerged from the risen interest in exploring how upstream collaboration can affect and contribute to innovation, particularly in the front end. With a theoretical gap in the understanding in how these interorganisational collaborations can work and how innovation is fostered within them, contact points between the main theories front end of innovation, open innovation and strategic alliances were studied. These contact points were then used to shed light on the purpose of this thesis, to develop a framework that helps describe how strategic alliances can contribute to the upstream innovation process in the front end of innovation.

The case company Leaf, a leading player on the European confectionary market, provide an excellent example of a company in the forefront of this dynamic industry, why Leaf was considered an interest object of study in the context of upstream collaboration focusing on innovation and new product development. The background to why the confectionary industry was considered particularly fascinating to study lies in the recent stagnation in the industry, resulting in the need for actors to embrace a newer approach to innovation. Being an innovative company, Leaf has adopted a more open approach to innovation by opening up for strategic collaboration in the upstream, particularly with ingredient suppliers, where there might lie possibilities for future radical innovations to evolve.

Trough extensive studies of theories presented in the previous chapter, a number of factors emerged, considered important in contributing to successful innovation in strategic alliances, which were then summarised in a theoretical framework. This preliminary framework has then been tested in the case study to be set in a context and was then developed to a general framework answering to the purpose. How these theories have been applied on the gathered empirical data will be further described and clarified in the following section.

## 3.2 Research Approach

*“Creative insights often arise from the juxtaposition of contradictory or paradoxical evidence. The process of reconciling these contradictions forces individuals to reframe perceptions into a new gestalt.”*

Eisenhardt, 1989

Research is a systematic approach to gain knowledge and answers to one or a couple of unanswered questions. In order to have credibility, both gathering, handling and presentation of empirics needs to be carried out systematically, hence the need for methodology. (Jacobsen, 2002)

New theory can be developed in different ways, through deduction, induction or abduction. A deductive approach means to develop new theory from old ones, while induction implies the development of theory from gathered empirics. The more iterative semi-deductive or abductive approach can be said to be a mix of the deductive and inductive methodologies. (Alvesson & Sköldbberg, 1994) This thesis has been carried out in such a manner, which has resulted in a continuous movement back and forth between theory and empirics. As described in the section above, the starting point of this thesis was an extensive theoretical study, resulting in a theoretical framework. This framework constituted a theoretical answer to the stated purpose, which was then applied on the empirical data. This summed up to the finalised framework, sorting out the issue of study.

The choice between different methodologies is not an easy path to travel and each approach has its pros and cons. The deductive approach can be criticised since the results of such a research are unavoidably influenced by initial preconceptions, while the inductive approach on the other hand is criticised since no one can perform research with a completely open mind, and not be influenced by their own opinions or the outside world. Either way, the choice of methodology is not as important as the understanding of weaknesses and differences in interpretation of the results is, which is further discussed under section 3.8. (Jacobsen, 2002)

### 3.2.1 Qualitative and Quantitative Data

The difference between the two types of data collection is that qualitative studies are based on non-measurable characteristics, information gathered in words, while quantitative studies base conclusions on information in numbers. The gathering of quantitative data is typically conducted by using a number of questionnaires, which are the same for all respondents and here the statistical reliability is an issue to have in mind. (Jacobsen, 2002)

In this thesis conclusions have been based on qualitative data gathered by interviews and observations. This approach was chosen since the issue of study and the purpose request data that cannot be translated into numbers. Moreover, the

aim to achieve an understanding of the chosen issue of study was best obtained with a qualitative case study, which is further argued for in the following section. To gain in depth understanding and draw general conclusions about the qualitative research an analytical generalisation (Yin, 2003) was performed, further explained under Generalisation in section 3.3.1.

### 3.3 Case Study

Höst, Regnell and Runeson (2006) cover different types of research strategies, where it is argued that the four most relevant ways of conducting a master thesis are through an *experiment*, where two or more alternatives are analysed and compared, a *survey*, consisting of a summary and description of the current status of a selected research object, *action research*, where an activity is supervised and documented, and finally the *case study*, where a thorough investigation of one or more cases is conducted.

The choice between these different research strategies can be based on three conditions; type of research question, extent of control the investigator possesses over behavioural events and the extent to which focus is on contemporary events. (Yin, 2003) Based on these conditions Yin (2003) argues that the case study is specifically beneficial when “*a how or why question is being asked about a contemporary set of events, over which the investigator has little or no control.*” (Yin, 2003)

A case study approach was chosen as the most suitable research strategy in this thesis, since it was desired to gain deep understanding in the specific issue of study in order to thoroughly describe it. Moreover, a statistical study was not considered suitable for the studied theories and the developed framework, also motivating the choice to conduct a case study. In this thesis the case study was designed to capture the perspective of employees at the innovation centre, employees within procurement and representatives from two different suppliers, which is more thoroughly described in 3.5.1.1. The case study was performed in an exploratory manner, meaning that it aimed to in depth increase the understanding of how something functions and is done. (Höst et al., 2006)

This thesis was performed as a single-case research including both the company perspective, as well as supplier perspective. The choice to focus on a single-case study also falls back to the nature of the developed framework and complexity of the purpose of study. Furthermore, the aim of this research has been to access the extremes, as opposed to the mean values, also motivating the choice to perform a case study and not a statistical survey.

When evaluating and analysing the case study, a pattern-matching logic has been used. This means that a comparison of empirically gathered pattern and expected results from studied theories was made. The pattern-matching approach is a useful

research approach of relating data to an identified theoretical pattern and draw conclusions from overlaps and contradictions. If and when a pattern coincides with the theoretically predicted outcome, this can contribute to a strong internal validity of the performed case study. (Yin, 2003)

### **3.3.1 Generalisation**

Case studies are sometimes said to be difficult to generalise about, but Eisenhardt (1989) argues that the constant compiling of different realities makes us less biased and able to generate better research. (Eisenhardt, 1989) The ability to generalise about a specific case is also explained by Yin (2003) where analytic generalisation is compared to the more commonly known statistical generalisation. In a statistical generalisation a conclusion is made about a population of samples based on empirical data. This is the most common way to generalise when conducting a survey and the statistical generalisation can often be supported by quantitative data, determining the confidence of the generalisation. When conducting a case study, Yin (2003) advocates that a chosen case can and should be compared to the surveys topic of a new experiment, and not as a sampling unit. (Yin, 2003) This is important since it influences the ability to generalise and since a case is different from a sample, the statistical generalisation logic is not suitable. Instead, analytic generalisation is to be used, where studied theory is used as a template to which the empirical results of the case study are compared. The analytical generalisation is also, as the name implies, an in depth analysis providing a solid ground for understanding of the specific case and hence draw generalising conclusions based on the theory template. (Yin, 2003)

### **3.4 Work Process**

The approach to this thesis has been performed as previously stated, in an abductive way. In practice this was done by firstly identifying relevant literature and fields of theory, which were studied to gain an understanding of the field of research. When an overall picture of the field had been obtained, the empirical study was conducted in three phases, where the initial phase was carried out parallel to additional theory studies. Phase one of the empirical study consisted of an extensive observation where the authors gained in depth understanding of the innovation process. The observation was followed by additional theoretical studies, resulting in a theoretical framework. In the empirical phase that followed the developed framework constituted the base for interview templates. Interviews were conducted with Leaf personnel as well as supplier representatives. In the third empirical phase additional interviews and observations were made to increase the validity of the study. Completing the final phase of the empirical study, the material was interpreted and followed by an analysis of the empirical material in relation to the previously developed theoretical framework. Summing up the analysis, an enriched framework was developed where the results from the empirical study are presented.

### **3.5 Data Collection**

The sources for this master thesis were primarily a case study, including interviews and observations, which were consequently tested with a pattern-matching logic against the developed theoretical framework. In addition, sources of data were supported with archives provided by Leaf and meetings with Leaf and advisors representing Lund University.

#### **3.5.1 Empirical Gathering**

When gathering empirical data from a case study, three techniques are suggested: *interviews*, *observations* and *archival analysis* (Höst et al., 2006). Due to the nature and problematisation of this thesis, all suggested techniques were taken into consideration. Moreover, the empirical data was supported through meetings with Leaf representatives and advisors from Lund University.

##### **Observations**

To obtain a better understanding of the innovation process at Leaf, in which the department of Front End Innovation plays a central roll, participating observations were performed at the company headquarter and at one of the plants. A participating observation, also referred to as ethnographic method, means witnessing group activities, practises and routines that are carried out in an organisation. The notes that are taken down during these observations are then summarised in a report. (Bryman & Bell, 2005). Observations in the context of this thesis were conducted while following the daily work of the innovation team and the product developers at Leaf's plant in Gävle. This included department meetings, laboratory work and subsequent analysis and sensory evaluations. Simultaneously, discussions and conversations, stating views and opinions of the personnel observed, were recorded.

##### **Interviews**

A total of 11 interviews have been conducted with representatives from different operations at Leaf and from two suppliers of raw material. Out of these interviews, 10 have been conducted face to face and one interview has been over telephone. Representatives from Leaf included people working with product development and innovation in Gävle, one working with value engineering, two representatives responsible for procurement of raw material and one person from marketing as well as the director of innovation. Interviewees at Leaf were selected based on criterions including that the respondent had a supplier contact, represented different parts of Leaf and preferably had a role with insight in the innovation process. Interviewed representatives from the two selected suppliers were three sales representatives. The two suppliers were chosen so one represented bulk ingredients such as starches and glucose and the other aromas. The choice to interview both representatives within Leaf as well as representatives from suppliers was natural since we aimed to have both parties view of the relationship. Interview questions were constructed to

cover identified factors in the theoretical framework and adjusted to fit respective interviewee and his or her role.

All interviews were conducted with a semi-structured approach, that by telephone as well as those face to face. Interview template (Appendix I-III) was used during all interviews, however, the questions asked were adjusted for the interviewee and how he or she responded. The approach of semi-structured interviews was chosen with the intent to have interviewees describe issues and opinions in their own words, as well as give room for reflection and emotions. This possibility to add feelings to the answers is also one of the strengths with the semi-structured approach. (Bryman & Bell, 2005)

All interviews have been recorded, and transcript, and both authors have been present during all occasions.

#### **Documents and Archives**

Documents and archives provided by Leaf, primarily analyses of the confectionary market and the industry in general, trends and consumer preferences, were added to the foundation from which to interpret the subject and the on-going case study. However, due to the non-disclosure act signed by the authors, the use of this information source was limited.

#### **Meetings with Leaf**

Regular meetings with Leaf representatives in Malmö and Gävle were conducted throughout the work with the thesis. Due to the distance to our supervisor situated in Gävle, weekly meetings were held by telephone, while monthly meetings face to face took place with our co supervisor situated in Malmö. The meetings have resulted in valuable feedback on our work and how to proceed with the work. Also, much inspiration and motivation have evolved from these meetings. A final presentation of our project was conducted at Lund University in mid May in 2012, where our supervisors from Leaf attended.

#### **Meetings with Advisors**

Frequent meetings have been held with our two advisors from Lund School of Economics and Management and Lund Institute of Technology, both belonging to Lund University. Their knowledge and experiences have guided us through this thesis and provided us with appreciated, inspiring and interesting discussions.

### **3.6 Empirical Presentation**

Gathered empirical data highlights certain parts of the relationship between Leaf and its suppliers, why focus in the empirical presentation is on the parts considered most vital for the collaboration. These identified important events are presented as a chronological, historical exposé covering the relationship from the initiation of supplier cooperation, through how the continuous work is carried out and how this

affects the approach to innovation in the company. This particular way of presenting the empirical findings was chosen since it describes and pinpoints the important factors in relation to what has been found in the studied theory. The factor of chronology was cared for differently in the theoretical framework where factors were divided in necessities, relationship structuring and innovation facilitation but since the resemblance to a love affair was so evident, the choice to embrace this metaphor in the empirical presentation seemed exciting. Moreover, it gives the reader a pleasant and logic review of the conducted study.

To further emphasise what was said during the interviews the empirical presentation includes several quotations from the interviewees. At times when the interviews were not conducted in English, the quotations were directly translated.

### **3.7 Analysis Method**

As previously mentioned, a pattern-matching approach (Yin, 2003) has been used as analysis method in this thesis. To explain, this means that the analysis was performed in a manner where the theoretical framework was applied on the gathered empirical data. Important factors identified in theory were compared to the empirically identified factors in order to identify overlaps. Also, empirical findings were the basis for new thoughts and possible refinements of the preliminary theoretical framework. The choice of analysis method was considered to be the most suitable way to address the purpose and issue of study. Moreover, the chronology introduced in the empirical presentation was by choice not cared for when entering the analysis and the reason for this lays in the insight that factors and activities are carried out cyclical rather than sequentially, analogous to a relationship, and can therefore not be categorised based on a certain order of occasion. The developed theoretical framework after empirical application was named the License to Ally Framework (L.A. Framework).

### **3.8 Method Evaluation**

As stated in the beginning of this chapter Jacobsen (2001) points out the importance of performing all research systematically and this also comes down to the issue of *validity* and *reliability* of conducted research. When conducting qualitative research, it has been argued that the term *validity*, which in definition covers measuring and hence plays a more important role in quantitative research, needs to be somewhat redefined when applied in qualitative research. Instead, quality in qualitative research is better determined by criteria such as *trustworthiness* and *authenticity*. Where the term *trustworthiness* includes the four sub-criteria, *credibility*, *transferability*, *dependability* and *confirmability*. (Bryman & Bell, 2005) To ensure trustworthiness throughout the study a number of precautions were taken and these are explained below.

When theories were searched for, a majority of the sources were found in published articles in acknowledged journals. Although those articles were written in other purposes and with other problematisations, trustworthiness was strengthened by continuous comparisons with other sources. The empirical collection of data was mainly conducted through interviews and observations connected to the case study and its historical background. Key personnel at Leaf involved the Innovation Director, Innovation Manager, Marketing Manager, Front End Innovation Team Leader, Project Manager of Value Engineering, Category Sourcing Manager, Sensory Manager and product developers. Furthermore, three Key Account Managers, representing starch-, glucose- and aroma suppliers were interviewed. The validity of our empirical gathering might be questioned since relations between the interviewees existed both internally at Leaf and across its organisational boundaries. However, the validity was strengthened by interviewing people with knowledge within different areas and with different approaches to the problematisation at hand as well as complementing interviews with thorough observations. The use of several sources for data collection was made in a triangulating manner, with the aim to increase credibility of gathered empirics. (Bryman & Bell, 2005) The use of secondary data might also increase validity (Eisenhardt & Graebner, 2007).

The same way which *validity* is translated into terms better suited for qualitative research, *reliability* is described as *dependability* in this context. To achieve dependability, authors are to take an auditing role and assure that the entire research process is documented and available. (Bryman & Bell, 2005) To create dependability to the empirical data in this study, a recorder was used during all interviews and for some observations, followed by immediate transcripts that served the purpose to reduce the risk of misinterpretations. Both authors were present at all conducted interviews and observations, aiming to ensure that the authors own values did not affect the study and also to increase reliability by inter-rater agreement. To further strengthen the dependability in this study a cross checking precaution was performed where interpretations and perceptions obtained during the interviews were discussed with the interviewees, allowing them to correct possible misconceptions.



## **4 Case Study: Collaborative Upstream Innovation in the Confectionary Industry**

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*Chapter 4 will give an introduction to the confectionary industry where Leaf, the company of this study, operates in. Innovation will then be discussed in the context of the industry in general and Leaf in particular. This discussion is followed by the chapter's final section, where a Front End Innovation project at Leaf is described.*

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### **4.1 Introduction to the Confectionary Industry**

The confectionary industry consists of chocolate, sugar confectionary, chewing gum and cereal bars and was worth an estimated USD 149.3 billion in 2010. This number corresponds to a 3 % compound annual growth rate for the period spanning 2006-2010. In value terms, sales of chocolate are equivalent to 50.1 % of the market's overall value, which makes chocolate the most lucrative segment within confectionary. (MarketResearch.com, 2011) In terms of volume, however, sugar confectionary accounts for roughly half of total sales. (Scott & James, 2011)

Though the confectionary market has become fairly matured in several regions, for example the Western Europe and North America where consumption levels basically have been static in recent years, the market as whole continues to grow and has done so for the past decades. While consumption in most developed countries has maintained on a level of approximately 11 kg per person per year (Scott & James, 2011), the market has experienced a growing customer base, and also a wealthier such, in Russia, China and India. Besides growth in these regions, the market has continued to develop as a result of an increased number of consumers in developing countries. (Research and Markets, 2012) The overall performance of the market is forecasted to decelerate thus maintaining an annual growth of 3 %. The main reasons for the market slowing down are mainly due to increased perception of health issues associated with confectionary, growing competition from other kinds of snacks and demographic changes on the market. (Thomas, 2006) Given that, the market value is expected to USD 173 billion by the end of 2015. (MarketResearch.com, 2011) Further, the market is expected to remain rather fragmented, where today's top five manufacturers accounts for less than half of value sales (Research and Markets, 2012) and the leading player generates just slightly over 15% share of the market's value. (Business Wire, 2012)

Regarding the European and Nordic confectionary market, the former accounts for almost half of the global market value. (Business Wire, 2012) Presumably, this is a result of higher chocolate consumption per capita in European countries compared to other countries. In comparison with the rest of Europe, the Nordic market seems to have a particular sweet tooth for sugar confectionary (Scott & James, 2011), as the annual consumption of such is equal to 8 kg per person in Finland, Norway and

Sweden per year. The Nordic confectionary market, including Sweden, Denmark, Norway and Finland, amounts to EUR 3.6 billion and has a relatively stable growth rate of a few percentages annually. (Cloetta AB, 2011) However, for the Nordic region as well as the global confectionary market to continue growing, the industry must offer products that attract both new consumers and existing such. In that sense, innovation seems to play a significant role for the industry's future growth.

#### 4.1.1 Innovation in Confectionary Industry

*"Product innovations are a key driver and a totally decisive success factor in the confectionary industry"*

Cloetta AB, 2011

As the quote above states, innovations account for a large portion of company growth and success in today's confectionary market. Therefore, for a company to maintain or enhance its market position within the confectionary industry the company must, on a regular basis, develop and launch new and existing products that attract new customers. Still, the company must not forget the importance of retaining its existing consumers why modernising the product portfolio is as important as the former.

In order to develop products that meet consumer needs and their preferences when it comes to confectionary, market analysis and trend monitoring are two useful means. In short, these tools provide valuable information of what the consumers demand, today and tomorrow, and that by thorough analyses of changes in consumption behaviour. The information is essential as it often makes a starting point in both product development and innovation activities. However, whether the company's focus is to come up with a new product or to re-launch one, development activities are often connected to one or a combination of the following four aspects of a product: *ingredients, flavouring, colour, shaping and package design*. (Cloetta AB, 2011)

Given the focus of this study, only the former three aspects will be addressed in more detail in the section that follows. Though product- and package design are good areas for innovation, upstream collaboration is more likely to evolve around raw materials such as ingredients, flavouring and colouring. In line with this, only raw material in traditional sugar confectionary have been taken into consideration, which in turn have been divided into *texturisers, sweeteners and flavourings and colourings*. A short description of the raw materials and their characteristics is presented in Appendix IV. This chapter will now continue with an introduction to the case company and how innovation is conducted within this certain company.

## 4.2 Introduction to Case Company

The company of this study, Leaf, is market leading within sugar confectionary, pastilles and chewing gum in the Nordic region and had a turnover of approximately EUR 516 million in 2011. During the same year, Scandinavian markets of Sweden, Norway and Denmark answered for EUR 153 million in turnover. (Leaf Sverige, 2012)

In mid February 2012, Leaf became a part of Cloetta group after a merger between the two companies. Similar to Leaf, Cloetta also has a history as leading player on the Nordic market thus with a considerable attention to chocolate and concentrated on the Swedish market. One reason behind the merger was the potential for cross selling chocolate through Leaf's sales organisations outside Sweden. By that, Cloetta group strives for the whole Western European market, which was estimated to EUR 35.6 billion in 2010. (Leaf EU, 2012) Altogether, the new corporate group is represented on 50 markets and holds a leading position on the Nordic as well as the Dutch and Italian confectionary market. (Leaf Holland B.V., 2011) Today, Sweden is the main market with 28% of Cloetta group's total sales (Leaf Holland B.V., 2011) and a yearly turnover of approximately SEK 6 billion is expected. (Dagens Nyheter, 2011)

Though the merger is an important milestone, and a recent such, in Leaf's history, the section that follows provides a background to Leaf before the merger since the study as well as the project was initiated before this decision was upheld. Also, the merger and reorganisation that follows will not have substantial influence on the operational work at Leaf until the beginning of 2014. That is, when the transfer from Leaf's production site in Gävle expects to begin.

Leaf was formerly owned by CVC Partners and Nordic Capital with headquarters in Solna in Sweden and in Oosterhout in the Netherlands. In 2010, the company had approximately 2400 employees of which roughly 430 were located in Scandinavia. Besides Scandinavia, Leaf operates on the Finnish, Dutch, German, Belgian, British and Italian market thus are Leaf's products distributed outside of these markets through networks. Leaf constitutes of three commercial units in the Scandinavian region, a Swedish, Danish and Norwegian such. All units are, however, supported by Scandinavian functions for Finance, Supply and Human Resources and also global such when it comes to Innovation, IT, Production, Purchasing and Logistics. A majority of Leaf products are produced in-house in the company's 11 production plants, all located in Europe. (Leaf Holland B.V., 2011) Leaf itself does not develop any raw material in-house thus ingredients are bought from suppliers. These suppliers have their own R&D and the possibilities to be application oriented due to pilot-scale equipment similar to Leaf's.

The business involves production and sales of products within two main categories: *Enjoyment* and *Refreshment*. The former includes sugar confectionary and the latter represents pastilles and chewing gums. In terms of sugar confectionary, Leaf offers

marshmallow, wine gum, liquorice, toffee and hard caramels. (Leaf Holland B.V., 2011) Before the merger with Cloetta, Leaf was represented on 7 of 10 markets with the highest consumption of sugar confectionary per capita, which gives an indication of Leaf's former product portfolio. The merger, however, will not have significant effect on Leaf's portfolio of strong brands, where the most renowned ones include Malaco, Läkerol, Ahlgrens bilar, Red Band, Sperlari and Tupla. (Cloetta AB, 2011)

#### **4.2.1 Innovation at Leaf**

Leaf's vision is to become the most admired company within the confectionary industry. To reach this position, Leaf states that being an innovative company is one key aspect to take into consideration. In 2011, Leaf spend EUR 3,4 million on R&D activities with the purpose of *"maintaining a flow of new products that will lead to profitable growth in the future"*. (Leaf Holland B.V., 2011)

Within Leaf, product development and innovation are centralised functions. Regarding the latter, however, Leaf has five innovation centres located in the Nordic area, Netherlands, Italy and Slovakia. Leaf applies a general NPD process, as the one described in the theory chapter, when developing new products. Since 2010, this process is supported by a FEI process, which was also described in chapter 2. In short, FEI at Leaf includes opportunity generation, technical evaluation and idea selection, which are then being transferred to the NPD phase. The FEI teams, one for product development and one for packaging development, within Leaf consist of one representative from each innovation centre and are managed by a team leader. In addition, when it comes to incremental product improvements and increased productivity Leaf has a separate value engineering department handling those kinds of issues.

### **4.3 Observation of Front End Innovation at Leaf**

#### **4.3.1 The Project: New starches – New textures**

The project *"New starches – New textures"* was initiated as a FEI project in August 2011. The initial idea with the project was to reduce drying times and hence make the production process more efficient. The idea to use a different type of starch to decrease drying times descended from a supplier workshop where the idea was presented and picked up by a member of the FEI team. At that moment, other ideas were prioritised. When the idea to focus on reduced drying times came up again, Leaf knew that it was possible to switch the ingredients and therefore they turned to the supplier who initially presented the starch. Unfortunately, the supplier had cut the required starch from their portfolio and instead, they presented carrageenan, which came to be this supplier's solution to the challenge of shorter drying times. Leaf also contacted two additional preferred suppliers, where one presented pea-starch as an option. Therefore, both pea-starch and carrageenan are ideas that have come from suppliers. (For the interested reader, more information about the conducted project can be found in Appendix V and Appendix VI).

When presented for marketing directors the aim of the project had too much of a value engineering purpose to be picked up by FEI and the scope was adjusted to finding a new and interesting texture, since both the pea starch as well as carrageenan could have this affect as well. The scope of the project was set to be a bit diffuse, which is typically the case in FEI projects. Moreover, when the origin of the project was explained to us this raised the interest in studying the collaboration and idea exchange with suppliers in more detail. However, due to non-disclosure agreements concepts will not be presented in this report.

## 5 Empirical Foundation

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*The fifth chapter consists of important findings from the gathered empirical data. The starting point for the empirical presentation is an identified factor of chronology similar to the phases in a love affair. This has been reflected through the following five phases of a relationship: The first crush, It's complicated, Opening up, Tie the knot and Getting one flowers.*

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To start with, what became evident when going through the empirical data gathered was the resemblance to the chronology of a love story, which was not cared for in the theoretical framework. Therefore, this chronology will be introduced in the chapter that follows, as the order of occurrence of those success factors discussed in the framework might affect the outcome of an upstream collaboration. The presentation of this chronology is inspired by the different phases of a love affair, given that, findings from the empirical data are divided under the following five phases: *The first crush, It's complicated, Opening up, Tie the knot and Getting one flowers*. Quotations have been presented in a way where the department behind the statement is referred to, rather than the person who said it.

### 5.1 The First Crush

The first crush reflects the beginning of a relationship where one is in the search for a partner that can match one's specific criterions, whether it is for a shorter period of time or a longer commitment. The first crush is simply about finding an attractive and compatible partner that considers one interesting to start dancing that tango with. However, to accept such invitation one must be ready in both mind and heart, where support from one's closest surrounding is greatly influencing.

#### 5.1.1 Match Making and Compatibleness

When deciding on which supplier to do business with, Leaf emphasise five fundamental requirements that the supplier must meet. These requirements include supplier having the right prices, providing enough volumes, a sustainable and solid supplier and also one that understands Leaf's business.

*"The right supplier means having the right price. A unique ingredient isn't enough – the margins must be good as well."*

Leaf Innovation, 2012

*"The best relationship to the best price"*

Leaf Procurement, 2012

Historically seen, price has always been, and still is, considered the basic criterion when it comes to sourcing at Leaf. However, additional aspects have become

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increasingly important and therefore included in Leaf's decision base. This is mainly due to Leaf focusing more on what is referred to as its preferred suppliers, a number of two to three selected suppliers per ingredient. The relationship with those suppliers is considered more long-term and includes close cooperation and communication in an open manner.

Though Leaf would consider its preferred suppliers as complementary to each other, Leaf still stress the importance of having at least one back-up supplier if one cannot support enough volumes or if another supplier would raise prices. In line with this, Leaf still does business with other suppliers than the preferred ones but only when none of the preferred suppliers can provide a specific material or ingredient that the non-preferred can. Also, there have been times when Leaf have chosen to continue to buy materials from non-preferred supplier due to too high transfer costs associated with a switch to a preferred one. However, as Leaf strive to harmonise ingredients today and in the future it is more likely that the focus on preferred suppliers will continue as preferred suppliers can provide valuable scale advantages that smaller suppliers cannot.

Compared to other suppliers, Leaf put certain demands on its preferred ones since those are basically guaranteed large volumes. Besides the requirements stated above, preferred suppliers must be represented on all of Leaf's markets, hold economies of scale, provide excellent product quality, offer good service and support and also participate in development and innovation at Leaf.

*"Collaboration with suppliers speeds up the innovation process, markedly!"*

Leaf Innovation, 2012

When comparing today's situation with the situation 10 or 15 years back in time, when Leaf did not have any preferred suppliers, more attention is drawn towards its possibilities and willingness to add value to Leaf. In that sense, Leaf has a relatively big supplier base to choose from and is therefore in a position able to handpick the most proactive suppliers. However, when it comes to proactivity Leaf express a wish for those suppliers to be more willing to help Leaf strategically and throughout the company's innovation process, other than just helping out on a short-term basis.

### 5.1.2 Internal Alignment and Support

*"It's about producing and selling more volumes. We don't need any additional candy bags. What we need is something new and revolutionary, that creates a whole new market. Unfortunately, the suppliers are not organised for that today."*

Leaf Innovation, 2012

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Though all of Leaf's preferred suppliers have the internal capabilities, in terms of pilot-scale plants, equipment, resources and competencies, none of them are organised or formed in a way that is necessary for such collaboration to evolve. While Leaf argues that its own organisation, theoretically, is arranged to cover more long-term plans, Leaf's suppliers are not capable to handle plans that cover more than one year at a time.

*"Leaf has visited their biggest suppliers in order to present the Leaf organisation and a suggestion of the new way of working. Though all suppliers have the capacity for it, only one jumped on the idea."*

Leaf Innovation, 2012

In order for suppliers to be proactive and add value to the collaboration, both Leaf and suppliers argue for the need of suppliers being initiated in as early stage as possible. Though Leaf means that the company is organised for that kind of early involvement, Leaf's FEI department admits that innovation does not fully influence the company all the way up to executive level, which in turn might affect the innovation process in a negative way.

FEI point out that in order to have a close and fruitful collaboration with other departments at Leaf the complete organisation must understand the idea behind FEI and give them more freedom and fewer boundaries opposed to how structured Leaf usually works. For example, as soon as marketing gets involved too much in a project they start setting deadlines and launch dates on everything, which is not the intention as FEI are supposed to work with projects in a calmer and more patient way. Also, FEI feel a need for looking over the process of idea selection since the marketing directors making these decisions sometimes have not got the right or complete basis for making such decisions. Therefore, more people besides marketing should be involved when evaluating potential ideas for projects, especially those coming from the innovation department.

Besides internal issues that must be addressed accordingly, both within Leaf and its suppliers, there are several aspects and factors that must be handled in order to have a solid ground where a well-functioning relationship between the companies can evolve. In other words, for a relationship to fully reach its potential it is important to address more complicated and sensitive issues, whether one likes it or not, and to do it as early as possible in the relationship.

## 5.2 It's Complicated

The second phase tackles those more uncomfortable issues that probably everyone that has been in a relationship would agree on must be sorted out in order for the relation to continue. In that regard, the phase includes questions of balance between the partners involved, if they are dependant on each other or not and how that might affect the situation. Also, it covers the important aspect of trust, which is



strongly related to uncertainty and doubts that might exist. The phase is also about declaring if the relationship is worth developing and if yes, under what conditions.

### 5.2.1 Power and Dependencies

Leaf implies that the company, in many cases, has its suppliers wrapped around Leaf's fingers and is therefore in a better position of influence than the suppliers typically are. This is mainly due to Leaf being a large confectionary company with well-known brands and several operating markets. By that, the suppliers interviewed consider Leaf as an attractive customer and important such since doing business with Leaf basically means suppliers getting large volume orders.

*"You come to an agreement and then you do business and it's all about keeping the customer satisfied."*

Sweetener supplier, 2012

On the other hand, the size of the supplier is also an important aspect when it comes to power and dependencies as Leaf's position somewhat diminish with growing suppliers. To avoid this kind of situation Leaf prefers to work with suppliers that are equal or more dependent on Leaf than the other way around. Additionally, it is more important that the suppliers show proactivity and have the time and interest for Leaf than it is for Leaf to work with a large supplier. This is of certain importance since Leaf does not develop any raw material in-house. Instead, all development of confectionary ingredients are in the hands of the company's suppliers, which might, in line with the previous reasoning, reduce Leaf's influence in the relationship. Similar to this, suppliers that have patented ingredients can sometimes undermine Leaf's negotiation position if it is obvious that Leaf wants to get hold of a specific ingredient.

As the reasoning above indicates, both Leaf and its suppliers might experience a situation where one part is in a better position compared to the other one, in terms of power and influence over the relationship. However, as power can be distributed and shifted in a relationship, no one can be certain of keeping its position in that relationship forever. This fact will lead us to the dimensions of managing uncertainty and risks in a relationship, which in turn is directly related to the first topic of discussion, namely that of trust.

### 5.2.2 Trust

Leaf as well as the company's suppliers emphasise trust as an important part of every business relationship. From Leaf's point of view, a mutual understanding of what to share and not to share with others outside the collaboration exists in the relation with all of Leaf's preferred suppliers. However, not everyone at Leaf would agree on that statement.

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*"You don't want to tell the suppliers too much. After all, they are in contact with our biggest competitors."*

Leaf Innovation, 2012

One supplier argues that it has made efforts in terms of getting Leaf to understand that Leaf can trust the supplier and that this supplier will not share any information from Leaf to its competitors. From the supplier's perspective, there are no risks associated with Leaf being too open in their relationship with each other, especially not when there are agreements in place confirming this fact. Still, suppliers wish that Leaf could be even more open and share more information.

*"We have a mind-set where we keep customers separated and do not share information."*

Sweetener supplier, 2012

With that in regard, one supplier means that Leaf does not fully realise to what extent and how the supplier could help Leaf develop its business. This recently became obvious when the supplier and Leaf sat down for a discussion concerning problems in the communication. While Leaf had the impression that support was only available from the supplier's technical expert, the supplier meant that the entire company was ready to provide Leaf with service and support, and that on many levels. In that sense, the people working at Leaf must ask themselves to what extent they want to open up and really trust its suppliers. One supplier stresses that when it comes to R&D there is huge potential for knowledge transfer between different units, but for that to happen there is a need for the right information from its customers. However, from Leaf's point of view the degree to which Leaf can be open towards the company's suppliers is highly dependant on the subject at hand. For example, there are generally no boundaries on what to talk and not to talk about when it comes to aromas and flavourings.

When speaking of trust, besides daring to be open in a relationship both Leaf and its suppliers emphasise meeting expectations and act according to what one has agreed upon as vital for becoming a trustworthy collaborative partner. In that sense, it is all about managing expectations and act in a manner that will not harm the other part.

*"We like to see it like this... We run our factories and processes as smooth as possible, just like Leaf wants to produce candy as smooth as possible."*

Sweetener supplier, 2012

Though relationships based on trust usually need less monitoring than those based on control, uncertainty and risks do occur and influence any kind of business relationship.

### 5.2.3 Uncertainty and Risks

According to Leaf, there is a tacit agreement within the industry not to share information to others why the risk of information getting spread is considered low. At the same time, one supplier means that there is always a risk associated with open relationships, as there is almost always a chance of information getting in the hands of others outside the collaboration. This risk might undermine the whole idea behind the relationship in terms of limiting the possibilities to be open and to share and exchange information. The same supplier would not say this risk is too big of a limitation when speaking of its relationship with Leaf, as there frankly is “no such thing as the new candy”. However, as Leaf put it, though it is not rocket science being discussed, Leaf would most likely address risks and uncertainty in a different manner if the company came up with something that would revolutionise the market.

Furthermore, procurement states that there is a potential risk in a relationship if one partner does not see the relationship as long-term or if the companies in some other way view it differently. Therefore, procurement argues for constantly monitoring the performance of the supplier to make sure that they perform accordingly. One of Leaf’s purchasers explained that he had to visit Leaf’s Chinese suppliers and spend time with them in order to get to know them and understand whether he could trust them or not. The purchaser meant that if you meet the suppliers face to face they cannot tell lies, and if you get to know them you will soon realise whether they are honest or not.

*“It is a constant war with some suppliers – either you die or I die”*

Leaf Procurement, 2012

The same purchaser then told a story about a specific Chinese supplier that had a history of playing games and lying to its customers. On one specific occasion, one of the supplier’s managers told Leaf that it would stop producing raw material to Leaf if Leaf would not agree on the supplier’s price increases. The purchaser then called his Chinese contact, which in turn contacted the production site and got to find out that there actually were no plans of shutting down the production. The purchaser returned to the manager, pushed back and saw through the supplier’s lie. This instantly made him realise that the supplier was not, and would never be, reliable to work with. With that in mind, there is a risk if Leaf focuses too much on one supplier and, so to speak, “puts all its eggs into one basket”. Therefore, it is important for Leaf to split the risks between different suppliers. Furthermore, procurement argues that Leaf must focus on all preferred suppliers as they hold different kinds of expertise, but also to be fair as a partner by giving them a more or less equal amount of Leaf’s business. Somewhat in line with this is one supplier expressing competition on their market as important as it is helpful to benchmark one supplier’s quality with others.

*“Competition is healthy as long as you’re still in the game – sometimes you win and sometimes you lose.”*

Aroma supplier, 2012

In the same context, to make sure that the suppliers are trustworthy procurement must understand which suppliers that persistently provide high quality and which ones that are appreciated by Leaf and which are not. For example, if one supplier lack in adding value to Leaf, procurement must push them to understand the importance of being proactive in order to get volumes from Leaf. Similar to this, as Leaf strives for supplier participation on a strategic level and in innovation, the suppliers must get used to think in a way that they are normally not used to. For that to happen, trust seems to be a vital part for the relationship to develop, however, as both Leaf and its suppliers express there is an obvious need for some kind of security that can manage potential uncertainty and risks the relationship.

*“Though every business relation involves a degree of trust, you must have the papers in place.”*

Leaf Innovation, 2012

#### **5.2.4 Contracts and Agreements**

*“Agreements make it possible to talk about everything – how we think, how we work and what kind of ideas we have”*

Leaf Innovation, 2012

Although Leaf emphasises an open relationship with its suppliers, agreements and contracts are still important. Confidentiality agreements, for example, are the basis for an open relationship in the sense that neither Leaf nor suppliers must think too much about what one can and cannot talk about with each other. However, Leaf must be open towards other suppliers than just the preferred ones why Leaf usually write exclusivity agreements with them, which means that Leaf is the only company that is allowed to use a specific ingredients or raw material in a specific product during a specific period of time.

*“Look long-term but do not put it on paper!”*

Leaf Procurement, 2012

All of the suppliers that were interviewed express the relationship with Leaf as long-term even though it sometimes can be difficult to establish or even discuss long-term plans or agreements together. The length of written contracts depends highly on the market, which in turn is under constant change from being a seller’s market to a buyer’s market. This is due to fluctuating prices on raw material, impossible for any of the companies to steer in their direction. Consequently, contracts regarding prices are normally not written on more than a few months at a time nor are contracts of securing raw material due to short product life cycles in the

confectionary industry. However, Leaf's procurement department and the suppliers do negotiate and agree on raw material prices once a year.

*"It's tricky... You want to work long-term, but at the same time, everything must go so quickly!"*

Leaf Innovation, 2012

Though long-term agreements cannot be written between Leaf and its suppliers, the suppliers still see the relationship as long-term as the relation with Leaf is based on more than just contracts, it is also characterised by for example trust and a common view on certain things. In line with this, procurement argues that length of written contracts is not at all related to the length of a relationship. Therefore, even though a preferred supplier is not referred to as a long-term relationship on paper, both Leaf and its suppliers know that the relationship will continue unless something unforeseen happens. Given that, procurement usually do not want to commit on anything on paper, besides prices, because it cannot see the value of it. After all, suppliers are well aware of the fact that procurement is not able to change supplier that easily and also that they normally would not do such a thing. If procurement did want to leave a supplier, this would need to be done very carefully with solid arguments brought to the table. Anything less would be considered unprofessional from Leaf's side.

Although Leaf sets up written contracts, confidentiality agreements or non-disclosure agreements in all of the company's business relationship, procurement states that the company lacks internal contract management. In that sense, there are several improvement areas suggested, for example consolidation of contracts into one planning system as well as regular business reviews and evaluations of portfolios that Leaf has agreed upon. Also, though any department at Leaf is free to speak to suppliers one must keep in mind that as soon as one supplier starts to talk about prices, procurement must be involved. Otherwise, contracts would be based on negotiations between the suppliers and Leaf representatives that are not as skilled negotiators as procurement.

To have a degree of trust, diminishing potential risks and uncertainties, and the same time having the papers in place seems to be essential parts of a business relationship. With that in mind, it is rather easy to understand how these parts can contribute to a more open and transparent interaction between the partners involved. This leads to the third dimension of a relationship, that of opening up to each other.

### **5.3 Opening Up**

Once the two initial phases are overcome the phase of partners opening up to each other comes rather naturally as they now, more than ever, know where the other partner stand. The third phase is therefore about developing the relationship in the

right direction, which is a result of a more open communication that allows them to speak more freely to one another and also reveal their deepest secrets and desires.

### 5.3.1 Strategy, Knowledge Sharing and Transparency

Leaf's initiative to increase cooperation and transparency has been welcomed by suppliers, why transparency and communication during on going projects is now more open and involvement and supplier participation is high. There is also a growing willingness to participate in innovation and share information as well as strategies. Increased openness is an initiative from Leaf management with the intention to form partnerships where suppliers innovate in line with Leaf strategies. Although suppliers are eager to get hold of strategies the terms of a partnership is still to be worked out.

*“Cooperation is positive since suppliers can give input and the process is speeded up. We can focus on our core competence and do the finalisation of concepts if suppliers present a recipe or raw materials that can give consumers a new taste experience.”*

Leaf Innovation, 2012

Early involvement in development projects is stressed by all parties. Suppliers want to provide raw material, procurement wants to make sure the best supplier in terms of price, quality and relationship is picked and innovation wants to access supplier knowledge in the development process. Innovation also becomes easier when it is “allowed” to speak to suppliers in exact terms, without the fear of revealing too much. This openness is also appreciated by suppliers, saying how much easier it is to help and be accurate when plans and expectations are made clear. Being open also strengthens the relationship, making it easier to work together in future projects.

*“Leaf is very open in some cases, but usually suppliers are involved when we know what flavour we want and when date of commercialisation is set.”*

Leaf Value Engineering, 2012

Suppliers are also interested in an open and strategic sharing of knowledge and strategies. Though, it is apparent that focus is shifting depending on who one ask about openness and strategy sharing. From the supplier point of view, the term of sharing also involves full transparency when it comes to volumes and ingredient portfolio. Also, market information is of interest for both Leaf sourcing as well as for suppliers, and this transparency is also important in cases of changes within the companies in the sense of building trust and a good relationship. Information regarding follow-ups on orders and delivered material are provided via suppliers instead of in-house which can also be an example of transparency.

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*“This is also something that shows the good relation, that Leaf knows if something is going on within the supplier that is product related and vice versa... Or if the supplier have difficulties with a product, that they are flexible if problems are arising.”*

Starch supplier, 2012

Although, the willingness to share is not lacking, the understanding of motives and benefits of a long-term transparency seem to be absent. With too little understanding of Leaf’s products suppliers sometimes present material that does not meet the requirements in terms of shelf life for example. This affects both the project lead times as well as the relationship in a negative manner. This also becomes clear when several interviewees address the fact that suppliers present “old news” or things that have already been tested and rejected.

*“Supplier presentations are often interesting but more than often it feels like old news.”*

Leaf Innovation, 2012

Sharing is overall seen as positive and employees at Leaf as well as suppliers see this as a way to speed up the process of innovation and product development. Although, the relationship is still in an early stage and how to be open is still figured out. There is also a leap between long-term sharing and the project-specific sharing which is the most common today, where suppliers are provided with recipes or confectionary mass to apply a flavour for example.

*“The idea behind the relation with Leaf is to share as much information as possible, both in terms of products and strategies. As a supplier we are eager to get hold of Leaf’s competencies and so are they, the other way around. It’s about growing together, in a true partnership.”*

Aroma supplier, 2012

Suppliers point out that they have a lot to offer and they can help Leaf in several ways, something that maybe doesn’t always meet the eye with Leaf.

*“We didn’t know that there was so much knowledge behind a supplier of starch.”*

Sweetener supplier, 2012

For example, the quote above was said during a workshop facilitated by one of the preferred suppliers, which has its own pilot equipment similar to Leaf’s. In the context of strategy and information sharing suppliers mention the limitation in innovation potential regarding raw-material development. Although, suppliers stress that they are eager and interested to help Leaf, especially at this point in time, with a lot of changes and restructuring.

Once the strive for an open and transparent relationship has been agreed upon it is important to understand one another in order to grasp what the respective partners can contribute with, and what they can do together for the relationship. This leads us to the fourth phase, namely that of tying the knot that truly will unite the companies.

## 5.4 Tie the Knot

The fourth phase is about deepening and strengthening the relationship even further. It is a matter of understanding each other on an even higher level as well as on more levels. This bonding can only take place once both partners understand each other's needs and feel comfortable with solving them, which might require practical insights in how to do so.

### 5.4.1 Speaking the Same Language

*"One gladly works with people that understand. That also emphasises win-win in a relationship. It's about generating business, keeping promises and being honest and sincere."*

Leaf Innovation, 2012

A good personal relationship is considered very important to form a well-functioning working relationship. If there is a choice between different preferred suppliers, the choice falls on the one considered easier to work with.

*"This also comes down to the formation of a personal relationship, where the effect on the work related relationship is highly influenced by personal contact."*

Leaf Value Engineering, 2012

When it comes to comparison of different suppliers it is apparent that culture and attitude plays a major role. Communication is affected by different cultures since this rubs off on attitude and understanding. Size of the supplier also affects how well the companies fit together. If a supplier does not understand a request, this makes it harder to work with them, indicating that speaking the same language, though not literary speaking, is a key success factor in building a strategic alliance.

*"Where culture is a better fit the supplier has an ability to understand what we want and what is possible in our production facilities, while other suppliers has a difficulty to understand and translate what we want."*

Leaf Procurement, 2012

Supplier relationship is also managed through KPI's by procurement with the intention to improve the relationship. Here, hard factors like price, quality and



deliveries in time are important but also soft parameters like understanding, idea contribution and communication is taken into account.

*"[...] and more subjective is the added value, do they contribute in innovations? Do we like each other and do we understand one and other?"*

Leaf Procurement, 2012

In order to gain better understanding and build common ground in the relationship, activities such as workshops and active meetings are stressed as important. During these get-togethers knowledge is transferred, inspiration gets a shove and joint frames of reference are built. Therefore, the main intention with these trainings and workshops is to strengthen the relationship in order to gain better understanding for each other.

*"The main purpose with trainings is to speak the same language when it comes to aromas and tastes. So that one connect with each other."*

Aroma supplier, 2012

Building a good relationship takes time and it is pointed out that it can be a struggle with suppliers having a high turnover of staff, since contact persons change and relationships need to be reformed. Also, from the supplier's point of view continuity is important. All suppliers state that building a relationship and understanding the company takes time and effort.

*"Continuity is very important in a relationship as it takes time to build up such."*

Aroma supplier, 2012

There is also a caution about how to handle suppliers and relationships are managed in different ways where the relationship is sometimes viewed as a game, further enhancing the similarity to a complicated love affair.

*"You need to decide what to tell the suppliers and what not. This is a game."*

Leaf Procurement, 2012

#### **5.4.2 Relationship on Many Levels**

*"A bad relationship is characterised by supplier not being involved in new things in terms of R&D, that they don't have good contacts on all levels, the communication only is through the buyer for example. It is better if you have it on different levels."*

Starch supplier, 2012

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*“The more contact areas you have, the easier it is to get insights about the company, do business together and become a collaborating partner.”*

Aroma supplier, 2012

Relationships and strong bonds are formed when, as previously described, understanding is high and the same language is spoken. This also indicates that relationships need to be formed on many levels in the organisations since focus and knowledge differ between departments. Within innovation and product development a close and long-term cooperation is desired in order to gain a wide range of knowledge and access external ideas for innovation. This exchange is dependant on a certain level of technical expertise and a good relationship with a supplier’s technical department facilitates the relationship.

*“Innovation will remain the close contact with the suppliers. The marketing department doesn’t understand technology, ingredients etc. If they would be in contact with the suppliers, the discussion would turn out to be on the wrong level. It’s about asking the right questions.”*

Leaf Innovation, 2012

*“New ideas come to me sometimes, but I am not that familiar with the technical parts so I forward to innovation and it is up to them to decide.”*

Leaf Procurement, 2012

As discussed in the context of speaking the same language, how well size and culture of the two organisations fits is another important factor. This is the case in relationships on many levels as well, since in order to make this connection the transfer of knowledge needs to be possible.

*“Suppliers are different from each other, which also affects the relationship. A supplier might have a lot of knowledge, which would be valuable to Leaf, but if it the supplier is big it can be difficult to access the right person to transfer this knowledge.”*

Leaf Value Engineering, 2012

Contact with suppliers is frequent, both electronically and personally. The relationship today is at a level where help and support is just a phone call away. Although, this differs between suppliers and something that was noted during an observation was how the contact differed between the two suppliers providing raw material in the observed project. While one supplier were easy to contact, another supplier were not involved during the process. Also, it is once again stressed by several interviewees how important the personal relationship is and how understanding can be increased when meeting suppliers eye to eye. When it comes to cooperative innovation activities, suppliers of aromas are the most frequent contact today since innovation potential is greater within that field.

*“In a project in Israel regarding liquorice, we instantly found out how we wanted things due to us visiting the supplier. It’s hard to take decisions regarding aromas by e-mail or over phone.”*

Leaf Innovation, 2012

The importance of a relationship becomes apparent when thinking more long-term. Since the dynamics on the market changes it is important to have relationships in order and this also puts more to a transaction than price.

*“If I can choose the best one and fully focus on price, I do that. But that differs from building a relationship. You always have to keep in mind how the market changes and when you have a sellers market it is important to have established a relationship with the supplier.”*

Leaf Procurement, 2012

Moreover, strong relationships are important when there is an issue with deliveries or volumes being used. With the right connections exchanges can be done and both parties can be more flexible.

Relationships are complicated by a difficulty in understanding different taste preferences and variations between different confectionery markets. In this context it is important to have experience and an open communication to gain understanding about what is desired in the different countries. This is still an issue resulting in time losses in projects where misunderstandings appear. To come to terms with this, suppliers are eager to have even more information about what is desired, since time is an important factor to them as well.

*“The aroma suppliers have become better at knowing what Leaf wants and how they work. For example, those supplier they have worked with for a long time are aware of what strawberry flavour the Swedish market prefer.”*

Leaf Innovation, 2012

*“Being able to send three samples instead of 20 results in time saving for everyone involved.”*

Aroma supplier, 2012

With preferred suppliers Leaf can send mass to the aroma supplier in order to see the application of an aroma, which is valuable when deciding about a specific flavour. This way of working also saves a lot of time in the projects. The ability to provide physical samples facilitates the communication and when providing a new ingredient it is important to include samples for evaluation.

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*"It's up to the supplier to present a potential application for their products. For example, if carrageenan had come without the samples, Leaf wouldn't have known what to do with the ingredient."*

Leaf Innovation, 2012

Additionally, several suppliers state that they have pilot equipment where it is possible to make confectionery and hence gain a better understanding for the production process, see where problems might arise and also participate in innovation. Although, suppliers innovate to find new raw material and new applications, these innovations are typically incremental as previously mentioned and this is also standard in this business.

*"However, coming up with something revolutionary doesn't happen often, perhaps one time in a ten years period of time thus there is many things to do "for the eye"."*

Aroma supplier, 2012

The open relationship in every part of the organisations also contributes to a greater possibility of knowledge transfer. One of the suppliers explain how their sellers are responsible for communication with procurement, where ideas are transferred and at the same time the supplier's technical expert is responsible for talking to the innovation department, while there is an in-house communication by the supplier as well. This is an example of transfer in many levels and where people speaking the same language are able to discuss with each other about their area of expertise. Although, this is just the one supplier and this exceptional dialogue is believed to be highly dependant on the person behind each role.

*"Comparing Leaf with our other customers, you could say that the relationship differs in the way that there is an open relationship on all levels of the organisation."*

Starch supplier, 2012

The same supplier is also interested to take even more part in innovation with Leaf. When new ideas are picked up, it is stated by this supplier that Leaf will be the first to know. The supplier is interested in expanding the portfolio and has a discussion about future possibilities regarding new textures. It is also considered important by this supplier to know how their ingredients have contributed to the final product reaching the market.

*"That is important, being application oriented."*

Starch supplier, 2012

Unsurprisingly, Leaf as well as their suppliers realises the value of understanding what their respective customers want. The difference, however, is that the suppliers

have started to think more in terms of how Leaf thinks, that is, with regards to what their so to speak “customer’s customers” want. This leads us to the final phase of this chapter, which describes the need for putting, sometimes additional, efforts in making a relation work.

## 5.5 Getting One Flowers

The final phase of a relationship is about showing the other partner appreciation in order to keep the familiar fire in a relationship burning. By that, it is a matter of upholding the interest and to amuse one another, which sometimes means doing more than expected to light that spark once and for all.

### 5.5.1 Supplier Proactivity

*“Helping out is not the same thing as being proactive. Suppliers try to develop new ingredients and think of different applications, but it is not like they present concrete products. They aren’t proactive at all in that sense!”*

Leaf Innovation, 2012

Leaf’s suppliers are generally willing to help Leaf whenever Leaf comes forward with a certain issue or problem in one of its projects. However, it is quite unusual that suppliers show interest in supporting Leaf on a higher level, that is, on a strategic such. With that in account, Leaf believes that suppliers would become more proactive and present more value-adding ideas and solutions if the suppliers were more familiar with Leaf’s strategies and business plans.

*“It’s not like suppliers ask to be involved in the strategic work, in order to be one step ahead. We are the ones calling them.”*

Leaf Innovation, 2012

Though suppliers sometimes present new ideas and interesting samples to Leaf, more than often suppliers present things that are not in line with what Leaf is working on today, tomorrow or in the future. Also, Leaf sometimes experiences that suppliers present ideas that Leaf has already seen or tested before. Though this gives Leaf somewhat a confirmation of whether the company is on the right way or not, Leaf would much rather be surprised by suppliers presenting samples with new textures or where new technologies have been combined.

*“It’s not like the suppliers turn our world around!”*

Leaf Innovation, 2012

*“Ingredients are the supplier’s core competencies, therefore it’s surprising that they haven’t come further than they have today.”*

Leaf Innovation, 2012

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At the same time, Leaf means that there might be a particular reason why some of the suppliers are not as innovative as Leaf would like them to be. The innovation potential is simply smaller when it comes to bulk ingredients, such as texturisers and sweeteners, as those ingredients take longer time to develop when comparing to aromas and flavourings for example.

*“Ingredients are difficult... If you go to FEI, you see what is really innovative? It is only one or two things every one or two years.”*

Starch supplier, 2012

With that in mind, it is fairly unsurprising that Leaf’s aroma suppliers are more innovative than suppliers of starches or gelatines. This is also why Leaf does not expect as many ideas from suppliers of bulk ingredients as those supplying aromas. Still, both Leaf and its suppliers are aware of the fact that when something new does appear within bulk ingredients it has the potential to revolutionise the whole industry. The sweetener Stevia is a good example of that, which recently was approved by EU after several years of legal processes.

Although the suppliers are not as proactive as Leaf would want, Leaf has experienced a huge difference in terms of increased supplier involvement and suppliers providing and serving Leaf with much more than just ingredients and raw material. Nowadays, suppliers regularly visit Leaf or invite Leaf to meetings where the supplier present samples of actual confectionary, show trend presentations, conduct aroma trainings, present consumer research or demonstrate working processes and recipes used. Leaf does value these gatherings as Leaf gets inspired to come up with new ideas on their own. Also, by presenting real samples or samples based on Leaf’s existing mass it is easier for Leaf to find a potential application and gain a better understand how the mass will work in production. One supplier, for example, has equipment similar to Leaf’s where the supplier produces products similar to Leaf’s. Additionally, as those samples are “as real as it gets” it makes it easier for this supplier to sell in their ingredients to Leaf. Still, Leaf often ends up pilot-scale testing the products by applying the ingredients into one of the company’s recipes since modifications are almost always necessary.

*“Consumer insights are crucial. It’s not just about doing things, it’s about doing things first and best!”*

Leaf Innovation, 2012

As portrayed, Leaf contacts suppliers for several reasons beside that of helping Leaf with a specific problem on an on-going project. Furthermore, whenever Leaf has an idea of a campaign not seldom Leaf turns to its preferred suppliers to be provided with suggestions of for example aromas or tastes that would fit the campaign. Another reason for contacting a supplier could be in order to get better understanding of the feasibility of an idea. However, the fact remains that Leaf’s

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ideas are mainly generated internally and up until today, no products that has evolved from ideas coming from a supplier have been launched.

*“Whenever there is something new, Leaf will be the first one within confectionary to know and to try it.”*

Starch supplier, 2012

From one of the suppliers’ perspective, the company sees itself as an innovative one and do emphasise their efforts in being a proactive supplier to Leaf. For example, one supplier often forward new ideas to Leaf early in the innovation process and recently this supplier held in a training day together with Leaf’s innovation department. The supplier argues that knowledge cannot always be kept in-house why the supplier wants to help Leaf through different trainings and by sharing its expertise.

*“As a supplier, you follow the trends on the market or you come up with something new.”*

Starch supplier, 2012

Somewhat contrary to the statement above, the same supplier also say that in order to be innovative one have to listen to the confectionary market and follow its trends. In that sense, the supplier has local contacts on all of Leaf’s markets scanning the market for trends and customer preferences. Once this information has been reported back to the supplier, the information flow is coordinated through a commercial perspective and also a technical such. Another supplier, on the other hand, mean that the company sometimes is too early with innovative ideas resulting in neither market nor customers are ready for them. This reasoning is in line with what innovation at Leaf describe as a recurring issue, that of great ideas without a receiver.

*“Aromas are only limited by fantasy, however, a company’s image and brand strategies set some boundaries as well. In that sense, Leaf is pretty bold and dares to try new things.”*

Aroma supplier, 2012

Furthermore, Leaf believes that suppliers might be too intimidated by the perception of Leaf as a very innovative company that is at the forefront in the confectionary industry, especially in terms of aromas and flavourings. As a result, the suppliers might feel that they cannot contribute to Leaf so much. On the other hand, the degree of proactivity might also have something to do with the size of Leaf. Though Leaf is a big company within the industry Leaf is not always the biggest customer to their preferred suppliers. Some suppliers agree on this and state that coordination of presentations, trainings and workshops would be run differently if Leaf would be a smaller client to them.

## 6 Analysis

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*The following chapter provides an analysis based on the application of the theoretical framework on the empirical data. The analysis is carried out in accordance with the structure introduced in the theoretical framework and is then concluded with a short summary and the enriched L.A Framework.*

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The analysis of the empirical data is based on the theoretical framework (table 2) that was developed in the previous theory chapter. The framework is built upon three dimensions of success factors, which with regards to what the studied theory said were considered necessary for a functioning upstream collaboration in the early innovation process. These dimensions were divided into *Necessities*, *Relationship Structuring* and *Innovation Facilitation*, which were described in section 2.3. After conducting an analysis based on these dimensions the three new dimensions *Cognitive Abilities*, *Cultural Abilities* and *Availability* emerged. These dimensions include factors from the theoretical framework (table 2) as well as a few additional ones.

### 6.1 Necessities

#### 6.1.1 Contracts and Governance

Although contracts to some extent prevent opportunistic behaviour, the contract itself is not insurance for a well-functioning relationship. Furthermore, having the papers in place does not necessarily mean that there is a high degree of trust between the companies. With that in regard, contracts should rather be seen as basis upon which a relationship and trust can evolve. Leaf as well as its suppliers emphasises trust as an important aspect, necessary for a relationship to work out accordingly and for the partners to speak freely to one another. Contracts between Leaf and the suppliers usually are not long-term, even though the relationship is considered to be. This indicates that contracts might not be as important in the matter as stated by Mowery et al. (1996) and perhaps it is more important to focus on the underlying reason for contracting, namely the issue of trust in the relationship.

Moreover, Mowery et al. (1996) suggests bilateral contracts, that is contracts based on relatively high degree of integration between companies, in situations with enhanced supplier involvement. These types of contracts require the companies to not only work together, but also for them to share resources and knowledge interfirm-wise. Though Leaf apparently strives for this kind of involvement from the supplier's side, the contracts being used are more similar to unilateral ones as they are often complete and specific, including agreements on prices or volumes first and foremost. Additionally, even if Leaf would like the suppliers to participate more actively in the innovation process, it is obvious that Leaf expects its suppliers to carry



out these activities rather independently. Though this reasoning does not necessarily say anything about the general applicability of bilateral contracts, those contracts might be less suitable in some sorts of industries, Leaf's for example, where the industry cannot be said characterised by high degree of companies integrating.

### **6.1.2 Strategic Purpose**

For an alliance to be categorised as strategic, Bengtsson et al. (1998) argue that the ulterior motive behind the relationship must be linked to the companies' business strategies and overall objectives. Leaf's strategy towards growth and increased market share within confectionary involves growing organically, and to do so by collaborating or forming partnership with preferred suppliers rather than acquiring such. Given this, Leaf's strategy is a result of the company's active decision not to produce or develop any raw material or ingredients in-house. With that in regard, the strategic alliance between Leaf and its suppliers can be described as non-equity, as neither Leaf nor the suppliers hold any equity positions in the other company. (Barney 1997)

As described, there are several reasons why a strategic alliance is established where the most common ones are related to market-, production-, financial- or development aspects. (Mowery et al., 1996; Forrest & Martin, 1992; Håkansson et al., 1993) The most seeming incentive for Leaf to collaborate with its suppliers on a strategic level is due to the added value in the innovation process and that of developing new products, why development- and production related aspects are the most apparent ones in Leaf's case. To exemplify, Leaf expresses a strong need for looking outside the company's four walls and to involve external partners in order to generate radical ideas to the innovation process. Also, Leaf must get access to resources that the company does not possess over, that in terms of ingredients why the company, in order to reduce production costs as much as possible, strives to collaborate only with suppliers with economies of scale. However, seldom will a strategic alliance, after being established, affect only one of these aspects why companies in such alliance might experience favourable outcomes on many levels of the organisation.

While the link between Leaf's business strategy and these aspects is rather apparent, the supplier's incentive to form a strategic alliance with Leaf is not as evident. However, the incentives behind a strategic alliance must not be the same, nor must their respective objectives or company's strategies. In that sense, Leaf and its suppliers can be described as an asymmetric alliance. (Barney, 1997) However, as recently discussed one strategic purpose must not exclude another why one could question the need for categorising an alliance in line with Barney's (1997) saying, since categorising is not merely as easy in reality.

The incentives to form a strategic alliance due to development aspects might also be due to the statement made by Bengtsson et al. (1998) that successful innovation lies

in collaboration between companies rather than within the company itself. In contradiction to this statement Leaf argues that most innovations today are developed internally, even if this mainly includes incremental innovations. With that being said one might say that it is in developing the radical innovations the true benefits of strategic alliances arise.

### **6.1.3 Formalised Process for Supplier Selection**

Leaf put certain demands on its preferred suppliers, both when deciding on which to become one and after a supplier has been chosen. While theories focus more on aspects coupled to the company's objectives and goals when deciding on whom to form a strategic alliance with (Barney, 1997), Leaf mainly stresses economic aspects such as price and costs on raw material. However, as soon as those aspects, as well as Leaf's specific demands addressed in section 5.1, are overcome, the company does take more fuzzy aspects into consideration, and perhaps to an even greater extent than theories do. For example, procurement states the importance of bearing an employee's subjective perceptions of a specific supplier, in terms of appreciation, in mind when deciding on preferred suppliers. By that, one would say that Leaf to some extent relies more on intuition than after a formalised process. This might lead one to question the need for a strict formalised process in the supplier selection. Also, structuring and following such a process might be difficult to carry out, since every supplier relationship is different, which is perhaps why Leaf rather focuses on intuition and perception than strictly follow formalised and pre-set standards.

### **6.1.4 Low Transaction Costs**

According to theory on transaction costs, there are incentives to establish a strategic alliance whenever the transaction costs associated with that alternative are lower than those costs of using the market mechanism or integrating the company hierarchically. (Williamson, 1975) From Leaf's perspective, it is not profitable for the company to either produce nor develop raw material in-house why the company turns to the market to get access to such, where in turn, there are many suppliers to choose from. This is in line with Williamson's (1975) reasoning of small numbers, which argues that the market is more efficient in handling transactions if there is a fair amount of companies to do business with. However, as high switching costs might arise when moving from one supplier to another, Leaf prefers to work with a selection of suppliers called preferred ones, which Leaf collaborates with in a closer and more open manner than other non-preferred ones. The idea behind these preferred suppliers is that of developing profitable relationships, which due to those supplier's economies of scale lowers the transaction costs even more. Also, doing business with preferred suppliers facilitate Leaf's strive to harmonise its ingredients, which also cut the company's costs.

### **6.1.5 Clarity of Targets**

Though Leaf has an organised way of choosing which suppliers to do business with, especially suppliers regarded as preferred ones, theory (Davila et al., 2006; Inkpen, 1998) suggests even more structure than one might say that Leaf actually pursues. While Leaf emphasises suppliers adding value as a highly important aspect when deciding on preferred suppliers, the company lacks in evaluating how well, or even if, the suppliers have fulfilled that certain wish. Though both Leaf and the suppliers highlight understanding of how the relationship adds value to the companies as important, there seems to be a disparity in how that value is created and what it consists of. While Leaf wants its suppliers to be more innovative and develop products with regards to Leaf's strategies, the suppliers simply have not realised this wish or even understood the meaning of it. Although the clarification and common understanding of targets in the alliance is apparent it is obvious that the execution of this is a bit trickier than stated in the theory suggesting it. Moreover, one of the important outcomes of a relationship is said to be the ability to be flexible and make exceptions, which would be more difficult to act according to with more structure added to the relationship.

### **6.1.6 Risk Spreading**

Theories regarding strategic alliances stress risk spreading and reduction of risk as both incentives and advantages to why companies should form a strategic alliance. (Håkansson et al., 1993; Barney, 1997; Powell, 1996) Though Leaf has a big supplier base to choose from when it comes to bulk ingredients in confectionary, which naturally should lower the risk and uncertainty on the market, Leaf has chosen to do business with only two or more preferred suppliers per ingredient.

Furthermore, as R&D is often highly associated with risk-taking, Leaf has practically outsourced all of their raw material development to its suppliers. However, though Leaf expects its preferred suppliers to be innovative and be in the forefront of developing ingredients to Leaf's products, Leaf does not bare any of those risks that suppliers might experience in R&D. Spreading of risks is supposedly an incentive to enter a strategic alliance (Håkansson et al., 1993; Barney, 1997; Powell, 1996) but one might also see the potential increase in risk for one party if both ends of the relationship are not prepared to take on possible risks that may arise due to the establishment of the alliance. In that sense, sharing of risks might be an even more interesting factor to investigate compared to spreading of the same when entering a strategic alliance. Since this would better describe the incentives for both parties, compared to risk spreading which merely covers the benefits for one part of the alliance.

## **6.2 Relationship Structuring**

### **6.2.1 Communication**

Important in any strategic alliance is the presence of a good relationship, and establishing a solid ground for this relationship is dependant on how well parties can communicate. The term communication is of course both broad and quite intangible, but equally important to mention in this context. Theory states that communication should be frequent and direct, both internally as well as externally between the organisations. Communication within the relationship directly effects the transfer of knowledge, and indirect or absent communication will affect this in a negative manner. (Clegg et al., 2002)

Communication and the frequency of the same is referred to as crucial factor in the relationship between Leaf and its suppliers. Where communication is frequent and runs smoothly, the transfer of knowledge is also greater, as argued by Clegg et al. (2002). Moreover, how the communication is done is equally important and the formation of a good relationship requires some level of eye to eye contact, since this communication strengthens the bonds and increases understanding, which itself is a contributing factor to structuring a relationship. What is not mentioned to the same extent in theory is the importance of how the communication is carried out and also, how it is conducted. With implications and statements that eye to eye contact and tacit communication are important factors, one might take a leap at how the distance to a supplier affects the relationship. When suppliers are situated fairly close, the possibility to meet is greater and communication is facilitated. Further implying the similarity to a love relationship, physical proximity to a supplier can bring the reassurance and security of a safe haven, while the long distance relationship can be a struggle to manage.

### **6.2.2 Understanding and Transparency**

In line with the previous discussion regarding communication, understanding within the relationship is dependant on accessing the right persons in the organisation (Cohen & Levinthal, 1990). This is adopted at Leaf and understanding is maintained with many contact areas between Leaf and its suppliers. It is also important to know which information is important to transfer and to whom, also facilitated through many different contact areas between the parties.

Suppliers are transparent regarding sharing of recipes and processes, which is important in both increasing understanding for the purpose of the alliance and how value is added trough the relationship. (Inkpen, 1998) To reach a successful relationship, know-where, know-who and know-how are important over the organisational boundaries, further stressing the importance of transparency. (Cohen & Levintahl, 1990) This is also picked up by Leaf in the relationship with its suppliers, as both organisations are transparent regarding organisational changes, market information and knowledge.

Although, both Leaf and suppliers are aware of the limited innovation potential within bulk ingredients such as starch and glucose, Leaf wants suppliers within this industry to participate in innovation to quite a big extent. This requirement has been difficult for the suppliers to work according to, probably since it is difficult for suppliers to understand how they can contribute to innovation, but also due to a lacking of understanding how this would add value to the relationship.

Understanding seems to be as important as argued by Cohen and Levinthal (1990), and the part above covering contact areas and access to the right persons further enhance the discussion about supplier proximity presented above. When it comes to the factor of transparency in the relationship, once again it becomes clear how something viewed as fundamental in theory does not work out accordingly in reality. This does not implicate the factor to be insignificant for success, it rather makes one pay attention to how the black or white situation in theory often ends up to be a grey zone in reality. In this case, even though full understanding exists between parts of the organisations, the overall understanding is lacking. The empirical data stress the need for a factor of overall understanding of the relationship's aim and value, which indicates the need for the factor *comprehension* to cover this broader grasp of the relationship.

### **6.2.3 Commitment**

Successful innovation is dependant on commitment in the organisation, where management support plays a major role. (Koen et al., 2002) This commitment is something Leaf is lacking today since innovation does not reach the table of top management.

The major focus regarding commitment in theory is the support and commitment internally in the organisation (Koen et al., 2002). The empirical data also highlight the commitment between the organisations to be equally important. This external commitment also includes managing to earn up to expectations and although stressed by Leaf how important this is, the clarity of what is expected from the suppliers and their participation is not clear enough. If suppliers are to be contributors to successful innovation, their involvement needs to be clarified and supported better than it is today. This comes down to the need for a commitment to *each other* as well as commitment to *oneself*.

### **6.2.4 Power Distribution**

The distribution of power in a relationship is important and will be an issue in every relationship or alliance. In this context, power can be discussed with regards to supplier power and buyer power. (Porter, 1979) In the relationship between Leaf and its suppliers it is a constant shifting of this balance since the market of raw material shifts between being a buyers- to a sellers market. This fluctuation also makes it beneficial for both parties to enter an agreement about prices and volumes,

further enhancing the incentives for a well functioning relationship for both the suppliers and for Leaf.

The level of power that one partner possesses over is also dependent on the level of suppliers and the size of the company. (Porter, 1979) While the importance of a relationship is stated by Leaf, the comparison between the supplier relationship and a constant war is not far away. Suppliers who possess a patent for example, can put pressure on Leaf regarding prices as well as commitment to volumes. Though, theoretically suppliers holding this power can put pressure on the buyer, Leaf stresses that in a situation like this it pushes back and might even end an account even if the product is patented. This way of meeting the act of power is possible in this industry since no ingredient is rare enough, even though flavours might be patented they are still replaceable.

What becomes interesting in the context of power is how the pursue of the same does not seem to follow the rules of the game in this industry. It is possible that the fluctuating market “evens out” the dependencies between the parties and in the end it all comes down to maintaining a good relationship, since one can never know when the tide will change, so to speak.

### **6.2.5 Cultural Alignment**

Values, norms and routines does not necessarily need to be the same for organisations in the relationship, but the compatibleness of the same is an important factor. Also argued is the importance of Internal structure and culture to influence the creation and spreading of knowledge in the relationship. (Seufert et al., 1999; Simonin, 2004) This is an apparent factor in the relationship between Leaf and suppliers where both cultural alignment and attitude is stressed. Leaf works with suppliers from different European countries, which result in suppliers having different attitude about the relationship. Two suppliers are compared in this sense, where one supplier more similar to Leaf in both size as well as culture is viewed as easier to cooperate with. Although the hard factors used for evaluating suppliers such as price for example, are in place, the attitude and lack of cultural alignment towards the relationship can result in the settlement of one supplier.

Both Martins & Terblanche (2003) and Koen et al. (2002) argue for the importance of balance between chaos and structure to achieve successful innovation in the front-end, further emphasising the need for aligned cultures since both parties should support open innovation and provide support in this process. To provide the necessary support the need for understanding and a common language has become apparent. Also, many levels of contact areas in the relationship facilitates the process, why attitude is important all the way trough an organisation.

Seufert et al. (1999) and Simonin (2004) state how norms and values of organisations entering a strategic alliance need to be aligned. This alignment can be

seen in the empirical data only when reading between the lines, and this might lead one to question whether it is really more an issue of convenience. Perhaps it is more convenient to work with a company organised in a similar way and of a similar size as your own, and presumably, it might be more convenient to work with a supplier to whom you can relate. This, however, does not mean that culture is irrelevant, merely that culture does not need to be as complicated as one might think.

### **6.3 Innovation Facilitation**

#### **6.3.1 Absorptive Capacity**

Lane and Lubatkin (1998) argue that for a company to generate innovations it must hold three specific abilities, that is, the ability to recognise the value of new external information, the ability to assimilate it, and the ability to apply it to commercial ends. Leaf seems to have these abilities, which together are summarised in the term absorptive capacity. To exemplify, Leaf expresses the value of workshops or trainings where suppliers show trend presentations or customer researches and how this information comes in hand when Leaf comes up with its own ideas of products or applications. Besides presentations or research shown by suppliers, Leaf themselves conducts these kind of activities from which Leaf gets valuable input to the innovation and NPD process, especially when it comes to customer preferences or market trends. The suppliers, on the other hand, are supposedly not as good at assimilating or applying the information that Leaf provides them with. For example, the suppliers do not seem to realise the value of getting hold of Leaf's strategies even though the need to understand Leaf's business plans in order to be proactive is expressed. This fact becomes particularly clear since none of the suppliers have shown any greater willingness to participate and to be involved with Leaf on a strategic level. In line with what Leaf has said, the suppliers are simply not formed to internalise and absorb the kind of information that Leaf would want them to keep in mind when developing material or producing samples to Leaf.

This finding can lead to the question about where in the supply chain absorptive capacity is of greatest importance. Lane and Lubatkin (1998) only state the importance of the concept, but the insight that suppliers does not pay attention to the same extent as Leaf does may indicate that the proximity to the consumer also matters, perhaps even more, when it comes to the search for external input.

#### **6.3.2 Resource and Knowledge Fit**

For a fruitful exchange to take place one company must possess resources that the other company does not, why the fit of partners' resource and knowledge is important in the context. (Teece et al., 1997) Transfer of knowledge and expertise in the relationship should go both ways and here there is an understanding between Leaf and its suppliers what benefits and cumulative learning can come out of this. The level of knowledge fit is weighed in when deciding upon preferred suppliers, indicating Leaf's understanding in the importance to access supplier's resources and

expertise. Barney (1991) addresses the capabilities of a firm, which Leaf can be said to use in quite a dynamical manner, further discussed in the context of core competencies.

Moreover, besides dissimilarities in what the companies themselves do best, variations in their knowledge base is another prerequisite for an effective exchange and utilisation of each other's expertise and resources to take place. While Leaf is an expert when it comes to recipe making and producing confectionary, its suppliers' knowledge evolves around raw material and developing ingredients. However, as theory states, companies collaborating must learn the basics related to the other company's specific field of knowledge. With that in regard, both Leaf and its suppliers express an understanding of each other's expertise, which is probably a result of frequent communication and meetings supplemented with presentations and trainings.

### **6.3.3 Information Sharing**

As Chesbrough (2003) and Grant (1996) state, for a company to become truly innovative it must open up its innovation process and allow ideas, knowledge and resources to flow in and out of the organisation. In that sense, the more openness there is, the better. For that to work out accordingly, Cohen and Levinthal (1990) mean that it is important for the company to know, not only to whom this type of information should flow out to, but also to know what valuable information actually means for the company and who might be willing to share it. When it comes to Leaf, the company sure shows a great deal of openness towards its suppliers, however, in some way one might say that there exists more of a thought around openness than Leaf actually demonstrates openness in practise. While its suppliers are happy to reveal recipes and their internal production processes, Leaf is not as willing to uncover that kind of information since this is considered to be too sensitive, at least when speaking of recipes. On the other hand, the companies seem to have a well-functioning information flow as several of the interviewees say that relations on many levels facilitate so that information is actually transferred to the "right" person at each company. For example, one supplier emphasise an information flow from both a commercial perspective and a technical such. This is in line with what Doz (2006) underlines as an advantage with strategic alliances, that is, to get knowledge and information transferred properly.

The question about openness will always be a sensitive matter and the approach suggested by Chesbrough (2003), might not be possible to adopt all without consequences. Information sharing for sure is an important factor, but it seems to be more important to share the right information to the right person in the organisation, hence, all kinds of information need not be available to everyone at every time.



#### **6.3.4 Synergies and Cross-Fertilisation**

Becker and Dietz (2003) argue that for synergies and cross-fertilisation to arise in the front-end there must be a resource- and knowledge fit between the collaborating companies. At this point, as Leaf expresses that up until today no products that have originated from a supplier's idea have been launched, it is difficult to see any specific synergies between Leaf and its suppliers. However, the reason for that is probably not due to a missing resource- and knowledge fit between the companies, since that fit most certainly exists, but rather a result of Leaf not working with front end innovation for so long. Also, synergies and cross-fertilisation might be viewed as something to come out of a fruitful relationship after a time of cooperation rather than being viewed as incentives to establish the relationship in the first place.

#### **6.3.5 Focus on Core Competencies and Activities**

The resource-based view considers an organisation equal to those tangible and intangible resources that it possesses over. In order to achieve competitive advantages the theory argues for a company to maintain resources and activities that are associated with what the company does best internally and to acquire others through external channels. (Das & Teng, 2000) The resource-based theory is, by all means, in line with the business strategy of focusing on a company's core competencies, which too underlines the value of doing what the company does best in-house and to procure those resources that another company can do better externally. (Teece et al., 1997)

Leaf is a good example of a company that has chosen to focus only on what the company does best, that is, developing confectionary recipes in order to produce and sell products based on those recipes. Leaf is well aware of the fact that it is not as good as its suppliers to develop and produce raw material, which is the reasons why Leaf uses the market to access such, instead of producing it in-house. Likewise, the suppliers are probably under the impression that Leaf is better at finding suitable applications for the raw material than the suppliers are, and not to forget the benefits that come from Leaf's well-known brands and extended marketing and sales channels, why the supplier itself is not competing with Leaf in producing and selling real confectionary products. From another perspective, though Leaf and its suppliers possess different resources and perform different activities, there might be a risk that none of the companies have considered whether there are assets that neither one of them own or activities that neither Leaf nor the suppliers perform. For example, it is unclear whether any of the partners have thought about certain technologies to combine with existing ones in order to produce something new and interesting, even though Leaf express a strong wish for something like that.

Furthermore, one could question whether it is accurate for partners in a strategic alliance to only focus on their respective core competencies, especially in an alliance established for innovation reasons. As innovations more than often arise when *combining* competencies and expertise one might suggest, contrary to what theory

says, that some parts of an organisation should focus as much on the other partner's core competencies as their own. Additionally, it is important to question a company's core competencies from time to time, especially since the business landscape is under constant change and most certainly affects how "core" one's competencies actually are.

### **6.3.6 Trust Building**

In every relationship the factor of trust needs to be covered, which is frequently mentioned in the context of successful knowledge transfer as well as innovation. (Harryson, 2006) Lack of trust is also said to increase opportunistic behaviour (Williamson, 1975), which further explains the importance of the factor in the context. Still, the relationships between Leaf and its suppliers cannot be said to be *completely* permeated by trust. Though trust is stressed to be important in the relationship by Leaf as well as by its suppliers, the lack thereof is apparent when some relationships are referred to as "situations of constant war". In the case of preferred suppliers the trust is of a higher level, but also here it exists a level of suspicion and caution can be observed. This indicates a level of partner protectiveness, decreasing the possibilities of knowledge transfer.

Being able to enter a relationship fully based on trust might be a romantic illusion and some level of suspicion and fear of being hurt will probably be present, as it is in any relationship. This caution indicates that trusting one another is not without complication and something that needs to be earned by both parties and grow over time, also implying how the time horizon of the relationship comes to matter. Somewhat contrary to this some degree of non-trust, preferably low such, might be constructive for the relationship. The reasoning behind this is that tip-toeing around each other could make the partners pay more attention and dare to question the other one in a more direct manner.

### **6.3.7 Long-Term Relationship**

Dyer and Ouchi (1993) argues for the importance of sharing a history together and state that the length of a relationship is important since knowledge, insights and understanding of each other and each other's businesses accumulates over time. This is also obvious in the relationship between Leaf and suppliers, where both understanding and learning is said to be better where the relationship goes back for some time. What the theory, however, did not stress as much as the empirical data did was the importance of a personal connection and continuity of the same.

### **6.3.8 Supportive Internal Structure**

The internal structure and top management support is one of the top factors mentioned when it comes to successful innovation. (Davila et al, 2006; Martins & Terblanche, 2003; Khurana & Rosenthal, 1998; Koen et al., 2002) The internal structure at Leaf is today different from this and it is seen as an issue that the top

management is not involved in innovation. On one hand, this might be an additional factor hindering the rare radical innovations in the industry, which has also been picked up by the company and there is a strive for more visible management support. On the other hand, the environment of the fast moving industry where companies constantly need to fight to maintain shelf space and consumer attention might make it difficult for top management to show desired support since they need to focus on making money here and now.

Leaf has an ambition to access more participation in innovation from supplier but state that suppliers are not structured in a way where this would be possible. This implies that misunderstandings may occur regarding the aim of the relationship and also highlights the importance of supportive structure of the relationship, something not theoretically mentioned to the same extent as supportive internal structure.

#### **6.4 Analysis Summary and The L.A. Framework**

Based on the theoretical framework an application and analysis was performed on the Front End Innovation at Leaf and the possibilities to collaborate with suppliers in this early stage of the company's innovation process. The findings from this analysis are summarised in *The License to Ally Framework* (The L.A. Framework, figure 7), an extended version of the initial theoretical framework that was applied on the thesis's empirical foundation. Seemingly, the previously discussed factor of chronology was somewhat left behind by choice when entering the analysis why chronology is not included in The L.A. Framework either. The reason for this lays in the insight that factors and activities are carried out cyclical rather than sequentially, analogous to a relationship, and can therefore not be categorised based on a certain order of occasion. Therefore, The L.A. Framework is developed with regards to this particular finding and several others that the analysis resulted in, illustrating that factors and activities in a strategic alliance can be carried out both parallel and iterative and also that there is an evident dependence between those.

The L.A. Framework is based on three dimensions: *Availability*, *Cognitive Abilities* and *Cultural Abilities*. The respective dimensions include different factors and activities that, to a lesser or greater extent, needs to be addressed in order to develop a relationship where successful innovations can arise in this upstream collaboration. The dependence between these dimensions can be discussed in terms of a two-pronged balance that the model as a whole must manage. Firstly there is a need for a balance between the cognitive abilities and cultural abilities, which means that absence of activities in one of the "ability dimensions" must be balanced by the other dimension's activities. Given that, cognitive and cultural abilities are considered even more important as a whole compared to when separated, as their respective activities and factors are not only complement to each other but also substitutes. The second balance that must exist is that between the dimension of availability and the cognitive and cultural dimension where the two latter should be viewed as a whole, previously referred to as ability dimensions. That is, if the

dimension of availability lacks in some activities or factors the combined ability dimensions must manage to rebalance that particular absence by putting additional efforts in making those cognitive and cultural abilities present.

Besides the three dimensions mentioned, different “capacity abilities” including *recognise*, *assimilate* and *apply* are incorporated in the model. These abilities are inspired by the logic behind absorptive capacity (Lane & Lubatkin, 1998), and should be seen as facilitators to a successful collaboration as they stimulate the transfer between the three dimensions. These abilities as well as the dimensions of availability, cognitive abilities and cultural such, which collectively form The L.A. Framework, will now be described in more detail.

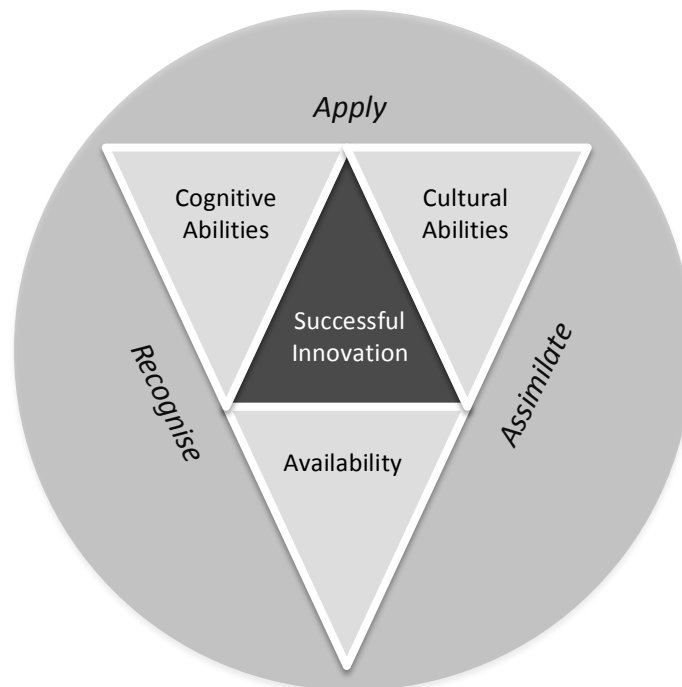


Figure 7. *The License to Ally Framework*

#### 6.4.1 Dimensions of The License to Ally Framework

##### **Availability**

The degree of availability in a relationship can be described with regards to the aspects of *openness* and *proximity*. The logic behind this is that the extent of openness and the extent of proximity, individually or combined, in a strategic alliance affect how smoothly the collaboration will turn out. Based on the theoretical framework we found several factors that were closely related to these two aspects, meaning that they most certainly will affect the degree of availability, either in a positive manner or negative such. The factors included in the dimension of availability are *contract management*, *communication*, *power balance*, *risk sharing*,

*supplier selection, low transaction costs, trust and long-term relationship.* Though a majority of these factors were explained in the theoretical framework, there are certain ones that need to be further addressed as are their connection to openness and proximity.

Firstly, for partners in a strategic alliance to be open towards each other and speak freely there is an obvious need for having contracts or agreements in place. Though contracts never can, or should, be regarded as substitutes for trust in a relationship it is necessary to have the papers in place in order to communicate openly and also to balance the power in their relationship. In that sense, trust is probably one of the most important aspects of a relationship, as it must exist whether one is close to one another or far away. Also, trust affects the degree of openness and therefore what one is willing to share with others in terms of information, knowledge or resources. This is especially important in the context of open innovation, as it requires that the partners are able to both transfer and assimilate what has been shared from one to another. In that sense, this dimension is highly important, as the activities included in it should support that valuable information and knowledge are shared throughout the collaboration rather than being stored in-house. Trust also influences the power balance in a relationship positively in the sense that a high level trust reduces the risks for a biased dependence in the alliance. In turn, by reducing harmful dependencies, often resulting in uncertainties and risk, transaction costs will indeed be affected positively. Speaking of risks, contrary to what was emphasised in the theoretical framework there is a significant need for *sharing* risk rather than *spreading* risk in an alliance as both partners must bare the costs of the risks, especially when it comes to R&D activities that more or less always are connected with high level of risks. In line with this, as stated before openness automatically comes with higher risks which is something that both partners simply must deal with if the alliance is built on being as open as possible towards each other. Finally, another finding that stood in contrast to what theory stated was that of formalised supplier selection. Evidently, though it is necessary that the supplier match the buying company's criteria in terms of pricing and production economy, it is as important to base the decision on intuition and subjective perceptions of those being in most contact with the suppliers, especially since the value of having a well-functioning personal relationship is tremendously emphasised.

As mentioned, there is an evident dependence between this recently described dimension of availability and the second and third dimensions of cognitive abilities and cultural abilities. To clarify this dependence, or rather the interaction between the dimensions, we have chosen to introduce three capacity abilities of *recognise*, *assimilate* and *apply*. The first ability, the one of recognise, address the importance of fulfilling the dimension of availability in order to get the most out of the collaboration's cognitive abilities. Likewise, the possibility to utilise the collaboration's cultural abilities is improved by a satisfying degree of openness and proximity between the partners. Thirdly, the ability to apply is enhanced by a fruitful

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matching between the collaboration's cognitive and cultural abilities. A further description of these two dimensions will now take place.

### **Cognitive Abilities**

Cognitive abilities are those that determine how well the exchange and transfer between the collaborating partners will work out. The starting point for this is that each partner possesses over knowledge, resources and information that indeed are valuable when separated, however, even more valuable when merged through collaboration. This merge is especially important when it comes to innovation, as innovative ideas are proved not to evolve from working in isolation. In order for both partners in a strategic alliance to utilise this value that comes from sharing both partners must hold certain cognitive abilities directly linked to *core competencies, resource and knowledge fit, synergies and cross-fertilisation, information sharing and comprehension*. Seemingly, all of these factors were included in the theoretical framework, however, for some the analysis resulted in some minor modifications.

Though it is important to focus on one's core competencies it is also necessary to understand the other partner's such and how and why one would like to combine them. The ability to combine different core competencies, preferably on a common platform for innovation, would facilitate the emergence of synergies and cross-fertilisation. In that sense, it is essential to not only be aware of the partner's core competencies but also how these competencies will fit with one's own. Additionally, it is crucial to evaluate whether there are resources and knowledge missing in the collaboration that none of the partners possess over. Therefore, both partners must realise the value of understanding each other's expertise and also how a combination of different expertise might confirm the saying that the sum of parts together are greater than the sum of those parts in separate.

### **Cultural Abilities**

The third dimension includes factors that are directly connected to the respective partners way of organising themselves in order to create the best conditions from which a strategic alliance with innovation purpose can grow. By that, the cultural abilities involve *internal structure, commitment, culture fit, innovation purpose and value-adding activities*. Firstly, it is vital that the internal structure within each company supports innovation activities and especially those activities focused on undefined and complex innovations rather than incremental ones. Therefore, it is vital to have a process where ideas towards such innovations can evolve, however, it is important not to include too much structure and instead realise the benefits that might come from living in ambiguity. As there is a fair amount of uncertainty and risks connected to such innovations, it is important not only that each partner is committed to the somewhat shared innovation process but also that the respective top management are. In line with this becomes the use of different people on different levels obvious, as there are several others than just an innovation department that can contribute with input and commit to activities connected to the innovation process. With that in regard, the collaboration must focus on value-adding activities that truly supports the purpose of the alliance, namely that of being innovative. For that to happen, both organisations must be formed to foster innovations and especially collaborative such, which besides having the right internal

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structure is directly influenced by the respective culture and the fit between these. Though culture is not something that can be steered in a jiffy, attitudes and views on innovation are probably the most important ones to reconcile in order to develop successful innovations over firm boundaries.



## 7 Conclusions

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*This chapter includes the conclusions of this study, divided into the theoretical contribution followed by the implications this has for Leaf. A discussion about the contribution and validity of this research is presented, as well as suggestions for future research within the area.*

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### 7.1 Theoretical Contribution

*The License to Ally Framework* (L.A. Framework, figure 7) can be used to improve and nurture upstream collaboration that evolves around innovation. Moreover, this developed framework provides an understanding of how interorganisational collaboration can be formed and contribute to successful innovation in the front end of such processes, answering to the fulfilment of the purpose of this thesis.

Based on theories within Front End of Innovation, Open Innovation and Strategic Alliances a theoretical framework was developed. The framework consists of three parts, namely *Necessities*, *Relationship Structuring* and *Innovation Facilitation*, where each part includes theoretical factors contributing to successful innovation in a strategic relationship in the upstream. The combination of above named theories, and the study of innovation in the context of strategic alliances is a fairly unexplored area, why the application of the developed theoretical framework aimed to contribute to this. Applying the theoretical framework on the case company Leaf resulted in the L.A. Framework. The L.A. Framework is a further developed and refined version of the initial theoretical framework and shows how a company can structure their upstream collaborations in order to generate successful innovation. The L.A. Framework shows how knowledge and capabilities can be made available and transferred between the partners in a relationship. The three dimensions *Availability*, *Cognitive Abilities* and *Cultural Abilities* constitute the framework and each dimension includes factors and activities contributing to successful innovation. In addition to the three dimensions three capacity abilities, *recognise*, *assimilate* and *apply*, have been incorporated in the model and are to be seen as facilitators to collaboration. The findings that resulted in the framework are thoroughly described in the analysis chapter and therefore, only some of the more interesting topics for discussion will be mentioned here.

There are several benefits to experience by opening up and participate in cooperation if both parties embrace it equally. It is evident how project lead times can be speeded up and knowledge transfer increased by working together as suggested in the L.A. Framework. What is still to be figured out is whether these benefits also can result in radical innovations in an industry where these types of innovations seldom come along. The main lesson when it comes to the front end of innovation is how one of the significant benefits with supplier cooperation lies

within generating radical ideas that in turn can result in successful innovations. To be able to contribute in the process suppliers need to be dedicated in an early stage of the innovation process and partake all the way from idea generation. In that regard, both parties must share a common understanding on innovation activities necessary for that fruitful generation of ideas to take place, but also to bear the overall purpose behind the collaboration in mind. Furthermore, when selecting suppliers to form a relationship and establish collaboration with, influence of intuition was found to be a main contributor in how well the collaboration would carry out. This influencing factor seemed especially vital in an industry where much of the added value comes from personal relationships with the suppliers.

The greater understanding that has come out of this study is that the potential for radical innovations in the confectionary industry is limited in the upstream, though not impossible. At the end of the day, what it all comes down to in this industry, and similar to many others, are pennies and dimes and by that what the consumer in the end are ready to pay for. To develop innovations, however, one must be ready to invest in those uncertainties and risks that innovation and development activities so often are associated with. This means that upstream collaboration truly must shift its focus from incremental ideas towards radical such, which, as presented in the L.A. Framework, put certain requirements on the collaborating partners. This study also raises questions about how such strategic collaboration could take place in the downstream. Perhaps this is where to turn in order to for those break-through innovations that are so sought after to evolve. Moreover, the intangible factor of intuition also reflects on the difficulty to follow structure and guidelines provided by theory, why one need to be quite humble and grasp the limitations of these tools.

## **7.2 Implications for Leaf**

What has been seen when analysing the empirical material is that Leaf in some respects does not act in accordance with what the studied theory advocates. Though it is not unusual to act differently in practise, after all there are numerous disparities between what theory points out and how things are actually done in reality, still there are some aspects that would be valuable for Leaf to take into consideration in its further work. These aspects, stated below, should be considered complementary to the L.A. Framework rather than included in it.

Applying the L.A. Framework on the relationship between Leaf and its suppliers today indicates that the missing piece in the puzzle is the dimension of availability. As previously described, availability is the dimension important when it comes to making knowledge, competence and other resources possible to absorb for the parties in the relationship. The importance of availability decreases with increasing fit between parties' cognitive and cultural abilities. In the relationship between Leaf and its suppliers today there is quite a leap between those dimensions. There is no doubt about both parties possessing cognitive abilities, but the difference in cultural ability and attitude towards increased long-term cooperation indicates that the

ability to assimilate resources putting a limitation to accessing a fully successful relationship.

In the sense of assimilating resources and apply this in innovation we suggest for a platform for innovation where both people from Leaf as well as suppliers can contribute with ideas. To have a platform like this to be successful it is important to have a level of structure and an agenda for innovation ensuring that all participants are made aware of the aims and goals with the activity. With this activity we believe that suppliers might be more eager to participate actively since risks for activities in a joined unit can be shared. Moreover, it is important to clarify the benefits with the cooperation for both parties.

Furthermore, the limited potential for radical innovation in the upstream of this industry raises the question if more effort should be on opening up downstream to consumers as well. Leaf has attempted an approach to involve the consumers with the Malaco “your bag” concept where consumers can design their own bag of candy with customised content. Although, this is an attempt for downstream involvement additional activities are needed to open up for more radical ideas. How such incorporation would be designed in this context can be investigated further and is one of the points suggested for future research.

The introduction of a platform for innovation is something that can be done in a relatively short period of time. To ensure long-term success and have an innovative mind-set to permeate the organisation the need for support on executive level becomes evident, this is advocated in theory and Leaf itself has also expressed the need for this. Roles in innovation need to be made clear both internally and externally in order for individuals to grasp the benefits of the cooperation. Moreover, we would suggest a clarification of what the long-term expectations regarding innovation are on suppliers in terms that can be monitored and evaluated.

### **7.3 Validity of Research**

This chapter was introduced with a discussion about how the study has contributed to the understanding of upstream collaboration in the context of innovation, which was the aim of this thesis. In this section, the validity of the developed L.A. Framework will be discussed together with its limitations. Validity will be covered in terms of explanatory power and relevance. The third criterion contributing to the validity is the integration of the framework, which has been covered extensively throughout the theoretical as well as analytical chapters and will therefore not be discussed further in this section.

To start, the explanatory power of the model is to be discussed, where the developed model can be argued to provide a better understanding to innovation in upstream cooperation since it is based on many different theories, providing a broad and rich perspective. The model has been developed and refined after empirical

application, where the applied research method has resulted in us being especially susceptible to the interesting empirical environment, further strengthening the explanatory power of the model. Compared to other frameworks addressing successful innovation the L.A. Framework is positioned in the context of strategic alliances, why it can be said to hold a new and broad approach, complementary to previously developed models. The composition of the L.A. Framework also speaks for a greater use of the model compared to a list of factors with no stated interdependence.

Further, to what extent the framework can be used to foster innovations in interorganisational collaborations is still to be figured out since this is just a study of one particular case. In this context, the relevance and generalisability of the framework can also be discussed. As mentioned in the section about generalisability of a case study in the method chapter, the generalisation of this case study is an analytical such and although there are no statistical grounds for the result of the application, the model can be said to be applicable in other companies in the same industry since the theories constituting the model are general. Regarding other industries the L.A. Framework might carry some limitations but we would argue that an industry with similar structure and interaction with upstream suppliers would benefit from the model. Although, to fully understand the limitations and further applications of the framework some future research is suggested.

#### **7.4 Suggestions for Future Research**

- Apply the L.A. Framework on another company to study how the result of this would be.
- Apply the L.A. Framework in another industry with more potential for radical innovation in the upstream.
- Explore how cooperation and an open strategic alliance in the downstream would be organised in this industry.
- Develop the L.A. Framework further by addressing how intuition fits in the framework since this was a recurring factor in the empirical study.

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## 9 Appendix

### Appendix I Interview Template Innovation

#### Introduction to interviewee

- 1) Can you tell us briefly about yourself?
- 2) Describe your background and your daily work at Leaf

#### Innovation

- 1) Who usually initiates innovation projects?
- 2) Where do you get inspiration to innovate?
  - a. How do you work with consumer insights and market analysis?
- 3) How do the communication look like between innovation and other departments within Leaf?
- 4) In what way do management and culture at Leaf affect innovation?
- 5) How does the company strategies affect innovation?
- 6) How eager are suppliers to participate in innovation?
- 7) How innovative do you find the suppliers to be?
- 8) Does the relationship with your suppliers generate a lot of ideas for NPD or FEI?
- 9) Can suppliers contribute to radical innovations, or does ideas generally concern incremental improvements?
- 10) Do you see any particular improvement areas within Leaf's innovation process?

#### Preferred suppliers

- 1) What is expected of a preferred supplier?
- 2) Is the relationship seen as long-term?
- 3) What are the major differences between a preferred supplier and a supplier that is not preferred?
  - a. How often do you come in contact with not preferred suppliers with interesting material for Leaf?
  - b. How is this handled?

#### Supplier relationship

- 1) Describe the relationship with your preferred suppliers
- 2) Does the relationship differ between different suppliers?
  - a. Can you compare two or more specific suppliers?
- 3) Has the relationship developed in some direction, positive or negative?
- 4) Describe what a good relationship means to you, and a bad one
- 5) How would you describe the distribution of power between Leaf and its suppliers?

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- 6) How important is the personal relationship between you and the supplier's representatives?
- 7) Are the suppliers updated on Leaf's markets?
  - a. Do they know what Leaf's customers prefer?
  - b. Do they work according to this knowledge?
  - c. What could be improved within this area?
- 8) What is working well in the cooperation with preferred suppliers today?
  - a. Do you see any general areas of improvement?

#### **Communication and sharing with suppliers**

- 2) How often, and in what way, are you in contact with suppliers?
- 3) What is discussed at meetings with suppliers?
- 4) How does the communication within Leaf work, when it comes to information provided by suppliers?
  - a. How are knowledge and ideas distributed?
- 5) How open is Leaf with future plans and strategies towards suppliers?
- 6) How are these communicated to suppliers?
  - a. How often and through who?
- 7) How eager are the suppliers to be involved in Leaf's strategies and future plans?
- 8) How do the suppliers use the knowledge?
- 9) Do you see any risks with the sharing of strategies?
- 10) How updated is Leaf on supplier strategies?
  - a. Would it be valuable to know more?
  - b. How do you use this knowledge?
- 11) How has the openness changed over time?
  - a. Have there been any major changes?
  - b. What effects have you experienced?
- 12) What is working well within the area of communicating and sharing information with suppliers?
- 13) What could be improved in this area?

## **Appendix II Interview Template Procurement**

### **Introduction to interviewee**

- 3) Can you tell us briefly about yourself?
- 4) Describe your background and your daily work at Leaf

### **Preferred suppliers**

- 4) How do you scan the market for suppliers?
- 5) How does a supplier become a preferred one?
  - a. What are the criterions?
  - b. How involved are you in the choice of a preferred supplier?
- 6) How does the agreements look?
- 7) What is expected of a preferred supplier?
- 8) Is the relationship seen as long-term?
- 9) What are the major differences between a preferred supplier and a supplier that is not preferred?
  - a. How often do you come in contact with not preferred suppliers with interesting material for Leaf?
  - b. How is this handled?

### **Supplier relationship**

- 9) Describe the relationship with your preferred suppliers
- 10) Does the relationship differ between different suppliers?
  - a. Can you compare two or more specific suppliers?
- 11) Has the relationship developed in some direction, positive or negative?
- 12) Describe what a good relationship means to you, and a bad one
- 13) How would you describe the distribution of power between Leaf and its suppliers?
- 14) How important is the personal relationship between you and the supplier's representatives?
- 15) Are the suppliers updated on Leaf's markets?
  - a. Do they know what Leaf's customers prefer?
  - b. Do they work according to this knowledge?
  - c. What could be improved within this area?

### **Communication and sharing with suppliers**

- 14) How often, and in what way, are you in contact with suppliers?
- 15) What is discussed at meetings with suppliers?
- 16) How does the communication within Leaf work, when it comes to information provided by suppliers?
  - a. How are knowledge and ideas distributed?
- 17) How open is Leaf with future plans and strategies towards suppliers?
- 18) How are these communicated to suppliers?
  - b. How often and through who?

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- 19) How does the suppliers use the knowledge?
- 20) Do you see any risks with the sharing of strategies?
- 21) How updated is Leaf on supplier strategies?
  - c. Would it be valuable to know more?
  - d. How do you use this knowledge?
- 22) How has the openness changed over time?
  - c. Have there been any major changes?
  - d. What effects have you experienced?
- 23) What is working well within the area of communicating and sharing information with suppliers?
- 24) What could be improved in the area?

#### **Improvement areas**

- 1) What is working well in the cooperation with suppliers today?
- 2) Do you see any specific areas of improvement?

## **Appendix III Interview Template Suppliers**

### **Introduction to interviewee**

- 5) Can you tell us briefly about yourself?
  - a. Describe your background, role and your daily work
  - b. What is your history within the food industry?
- 6) Give a short introduction to your company
  - a. What would you say are the company's core competencies?
  - b. Who are your typical customers?
  - c. On which markets and industries are your customers represented?
  - d. Who are your main competitors?

### **New product development and innovation**

- 1) Do you see your company as an innovative one?
- 2) How important is R&D for your company?
- 3) How much effort and resources are put in R&D given the size of the company?
- 4) Who usually initiates NPD or innovation projects?
- 5) Where do you get inspiration to NPD and innovation?
  - a. How updated are you in future materials and up-coming trends, in both your industry and the industries that your customers are representing?
  - b. Do innovations evolve from your own initiatives rather than from ideas that comes from your customers, or the other way around?
- 6) How innovative would you say that your customers are in general?
- 7) How innovative would you say that Leaf as a company is?

### **The relation with Leaf**

- 1) Describe the relationship with Leaf and your company, generally and historically seen
- 2) Has the relation changed in any way during the past years or decades?
  - a. Has this affected the exchange of information and materials?
- 3) How would you describe a well functioning relation?
- 4) How does your relationship with Leaf differ from your other customers?
  - a. Does the way of communicating differ in any way?
- 5) Describe the communication with Leaf in terms of frequency, format, contact persons and what the communication is generally about.
- 6) Who is your main contact at Leaf?
- 7) How is your relationship with this person?
- 8) Do you see any specific areas of improvement in the relation with Leaf?

### **Preferred supplier**

- 1) Does your company collaborate with customers?
  - a. Could you give us some examples of collaborations between your company and Leaf, and also with other customers?



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- b. Would you prefer more collaboration with customers?
- 2) What does it mean to be a preferred supplier?
  - 3) What types of expectations do you have as a preferred supplier to Leaf?
  - 4) Would you say that one partner generally has to adjust more than the other one in a collaboration?
  - 5) Do you see your relationship with Leaf as long-term?
  - 6) In what way does Leaf create value for you and your company create value for Leaf?
  - 7) What role would you say that your company has for Leaf's future development?
  - 8) What role would you say that Leaf has for your company's future success?

#### **Openness and willingness to share in a relationship**

- 1) What does an open relation mean to you?
- 2) Would you describe the relation with Leaf as open?
- 3) Do you see any risks of being too open in a relation?
- 4) Would you say that your relation with Leaf is based mainly on trust or written contracts?
- 5) How willing are you to share your business strategies with Leaf?
- 6) How willing would you say Leaf is to share their business strategies with you?
- 7) Do you see any benefits of sharing ones strategies with one another?

## Appendix IV Ingredients in Sugar Confectionary

### Texturisers

#### *Starch*

Starch is a member of the polysaccharide group of polymers and is composed of linked glucose chains. It has natural abundance and was originally designed as one of nature's energy reserves. It has been said that no other food ingredient can compete with starch in terms of its versatility in food applications. The reason behind this statement lies in the many capabilities of starch as it can be customised after different needs and demands expressed by the food industry. As a result, the fundamental purpose of ensuring product consistency has extended into several additional ones such as reducing recipe and production costs, enhancing product aesthetics and extending product shelf life. Consequently, as a multifunctional and user-friendly ingredient, starch has the ability to influence all stages of a food product's lifecycle, from development to launch. (Phillips & Williams, 2000)

Although starches are widely spread in nature, the number of viable sources is limited to maize, wheat, potato and rice. However, there are additional sources of starch such as pea and tapioca, also it can be modified either chemically, biochemically or physical. Starch is well known for its textural attribute and it is therefore used in several applications in the food industry including baked goods, batters and breading, fruit preparations, dairy products and confectionary. Regarding the latter, starch is found in a wide range of confectionary products due to its ease of cooking in high-sugar environments and its ease of handling in production. (Phillips & Williams, 2000)

#### *Gelatin*

Despite what many people might think, gelatin has no natural abundance. However, all gelatines are derived from collagen, a protein that exists naturally in hides, skins or bones of warm-blooded mammals. The term gelatin comes from the Latin word *gelata*, which means gel formation in water. Unsurprisingly, gelatin is an efficient gelling agent as its molecules form gels already at temperatures above 35-40°C. Unlike other protein gels gelatin gels are thermoreversible, meaning they solidify when cooled and melt when heated. This attribute, together with those being discussed further on, makes gelatin a unique and most useful ingredient in food. (Phillips & Williams, 2000)

Gelatines are widely used in the food manufacturing, though in relatively low concentrations. The reason for its popularity in food, especially in confectionary and dessert products, is mainly because of its textural attributes and water-holding capacities, resulting in textures from clean "melt in mouth" ones to elastic gum-like. Other applications within the food industry are frozen cream products, low-calorie sweets, meat products and some novel dairy products. (Phillips & Williams, 2000)

In some cases, food manufacturers have chosen to replace gelatin with vegetable alternatives or with other hydrocolloids. This is mainly due to vegetarians and followers of religions that do not consume food derived from pork, but it is also as a result of those concerns expressed regarding bovine spongiform encephalitis (BSE). However, besides gelatin's still wide applicability in food, gelatines are also used in the pharmaceutical industry where it can bind tablets and utilise the slow release of active ingredients. (Phillips & Williams, 2000)

### *Carrageenan*

Carrageenan is a natural polysaccharide extracted from seaweed and works as a thickening agent in different foods. Carrageenan is of particular interest in cases where shortening in drying time is required since it is quick setting with instant gelling in room temperature, which can cut drying times considerably compared to starch. Carrageenan can be used to replace gelatin, where vegetarian confectionary is required, or in other contexts to provide new textures. (Phillips & Williams, 2000)

### **Sweeteners**

#### *Sugar*

Sugar, or the monosaccharide sucrose, is one of the main ingredients and added to candy in order to achieve the desired sweet flavour. Furthermore, a problem with sucrose is its crystallising abilities which can be a problem during storage and seen as a quality defect. Sugar also affects the texture of some candies, for example the hard surface cover of some sweets called dragées, which is due to a higher level of added sugar. (Kearsley & Dziedzic, 1995)

#### *Glucose syrup*

The simple monosaccharide glucose is one of the main ingredients in confectionary, and is also the cell's primary source for energy. Glucose syrup is added to balance the sweetness, but also prevent crystallisation of sugar, which might occur when a solution is saturated. High sugar content also works as a preservative and to keep down microbial growth, therefore it is due to the high sugar content that candy can be stored in open boxes at retail stores. (Kearsley & Dziedzic, 1995)

#### *Polyols*

Polyols are multiple hydroxyl containing alcohols and are also referred to as sugar alcohols. Polyols have been used in the food and beverage industry to replace sucrose and lower caloric content of sweets and drinks. Examples of polyols used in the confectionary industry today are sorbitol and malitol, where sorbitol is produced by the hydrogenation of glucose and malitol the hydrogenation of maltose. Most polyols also provides textural attributes to the product and today the innovation potential of confectionary ingredients involves these polyols to quite a large extent. (Kearsley & Dziedzic, 1995)

### **Flavourings and colourings**

#### *Aromas*

Livsmedelsverket (2012) defines aromas as compounds, which are added in small doses to food or drinks in order to provide or enhance the taste and smell of fruits or berries. (slv.se) In short, aromas are applied to confectionary to provide the taste, smell and experience of familiar and exotic flavours. Aromas can be chemical or natural, where the latter means that the aroma is composed exclusively of flavouring ingredients from plant- or animal origin. (Livsmedelsverket, 2012)

The most common way of product development and incremental innovations in the confectionary industry is changing and developing new aromas to apply in developed products in order to provide consumers with new taste experiences.

#### *Colour*

As with aromas, colourings in confectionary are additives aiming to provide the products with an appealing colour. Colouring agents are derivatives from many different sources and can like aromas be natural or synthetic. In terms of the former, cochineal, chlorophyllin and betanin are sources commonly used as colouring agents in the confectionary industry, resulting in red, green and yellow shades. (Livsmedelsverket, 2012)

## **Appendix V New Starches – New Textures Project**

### **Pilot-scale testing**

One quick setting pea starch, supplied by Roquette was chosen and another texturiser, carrageenan, from Cargill. Suppliers also provided suitable recipes to try out and finally six different recipes were chosen and tested in pilot scale. The exact amounts of ingredients used in these recipes are confidential and cannot be disclosed in this report. All recipes were designed to have a dry matter of the slurry between 60 and 70 per cent, since this is optimal for the process. All samples ended up on levels between 64 to 75 per cent of dry matter in the final mass, which is suitable for moulding.

After moulding samples were dried in heating cabinet for some time. Drying times ranged between five to 36 hours, and half an hour in room temperature for the sample containing most carrageenan. All samples were evaluated using texture analyser, water amount was measured using Karl Fisher titration and a water activity measure was also made for each sample. Moreover, sensory testing by the in-house panel will pose as the basis for further development of a few recipes. In the sensory testing eight people participated and a standard evaluation templates was followed. To evaluate how samples were affected over time, storage tests were made on a few selected samples.

In the carrageenan samples where pH plays a major role, this was measured as well. Although these tests were only made to see whether pH was within acceptable levels and no conclusions can be made about how the pH affects texture of the product.

### **Analysis of test results and sensory evaluation**

Results from the analysis can be seen in table 3 and 4 below. The first table shows results from the large samples and the second for small samples. Recipes for “large” and “small” samples are the same, they only differ in moulds and thus drying time which can also be seen in the tables below. Worth noting in the tables below are the dramatic reduction in drying times for all samples compared to reference samples. Also, texture differs as measures indicate, but decisions regarding which samples to develop further were mainly based on the sensory evaluation. Water activity ( $a_w$ ) and water content (KF) were measured in order to ensure that levels did not exceed what is acceptable from a microbial point of view. This might be an issue in the case of carrageenan, why this issue will be investigated, although it will not be further discussed in this report.

Table 3. *Large sample*

Sample	a <sub>w</sub>	KF	Texture (mean of five measures)	Drying time (h)
Mallorca (Reference)	0.351	12.4	0.455	60
100 % starch	0.453	14.05	0.272	36
Gelatin	0.504	15.10	0.622	33
Carrageenan	0.697	21.40	0.125	0.5
Zoo-texture	0.595	14.35	0.969	27
More pea starch	0.561	14.45	0.480	25
Less carrageenan	0.657	18.15	0.239	5

Table 4. *Small sample*

Sample	a <sub>w</sub>	KF	Texture (mean of five measures)	Drying time
100 % starch	0.373	12.50	0.348	27
Gelatin	0.484	14.80	0.786	24
Carrageenan	0.655	18.05	0.145	0.5
Zoo-texture	0.534	9.05	1.335	20
More pea starch	0.479	12.75	0.508	24
Less carrageenan	0.586	14.35	0.326	5

The results from the sensory testing can be seen in the spider diagram below, figure 8. Attributes evaluated are mentioned below and further explained in appendix VI. Tests were evaluated compared to “Mallorca mix” which was given a value of five in each attribute.

When performing a sensory evaluation, seven attributes are used to be able to quantify the taste experience. The attributes *hardness*, *toughness*, *crumble*, *sugar shell*, *solubility*, *stick to teeth* and *elasticity in hand* in this case were used compared to the reference sample, were the range 1-4 indicated *less than* reference and 6-9 *more than* reference. The results of the sensory evaluation can be seen in the spider diagram below.

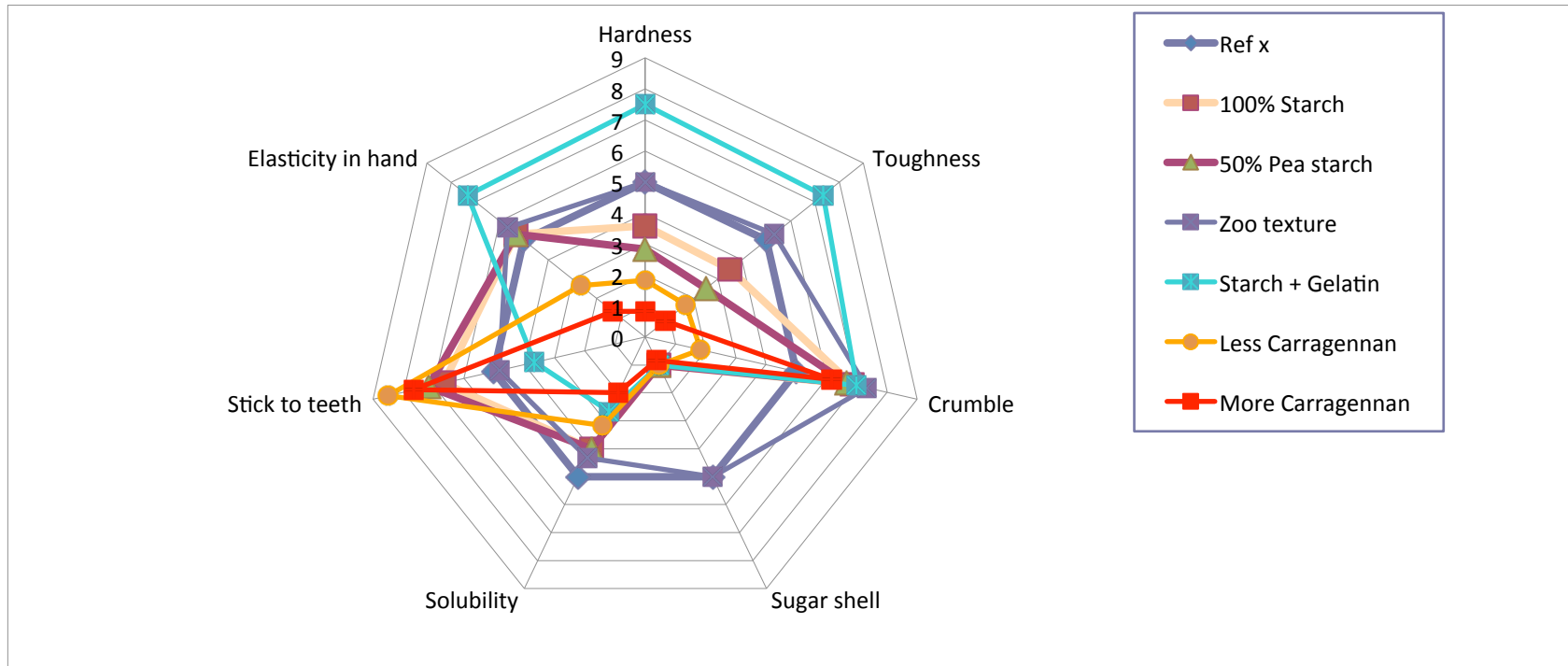


Figure 8. Sensory Evaluation

Furthermore, important to consider in the project is also the effect of storage on developed products. This was evaluated by stressed shelf-test, where products were put in a 75% humidity climate, 25% humidity and room temperature. After the initial sensory testing it was decided to proceed with three different products to further evaluation and storage testing. These samples were “Zoo texture” and “Less pea starch” since they showed a positive effect on drying times, while maintaining a texture similar to the reference, hence possible for the use to reduce drying times in existing products. Also, the sample “Less carrageenan” was chosen for further evaluation, since it provided an interesting and new texture. Samples were evaluated after five and ten weeks of storage. In addition to the attributes evaluated in the sensory evaluation, a number of appearance and taste attributes are added in the storage evaluation. The results after five weeks of storage are shown in spider diagrams, figure 9, 10 and 11 and the conclusion can be made that all three samples did good after five weeks of storage, both in stressed environment as well as in normal conditions. Storage after ten weeks are not shown in this report.

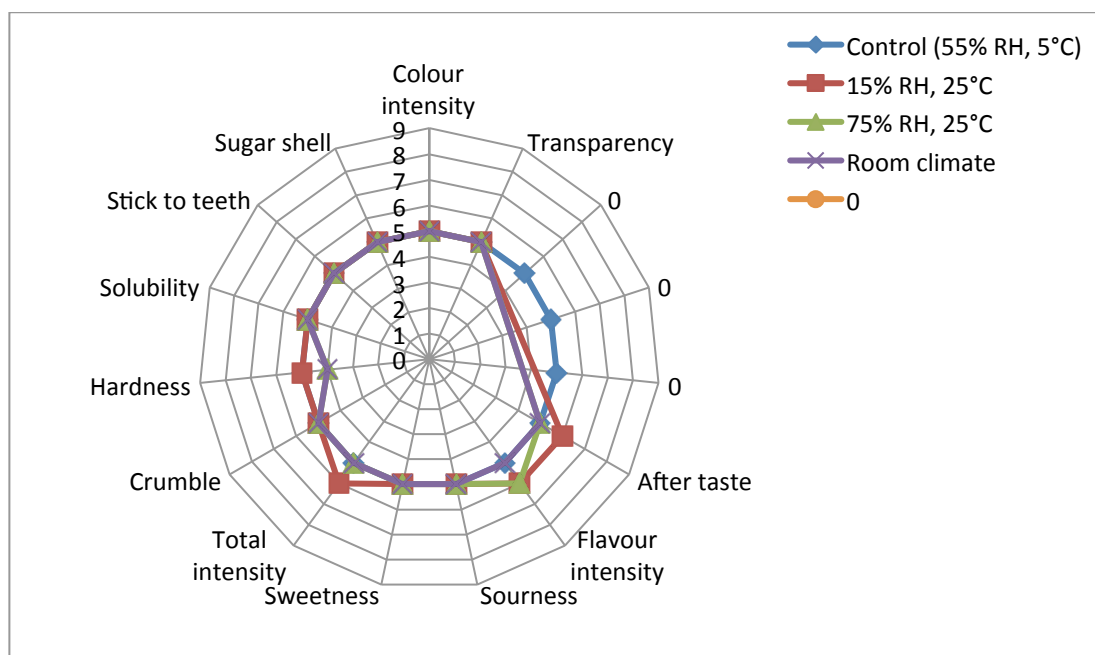


Figure 9. More pea starch 5 weeks storage



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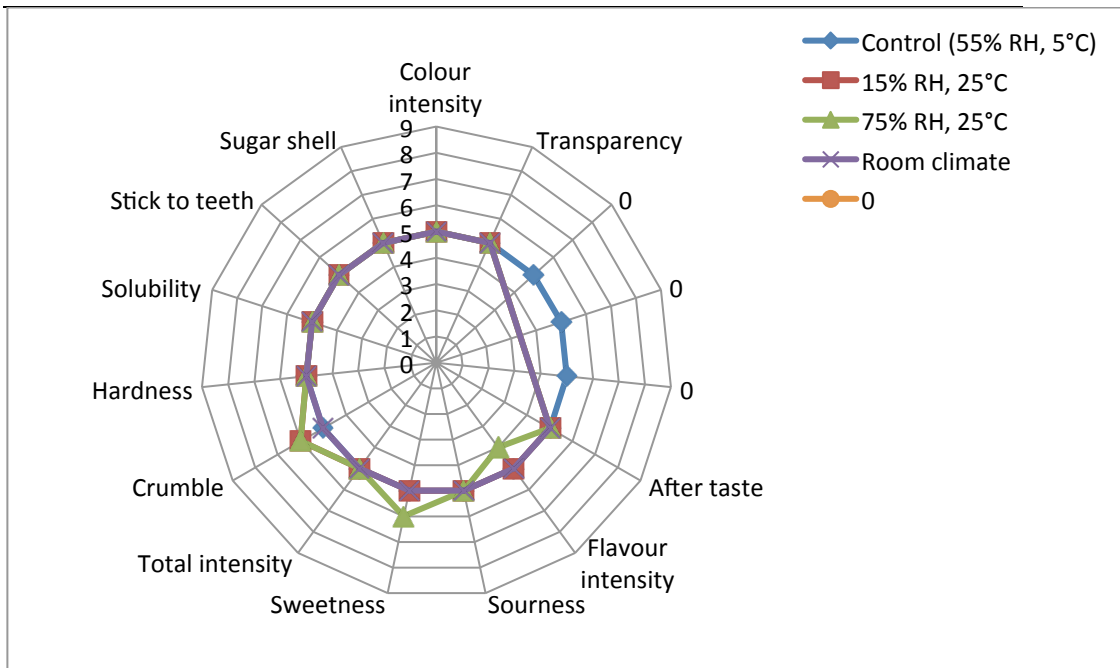


Figure 10. Less carrageenan 5 weeks storage

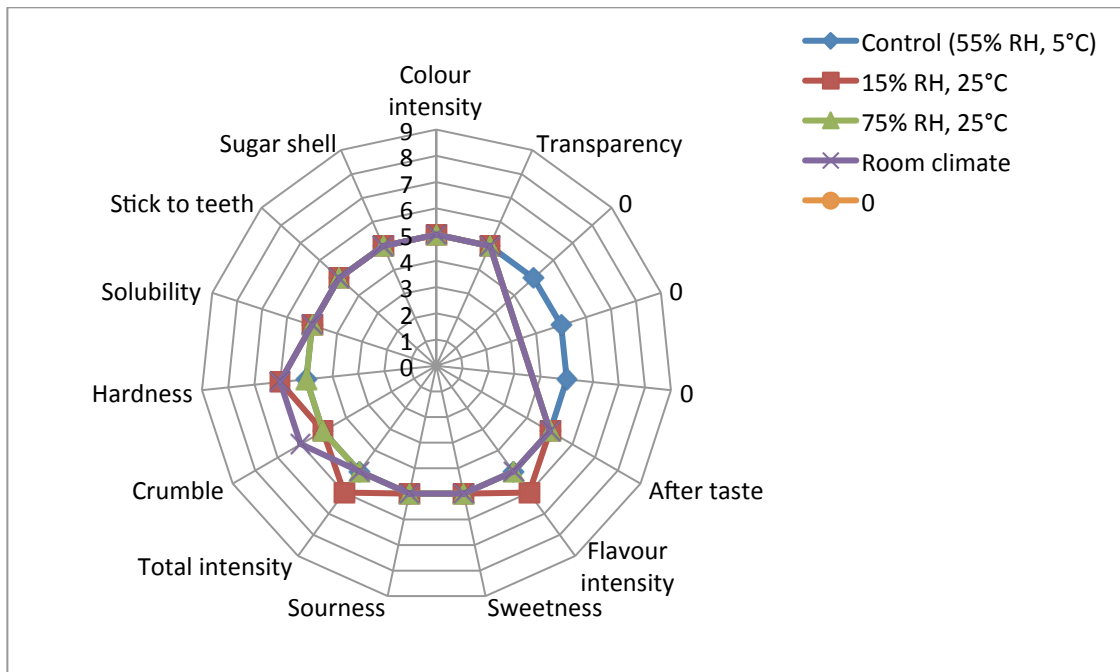


Figure 11. Zoo texture 5 weeks storage

**Project outcome**

As stated before, the scope of this project has been to develop a new and interesting texture. This was found in the case of using carrageenan as a texturiser, and confirmed through the sensory evaluation conducted. Furthermore, an additional interesting part of this project has been to evaluate drying times and here the usage of pea starch indicated possible improvements in this area. The chosen recipe with carrageenan was further developed through a brainstorming session with the innovation team at the site in Gävle, where a couple of concepts were developed and derived. These concepts are in turn, intended to be presented to the marketing department at the category team Enjoyment's New Product Development-days later this spring. Concepts will not be disclosed in this report.

## Appendix VI Sensory Evaluation

### Attributes

Hardness	Degree of hardness. Bite with your front teeth through the product where it is thickest (1 bite). Evaluate the power needed to bite it in two pieces. Less resistance = towards 1, much resistance = towards 9.
Toughness	Degree of toughness. Evaluate the energy needed to chew the mass. Evaluate the first 5 chews. 1 = little 9 = much.
Crumble	Degree of how much the sample crumbles. Divide into small pieces. Evaluate chew number 20 (the number can be increased or decreased depending of the products category, but be consistent in the number) 1 = little 9 = much.
Sugar shell	Thickness of sugar shell – cut the product in two pieces of equal size. Look at the cut surface and evaluate the thickness of the sugar shell. 1 = thin 9 = thick.
Solubility	Degree of how quickly the sample disappears when chewed. Solubility may be quickly even if the sample sticks to the teeth. Long time = towards 1 short time = towards 9.
Stick to teeth	Degree of how much the product sticks to the teeth, the chewing surface and to the side of the teeth. 1 = does not stick to teeth 9 = much stick to teeth.
Elasticity in hand	Degree of elasticity. Hold the product between the 2 thumbs and the fingers. Pull the product until the palms separates starts to separate. Let go of the product and evaluate how quick the product regain its normal shape (count to 5 and evaluate). If the product, after you have let go of and counted to five, regains its shape it is much elastic (towards 9). Sometimes it gets its shape before you have reached five, then it is also much elastic. Little elastic (towards 1) it does not regain its original shape – maybe it breaks in two or it is simply not possible to pull the product until the palms separate.

