

Author: Lonneke van Ravenswaaij
S0038385

University University of Twente
School of Management and Governance
Master of Business Administration – Innovation management

Company: Sara Lee Corporation
Division Sara Lee International Coffee & Tea

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Share to acquire?

*An exploration of interfirm and intrafirm knowledge transfer processes within
collaboration projects of Sara Lee International Coffee & Tea.*

Supervisors:	Sara Lee International	University of Twente
	Dr. ir. J. Sanders MBA	Dr. D.L.M. Faems
	Innovation director	Prof .dr. ir. O.A.M. Fisscher
	Global Brands Equity & Innovation	Drienerlolaan 5
	Vleutensevaart 35	7522 NB Enschede
	3532 AD Utrecht	053 489 4398 / 053 489 3526
	030- 297 9529	<u>d.l.m.faems@utwente.nl</u>
	<u>johan.sanders@saralee.com</u>	<u>o.a.m.fisscher@utwente.nl</u>

PREFACE

In order to finish my master of Business Administration, specialisation Innovation management, I conducted a research for the R&D department of Sara Lee International Coffee & Tea. From the time when I followed my first innovation course, I was directly interested in the theory on 'open innovation'. Therefore, it was great to get the opportunity to conduct a study on this matter within Sara Lee.

The aim of the research was to explore interfirm and intrafirm knowledge transfer in interfirm relationships. Therefore, this study has been accompanied by quite some interaction. At first I held conversations with various employees to get an overview of the existing relationships, after which I conducted interviews with both internal and external interviewees. This was not only informative for me, but also very enjoyable. These conversations led to new connections for me in the organization and eased the conclusion drawing; every time I analyzed the interview transcripts I still felt the pleasure I had in having all these conversations.

My graduation assignment has been facilitated to a large extent by Sara Lee employees and by my supervisors of the university, to whom I am very grateful. Concerning Sara Lee, I would like to thank my supervisor Johan Sanders in the first place; he has been really interested in this topic and continued to give useful suggestions and besides he made time for pleasant update conversations weekly. Besides, I have had great support from all employees who freed up time in their agendas to speak with me. Last but not least, my graduation became more pleasant because of my nice roommates, the enjoyable lunch breaks and the activities with the interns.

But my graduation would have been a whole different process without my university supervisors. Especially, I would like to thank Dries Faems who took a lot of time by reading my concepts every few weeks and provided very useful feedback each time. Every meeting motivated me to get more out of this research. Olaf Fisscher has been a great support as well because of the trust he put in this research from the beginning and the useful suggestions he provided.

During my internship I have discovered that a forty-hour workweek offers enough opportunities for a nice social life in the evenings and the weekends. I would therefore like to thank my family and friends for providing me excellent relaxation moments. All these pleasant moments made this half-year period in Utrecht an absolute great finish of my student years!

Lonneke van Ravenswaaij

Utrecht, February 4, 2007

INTRODUCTION

The Senseo has been cited many times as an open innovation example par excellence. This coffee brewing machine with coffee pads is the result of cooperation between Douwe Egberts and Philips. One should expect open organizations behind it, who continue to introduce innovations together developed with partners and thereby stay ahead of their competitors. Sara Lee International Coffee & Tea, to which Douwe Egberts belongs, manages to introduce innovations with regularity; however this cannot be ascribed to a formal open innovation structure. The pressure of coming up with new innovations grows: not only due to the fact that previous successful projects set expectations, but also because of a more dynamic coffee market. Open innovation projects can be found among competitors as well. A well-known example is the Nespresso, an espresso capsule machine, which was developed separately from the mother organization Nestlé. In order to stay ahead of the competitors, ‘out of the blue innovations’ no longer suffice for Sara Lee. Instead, a structure should be created which stimulates a continuous development of both incremental and radical innovations.

Hence, it is time that Sara Lee is not only widely known for their open innovations, but also carries out an open innovation policy in order to maintain their open innovation reputation in the future. The curious thing namely is that the company behind the Senseo had no formal open innovation policy at the time this research was started. The division is highly motivated to adopt an open innovation policy and is prepared to call in support. After all – preceding to this research – the company has elaborate experience in collaboration with external partners; from suppliers to universities. However – because of the lacking formal policy – it remained vague to what extent and how these relationships contributed to innovation and new knowledge.

Inspired by these practical challenges, this research investigates how knowledge transfer takes place between organizations and to what extent this results into new organizational knowledge within the focal organization. In the end the insights obtained from this research can support Sara Lee International Coffee & Tea in developing their open innovation policy.

EXECUTIVE SUMMARY

Sara Lee International Coffee & Tea is already worldwide known for their innovations developed with external partners. In order to ensure a continuous supply of innovations in the future, the company is developing a formal open innovation policy. However, it is not clear yet in which way current interfirm relationships contribute to Sara Lee's innovation capability. Therefore, this study explores interfirm knowledge transfer within five current relationships of Sara Lee and the way in which the external knowledge is transferred within the organization.

Following from this study is that interfirm and intrafirm knowledge transfer within the interfirm relationships of Sara Lee Coffee & Tea offers space for improvement. A list of five recommendations has been made up, which contribution can be found in an enhanced innovative- and knowledge transfer capability in current and in future relationships. These are:

1. Improve intrafirm knowledge transfer
2. Broaden the sharing of knowledge
3. Abandon the standard approach
4. Free up the contract establishment process
5. Maintain approachability and pleasant contact

The conclusions which form the basis for these recommendations are clarified briefly below. 1) There is space to improve intrafirm knowledge transfer, because the accessibility and absorption of knowledge across units shows some gaps. Consequence is that opportunities are sometimes missed, which is of course undesirable. 2) Knowledge sharing can be broadened; currently the opportunities in terms of open innovation are not fully exploited. Cause is that knowledge transfer mostly is limited to the initial problem definition nowadays 3) Furthermore, the research showed that Sara Lee approaches all its partners in quite the same way, while the goals of the interfirm relationship deviate. These factors result in an overlooking of innovation opportunities by Sara Lee and therefore, a standard approach is discouraged. 4) When the tough process of establishing contractual agreements is freed up, frustrations are taken away and possibilities to adjust contracts to knowledge sharing outside the initial scope are created. 5) Since pleasant contacts at a personal level was explicitly mentioned as a facilitator of both the interfirm relationship and the knowledge transfer, it is important to maintain this level. In order to realize these recommendations various practical actions are suggested (see page 70 and further).

Besides these recommended actions, the following ‘quick wins’ can be realized on the short term and without much effort. At first, the sending by Sara Lee of a newsletter with recently introduced products. This cannot only be an easy incentive for partners to get reconnected, but also shows Sara Lee’s willingness to become more open. Besides, the current interfirm relationships need to be assessed with regard to the opportunities in other disciplines. Furthermore, ensuring that the external partner has several contacts within Sara Lee can capture gaps in intrafirm knowledge transfer. A last quick win is to maintain some free time on the agenda and schedule a lunch before or after the meeting; without much effort additional, innovative knowledge can be exchanged.

To wrap up, the current interfirm- and intrafirm knowledge transfer processes offer space for improvement. The actions recommended consist of realizable activities which will enable Sara Lee to transfer knowledge more effectively and be better able to exploit the interfirm relationships for innovating.

MANAGEMENT SUMMARY (IN DUTCH)

Sara Lee International Coffee & Tea staat wereldwijd bekend om de innovaties die in samenwerking met externe partners ontwikkeld zijn. Om ook in de toekomst een continue stroom van innovaties te behouden, ontwikkelt de organisatie nu formeel een open innovatie strategie. Voordat Sara Lee zich kan oriënteren op toekomstige partners, is het van belang te weten hoe de huidige interorganisationale relaties bijdragen aan Sara Lee's vermogen om te innoveren. Deze studie verkent daarom interorganisationale kennisoverdracht in vijf huidige relaties van Sara Lee met externe partners en onderzoekt op welke manier de externe kennis binnen de organisatie wordt overgedragen.

Dit onderzoek wijst uit dat er verbetering mogelijk is in de wijze waarop interorganisationale- en interne kennisoverdracht plaatsvindt in relaties met externe partners. Vijf aanbevelingen zijn opgesteld die ervoor zorgen dat Sara Lee beter in staat zal zijn kennis over te dragen en te innoveren in zowel huidige als toekomstige relaties met externe partners, namelijk:

1. Verbeter de interne kennisoverdracht
2. Zorg voor kennisdeling op een bredere schaal
3. Benader externe partners niet op een standaard wijze
4. Verbeter het proces van het opstellen van contracten
5. Handhaaf de bereikbaarheid en het prettige persoonlijke contact

De conclusies waaruit deze aanbevelingen voortkomen, worden hier kort toegelicht. 1) Het verbeteren van de interne kennisoverdracht is wenselijk omdat kennis buiten de eigen afdeling vaak niet toegankelijk is en hierdoor wordt het opnemen van kennis binnen Sara Lee ook belemmerd. 2) Er zijn mogelijkheden om kennis op bredere schaal te delen, omdat de kennis die nu gedeeld wordt vaak beperkt blijft tot kennis die valt binnen de vooraf opgestelde probleemdefinitie. 3) Daarnaast blijkt dat Sara Lee al haar partners op een soortgelijke wijze benadert, onafhankelijk van het doel van de samenwerking. Gevolg is dat kansen op het gebied van innovatie hierdoor over het hoofd gezien kunnen worden en daarom is het tijd af te zien van deze standaard benadering. 4) Het versoepel van het proces van contracten neemt frustraties weg en creëert mogelijkheden om op bredere schaal kennis te delen. 5) De bereikbaarheid en prettige persoonlijke contacten zijn stimulansen voor zowel de samenwerking op zich als kennisoverdracht; het is daarom belangrijk dat Sara Lee zich hier bewust van is. Om deze aanbevelingen te realiseren zijn er diverse acties aanbevolen (zie pagina 70 en verder).

Eveneens kunnen er direct al een aantal maatregelen genomen die relatief weinig input vereisen. Allereerst, is dit het uitzenden van een nieuwsbrief met recent geïntroduceerde producten door Sara Lee. Deze brief kan een aanleiding voor partners zijn om weer contact op te nemen en demonstreert tegelijkertijd Sara Lee's open houding. Daarnaast is het handig om met huidige partners de mogelijkheden in andere disciplines te bekijken. Ook kunnen eventuele gaten in de interne kennisoverdracht deels worden opgevangen door ervoor te zorgen dat externe partners meerder contacten hebben in de organisatie. Naast het reserveren van tijd op de agenda voor bredere kennisdeling, kunnen er eenvoudig meer informele momenten gecreëerd te worden; bijvoorbeeld door het inplannen van een aansluitende lunch.

Kortom, er zijn mogelijkheden om de interorganisationele- en interne kennisoverdracht te verbeteren. De aanbevolen acties zijn absoluut haalbaar en zullen er daardoor voor zorgen dat Sara Lee effectiever kennis over kan dragen en zodoende beter in staat zal zijn de relaties te benutten voor innovatie.

STRUCTURE OF THESIS

This thesis consists of five chapters. In chapter 1 the theoretical framework can be found. Chapter 2 gives an overview of the research method applied in this study. Chapter 3, the results section, highlights the most important interview data and in chapter 4 the conclusions are drawn. Furthermore, the theoretical implications are addressed in this chapter by giving an overview of the limitations and suggestions for further research. Chapter 5 outlines the managerial implications; here the recommendations are extensively discussed. This thesis ends with the references and the appendices.

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CHAPTER 1 THEORETICAL FRAMEWORK

1.1. Abstract

The main goal of this research is to explore interfirm knowledge transfer within interfirm relationships and the transfer of such knowledge within the focal organization. The entire thesis is build up around these three concepts: an investigation of both interfirm– and intrafirm knowledge transfer within the frame of interfirm relationships. Interfirm relationships are an appropriate way for firms to transfer knowledge at an interfirm level. After interfirm knowledge transfer has taken place, firm can start to process the new knowledge internally; intrafirm knowledge transfer. Figure 1.1 visualizes the relations between these terms and how these terms are integrated in the research model.

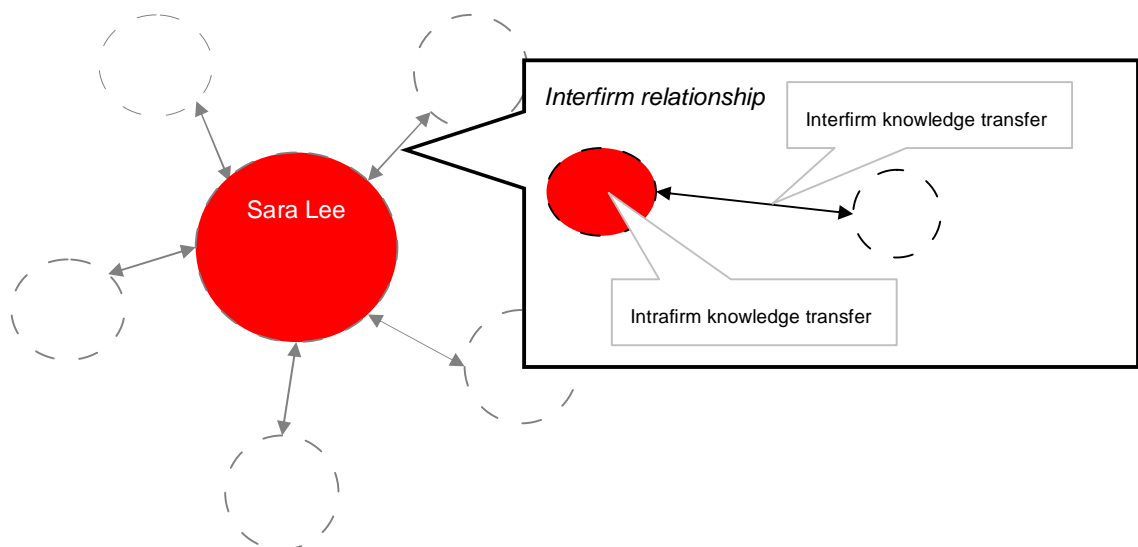


Figure 1.1 Research model: the exploration of interfirm knowledge transfer in interfirm relationships and the transfer of this knowledge within Sara Lee International Coffee & Tea.

At first the context – the interfirm relationship– where knowledge sharing and generation takes place is outlined (§1.2). After defining the underlying factors of interfirm relationships, the theoretical framework reviews the theories accompanying interfirm and intrafirm knowledge transfer (§1.3). The theoretical overview forms the basis for the research questions (§1.4), which aim to get an insight in the underlying factors behind interfirm– and intrafirm knowledge transfer within interfirm relationships.

1.2. Interfirm relationships

The utilization of both internal and external sources to innovate is well-addressed in the extant literature on interfirm relationships. This section elaborates on the conceptions accompanying interfirm relationships. At first the open innovation paradigm will be reviewed (§1.2.1.), after which the definition of interfirm relationships will be given (§1.2.2). Subsequently, the governance structures (§1.2.3), number of participating organizations in interfirm relationships (§1.2.4), different types of partners (§1.2.5), and collaboration strategies (§1.2.6) will be explored. The section ends with an overview of motivations and benefits of interfirm relationships (§1.2.7).

1.2.1. Open Innovation

The necessity to collaborate with external parties in order to stay innovative is clearly emphasized by Chesbrough (2003), who states that several erosion factors caused firms to switch to an Open Innovation approach (for an overview of these factors, see Chesbrough, 2003). The open innovation paradigm stresses that firms should use 1) internal and external knowledge to accelerate innovation and 2) internal and external paths to markets (Chesbrough et al., 2006). This is visualized in figure 1.2. The open innovation model distinguishes itself from previous 'closed' innovation models by the systematic encouragement and integration of the role of external knowledge and internal discoveries, coupled with creative exploitation with Intellectual Property (IP).

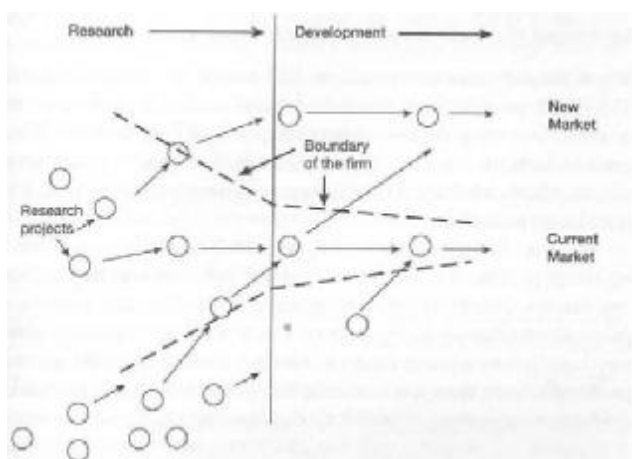


Figure 1.2 The open innovation model (Chesbrough, 2003)

A search for ‘open innovation’ with Google results in 16.800.000 hits (Retrieved February 12, 2008). The term is not only embraced by many large established firms in order to improve their innovation performance, also the academic literature increasingly reckons the value of external sources of knowledge.

1.2.2. Definition of interfirm relationships

Interfirm relationships are defined as “collaboration between independent companies through formal agreements” (Hagedoorn, 2002, p.477). Interfirm relationships are widely seen as valuable external sources for innovation (Hagedoorn, 2002; Shan et al., 1994, Chesbrough, 2003).

Firms cooperate in different modes; the governance structures in interfirm relationships diverge from relatively loose contractual agreements to tighter forms like alliances, acquisitions and joint ventures (Doz, 1996; Hamel, 1991; Khanna, 1998; Kogut 1988; Mowery et al., 1996; see §1.2.3). The semi-independent status enables firms to have relationships with a variety of firms (Faems et al., 2005; see §1.2.4 and §1.2.5). Key in interfirm relationships is the sharing of certain activities among two or more independent companies. Often these activities contain the sharing of technology and research & development (R&D) in joint research or joint development projects (Hagedoorn, 2002; Faems et al., 2005). Nevertheless, it also occurs that firms share activities in broader areas. Interfirm relationships are generally typified by a limited time-horizon – as they are often project-based – which requires relatively strong commitment and interdependence during the joint project.

1.2.3. Equity versus non-equity ownership structures

Structures for interfirm relationships are categorized into equity governance structures and contractual-based governance structures in the extant literature (Blomqvist et al., 2005; Chen, 2004; Das & Teng; 1998, Mowery et al., 1996; Hagedoorn, 2002; Klein Woolthuis et al., 2005; Nooteboom, 2000). Equity-based relationships – for instance alliances and joint ventures – involve equity sharing and equity investment and comprehend mutual interdependency, where contract-based relationships – for example R&D agreements – do not. Figure 1.3 shows the proportions between diverse interfirm relationships. Contractual agreements – formal contracts – are defined as agreements in writing between two or more parties, which are perceived, or intended, as legally binding (Lyons & Mehta, 1997 in: Klein Woolthuis et al., 2005). Contractually bound relationships lack an overarching hierarchy; nevertheless contractually-based agreements do offer possibilities for the agreement on organizational mechanisms as three types

of contracts can be distinguished (Klein Woolthuis, 1999). Firstly commitment contracts; contracts that consolidate the developed trust and commitment between partners. These contracts cover arrangements for goals and the management of the relationship. The second contract type is safeguarding contracts and focuses on the risks accompanying a joint development relationship. Accountability and conflict resolution are covered in this kind of contracts. The third type is spill-over contracts which prevent unwanted knowledge transfer or opportunism and covers Intellectual Property (IP) rights. Most contracts usually serve a number of functions (for a detailed overview of contract functions: see the appendices, p.82).

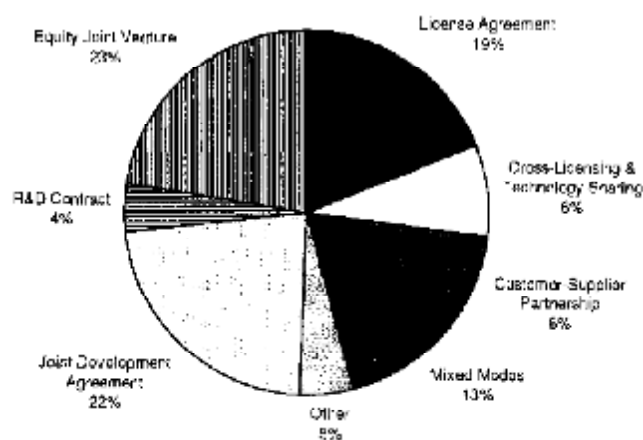


Figure 1.3 Variety in formal structures of interfirm relationships¹ (Mowery et al., 1996, p.80).

The governance structure influences the performance of an interfirm relationship; different forms of partnerships result in transferring different types of knowledge (Chen, 2004; Kogut, 1988; Kogut & Zander, 1993). “Equity-based ... [relationship forms] are expected to provide a more effective setting for discovery ... of new knowledge than contract-based relationships, because equity-based relationships imply more active involvements of the partners and may promote more interactions than contract-based relationships do” (Chen, 2004). Although joint ventures are highly esteemed (Kogut; 1988; Mowery et al., 1996; Chen, 2004), their popularity decreases (Hagedoorn, 2002). Figure 1.2 confirms Hagedoorn’s statement as contractual agreements exceed joint ventures by far. High organizational costs, high failure rates, problems with sharing

¹ Source: Cooperative Agreements and Technology Indicators database: a comprehensive data set that contains information on over 9000 interfirm relationships involving about 5000 firms.

IP and varying strategic objectives are reasons that contractual-based agreements are nowadays the dominant formal structure in relationships.

1.2.4. **Bilateral versus multilateral relationships**

One of the main characteristics of an interfirm relationship is the number of partners involved (Gulati, 1998; Das & Teng, 2002; Hoffmann 2007; Chesbrough et al., 2006). The common distinction is made between bilateral relationships – a relationship between two partners – and multilateral relationships – a relationship in which more than two partners are involved. Bilateral collaborations are usually indicated as dyadic relationships, where relationship constellations refer to multilateral relationships. The total number of relationships of a focal organization – viewing the network from the perspective of the observed company – is seen as the relationship portfolio / network (Hoffmann, 2007).

1.2.5. **Types of partners**

This research aims to explore interfirm relationships and therefore, the scope of potential external sources needs to be understood. The external sources available to a focal firm are described as the portfolio of interfirm relationships (Powell, Koput and Smith-Doerr (1996, in: Hoffmann, 2007). Potential partners for an interfirm relationship are grouped into three categories: 1) suppliers and customers; 2) universities, government and private laboratories and 3) competitors (see Chesbrough, 2006; Lee, 2000; Prahalad & Ramaswamy; 2004; Tidd et al., 2005; Von Hippel, 1988, in: Chesbrough et al., 2006 for a deeper investigation and empirical evidence).

The type of partner affects the activities accomplished within an interfirm relationship. An effective and efficient manner of doing research and the acquiring of knowledge and information are the main activities in relationships with universities and research institutes (Chesbrough et al., 2006; Hurmelinna, 2004). This results in a division of labor; universities do the research, where firms commercialize the ideas. The relationships with suppliers are indicated under the term ‘early supplier involvement’. Activities are the improvement of product development performance in terms of costs, speed and product quality and provide a source of innovative ideas and critical technologies (Wynstra, 2006). These different activities are empirically demonstrated by Faems et al. (2005), who report that the choice of the partner affects the developed capabilities. Relationships with customers and suppliers are associated positively with higher levels of turnover stemming from improved products, while relationships with universities and research organizations are associated in similar fashion with turnover levels related to new

products. More or less related is the distinguishing of innovation partners in either downstream or upstream partners (Jorde & Teece, 1994; Pepall & Norman, 2001 and Buckley & Dunning, 1994). Partners who stimulate downstream innovation are associated to contribute especially to product differentiation, while upstream partners provide specialized services which are complementary to the competences of the focal organization.

There is not one best practice for open innovation which organizations can implement; interfirm relationship decisions should be influenced by the firm's own characteristics (Chesbrough, 2003; Johnson et al., 2006).

1.2.6. **Exploration versus exploitation**

An interfirm relationship can have an exploitative or an explorative strategy (March, 1991; Koza & Lewin, 1998, 2000; Faems et al., 2005; Chesbrough; 2006). According to Koza & Lewin (1998; 2000) in exploitation-relationships, firms transfer knowledge by the pooling of complementary resources that neither partner is interested in developing on its own in order to acquire a source of incremental revenue. Exploration relationships on the other hand are intended to accomplish generating of unknown technologies, new geographic markets or new product domains. Interpreting March's theory (1991), firms should have both explorative interfirm relationships and exploitative ones in order to ensure the company's viability today and tomorrow.

1.2.7. **Motivations and benefits of interfirm relationships**

The classical article of Kogut (1988) classifies three categories of motivations for starting up interfirm relationships: 1) transaction costs, 2) strategic behaviour and 3) knowledge transfer. Transaction costs motivations mean that firms are driven by cost-minimizing considerations to cooperate. Strategic behaviour motivations indicate that the firm wants to enhance the competitive positioning by the interfirm relationship. Knowledge transfer motivations indicate that interfirm relationships are used as vehicles to transfer organizationally embedded knowledge, as this knowledge cannot be easily blueprinted or packaged through licensing or market transactions.

Motivations mentioned in more recent articles still can be subdivided into these three categories, but the focus is different. Kogut (1988) recognizes knowledge transfer as a motivation, but focuses on transaction costs and strategic behaviour as complementary motivations. Hamel (1991) elaborated more deeply on the knowledge transfer motivation and

observed a shift from resource or risk-sharing relationships to relationships with generating knowledge from partners as a primary goal in his article. This resulted in an increased valuation of motivations related to knowledge transfer in more recent articles (Chesbrough et al., 2006; Doz, 1996; Inkpen; 1998; Hagendoorn, 2002; Johnson, 1996; Lane & Lubatkin, 1998 and Muthusamy & White, 2005).

These motivations are defined rather broad, therefore I will review the concrete benefits that attract firms to start up interfirm relationships. Table 1.1 provides an overview of the benefits, listed by the motivation categories of Kogut (1988).

Table 1.1 *Motivations and benefits of interfirm relationships*

<i>Motivation</i>	<i>Benefit</i>
Transaction cost	Overcome budgetary constraints / spread the costs Faster creation Reducing the risks of innovation
Strategic behaviour	Enhanced innovative performance Access to complementary resources Access to new markets Increase market power Reduced uncertainty Enhanced flexibility Coordinating and formulating standards and dominant designs
Interfirm knowledge transfer	The acquisition of new technical skills / capabilities Transfer of tacit and explicit knowledge More readily transfer of knowledge

A clear cost benefit is the overcoming of budgetary constraints (Bleeke & Ernst in: Muthusamy & White, 2005; Larsson, 1998; Mowery et al, 1996). Relationships enable the spreading of R&D's costs and risks and enable a more rapid penetration of markets.

One of the main strategic benefits is enhanced innovative performance (March and Simon, in: Cohen & Levinthal, 1990; Faems et al., 2005; Bleeke & Ernst, in: Muthusamy & White, 2005; Chesbrough et al., 2006). Interfirm relationships positively influence the internal innovative activities of organizations; the speed of innovation; patenting rates and the improvement of existing products. Besides, benefits can be found in the access to complementary resources (Bleeke & Ernst, 1993 in: Muthusamy & White, 2005, Johnson et al., 2006, Mowery et al., 1996). External resources can enhance the development possibilities or can give access to new routes for commercializing innovation projects. Access to new markets is another incentive for firms to start collaborating (Doz, 1996; Johnson et al., 2006; Arias 1995). A strategic benefit as well is the ability to 'master uncertainty better' jointly (Hoffmann, 2007; Larsson et al., 1998).

Interfirm relationships are considered to facilitate knowledge transfer in several manners. The most important benefit is that interfirm relationships facilitate the capturing of both organizationally embedded (tacit) and codified (explicit) knowledge. Organizationally embedded knowledge cannot be easily blueprinted and exchanged through market transitions and is associated with a high degree of uncertainty (Mariti et al., 1983, in: Mowery et al., 1996; Doz, 1996; Inkpen, 1998, Muthusamy & White, 2005). Another benefit is that knowledge is more readily transferred in interfirm relationships; more quickly and inexpensive and the possibility of easy access to knowledge spillovers (Chesbrough et al., 2006, Ahuja, 2000, Hamel, 1991).

1.3. **Interfirm and intrafirm knowledge transfer**

The previous section made clear that interfirm relationships have an important facilitating role in the sharing of knowledge above the level of the firm. Therefore, this section reviews the literature on interfirm and intrafirm knowledge transfer. At first interfirm and intrafirm knowledge transfer will be defined (§1.3.1), and the types of knowledge distinguished will be reviewed (§1.3.2). Subsequently the necessary conditions for inter- and intrafirm knowledge transfer (§1.3.3) will be outlined, after which an overview of the obstacles (§1.3.4) is given. This section concludes with a review of the facilitating mechanisms (§1.3.5) of interfirm and intrafirm knowledge transfer.

1.3.1. **Definition of interfirm and intrafirm knowledge transfer**

Knowledge transfer is defined as “dyadic exchanges of organizational knowledge between a source and a recipient unit in which the identity of the recipient matters” (Szulanski, 1996). Source and recipients of knowledge can be individuals, groups, departments or divisions (Argote et al., 2000). Knowledge needs to be firstly disclosed by the unit that possesses the knowledge and subsequently the generating unit needs to acquire and assimilate the knowledge (Hamel, 1991; Lane & Lubatkin, 1998; Cummings & Teng, 2003). Knowledge transfer therefore consists of two steps: 1) knowledge sharing by the ‘source’ and 2) knowledge generation by the recipient. The transfer of existing knowledge can take place between organizations; which is referred to as interfirm knowledge transfer as well as within organizations; so-called intrafirm knowledge transfer.

Although interfirm knowledge transfer and intrafirm knowledge transfer are often discussed separately in the extant literature, it is important to review these terms together as they are deeply interlaced. As a matter of fact, interfirm- and intrafirm knowledge transfer are interdependent. An organization will not internalize external knowledge when it is not capable to

exploit and transfer this new knowledge internally; and opposite, an organization who is capable to transfer knowledge internally can disclose its capabilities and thereby contribute to interfirm knowledge transfer (Holmqvist, 2003; Cohen & Levinthal, 1990). In relationships between firms, interfirm knowledge transfer is the first step after which intrafirm knowledge transfer follows.

Knowledge transfer is a process whereby one unit is affected by the experience of another (Argote et al., 2000), which comes down to the absorption of specific skills, knowledge and competencies by the recipient (Muthusamy & White, 2005). Transferred knowledge can reside in design; production; installation; sales and distribution; operation and maintenance or management (Zander & Kogut, 1995). Hereby the goal is to apply the partner's knowledge in order to develop one's own competence in a technological or management capability (Lubatkin et al, 2001). Four stages are distinguished: 1) initiation – the decision to transfer, 2) implementation – the decision to proceed, 3) ramp-up – the use of the transferred knowledge by the recipient and 4) integration – the achievement of satisfactory results of the transferred knowledge (Szulanski, 1996).

In order to assess whether knowledge transfer has been successful or not, the following criteria should be satisfied: timely; on budget; produces a satisfied recipient; is adapted to the new context and changes in knowledge or performance can be measured (Cummings & Teng, 2003; Argote & Ingram, 2000). A full replication of knowledge is not required; it is about modifying the existing knowledge to the specific context; for example in the form of solutions to specific problems (Foss & Pedersen, 2002). At last, successful knowledge transfer is considered to evolve over time (Doz, 1996).

1.3.2. Types of knowledge

In general, knowledge can be typified as either 1) tacit or explicit, 2) related or unrelated or 3) explorative or exploitative. This section discusses these various types of knowledge.

A common distinction is the one between tacit and explicit knowledge. Explicit knowledge can be coded in writing or symbols, where tacit knowledge is acquired by and stored within individuals and cannot be transferred or traded as a separate entity (Polanyi, 1966 in: Osterloh & Frey, 2000). Cummings & Teng (2003) argue that explicit knowledge is more easily transferred than tacit knowledge. Tacit knowledge is embedded in a firm's social context; making it more unique, less imitable and thus better able to create strategic value. Tacit knowledge therefore forms the basis of a firm's dynamic capabilities and is the ultimate source of sustainable competitive advantage (Spender, 1996 in: Lane & Lubatkin, 1998). Socialization – interfirm and intrafirm relationships – is seen as the only means to transfer tacit knowledge, since this

knowledge is organizationally embedded (Kogut, 1988; Mowery et al., 1996). Active cooperation results in a faster transfer of tacit knowledge (Chesbrough et al., 2007). Tacit knowledge can be best transferred through interpersonal means and less structured processes; examples are mentoring, teamwork and opportunities for face to face conversations. Explicit knowledge can be best transferred through technology-driven, structured processes; examples of support are manuals, patents and databases (Goh, 2002). Interfirm relationships are seen as a means to transfer both explicit and tacit knowledge among firms. Transfer of existing knowledge is the earliest step in interfirm knowledge transfer which is foregoing to the eventual additional knowledge transfer.

Related knowledge is defined as “expertise in the firm’s business units that can be useful for tasks performed in a focal business unit” (Hansen, 2002). When knowledge is unrelated, the knowledge is not related to the skill base of the focal unit. Hansen (2002) argues that a combination of both related knowledge and interunit links is optimal for knowledge transfer; which is visualized in figure 1.4.

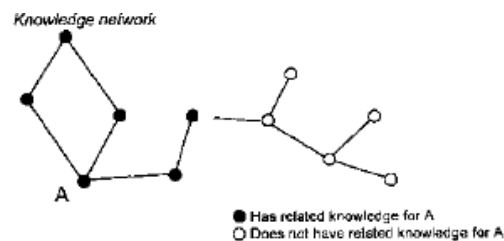


Figure 1.4 Network and related knowledge (Hansen, 2002, p. 233)

Within interfirm relationships the type of knowledge transferred is also affected by the goal of the cooperation. With an exploitation strategy elaboration and deepening of existing capabilities takes place and this asks for related knowledge. In an exploration strategy on the other hand really new knowledge is required or should be jointly created in order to discover game-changing opportunities (March, 1991).

1.3.3. Necessary conditions for interfirm and intrafirm knowledge transfer

In common three necessary conditions for knowledge transfer (both inter – and intrafirm) can be distinguished: internalization intent, transparency and preconditions for receptivity (Hamel, 1991). These conditions need to be present for interfirm and intrafirm knowledge to occur.

Internalization intent

The first necessary condition ‘internalization intent’ is defined as a source’s initial propensity to view a relationship as an opportunity to assimilate knowledge (Hamel, 1991). In common concerning internalization intent a distinction is made between either exploration or exploitation (March, 1991, §1.3.2).

Transparency

The second necessary condition ‘transparency’ refers to the ‘know-ability’ or openness of each unit; the potential / opportunity for knowledge absorption (Hamel, 1991), which is also referred to as the accessibility of knowledge. The author identified the following determinants of transparency: 1) the penetrability of the social context which surrounded the partner; 2) attitudes towards outsiders; 3) the extent to which the partner’s distinctive skills were encodable and discrete and 4) the partner’s relative pace of skill-building. The first determinant means that transparency is influenced by the extent to which a firm’s knowledge base is context-bound (Terpstra & David, 1985 in: Hamel, 1991). Willingness to transfer knowledge (Hansen, 2002) and trust in the partner (Muthusamy & White, 2005; Faems et al., 2007) positively influence the attitude towards outsiders and with that the transparency. Some skills are inherently more transparent than others; organizationally embedded knowledge is less accessible for the partner than encoded, explicit knowledge (Hamel, 1991). When a firm’s speed of innovation exceeds the partner’s pace of absorption, a firm can afford it to be open as the partner is not quick enough to become a competitor. Transparency is affected by the design of organizational interfaces, the structure of joint tasks and the protectiveness of individuals. The largest impediment to transparency is fear of unintended and unanticipated transfers of knowledge (Hamel, 1991). It is therefore, that in an interfirm relationship partners often employ various measures to limit transparency. For example, partners restrict their contractual agreements to a narrow range in order to limit their transparency. In this regard the author speaks about relative transparency.

Receptivity

Third necessary condition is ‘preconditions for receptivity’: a unit’s capacity for absorptiveness and utilization of the transferred knowledge (Hamel, 1991).

Receptivity of external knowledge is in the first place affected by the initial conditions of an interfirm relationship (Doz, 1996). The initial conditions are necessary conditions, because they are a prerequisite for partners to assimilate. These initial conditions are joint conditions and consist of 1) a task to be performed; 2) a set of action routines borrowed from the organizational

contexts of each partner; 3) a design for the interface between partners (interface structure) and 4) a series of expectations about both the performance of the interfirm relationship and the behaviour of the partner. Once the initial conditions are established, a cycle of learning-re-evaluation-readjustment can come into being (Doz, 1996). In successful interfirm relationships, the cycles cumulate over time and increases partners' willingness to make commitments to each other. Changes over time in relationships occur, due to these evolutionary cycles. This process is visualized in figure 1.5.

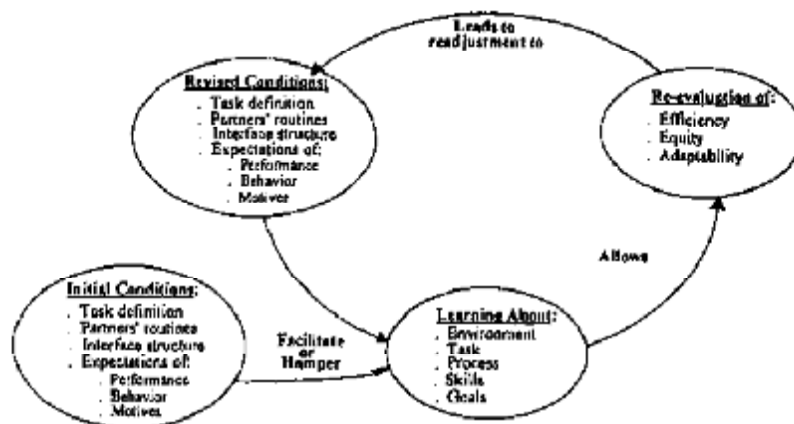


Figure 1.5 Simplified process of interfirm relationship evaluation. Source: Doz (1996, p.64)

Cohen & Levinthal (1990) refer to receptivity as absorptive capacity; the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends. The ability to recognize and value new knowledge is influenced by the firm's prior knowledge and prior learning, because this is cumulative (Cohen & Levinthal, 1990). Because of that, firms with an internal R&D department are better able to exploit information obtained from external sources (Cohen & Levinthal, 1990). Experience within the firm is important also because much of the knowledge regarding routines, objectives and R&D is tacit. It is of major importance to be able to transfer knowledge internally, because this enables firms to assimilate externally available knowledge / competitor's knowledge spillovers. Hence, firms who have this ability are more successful in terms of innovativeness and performance than firms who lack effective intrafirm knowledge transfer (Argote et al., 2000; Cohen & Levinthal, 1990; Cummings & Teng, 2003; Osterloh & Frey, 2000; Tsai, 2001; Szulanski, 1996; Holmqvist; 2003).

Besides the willingness to absorb external knowledge (internalization intent), receptivity is influenced by the firm's ability to assimilate new external knowledge (Hansen, 1999). Knowledge absorption does not only depend on the focal organization, but also on the degree of knowledge

disclosed by the partner organization (Lane & Lubatkin, 1998). Besides this influence of the source and the recipient; knowledge assimilation is furthermore influenced by characteristics of the knowledge and the context in which the transfer takes place (Szulanski, 1996). With regard to willingness the source and recipient matter, while the characteristics of knowledge and context on the other hand influence a unit's receptive ability. Figure 1.6 shows how the internal R&D department, external knowledge and absorptive capacity are related in order to obtain new technological knowledge.

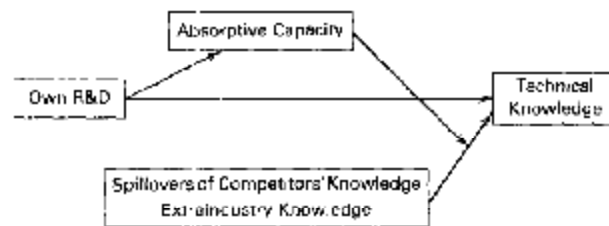


Figure 1.6 Model of sources of a firm's technical knowledge (Cohen & Levinthal, 1990, p.141)

The ability to apply knowledge to commercial ends comes down to the utilization of the new knowledge. Organizations need to avoid a gap between what is known within the organization and what is actually put into use (Szulanski, 1996). However, it is often observed in practice that some units benefit from organizational knowledge, while others do not (Hansen, 2002). Ideally organizations use the new knowledge to create opportunities for profit which are in line with the organization's objectives (Cohen & Levinthal, 1990; Lane & Lubatkin, 1998). Generally, this commercialization ability is assessed on the amount of new products / innovations. The degree to which the outside knowledge is commercialized is influenced by the connection to the firm's needs and concerns and the accumulated absorptive capacity. When the new knowledge matches the firm's needs and concerns it will not only be easier for the firm to find commercial applications; firms are also looking for ideas in a certain scope and if the ideas fit to their strategy, there will be less resistance to commercialize them (Lane & Lubatkin, 1998). At last, a firm's experience in absorptive capacity – accumulated absorptive capacity – makes a firm more familiar with the types of problems and projects so that commercialization of the new knowledge is simplified; the firm becomes able to predict the nature and commercial potential of technological advances more accurately (Cohen & Levinthal, 1990).

The necessary conditions transparency and receptivity are interconnected; a unit has to facilitate them equally in order to establish internalization of the knowledge in the focal unit

(Hansen, 1999; 2001; Tsai, 2001; Larsson et al. 1998). According to Larsson et al (1998) there are five different strategies for knowledge absorption, based on a unit's receptivity and transparency. Table 1.2 presents these strategies.

Table 1.2 *Knowledge absorption strategies (Larsson et al., 1998, p.285)*

<i>Knowledge absorption strategy</i>	<i>Receptivity</i>	<i>Transparency</i>
Collaboration	High	High
Competition	High	Low
Compromise	Moderate	Moderate
Accommodation	Low	High
Avoidance	Low	Low

1.3.4. **Obstacles to interfirm and intrafirm knowledge transfer**

Firms recognize the necessity to be able to transfer knowledge with other firms –the top 500 global companies has an average of 60 relationships each (Johnson et al., 2006). To transfer this new, external knowledge towards the firm is a key factor in a firm's competitive advantage. However, many firms find both interfirm and intrafirm knowledge transfer to be challenging (Cummings & Teng, 2003; Larsson, 1998). Therefore, this section groups the obstacles found to inter– and intrafirm knowledge transfer. Since a unit's ability to absorb and utilize the transferred knowledge depends on characteristics of the knowledge; the source; the recipient and the context in which the transfer takes place, the obstacles are grouped into these categories (Szulanski, 1996)

Obstacles relating to the characteristics of knowledge

Knowledge itself can have thwarting characteristics (Hansen, 1999; Szulanski; 1996; Gupta & Govindarajan, 1986; Argote et al, 2000; Tsai, 2001). At first it can be difficult to identify knowledge needs. Besides it can be hard to assess the feasibility of a transfer and units can suffer causal ambiguity, when the underlying factors of a capability are unclear. Relating to intrafirm knowledge transfer in particular are the unawareness of the existence of the knowledge within the organization and/or the unawareness of the location of knowledge in the organization. This is described as internal stickiness (Szulanski, 1996): knowledge is residing in one area and not easy movable to other parts of the organization.

Obstacles relating to characteristics of the source and /or the recipient

Willingness is one of the major obstacles regarding obstacles stemming from sources and/or recipients. This obstacle emerges both within the organization and between firms. Absorption and communicating of knowledge can be absent, individuals can lack the motivation to share and

assimilate knowledge or they can be not able to do so or recipients can be unwilling to absorb knowledge (Larsson et al, 1998; Argote et al, 2000; Doz, 1996; Goh, 2002). Sometimes individuals don't communicate particular practices as they don't realize the value for others; besides strong social identities or in-group favouritism can be barriers. Reasons for sources to be unwilling to share knowledge can be the fear of losing ownership; a position of privilege; lack of incentives / no adequate rewards or unwillingness to devote time and resources to support the transfer (Hansen, 1999; Szulanski; 1996). Reasons for recipients to be unwilling to absorb knowledge can be reluctance to accept knowledge from the outside; lack of confidence in the source; low priority or resistance to change (Hansen, 1999; Szulanski; 1996). With regard to intrafirm knowledge transfer interdivisional jealousy is worth mentioning as an obstacle. Tsai (2001) illustrates this phenomenon by explaining that in multiunit organizations units are forced to both compete and cooperate with each other. They have to cooperate in order to learn from each other: to gain new knowledge and exploit the economics of scope. They compete because their performance is compared among each other.

Besides willingness, a second serious obstacle is the ability to absorb knowledge (Hansen, 1999). Hereby the obstacle is a unit's incapability to utilize new knowledge. It is often difficult to understand how the knowledge should be applied and modified in order to make it appropriate for use in the focal unit. Related is the presence of stunted learning; the partners understand what is needed to succeed, but do not know how to make it happen. Besides, communication struggles can provide another serious obstacle (Arias, 1995). Communication obstacles can be found for example in a clash of personalities; increasing complexity, loss of autonomy and information asymmetry. A lack of mutual understanding and/or trust can result in less information sharing; a non-reciprocal intent and unwillingness to share information by one partner undermines the willingness of the other partner to cooperate in transferring knowledge (Yih-Tong Sun & Scott, 2005). It is obvious that this obstacle can emerge at both the interfirm and intrafirm level.

With regard to interfirm knowledge transfer two additional obstacles are mentioned in the literature. A first huge obstacle in interfirm relationships is the risk of future opportunistic behaviour (Hamel, 1991; Khanna et al., 1998; Muthusamy & White, 2005; Chesbrough et al., 2006). Firms may fear that unintended knowledge spillovers result in future competition whereby collaborators turn into competitors. Partners behaving opportunistically are using interfirm relationships for absorbing business or technological secrets. Therefore, partnerships may provide a risk of future competition (Khanna et al., 1998; Hamel, 1991). The perception of this risk can seriously impede a firm's transparency – which is required for effective interfirm knowledge

transfer. A related obstacle is the tension of value creation and value capturing in an interfirm relationship (Chesbrough et al., 2006). Each partner wants to balance their investments – value creation – and their appropriation – value capturing – which results into tensions. Next to this, learning races are associated with the so-called cooperation-competition dilemma. When learning races occur partners are “more likely to view the collaboration as a race to get to the future first, rather than a truly cooperative effort to invent the future together” (Hamel, 1991).

Interfirm knowledge transfer furthermore can be hampered by obstacles stemming from contractual agreements (Szulanski, 1996; Das & Teng, 2001; Klein Woolthuis et al., 2005). At first, contracts can block unforeseen innovation opportunities. In the second place, patents can prove to be ineffective when they reveal too much. Furthermore, it can be delicate to include concerning future contingencies. Besides, it might be difficult to realize measurement of compliance and application of sanctions and set-up– and monitoring costs might be high. At last, detailed contract may frustrate the building of trust.

Obstacles relating to characteristics of the context

Several obstacles are related to the context in which knowledge transfer takes place. Inter- and intrafirm knowledge transfer are impeded by 1) a lack of direct relationships; 2) lack of extensive communication between people; 3) communication gaps across boundaries; 4) lack of absorptive capacity; 5) costs of coordination and 6) costs in terms of time and energy (Hansen, 1999; Szulanski; 1996). Furthermore, knowledge transfer is more difficult when it takes place across-functional, geographical and organizational levels (Dougherty & Hardy, 1996; in: Cummings & Teng). Besides a knowledge distance between two parties can be hindering; that is when source and recipient do not possess similar knowledge (Hamel, 1991; Mowery et al., 1996). In §1.3.5 mechanisms to avoid these obstacles will be given.

Some context related obstacles are especially observed in interfirm relationships. Interfirm relationships are more infrequent, heterogeneous and causally ambiguous compared to other internal processes (Zollo et al., 2002) and therefore require special attention. At first, when work values and organization cultures differ, knowledge transfer becomes more difficult (Allen, 1997; Tushman, 1977, in: Cummings & Teng). Besides, the “Not Invented Here” syndrome (Katz, 2004) can block effective interfirm knowledge transfer. This is a behavioural response of employees to the introduction of external technologies. The accompanying attitude can be described as “if we didn’t invent it, it’s not very valuable”. Open innovation on the contrary, requires an attitude of ‘Proudly found elsewhere’ (Davis, 2006). Secondly, the incorporation of external technologies is also kept back by the need of minimizing risk in R&D projects

(Chesbrough et al., 2006). Because there is less known about external technologies, the perceived risk is higher which results in resistance. A third factor of influence is the internal R&D staffing level. Employees may fear that internal R&D staffing level falls when the use of external knowledge increases. Besides, employees perceive asymmetric risks; in case of failure of incorporating external technologies the project team bears the responsibility, but in case of success the internal R&D staffing levels could be jeopardized (Chesbrough et al., 2006). Interfirm knowledge transfer furthermore can be hampered by incorrect management of the relationship and obstacles related to interorganizational characteristics (Koza & Lewin, 2000; Zollo et al., 2002).

As this section shows, knowledge transfer is accompanied by quite some challenges. Therefore, the next section will give an overview of mechanisms which can be implemented to facilitate interfirm and intrafirm knowledge transfer.

1.3.5. Mechanisms to facilitate interfirm and intrafirm knowledge transfer

Now is clear that 1) internalization intent, 2) transparency and 3) receptivity need to be present for interfirm and intrafirm knowledge transfer (§1.3.3), it is important to know which mechanisms can be implemented to facilitate the presence of these necessary conditions. Figure 1.7 presents the nine key factors of knowledge transfer (Cummings & Teng, 2003).

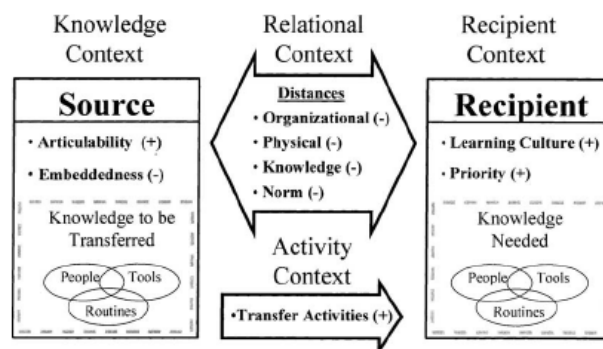


Figure 1.7 Nine key factors affecting knowledge transfer (Cummings & Teng, 2003, p. 40)
Mechanisms related to characteristics of the knowledge context

Just like the necessary conditions and the obstacles to knowledge transfer in this figure the source; the recipient, knowledge and the context in which the transfer takes place are included as meaningful categories (conform to Szulanski, 1996). The context is splitted up into relational–

and activity context. These factors are applicable to both inter- and intrafirm knowledge transfer; it is either when the source and recipient belong to the same or different firm(s). The knowledge context at first is characterized by articulability and embeddedness of the knowledge. Articulability is positively associated with successful knowledge transfer, while embeddedness of the knowledge makes knowledge transfer more difficult. This fits to §1.3.2; explicit knowledge (high articulability, low embeddedness) is easier transferable than tacit knowledge (low articulability, high embeddedness). In order to have access to new knowledge, inter-unit links and networks are recommended. Knowledge, information and resource sharing is difficult across unrelated diversified units when pre-existing relationships are absent (Gupta & Govindarajan, 1986; Hansen, 1999; 2001; Tsai, 2001). Networks should facilitate access to related knowledge (Hansen, 1999; 2001) and units need to be able to access knowledge when needed (Szulanski, 1996).

Mechanisms related to characteristics of the relational / activity context

As knowledge transfer is influenced at functional, geographical and organizational levels (Dougherty & Hardy, 1996; in: Cummings & Teng, 2003); organizational-, psychological-, knowledge- and norm distance need to be taken into account with regard to knowledge transfer. These four relational factors can be defined following the same rule: relatedness stimulates knowledge transfer. I will illustrate this by exemplifying knowledge distance. The opposite of knowledge distance (Hamel, 1991) is knowledge relatedness (Hansen, 1999); similar knowledge or technological capabilities facilitate effective transfer between source and recipient (Goh; 2002; Lane & Lubatkin, 2000; Mowery et al., 1996). Besides these factors of Cummings & Teng (2003) the relational context furthermore consists of the governance structure which affects interfirm knowledge transfer (Kogut, 1988; Mowery et al., 1996; Muthusamy & white, 2005). The ownership control in joint ventures is seen as a facilitator of transfer of complex knowledge.

With regard to the activity context, transfer mechanisms should be implemented which focus on 1) the embeddedness of knowledge, 2) management and administrative structures and 3) transferring the knowledge itself (Cummings & Teng, 2003). Intensive interaction and social exchange are seen as essential processes to ensure transparency (Larsson et al., 1998; Faems et al., 2005; Muthusamy & White, 2005; Gupta & Govindarajan, 1986; Szulanski 1996; Zollo et al., 2002). The authors all emphasize on pre-existing relationships and organizational familiarity as means to enhance transparency. They state that a network should consist of weak and strong ties, as intermediaries are more likely to provide new knowledge than direct contacts (Hansen, 2002) and relationships should be established across unit's boundaries (Hansen, 1999; Tsai, 2001);

boundary spanning activities (Muthusamy & White, 2005; Hansen, 2002). Transparency is furthermore facilitated by long-term orientation (Larsson, et al 1998); training, organizational and structures and information technology systems (Goh, 2002; Foss & Pedersen, 2002).

Besides the mechanisms just described figure 1.7 needs to be filled up with two mechanisms which are valued in the literature to be key facilitators of knowledge transfer: trust and governance structure.

Trust is commonly accepted as a critical factor to make interfirm relationships succeed (Ring & Van de Ven, 1994; Nooteboom, 2000; Klein Woolthuis et al., 2005; Das & Teng, 2001) but also has been increasingly recognized as an essential contributor to knowledge transfer more recently (Chen, 2004; Muthusamy & White, 2005; Faems et al, 2007). Trust is defined as “ the expectation that a partner will not engage in opportunistic behaviour, even in the face of opportunities and incentives for opportunism, irrespective of the ability to monitor or control that party” (Klein Woolthuis et al., 2005). Thus expectations are covered about what others will do in circumstances that are not explicitly covered in a written contract. Trust has two dimensions: competence and goodwill (Nooteboom, 2000). Competence refers to the confidence one has in the technical, cognitive, organizational, and communicative competences. When competence trust is established, the external partner is perceived to be able to act appropriately. Goodwill is described as intentional trust; the intentions of a partner towards the relationships and the belief in the benevolence/goodwill of the partner. Trust affects interfirm knowledge transfer positively (Chen, 2004) due to two reasons: trust reduces the risk of opportunism and encourages contact between partners. Trust reduces concerns about opportunistic behaviour and reduces the need for formal contracting, because the perceived necessity for protection is absent. Trust facilitates the engagement of members, synergistic social behaviours; the stimulation of excessive communication and information sharing on an informal basis Better integration / simplified coordination can be another outcome (Das & Teng, 2001). Although trust of course is also of importance within firms, the emergence of trust is less obvious between firms.

Now it is clear that trust is an important facilitator it is necessary to know how trust actually can be established. Competence trust is based on the resources and capabilities of a firm. Faith in the goodwill of the external partner can be reached by shared norms, values and beliefs. The firm has to be confident about the external partner’s good faith, good intentions and integrity (Nooteboom, 2000). This confidence is influenced by the reputation of the external partner (Das & Teng, 2001). Furthermore, personal characteristics; institutional arrangements and situational factors are said to be of influence (Das & Teng, 2001). It can be established at multiple levels: from personal to interorganizational. In order to build competency trust, at first the partners

should be open and share information. Other factors that stimulate competency trust are the setting of objectives, planning and budgeting and the establishment of a participatory decision-making process. Goodwill trust can be established by mutual interests, individual and team trust and joint dispute resolution. Policies and procedures, reporting structures and staffing and training also are essential to develop trust. When goals and preferences are congruent, commitment increases. This can be stimulated by cultural activities, like networking (Nootboom, 2000). So, establishing trust requires a quite extensive method of working.

The governance structure also affects the interfirm relationship and interfirm knowledge transfer. Contractual agreements on the one hand are seen as a facilitating mechanism because contracts fulfil several functions and with that the content of a contract can influence whether an interfirm relationship will be successful or fail (Hagedoorn, 2002; Klein Woolthuis et al., 2005; Das & Teng, 2001; Das & Teng, 2002; Nootboom, 2000). Contractual agreements are facilitating interfirm knowledge transfer because they restrict the opportunities for opportunism, make expectations predictable and give guidelines for coordination (Szulanski, 1996; Das & Teng, 2001; Klein Woolthuis et al., 2005). Contracts reduce the chance of opportunistic behaviour to occur by safeguarding the intellectual property rights, spill-over risks and external contingencies in long-term relationships. Expressing expectations enables the prevention of misunderstanding and it can result in commitment; a tangible expression of their trust in each other and their intention to be loyal partners. By making management practices explicit, the division of labor and the interactions between partners become more predictable and joint decision making can be speeded up. Equity-based alliance forms on the other hand, are expected to provide a more effective setting for discovery and learning of new knowledge than contract-based alliance forms, because equity-based alliance forms imply more active involvements of the partners and may promote more interactions than contract-based alliance forms do" (Chen, 2004). Thus equity and non-equity governance structures are facilitating the interfirm relationship in different ways, and therefore a conscious choice for the governance structure is recommended.

Mechanisms related to the recipient context

Concerning the recipient's context key are the priority of the project for the recipient and its predisposition for knowledge generating (Cummings & Teng, 2003). Knowledge commitment is relevant to priority. Especially when this commitment is reciprocal it facilitates knowledge transfer (Leonard-Barton, 1995; Mowday et al., 1979 in: Cummings & Teng, 2003; Muthusamy & White, 2005). When people are committed to the knowledge, they see the value of it; develop competence in using the knowledge; are interacting with the knowledge and are willing to put

extra effort in it. Connecting priority to the development of knowledge management structures, senior management support is therefore critical (Gold et al., 2001; Davenport et al., 1998; Goh, 2002; Tidd et al., 2005). An organization that is eager to absorb knowledge, will have an extensive set of routines and generating competencies to retain and nurture knowledge and therefore will achieve greater knowledge transfer success (Cummings & Teng, 2003). Table 1.3 provides an overview by combining the nine key factors of Cummings & Teng (2003) with the mechanisms mentioned in this section.

Table 1.3 *Facilitators of intrafirm knowledge transfer*

<i>Key factor</i>	<i>Facilitators</i>
<i>Knowledge context</i> Davenport et al., 1998; Kogut, 1988; Mowery et al., 1996; Chesbrough et al., 2007).	<ul style="list-style-type: none"> - Knowledge linked to economic performance or industry value - Socialization - Active cooperation
<i>Relational context</i> Hansen, 1999	<ul style="list-style-type: none"> - Relationships - Supporting technical and organizational infrastructure
<i>Activity context</i> Cummings & Teng, 2003; Argote et al., 2000; Gupta & Govindarajan, 1986; Szulanski, 1996; Davenport et al., 1998	<ul style="list-style-type: none"> - Inform everyone in a group of each other member's expertise - Personnel movement - Training and communication - Observation and technology transfer - The "reverse engineering" of products - Replication of routines - Use of patents, scientific publications and presentations as sources of knowledge transfer - Incentive systems - Formal structure and systems - Sources of coordination and expertise - Foster closer relationships - Encouragement of communication - Devoting scarce resources and managerial attention
<i>Recipient context</i> Davenport et al., 1998; Goh, 2002	<ul style="list-style-type: none"> - Knowledge-friendly culture - Multiple channels for knowledge transfer - Senior management support - A cooperative and collaborative organizational culture - Applied management to the type of knowledge which is transferred.

1.4. Conclusion

This chapter made clear how interfirm relationships, interfirm knowledge transfer and intrafirm knowledge transfer are interrelated. It became clear that interfirm relationships only make sense if the partners benefit from it, i.e. if they are able to utilize the new knowledge. From the literature could be deduced that this not only depends on the degree to which interfirm knowledge has taken place, but also on the absorptive capacity of the focal organization. Now it is clarified which factors influence the utilization of external knowledge, it is interesting to investigate in which way organizations absorb valuable knowledge out of interfirm relationships and to what extent they utilize this knowledge.

The business unit Sara Lee International Coffee & Tea (Sara Lee) participates in several interfirm relationships, with partners diverging from universities to joint development partners (for a broader description I refer to §2.3). With regard to interfirm knowledge transfer and intrafirm knowledge transfer the organization observes various challenges. For instance, formal knowledge management is lacking and consequently it is not known how and if the new external knowledge flows through the organization and on which internal levels knowledge is shared. Sara Lee International Coffee & Tea is generating external knowledge in several projects and therefore this division is an appropriate research setting to explore interfirm knowledge transfer within interfirm relationships and the transfer of such knowledge within the focal organization (visualized in figure 1.1). The central question of this research is formulated as following:

To what extent is knowledge transferred within the interfirm relationships of Sara Lee International Coffee & Tea and how is this knowledge transferred within the focal organization?

This question is itemized in the following three sub questions:

- 1) Which types of knowledge are transferred within relationships with different kinds of partners?
- 2) How is this knowledge transferred within interfirm relationships and what are the main obstacles to interfirm knowledge transfer with different kinds of partners?
- 3) How are results of these interfirm knowledge transfer processes transferred within the focal organization?

This thesis continues with the research method used (chapter 2) in order to explain in which way interfirm- and intrafirm knowledge transfer will be explored in this study.

CHAPTER 2 RESEARCH DESIGN

2.1. Introduction

The purpose of the research is to explore interfirm relationships in terms of interfirm knowledge transfer. In order to do so, a multiple case study is conducted. Several partners of Sara Lee International Coffee & Tea were selected in order to see how interfirm knowledge transfer takes place. This chapter explains why the choice for case study research is made and in which form this research method is applied (§2.2), after which the research setting – Sara Lee International Coffee & Tea – will be described (§2.3). In §2.4 an overview of the case selection will be presented, §2.5 at last makes clear how the data are collected and analyzed.

2.2. Research method: case study research

Considering that the main objective of this research is to explore how knowledge is transferred 1) between organizations and 2) within Sara Lee International Coffee & Tea, the choice for a case study in this research seems evident. The processes under study are present-day phenomena and are situated outside the scope of influence of the researcher. When these criteria are met, a case study has a clear advantage above other methods (Yin, 1984). The author further states that a case study provides an advantage when a ‘how’ or ‘why’ question is being asked about a contemporary set of events over which the investigator has little or no control. In case studies data collection and analysis is guided by the prior development of theoretical propositions. When looking at the research questions, it becomes clear that they fulfil the requirements just mentioned and therefore the research questions are used for the development of the case studies. Beside this, the research objectives aim at the analyzing of continuous processes and interconnected levels; therefore case studies are a well-suited method (Faems, 2006). Verschuren & Doorewaard (2000) add that a case study is a well-suited research method for a starting researcher because of the limited proportions, a relatively easy access to relevant results and the applicability to many situations. Case studies can be typified by six characteristics: 1) a small number of research units, 2) a labour-intensive approach, 3) profundity, 4) strategic sample, 5) qualitative methods and data and 6) an open investigation in the natural environment (Verschuren & Doorewaard, 2000).

Like every research method, case studies have several benefits and drawbacks. The major benefit is that case studies can provide an integral insight, especially in circumstances of change (1). Case studies need less structure and therefore there is space for applying changes during the research (2). Another advantage is that results of a case study are easier accepted, because of the

previous interaction between researcher and respondents and usually ordinary characteristics of the results (3). A potential drawback is the risk that the investigator is influenced by equivocal evidence or a biased view (1). The investigator should be aware of this risk. Next to this, the external validity of case studies is another point of concern (2). However, this is not so relevant in a practical research where the results are provided to a specific organization (in this case: Sara Lee International Coffee & Tea). When investigating a previous or ongoing relationship, the investigator should be aware that the future of the relationship can be jeopardized (3). At last, case studies require much time and result in a high amount of data (4).

2.2.1. Multiple case study

The research method that is chosen is the multiple-case study. The aim of multiple-case studies is to see processes and outcomes across many cases, to understand how they are qualified by local conditions, and thus to develop more sophisticated descriptions and more powerful explanations (Miles & Huberman, 1994). A multiple case study makes a comparison of relationships possible and therefore this research method is appropriate here.

Multiple case studies are recommended with regard to investigating interfirm relationships (Faems, 2006). Besides, this method offers the benefit of more theory-driven variance and divergence in the data. Moreover, generalizability is enhanced and understanding and explanation is deepened. Multiple case studies therefore support the building of theory. The evidence of multiple-case studies is more compelling, however the drawback is that this method is quite intensive (Yin, 1984). Therefore, this study should follow a specific purpose. This is done by theoretical sample selection of the cases, which is described in §2.4.2. Before, the research setting will be illustrated.

2.3. Research setting: Sara Lee Corporation

Sara Lee International Coffee & Tea is widely known for products resulting from successful relationships with external partners. The most familiar example is the Senseo, a coffee machine which is developed together with Philips. Another example is a ready to drink coffee, Café Fresco, which is developed together with Campina. After these successful projects, the company wants more and puts emphasis on open innovation. This focus is quite recent; a formal policy is not yet developed. However, the intention to use both internal and external ideas exists; the only question is how this should be done. The successful collaboration history and the challenges the

company faces to innovate more open, makes Sara Lee International Coffee & Tea an ideal research setting to explore how knowledge transfer takes place in interfirm relationships.

2.3.1. Sara Lee Corporation

Sara Lee Corporation is a global manufacturer and marketer of food, beverage, household and bodycare products for consumers, which is divided into three businesses: 1) Sara Lee Food & Beverage, 2) Sara Lee Foodservice and 3) Sara Lee International. Sara Lee International is headquartered in The Netherlands and manages Sara Lee's non-U.S. coffee and tea businesses, the worldwide household and body care operations and the non-U.S. bakery businesses. This research is conducted within the division Sara Lee International Coffee & Tea.

2.3.2. Sara Lee International Coffee & Tea

Sara Lee International Coffee & Tea exploits well-known brands like Douwe Egberts, Senseo and Pickwick globally. Beside these brands, the division also exploits local brands. In total Sara Lee International consists of eleven coffee & tea brands which are in the market in twenty-three countries. Hereby the market is divided into retail; consumers and out of home; for example coffee in bars or companies. Tea is one group; coffee is subdivided in liquid coffee; single serve systems; instants; roast & ground and coffee innovations.

2.3.3. Innovation within Sara Lee International Coffee & Tea

Within the division several structures are implemented to stimulate innovation of coffee & tea products. At first there is a R&D centre which is responsible for the developments and improvements of all coffee & tea related products of Sara Lee. This centre is located in Utrecht, the Netherlands, and consists of 80 employees. Together with the marketing department for the global brands – which at the same time works on innovation – this R&D centre belongs to the department Global Brands Equity and Innovation. The R&D budget is limited: less than one percent of the turnover of the division. Next to the R&D centre there are other formal ways which aim to stimulate innovation in the division. At first there is an innovation team which has regular meetings regarding both incremental and radical innovation. Innovation platforms were developed for incremental innovations and recently a taskforce has been formed for radical innovation. There are several innovation functions, among others: the senior vice president global brands equity & innovation; the function of innovation director, responsible for innovation

projects; a responsible for global market consumer research and the function of vice president for coffee innovations global brands. Moreover, the organization as a whole is more innovation focused thanks to the chairman and chief executive officer of Sara Lee Corporation who has an emphasis on growth by innovation instead of consolidation.

2.3.4. Sara Lee & open innovation

The environment of Sara Lee International Coffee & Tea is full of competitors who seem to know how to deal with open innovation. Competitors like Nestlé en Kraft conduct fundamental research together with universities; other cooperations like Procter & Gamble and Unilever are worldwide known for their open innovation policy. Because Sara Lee also accomplished successful open innovation projects, the reputation of the business unit is that they do pretty well in innovating with partners. However, the paradox is that there is no open innovation policy developed. The competitive pressure – plus the success of previous external projects – made Sara Lee aware that they need to become more open in order to be and stay innovative. The division wants to know with whom to collaborate and how to commercialize this new knowledge into new innovations. Problem is that knowledge about previous and current projects lacks. What is known is that currently, most interfirm relationships originate ad-hoc; an employee has a specific problem, approaches an external party and a relationship has been born. Beside this, there is no complete overview of the relationships with external partners. This is partially due to the ad-hoc originating, but it is also caused by the lack of structural internal announcements about the interfirm relationships. Result can be that there exist valuable contacts without some relevant people knowing of it. Next to this, it is not known how and if the new external knowledge flows through the organization. Since the so-called relationship portfolio is not managed strategically yet, another challenge is to know which partners are missing in the current portfolio. As becomes clear, insight in the current situation in terms of interfirm knowledge transfer and intrafirm knowledge transfer should be gained in order to see what could be learned from these projects for a future open innovation policy.

2.4. Case selection

The case selection is based on the hierarchical method (Verschuren & Doorewaard, 2000). The hierarchical method consists of two stages. The first stage is an independent and separate study of the cases; the mapping of the current network (§2.4.1). After this mapping, the cases were selected by theoretical sampling (§2.4.2). The second stage is based on the results of the first

stage and consists of a comparative analysis of the dependent cases; the multiple case study of the five selected cases (§2.4.3).

2.4.1. Current network Sara Lee International Coffee & Tea

The first stage of the research consists of a network mapping. The goal of this mapping was twofold: to get an overview of the sample population and to get access to potential cases. In a period of two weeks fourteen conversations of each a half hour were accomplished to get a right understanding of the current interfirm relationships. Via contacts in the organization and on account of the small distances, appointments were easily made within the organization. By brief orientation conversations insight in the current interfirm relationships was acquired. During these conversations people were asked whether they would like to collaborate with the final research and if it was likeable that the external party was willing to join the research as well. Table 2.1 provides an overview of the current interfirm relationships.

Table 2.1 *Overview of current interfirm relationships within Sara Lee International Coffee & Tea*

<i>Type of partner</i>	<i>External partner</i>
Competitors	<ol style="list-style-type: none"> 1. International branch organization ISIC 2. International branch organization ICO 3. National branch organization VNKT
Consumers	<ol style="list-style-type: none"> 1. Turbo factory – consumer research with lead users 2. Blend days – consumer research at Sara Lee International 3. Consumer insight / connection – consumer research at the consumer's home
Customers	<ol style="list-style-type: none"> 1. Tesco (UK) 2. Waitrose (UK)
Suppliers	<ol style="list-style-type: none"> 1. Foil packaging supplier [...] 2. Campina 3. IFF 4. Philips 5. Carton packaging supplier [...]
Universities	<ol style="list-style-type: none"> 1. Dutch university [...] 2. Ludwig-Maximilians-Universität München
Research institute	<ol style="list-style-type: none"> 1. Food research institute [...]
Educational institution	<ol style="list-style-type: none"> 1. Educational design institute [...]

2.4.2. Theoretical sampling

In multiple case studies, a selection of cases needs to be made. Since case studies consist of a small number of cases in order to remain the depth and because these studies are also restricted by

the labor-intensive character, a proper selection of cases is an important aspect (Yin, 1984). In this research the cases are selected according to the theoretical sampling method.

Before taking a sample, the sample population should be defined. Several authors indicate why and how this should be done (Eisenhardt, 1989, in: Faems, 2006; Yin, 1984; Verschuren & Doorewaard, 2000). An appropriate population controls extraneous variation and helps to define the limits for generalizing the findings. Since this research aims to investigate among the partners of Sara Lee International Coffee & Tea, the first step which is taken, was the mapping of all the current interfirm relationships of this division (§2.4.1) in order to get an overview of the population.

After the population was defined, the sample taking followed. The goal of theoretical sampling is to choose cases which are likely to replicate or extend the emergent theory; sampling is based on the research design and goals (Yin; 1984). In this research the theoretical propositions directed to select cases based on 1) the occurrence of interfirm relationships, in order to analyze interfirm knowledge transfer, 2) diversity; since the objective is to analyze different partners and on 3) the possibility to investigate both interfirm and intrafirm knowledge transfer. As downstream and upstream partners differ in their contribution to innovation, it is interesting to compare among them. Besides, grouping partners in either downstream or upstream enables cross-case analysis. Therefore, the theoretical sampling also aimed to select both downstream and upstream partners. Furthermore, Verschuren & Doorewaard (2000) add that cases can be 1) selected based on a minimum level of difference, 2) selected based on a maximum level of difference or 3) selected by snowball sampling; selecting each case based on the previous case. In this research the cases are selected on the one hand on a similar level of collaboration (in order to establish a minimum level of variation), but on the other hand on a certain amount of diversity (in order to select cases consistent with the research objectives). Beside the criteria obtained from the research objectives, two practical implications influenced the case selection. At first the willingness to join the research; of both the internal and the external parties. Next to this, the appropriateness of a case was also influenced by the sensitivity of the relationship in terms of confidentiality and tensions between the partners.

2.4.3. Selected cases multiple-case study

After an overview of the interfirm relationships was available, the case selection could be made – based on the criteria mentioned in the previous section. Table 2.2 presents the selected five cases.

Table 2.2 Brief overview of the selected cases

Case	Type of partner	Goal of the collaboration	Initiative	Persons involved (internal)	Persons involved (external)
<i>Carton Packaging Supplier</i>	Supplier downstream	- New ideas - External view on innovation	External partner	24	6
<i>Foil Packaging Supplier</i>	Supplier downstream	- reduce manufacturing costs - closer on innovation: new products	SLI / External partner	17	10-15
<i>Educational Design Institute</i>	Educational institute upstream	- Bigger steps, out of the box thinking - new ideas, variety in ideas	SLI	2	38
<i>Food Research Institute</i>	Private Laboratory upstream	- use of external facilities and knowledge - knowledge about a specific problem, methods, models - enable new products	SLI	10	10
<i>Food Chemistry Group University</i>	University upstream	- to gain knowledge - to solve an existing problem	SLI	8	5-10

2.5. Data collection and analysis

Besides the informal conversations, data were gathered by interviewing. This section describes in which way the interviews were conducted, how the data were processed and according to which method they were analyzed.

2.5.1. Source of data: interviews

In the multiple-case study the data were collected by interviewing. Interviews are reckoned to be essential sources of case study information (Yin, 1984): interviews can provide access to in-depth insights and take place in the natural environment.

The goal of interviews is to gather information from the announcements of questioned persons in order to answer one or more research questions which are formulated in advance (Emans, 2002). Corresponding to this, the interview protocols were established in advance and were completely based on the research questions and the theoretical framework. For a detailed

overview of the interview topics and questions see the appendices for the internal (p.84) and the external interview protocol (p.88). Other characteristics of interviews are that they offer the opportunity of open questioning and interrogating on answers. In order to ensure that the questions are not aiming in a certain direction, the interviewer needs to take an objective and impartial position (Emans, 2002). The majority of the questions in the interview protocol were open questions. These questions are labor-intensive for the interviewer, but stimulate the interviewee because he can freely talk (Yin, 1984). Open questions are especially appropriate when there is little known about the expected answers. The aim was to collect retrospective data by the interviews, because it is quite a focused manner of data collecting and it offers the opportunity to speak about complete projects in the relationship (Faems, 2006).

The sequential method was followed with regard to the interviewing. In the sequential method new cases are selected after conclusions have been drawn over the previous case (Verschuren & Doorewaard, 2000). This method could not be adopted – due to time and resource constraints – while selecting the cases, however with interviewing the method added value. All the internal interviews were conducted – and in most cases also completely transcribed – before the external interviews were conducted. This enabled to pay attention to special matters and focus on certain topics for example. Applying little changes is in accordance with case study methods. The interviews are carried out in a semi-structured way; there was some space for the sequence of questions to be changed by the interviewer.

The conducting of the interviews took place face-to-face. This was possible because the internal informants were easy reachable and provided access to external contacts. The advantage is that each interviewee is interviewed in their natural environment and this resulted in enriched communication. The interviewees in this research can be described as informants; information was gathered about matters or persons outside the interviewees (Verschuren & Doorewaard, 2000). In order to gain richer data, for each case at least one internal and external informant was interviewed. When possible, more than one internal informant was interviewed as interesting insights can be obtained among function levels. The length of the interviews differed among whether the informant was internal or external. Interviews with internal informants were scheduled for one and a half hour, while interviews with external informants demanded one hour. Since external persons have little returns by this research for themselves, I expected their willingness to spend time unselfishly to be lower.

During the last three weeks of October 2007 sixteen interviews were conducted among ten internal informants and six external informants. A brief overview is presented in table 2.3.

The average interview took approximately 57 minutes. All the interviews were conducted in their local context: internal interviews at Sara Lee, external interviews at the informant's office.

Table 2.3 *Overview of interviews conducted*

<i>Case</i>	<i>Internal informants</i>	<i>External informants</i>
#1 Carton packaging supplier	1	1
#2 Flexible packaging supplier	2	2
#3 Educational Design Institute	2	1
#4 Food research institute	3	1
#5 Food Chemistry group university	2	1
<i>Total</i>	<i>10</i>	<i>6</i>

2.5.2. Transcribing

All the interviews were taped and transcribed; this is recommended to assure effective data collection as recordings provide the most accurate rendition of the interview (Yin, 1984; Miles & Huberman, 1994; McLellan et al., 2003).

Transcripts need to be generated systematically and consistently in order to be comparable, therefore it is recommended to transcribe a complete verbatim account of the interview (McLellan et al., 2003). In accordance to this recommendation, all the interviews were digitally recorded and verbatim transcribed all in the same standardized manner and they were transcribed by the interviewer herself. All transcripts were only accessible for the researcher in order to ensure confidentiality. Each digital recording was saved until the final conclusion drawing, so that listening back in case of unclearness was possible. All informants were given the opportunity to correct the transcripts; it was sent to them by e-mail and they got a period of two weeks to revise the document. The informants who responded all gave permission for the use of the data, but a few were surprised by the preciseness of the transcript and asked for a confidential treatment of their statements. An e-mail was sent to each of them personally to warrant confidentiality.

Transcripts allow researchers to make sense of and understand interviewee's experiences and perceptions and influence the analysis process. After transcribing the textual data were applicable for qualitative data analysis (Yin, 1984; Miles & Huberman, 1994; McLellan et al., 2003). As transcripts can be done at different levels of detail, the level of transcription should align with the level of analysis. An in-depth analysis requires a detailed transcript. Since interviews are the only source of data, a detailed transcript was meaningful here. However, McLellan et al. (2003) warn the textual data will never fully encompass all that takes place during an interview; the non-verbal communication cannot be taken into account.

Transcribing is a time intensive method, not only tracking the audio recordings requires time; transcribing usually results in many pages with data. In a small research project like this, no division of labor was necessary: interviewing, transcription and data interpretation were all done by the same researcher. So, the chance of undesirable data interpretation was here reduced. Nonetheless, the average transcript counts 6892 words and 16,5 pages (for a detailed overview see the appendices, p. 83). So, the data are quite massive and as humans are not capable to process large amounts of extended text (Miles & Huberman, 1994), data selection was needed.

2.5.3. Data analysis

In order to be able to draw conclusions and verify the data, the data were analyzed according to a first order analysis and a second order analysis.

At first several steps were taken to make a selection of the data. Because conceptual frameworks and research questions are the best defence against overload (Miles & Huberman, 1994), the interview protocol was completely based on the concepts of the theoretical framework and the research questions. When five transcribed interviews were available, anticipatory data reduction found place by reviewing the interview protocol. During this review the theoretical concepts and the answers of the informants were compared to each other. In case relevant answers were repeatedly missing, questions were added. One week later, after ten conducted interviews, the interviews were reviewed again according to the same review method. During the conducting of the interview, data collecting took place in two manners; digital recordings and memoing. For this so-called memoing (Miles & Huberman, 1994) the protocol was used as cluster so that notes connecting to the theoretical variables were made during the interviews. These notes were used to guide the continuation of the interview and are kept for further data analysis. When all digital recordings were transcribed, all the transcripts were connected to the interview questions as a first step to order the data. Subsequently five case summaries have been made. These summaries were based on the three research questions. For each case the three research questions are answered by the listing of interviewee pronouncements. Noteworthy is that for each case rich data were available: reports of the informal conversations; memos and the interview transcripts. The informal conversations and interview transcripts were compared on consistency and completeness; quite frequently they provided valuable complementary information.

Although it was planned to collect exclusively retrospective data, this appeared to be impossible in some cases. Therefore, this data reduction planned in advance could not be done in all cases. For example the case with the foil packaging supplier; this is a currently running project

which is started for the first time and therefore, longitudinal data collection appeared to be the only option. On the other hand, in cases where retrospective data collection was possible, it was not always easy to stay focused, because informants continued to quote examples from all kind of projects with the partner.

When all the data were collected, a data display has been created. Because a display organizes and compresses information it is a valuable tool, as it was unrealistic to get an overview of 265 pages of transcribed data. The data display lists the five cases on the rows and the columns are based on the relevant theoretical and empirical concepts. For each research question a separate display is made. Miles & Huberman (1994) give several guidelines for data analysis in a multiple case study. They state that some extra steps in the analytical process are required. At first, the complex configuration of processes and the understanding of the local dynamics have to take place within each case. This is realized, because the data display handles each case separately and therefore an analysis could be made of each case. Cross-case analysis is the second step. This includes patterning of variables that transcends particular cases. According to the authors, points of attention are the maintenance of the case conditions during the analysis; the combination of variable-oriented and case-oriented strategies; attention for deviant cases and the necessity of looking for configurations behind typologies and case families.

The data analysis followed two steps: first order analysis and second order analysis. Table 2.4 describes the steps which have to be taken.

Table 2.4 *Analytical steps for analyzing qualitative data (Miles & Huberman, 1994)*

<i>First order analysis</i>	
1 st step	Affixing codes to a set of field notes
2 nd step	Noting reflections or other remarks
3 rd step	Sorting and sifting to identify similar phrases, relationships between variables, patterns, themes, distinct differences between subgroups and common sequences
<i>Second order analysis</i>	
1 st step	Isolating these patterns and processes, commonalities and differences
2 nd step	Gradually elaborating a small set of generalizations that cover the consistencies
3 rd step	Confronting those generalizations with a formalized body of knowledge in the form of constructs or theories

According to Van Maanen (1979) first-order concepts are the ‘facts’ of an [...] investigation and the second-order concepts are the ‘theories’ an analyst uses to organize and explain these facts. The first-order analysis aimed to structure the data according to the research questions and uses only original citations of the informants. By ordering the interview citations in the display – described above – labels were established. This coding process was based on the research

questions, theoretical concepts and empirically derived concepts (Miles & Huberman, 1994). For an extensive presentation of the data obtained from the interviews, see chapter 3. When the data were presented in a structured form, the second-order analysis could be started up.

Second-order concepts are the notions used to explain the patterning of the first-order data; statements about relationships between certain properties observed to co vary in the setting. The second-order analysis aimed to draw conclusions and a verification of the data. The final goal of a second-order analysis is to answer the research questions and explain these answers. So, in this stage meanings were drawn from the data and connections with theoretical concepts were made. The second-order analysis can be found in chapter 4.

CHAPTER 3 RESULTS

3.1. Introduction

In this chapter the results which could be deduced from the interview data are presented. In order to get insight in the knowledge transferred in relationships with different kinds of partners an overview of the types of knowledge Sara Lee exchanged with downstream partners (§3.2.1) and upstream partners (§3.2.2) will be given. Subsequently, §3.3 classifies the way in which the knowledge was transferred and the accompanying main obstacles. The interfirm knowledge transfer processes and the accompanying obstacles are analysed by investigating the transparency in downstream cases (§3.3.1) and in upstream cases (§3.3.2) and the receptivity with respect to downstream partners (§3.3.3) and upstream partners (§3.3.4). To make clear how the results of interfirm knowledge processes were transferred within Sara Lee, the processes of intrafirm knowledge transfer are analyzed in §3.4. Hereby attention will be paid to the accessibility of internal knowledge (§3.4.1); the absorption of internal knowledge (§3.4.2) and the utilization of new knowledge (§3.4.3).

3.2. Types of knowledge exchanged

To get an overview of which types of knowledge are transferred within relationships with different kinds of partners, this section analyses firstly the knowledge transfer between Sara Lee and downstream partners (§3.2.1), after which the types of knowledge exchanged with upstream partners will be analysed (§3.2.2).

3.2.1. With downstream partners

In both downstream cases existing knowledge is transferred among Sara Lee and the external partner; though the types of knowledge actually transferred differ across the cases.

Table 3.1 shows that at the first sight the knowledge transferred in the ‘carton packaging supplier case’ and the ‘foil packaging supplier case’ is quite similar. In both cases the emphasis lay on knowledge related to products / materials and knowledge relevant for new product development. What’s more, all partners aimed in the relationship directly at new product applications. The informants however indicated that within the relationship, sharing of knowledge about processes did not occur. The citations below show that existing knowledge was transferred in both cases.

“We have had a meeting and I had a lot of questions. Especially about the use of coffee, the image of coffee, the main challenges and developments of Sara Lee and their current focus and they provided really elaborate answers. So that went very well.” (External informant)

“Because they [the foil packaging supplier] have the core competency. They have all the technologies. ... They have people dedicated to innovation and to development, it is very important. You need competencies, resources,... [the foil packaging supplier] has. And they are used to work in the coffee and food industry. And they know more or less what we are doing. ... When we ask requirements ... we want a packaging concept, ... [the foil packaging supplier] is able to deliver 90% of what we need.” (Internal informant)

Table 3.1 Knowledge transferred between Sara Lee and downstream partners

Case	Knowledge absorbed by Sara Lee*	Knowledge absorbed by external partner*
Carton Packaging Supplier	<ul style="list-style-type: none"> - ideas - prototypes - common information about the company - consumer research method - participation innovation seminar 	<ul style="list-style-type: none"> - Project specific information - Sara Lee market knowledge - The use of coffee - The image of coffee - The main challenges and developments within Sara Lee - Action plan innovation
Foil Packaging Supplier	<ul style="list-style-type: none"> - Material types: specifications, information - Access to their core competencies, resources, technologies - Plant information - Innovation letter - Samples and new ideas. mock-ups - Packaging methods 	<ul style="list-style-type: none"> - Sara Lee needs - Product knowledge - Business related information. - More accurate information about running projects

* ‘Knowledge absorbed’ means that the knowledge was disclosed by the partner and has been accessed and assimilated by the focal partner.

When looking at the transfer of tacit and/or explicit knowledge, the cases differ. The ‘carton packaging supplier case’ is characterized by transfer of mainly explicit knowledge, while in the ‘foil packaging supplier case’ tacit and explicit knowledge are transferred more in proportion. These differences in whether tacit knowledge was transferred or not, can be explained by the differences in interface structure and action routines among these two cases. The ‘carton packaging supplier case’ is lacking a formal structure and communication takes place ad-hoc. Interfirm communication only occurred when questions came up and exclusively in formal face-to-face meetings. Besides, Sara Lee did not visit the external partner’s site at all, which is appropriate to get a better insight in the external partner and consequently a way to absorb tacit knowledge. In the ‘foil packaging supplier case’ on the other hand, an interface structure and thereby action routines were established. By having an implant manager at the R&D department,

the sharing of tacit knowledge was not only unavoidable, but also desired by the partners in order to improve communication.

The cases differ also with regard to the knowledge they initially aimed to assimilate. Within the carton packaging supplier case it was Sara Lee's goal to get new innovative ideas and thus an exploration strategy was observed. In the foil packaging supplier case Sara Lee aimed at both acquiring knowledge that facilitates exploitation and exploration: access to resources and cost reduction are in line with exploitation, while exploration is facilitated by joint innovation projects.

Although the downstream partners are both packaging suppliers, the knowledge transferred is not completely equal across cases as this section showed. The strategies and underlying structures differ, which resulted in different knowledge transfer. Explanation can be that Sara Lee already had a long relationship with the foil packaging supplier, before starting up this specific cooperation. Moreover, the foil packaging supplier is a so-called preferred supplier in contradiction to the carton packaging supplier.

3.2.2. With upstream partners

The interfirm relationships have resulted into the transfer of existing knowledge in the upstream cases, whereby the types of knowledge transferred differed among cases.

An overview of the knowledge transferred within the relationships with upstream partners is presented in table 3.2. At first it becomes clear that the knowledge transferred across the various upstream partners differ, but that transfer of existing knowledge took place in all cases.

"We mainly used their [food research institute] pilot facilities. We did not have that opportunity internally and thus we went to them. ... It results in information which can be applied ... it gives at least direction for solutions of my problems" (Internal informant)

"In general, you do broaden your knowledge base and it resulted indeed into that. ... So coffee, we have acquired quite some experience with that in Sara Lee projects" (External informant)

Within the 'educational design institute case' mainly ideas for new product development were exchanged (just like the downstream cases). Both Sara Lee and the external partner aimed the relationship to result in ideas applicable for the design of a specific coffee machine. While the cases with the food research institute and the food chemistry group of the university (next abbreviated to university) aimed more general at new knowledge about materials / products and acquiring new skills. Hereby was not aimed at specific product applications, but instead on broadening the knowledge- and skill base in certain challenging areas. Remarkable is that the

sharing of processes was not frequently mentioned by the informants; except the ‘food research institute case’ where the sharing of certain processes has been taken up in the project description.

The cases are similar in the transferring tacit as well explicit knowledge between the partners. In the ‘educational design institute case’ concrete samples and written ideas were exchanged as well as the invitation of external contacts at the manufacturing plant took place. In the ‘food research institute case’ also both types have been observed: exchange of employees (tacit) and establishment of a computer program (explicit). The case with the university exchanged explicit knowledge for example in the form of reports, where exchanging tacit knowledge was established by the transfer of employees between the partners.

Table 3.2 *Knowledge transferred between Sara Lee and upstream partners*

<i>Case</i>	<i>Knowledge absorbed by Sara Lee*</i>	<i>Knowledge absorbed by external partner*</i>
Educational Design Institute	<ul style="list-style-type: none"> - Idea book: professionally bound - Ideas for NPD - Objects that can be implemented in the market: directly and indirectly - Present-day and future Applications 	<ul style="list-style-type: none"> - The big company experience: “see how it works and how they think and how they are” - Information about the daily happenings at Sara Lee
Food Research Institute	<ul style="list-style-type: none"> - Pilot facilities: use of their equipment - Dairy products knowledge - Analysis methods - Phase diagrams - Results of preservability analyses - Process circumstances - Understanding of mechanisms - Measurement methods - Preparing methods - Knowledge about better processing, about better forecasting. - Models, computer program 	<ul style="list-style-type: none"> - Knowledge in the area x also increases. - The knowledge in common base got broadened. - Our knowledge about coffee increased. - More product related knowledge in the heads of the people involved.
Food Chemistry Group University	<ul style="list-style-type: none"> - Publications (early involvement) - Specific knowledge - Mechanisms - New analytical methods (existence and import) - Access to university network - How to cope with complex food: new ideas, applications, processes 	<ul style="list-style-type: none"> - Studies - Process parameters - Building materials - Reports

* ‘Knowledge absorbed’ means that the knowledge was disclosed by the partner and has been accessed and assimilated by the focal partner.

The presence of both tacit and explicit knowledge transfer in all upstream cases is underwritten by the interface structures which were found. Tacit knowledge transfer was facilitated by interface structures and action routines which stimulated regular communication. Although regular communication took place in all three cases, the cases differed concerning the formality of the established interface structures.

A dissimilarity concerning the knowledge aimed at was observed in whether the partners aimed at explorative or exploitative knowledge. The relationship with the educational design institute had an explorative aim; a future positioning and so-called ‘out of the box’ ideas. The relationship with the university can be typified as explorative as well, since acquiring knowledge and insight was the prior goal and it contained assimilation of unknown technologies. The relationship with the food research institute on the other hand was characterized by exploitation; the pooling of resources and competencies in order to get an answer on a specific problem. This strategy is a consequence of the relatively high costs of this relationship; the results have to be measurable to be approved within Sara Lee. Remarkable is that the internal informants often indicate that exploration is the goal, while the external informants on the other hand state that Sara Lee – nevertheless the desire for new information – was pushing into a certain direction.

Several differences have been observed across the upstream partners. On the one hand this is not surprising, as usually research institutes and universities are categorized to one group and the collaboration with the educational design institute is outside this scope.

3.3. Processes of interfirm knowledge transfer

In order to see in which way the knowledge was transferred in the different cases, the transparency and receptivity of the firms will be reviewed as well as the main obstacles which emerged during the process of interfirm knowledge transfer. With regard to the interfirm relationships can be said that the relationships with the carton- and foil packaging supplier and the educational design institute were bilateral, and that with the food research institute and the university both bilateral and multilateral relationships were started up. In §3.3.1 an overview will be given of the transparency in downstream cases, after which §3.3.2 addresses the transparency in upstream cases. Subsequently the receptivity of knowledge with respect to downstream partners (§3.3.3) and upstream partners (§3.3.4) will be discussed.

3.3.1. Transparency in downstream cases

In general the informants referred to Sara Lee as a partially transparent partner. The carton packaging supplier was seen as very transparent, while the foil packaging supplier was seen as partially transparent – just like Sara Lee. Citations below reflect the dominant statements:

“Regarding the innovation platforms ... that is very strategic information. That really is their [Sara Lee’s] knowledge of the market. ... So it is quite sensitive information which is shared” (External informant)

“The focus [within Sara Lee] is that there is no spill-over of information, while the focus could also be: let us absorb new knowledge” (Internal informant)

“They [external partner] do not only tell us everything, they also provide it digitally” (Internal informant)

“You can’t expect two parties to act completely open” (External informant)

When looking a little deeper into the accessibility of Sara Lee, the partial transparency can be clarified by the following observation: within a relationship Sara Lee defines which knowledge they want to disclose; yet when topics belong within this scope, Sara Lee is completely transparent.

“We have consciously said we share the relevant platform knowledge. We defined a whole series of platforms, but we did not show them [external partner] all our platforms. ... But the platforms we worked on, we have shared these with them and we did share quite extensively” (Internal informant)

“For example with the innovation platforms, when we are talking about the innovation platforms, we do get some information about that” (External informant)

External informants indicated that they did not miss information regarding the project during the cooperation and moreover that they do not require absolute transparency.

In both downstream cases the internal as well the external informants indicated that they also provided access to knowledge which is not covered in a formal contract, which is an indicator of trust. In both cases the governance structure consisted of confidentiality agreements, which were re-established for every single project. Reasons mentioned for the ‘extra’ transparency is the fact that there occasionally is no time to wait for the establishment of formal contracts. Moreover, in both downstream cases the accessibility of the partner appeared to influence the transparency of the focal partner.

“No, the boundaries [of the contract] are not clear in my mind. No.” (Internal informant)

“But there are other issues that are still not covered by the confidential agreement but that I already know, but [Sara Lee] had to told me in order to things to run.”(External informant)

“It depends on the openness of the partner, that is obvious, when they don’t tell me, I won’t tell much either” (Internal informant)

As already touched briefly, the cases differ in the transparency of the external partner. The carton packaging supplier was seen as really accessible – noteworthy is that the informants explicitly pointed out that the external partner was more transparent than Sara Lee. The foil packaging supplier was seen as partly open by both internal and external informants and thereby the remark has been made by Sara Lee informants that they desire enhanced accessibility in certain areas, as they currently do not have access to all desired knowledge.

However, some refining to transparency has to be made, especially regarding Sara Lee. At first, Sara Lee showed some characteristics of internal orientation and inertia. In both downstream cases it was quite difficult to convince Sara Lee of the relationship at the beginning (although Sara Lee is seen as quite transparent once the relationship is established). Moreover, the interview data indicate that when a topic falls outside this scope Sara Lee usually was hesitant to share, as a consequence of the fact that the disclosed knowledge is consciously chosen. Furthermore, a lack of proactive information sharing was observed in both downstream cases – whereby in the ‘foil packaging supplier case’ informants from both sides missed this. Underlying citations reflect this ‘internal orientation obstacle’.

“At first very reserved. It took quite some time to get an appointment with the right people involved. ... After the presentation it changed suddenly; they [Sara Lee] saw which value we [external partner] could add and how we take care of things and after that Sara Lee reacted more proactive. ... After that, say after one year, we have been asked to give input. So the initiative came also more from their side.” (External informant)

“There is another idea, which is not yet a project. He [external partner] made really beautiful designs for coffee for youngsters, but that did not fit directly within the platform. So the idea still exists, but currently it does not fit well within the platform.”(Internal informant)

In the second place the occurrence of mainly formal communication appeared to be undermining the transparency of knowledge in downstream cases. Informal communication was not so usual as a consequence of lack of time, other priorities and changes in people / projects. Consequence of change positions of relevant people was the rebuilding of trust. Furthermore, face to face meetings were usually related to urgent matters / running projects and the other media were not used with respect to content. This partly explains why proactive informing and sharing

information outside the scope of projects barely happened. However, within the ‘foil packaging supplier case’ the informants indicated that because the implant manager was located at Sara Lee’s site, it became impossible to not share. Informants indicated that their increased disclosure was enabled because they trusted the implant manager.

“[The implant manager] is fully integrated, so it is impossible to keep for him some confidentiality, even for other projects we are working on. I mean when we are working on a project, and [the external partner] is not involved, [the implant manager] knows. It’s the deal. If you have an implant, you know that he knows more than he should.” (Internal informant)

“As I said I was not comfortable before, but knowing him [the implant manager] and that’s the way it is I am comfortable.” (Internal informant)

A third factor which impeded the transparency is the difficulties which were observed concerning the establishment of a governance structure; this obstacle was mainly observed among informants in the ‘foil packaging supplier case’. Hereby the remarks can be subdivided into 1) time to establish contracts, 2) diverging interests legal department Sara Lee and external partner and 3) fear of the risk of opportunistic behaviour.

“To move. If you wait [for the contract to be established] you have three to six months delay and my managers and marketing don’t want to wait. ... It has to do with Intellectual Property, CA is not an issue. ... I would have been out of my planning. My task is to be on time and on quality. I don’t want to delay the project, due to Intellectual Property.” (Internal informant)

The opportunity for knowledge absorption was furthermore reduced because expectations were not jointly adjusted in advance. Therefore, the actual interfirm knowledge transfer did not always fit the mutual expectations.

With regard to accessibility of knowledge in relationships with downstream partners can be said that as a rule the desired knowledge is achievable and the partners have a transparent attitude, nonetheless improvement of accessibility is desired by both internal and external informants.

3.3.2. Transparency in upstream cases

Generally speaking, both internal and external informants referred to Sara Lee as a transparent partner – however on condition that contracts were signed. The educational design institute and the university were seen as completely transparent, while the food research institute was valued partially transparent. The following citations illustrate this:

“All students signed a confidentiality agreement ... They have to keep it secret. So that simplifies sharing.” (Internal informant)

“Within [Sara Lee] much emphasis is put on confidentiality ... I take care that all papers are signed, in order to keep things confidential. ... The confidentiality is accurately covered here ... it is essential to be free to exchange knowledge” (Internal informant)

They [external partner] are really open towards us [Sara Lee]. We really have a good working relationship with them” (Internal informant)

“Of course they [external partner] also have confidential discussions with other parties, so they filter. But within this filtering I think they are rather open.” (Internal informant)

Just like the relationships with downstream partners, within the relationships with upstream partners the knowledge Sara Lee disclosed was consciously chosen. Hereby the main argument for partial disclosure was the decision to only share relevant information; in accordance the external informants indicated that they did not miss relevant information.

“We didn’t speak about certain things. Not because with didn’t want to, but I didn’t see the added value of it. They [external partner] can also become overloaded with information that is not even relevant” (Internal informant)

“We [external partner] didn’t get really secret information about new projects ... The kind of information that they gave us, was information about the daily happenings at Sara Lee and that’s what we needed to hear. So there was no relevant information kept back by Sara Lee. I didn’t miss anything.”(External informant)

In all upstream cases the governance structure consisted of both confidentiality agreements and additional agreements. With the educational institute, the students signed for confidentiality and between Sara Lee and the institute formal agreements were made about IP rights. With the food research institute and the university additionally research agreements were formulated. In these confidentiality agreements the confidentiality and IP were safeguarded, while the research agreement could be seen as a project plan. Furthermore, contracts were made up for every single project separately. Knowledge sharing beyond the boundaries of the contracts also occurred in all upstream cases, which is remarkable since the informants indicated that the contracts formed a condition to transparency. This indicates at trust, especially because the informants indicated that their willingness to share information beyond the contracts increased during the evolving of the relationship. This was mainly uttered in the cases with the food research institute and the university:

“I think there is kind of a range. Some things you are allowed to tell officially and you don’t because you have the idea that it is not so wise at the moment. And sometimes you think ‘this will help’ and then you give some kind of hint.”(Internal informant)

“On the other hand we have examples that they [external partner] provided information which was confidential with other partners, that they handed over after asking permission” (Internal informant)

“What we [Sara Lee] did not tell, especially not at the beginning, is ... details. ... But at the end it has happened that employees of our co-packer were involved; so at that time you are actually rather open.”(Internal informant)

Just like in the downstream cases in all upstream cases it was explicitly mentioned that the openness of the other partner influences one’s own openness. Furthermore, in all upstream cases the informants agreed that trust was not immediately established.

“Recently there was a report that [an internal employee] wanted to provide to them [external partner], which we did not do initially, but we noticed that they needed to know it in order to keep progress. ... I am convinced that that is the only way to get more out of a working relationship. When you don’t tell anything, you also won’t get anything back” (Internal informant)

“When you work with an external group, trust has to be build. It just takes time to let them know what you expect and also to give them a feeling, an unrestrained feeling, in order to communicate well.”(Internal informant)

With regard to the transparency of the external partners the upstream partners can be distinguished in completely open; the educational design institute and the university, and partially transparent; the food research institute. The explanation for this distinction is that the food research institute is a commercial organization in contradiction to the other partners which are public and typified by an open structure. It is not surprising that with regard to the transparency of the upstream partners little remarks have been made. On the one hand no improvements were required with regard to the university and the educational design institute as they are already valued as completely accessible. The partial transparency of the food research institute on the other hand was not seen as an impediment by the internal informants:

“If you want to ask him [external partner] something, he is always transparent. And if he can’t tell it, he just says that. It is clear, it is bright.” (Internal informant)

Concerning the accessibility of knowledge in relationships with upstream partners, external partner’s knowledge was valued to be better accessible than knowledge residing within Sara Lee. Although Sara Lee was reckoned to be reasonably accessible, this was accompanied by some marginal notes of which many also have been observed in the downstream cases. At first the opportunity to absorb knowledge was reduced because Sara Lee acted from an internal perspective by taking the lead and being quite inert. Besides, the absence of proactive knowledge

sharing by Sara Lee strongly affected the accessibility of knowledge in the case with the university. Some citations reflect this first remark to transparency:

“I was asked if we would like to do a project and therefore, I have cranked it up again within the organisation. ... I’ve tried it many times. People [Sara Lee employees] don’t know [the external partner] and therefore they were not interested.”(Internal informant)

“They [Sara Lee] are really result- and problem oriented. I am only allowed to find solutions in this small area and I may not develop knowledge outside it.”(External informant)

“We completely decide the goal and the outcome. ... To get a specific answer on a problem we have. ... We have only problem solving projects and less projects which purely strive at generating knowledge or stimulate innovation.” (Internal informant)

“Knowledge of importance is not proactively disclosed. So when we [external partner] ask for it ... they [Sara Lee] will provide the knowledge, but you have to be aware which knowledge you need to obtain. It appears frequently that [Sara Lee] already did accomplish relevant research. ... However, currently we get it at the moment we speak about the composition ...At that time you get the information, but not before that.” (External informant)

A second remark can be made regarding the fact that informal communication barely happened. Furthermore, the establishment of a governance structure required much effort; a fear of knowledge spillovers occasionally blocks transparency of Sara Lee.

“The legal part is ...it takes lots and lots of time. ... I honestly think that Sara Lee’s R&D dislikes it as much as we do” (External informant)

“There is a tension between which confidential information you want to disclose as a company and which information you want to keep inside.” (Internal informant)

The transparency was also impeded because only in one upstream case the expectations were adjusted together and in advance. An indicator for reduced transparency furthermore is that the ability to cooperate was restricted by budget constraints.

Besides obstacles to transparency, facilitators of transparency were also observed in all upstream cases. For instance, various examples relating to goodwill were given: extra work done by the partner that was not strictly required; invitation of the external partner for a guided tour of the plant or the supply of publications to Sara Lee before publishing.

Concerning the transparency within upstream cases it can be said that on condition of established contractual agreements and within the scope of the problem definition the desired knowledge is achievable. Enhanced transparency is desired as both internal and external informants felt hindered by several obstacles.

3.3.3. Receptivity with respect to downstream partners

Concerning the downstream partners Sara Lee’s willingness to internalize external knowledge is more than sufficient; the ability to absorb the knowledge on the other hand is less obvious.

As table 3.3 shows, in both cases the intent to internalize external knowledge exists. However, where Sara Lee collaborates with the carton packaging supplier solely to create innovative products, the internalization intent with the foil packaging supplier is defined broader.

Table 3.3 *Willingness to absorb external knowledge*

<i>Case</i>	<i>Internalization intent Sara Lee with regard to downstream partner</i>	<i>Internalization intent external partner with regard to Sara Lee</i>
Carton Packaging Supplier	<p><i>Motives</i> To see what is the reaction to coffee in a complete other package than the current one. External input on innovation platforms.</p> <p><i>Desired new knowledge</i> Nice new ideas, input within three weeks.</p>	<p><i>Motives</i> Strong brand, innovative, business opportunities, opportunities for growth</p> <p><i>Desired new knowledge</i> Coffee knowledge Sara Lee market knowledge</p>
Foil Packaging Supplier	<p><i>Motives</i> Preferred supplier, many questions, more effective communication.</p> <p><i>Desired new knowledge</i> Support of the plants Innovative ideas To get insight in the technologies behind products A new product Share processes</p>	<p><i>Motives</i> Main supplier. Improvement of communication. Assignments and enhanced turnover. To become leader in the area of innovative packages.</p> <p><i>Desired new knowledge</i> Building a relationship, get to know the people Joint new products</p>

The ability to recognize and value new external information is furthermore expressed by the appreciation of external partners for their fresh point of view, critical state of mind and –for Sara Lee – new ideas.

“Not only giving information, that’s the minimum, but discussion and improvement ... I don’t want someone who always says yes yes yes. I want someone who says yes but, yes but.” (Internal informant)

“They [external partner] came up with surprising combinations of existing solutions” (Internal informant)

However, one marginal comment has to be made concerning the willingness to absorb external knowledge. During the interviewing became clear that in both interfirm relationships Sara Lee mostly took the lead. Therefore, they could influence to a certain extent which new knowledge was absorbed. Result of this focusing on certain knowledge, was that the ability to adapt completely new knowledge decreased.

“A [packaging supplier] project has to be, we [Sara Lee] have to just do it once and not decide just before launching that we cancel the project. ... It would be good if we go once for that package. Their package is relatively expensive... Though you see the added value of it. ... But often in the end, it is not completely profitable; at that time other packages appear to be cheaper.”(Internal informant)

“What happens now is that we give him the assignment, ‘look at this type of project and come back with a proposal’.” (Internal informant)

Besides the willingness to absorb new knowledge, receptivity is also determined by the ability to absorb the knowledge. Therefore, this section now explores the conditions that influence this so-called ability to transfer knowledge.

The first condition which has been studied is the number of people involved in the interfirm relationship. Figure 3.1 illustrates for each case how many people were involved from Sara Lee (red) and the external partner’s site (white).

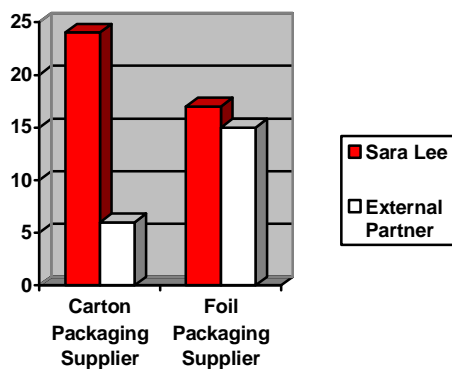


Figure 3.1 Number of people involved in the interfirm relationship

Within the ‘carton packaging supplier case’ the number of people involved from Sara Lee’s site is a fourfold of the external partner. Remarkable in this case was that the communication with the external party all happened with one and the same person. Like the figure shows, the supply of employees in the ‘foil packaging supplier case’ is more or less equal. This case attracts the

attention because the transfer of people also was observed as a condition with impact; an external employee was placed within a department of Sara Lee for a half year period.

To know how the knowledge is transferred another relevant condition is the organizational levels on which knowledge transfer took place; in both cases knowledge transfer took place at three levels: across individuals, teams and departments.

Furthermore, the interface structure of the interfirm relationship and the established action routines are conditions which affect the ability to transfer knowledge. The downstream cases deviate in the absorption of external knowledge, which is shown in table 3.4. In the ‘carton packaging supplier case’ there are no formal structures for knowledge absorption which is expressed in the unstructured interface structure and action routines. Factors for the lacking routines were mentioned: Sara Lee has never visited the external party and the relationship lacks structure. Both the internal and the external informant agreed that the cooperation can become more structural and that there is potential for knowledge sharing in broader areas.

Table 3.4 *Absorption of external knowledge in the downstream cases*

<i>Case</i>	<i>Interface structure of the relationship</i>	<i>Action routines</i>
Carton Packaging Supplier	No formal structure; on ad-hoc base.	4 times face to face contact at Sara Lee Phone calls 2-3 times weekly in a period of 3-4 weeks Joint visit informal event Presentations external partner to teams Cd-roms with information sent to teams
Foil Packaging Supplier	Implant manager (paid by external partner)	Individual meetings between implant manager and employees Weekly discussions: no standard date or time span Monthly team-meeting Business related conversations Presentations in meeting MT NPD

In the ‘foil packaging supplier case’ a formal interface structure has been established between the partners. Noteworthy was the advantage mentioned by both internal informants: they state that innovation is stimulated due to the fact that in the current interface structure the implant is paid by the external partner.

‘He [the implant manager] is not forced to focus and results do not have to be as measurable as internal projects’. (Internal informant)

Remarkable however is that action routines and therefore knowledge absorption are not so formalized. Although the installation of the implant manager has resulted in a central meeting

where Sara Lee and external people are sitting around the table monthly, the sharing at the individual level is not so structured yet, people indicate that they sit together with the implant when ‘it is necessary’. This can be explained by the easy accessibility of the implant manager, which encourages informal communication and personal conversations. The interview data made clear that the interfirm relationships were highly affected by the personal contacts which emerged among the contacts and that this influenced the interfirm knowledge transfer. The following citations are exemplary:

“Pleasant person [external contact], easy to make a phone call.” (Internal informant)

“He [the implant manager] really made a good job. I think the success we have now, that is [the implant manager]. He arranges it, he communicates in a highly pleasant manner.” (Internal informant)

“People know each other now and everything therefore goes by easier.” (External informant)

In both the ‘carton packaging supplier case’ and the ‘foil packaging supplier case’ both the internal and the external informants indicated the evolving of the interfirm relationship as a condition influencing the ability.

“What currently happens is, one on one conversations find place. ... My people now are going directly to the implant when they have a question related to foil” (Internal informant)

With regard to the downstream partners the data show that Sara Lee as a source is willing to absorb external knowledge from their partners. The way in which they absorb this knowledge however is not optimal yet, as structures to facilitate interfirm knowledge transfer are only established to a certain extent.

3.3.4. Receptivity with respect to upstream partners

In common Sara Lee has an open attitude towards external knowledge and the organization is to a large extent able to absorb the knowledge of the external partner.

Table 3.5 makes clear that in all cases the intent to internalize external knowledge exists. Sara Lee is willing to absorb new knowledge in quite a broad range; from idea generation to knowledge acquiring and network building.

Table 3.5 *Willingness to absorb external knowledge*

<i>Case</i>	<i>Internalization intent Sara Lee with regard to upstream partner</i>	<i>Internalization intent external partner with regard to Sara Lee</i>
Educational Design Institute	<p><i>Motives</i> Opportunity for out of the box thinking. Open-minded ideas for future applications</p> <p><i>Desired new knowledge</i> Idea generation for a specific coffee system Inspiration for a specific coffee system As much variety as possible in ideas</p>	<p><i>Motives</i> Working with an outside client: it is good for the students, it is good for the school. Abstract topic.</p> <p><i>Desired new knowledge</i> Learning processes for the students, projects have to be of educational value for the students</p>
Food Research Institute	<p><i>Motives</i> Use of facilities, knowledge, (pilot) equipment. Best partner available, clear view of the project.</p> <p><i>Desired new knowledge</i> Use of facilities, Use of their knowledge, Insights in the combination of milk and coffee, Specific answer on a problem, Knowledge about better processing, forecasting, Analysis methods, preparing methods, mechanisms, Models, New products, product ideas, compositions</p>	<p><i>Motives</i> Assignment has to fit within the scope of the institute. The opportunity to use the research in the future.</p> <p><i>Desired new knowledge</i> Broadening knowledge in common</p>
Food Chemistry Group University	<p><i>Motives</i> Network building. Not necessary to invent everything on your own. Most knowledge of the current problem. Expert in the area.</p> <p><i>Desired new knowledge</i> Knowledge Solve existing problem New ideas</p>	<p><i>Motives</i> Opportunity for acquiring money. To translate the research results in to fundamental knowledge.</p> <p><i>Desired new knowledge</i> Knowledge which creates opportunities for future research</p>

The willingness of internal informants to absorb new knowledge is furthermore expressed in their attitude to avoid tunnel vision, which is expressed in the citations below.

“O, I love external projects. Otherwise you will really get tunnel vision, when you are only inside. With external projects, you speak with people with other experiences, with other visions on your problem and sometimes it can result in very good insights. Besides, I like it anyhow.”
(Internal informant)

“That our own scientists [Sara Lee employees] ... that they are encouraged and they also like it to share thoughts with that kind of people. Your own intellect is kept elastic. ... Sometimes the

most marvellous ideas come from an unexpected area, so you have to see things in a different way now and then.” (Internal informant)

“Where I am surprised about by myself is that when you work somewhere for a while, you will get intertwined in the daily routines. ... Their [external partner] whole way of thinking is so different, we can’t do that. Solutions where we have never thought about, while we are thinking about it every day!” (Internal informant)

As well as in the downstream partners the knowledge assimilation was impeded by Sara Lee’s commanding position; they took the lead in the upstream cases.

Douwe Egberts [Sara Lee] pays and they have an expectation and I felt it was our obligation to give them exactly what they were looking for. Whereas I know that we [external partner] are not so keen on that kind of work, because it is too realistic. ... They [Sara Lee] thought they were open, they were open, but they told me [external partner] what they wanted, how open is that! (External informant)

“With the university we [Sara Lee] have tried to guide and that does not work. ... We expect to acquire a chunk of knowledge, which is applicable for use. ... So when you want to do something with the results directly, don’t collaborate with a university because it collides with the academic freedom.” (Internal informant)

In order to judge Sara Lee’s ability to absorb knowledge, this section will continue with a review of the way in which knowledge is transferred among the upstream partners. A first condition which influences the ability to transfer knowledge is the number of people involved in the interfirm relationship. Figure 3.2 shows for each case how many people were involved from Sara Lee (red) and the external partner’s site (orange). In the ‘food research institute case’ and the ‘university case’ the number of people supplied by the internal and external partner is of the same value. The ‘educational design institute case’ deviates, which can be clarified because groups of students (#34) are involved in the interfirm relationship.

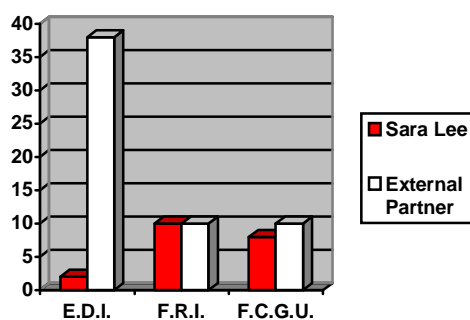


Figure 3.2 Number of people involved in the interfirm relationship (E.D.I. = educational design institute; F.R.I. = food research institute and F.C.G.U. = food chemistry group of university)

In all three cases transfer of people has been observed as a condition influencing ability. The case with the food research institute was characterized by the mutual exchange of people within the relationship. In the case with the educational institute as well as with the university it is worth mentioning that in both cases the Sara Lee employee responsible for the contact came originally from the external partner's site.

Table 3.6 *Absorption of external knowledge in the upstream cases*

<i>Case</i>	<i>Interface structure of the relationship</i>	<i>Action routines</i>
Educational Design Institute	Monthly visit and feedback session at the external partner's site.	Coordinating lecturers: organizing and communicating with students. Monthly face to face contact Once every 2-3 weeks contact by phone between Sara Lee and lecturers Straight contact with the students Steering of the project by lecturers Idea sharing between two groups of students Two Sara Lee departments involved
Food Research Institute	Equal project teams Coordination on the level of the project leaders Joint steering committee Exchange of people	Weekly project leader contact Face to face contact once every two weeks Project team interaction Sara Lee employees working at the external partner's site Small gatherings between the teams E-mail and phone in case of questions, planning and availability of the plant
Food Chemistry Group University	Interface structure dependent on the project <i>Ad hoc projects</i> : not formally coordinated <i>PhD research</i> : guided by university <i>Post doc research</i> : Synchronous project teams	<i>PhD research</i> 2,3 times adjustment Formal communication <i>Post doc research</i> : Project team meeting every 1-2 months. Regular communication between project leaders Every few months: meeting about progress in the research. Twice per year connecting broader group of people with external contacts Phone contact in between for the arranging of things. Ad hoc visits Business related communication

Table 3.6 makes clear how external knowledge is absorbed by Sara Lee during the interfirm relationship; whereby the interface structure and the action routines are seen as conditions which influenced the ability to transfer knowledge among the partners. Hereby the 'educational design

institute case' deviates itself from the other cases as the established interface structure is less formal than in the other two cases; the contacts sit together each month, but it still has to be reconfirmed every single time. The 'food research institute case' has the most formal interface design; a structure for communication is established, so that interaction also takes place when there is no urgent need. In the relationship with the university the interface structure depends of the goal and the priority of the project, nonetheless when a project is running the interface structure usually is pretty formal.

In all upstream cases the action routines facilitated regular communication and thereby interfirm knowledge transfer. The mechanisms for this knowledge generation differed across cases. The informants pointed out that these structures encouraged knowledge transfer:

"It works the best when a project is running on their side [external partner] as well as on our side [Sara Lee] because then you have an immediate interest in the work they are doing and the project teams are waiting for their input. This results in the best interaction. So, mutual interest, yes." (Internal informant)

"What I really appreciate is that they [Sara Lee] don't have just a project where the university is working at on its own. They have an internal project that is strengthened by the university." (External informant)

During the processing of the data it became clear that the action routines between partners are largely dependent on the role of personal contact and the people involved. In each upstream case informants indicated that their contact was pleasant to get in touch with and that this contributed to the interfirm relationship. The following citations underwrite this:

"On a certain moment people know each other and they know what they are worth" (External informant)

"When persons have a good contact, a collaboration runs smoother" (External informant)

At last, informants clearly indicated that the interfirm relationship evolved.

"At the beginning they [external partner] positioned themselves too submissive – we do what you are asking – while we [Sara Lee] asked them to think along. So we made clear that we expect a participating role of them and that we would like to gain their input. That has changed, yes." (Internal informant)

Two remarks were found concerning the ability to absorb external knowledge. At first in all upstream cases internal informants indicate that because of the character of the relationship the measurability of the results was not obvious which affected the basis for the relationship within Sara Lee.

“To get the internal commitment for it. ...I can do very good research during two years and still have no answers and that is very difficult to explain. ... So, it are all long term projects. And people find that difficult here.” (Internal informant)

Furthermore, a remark must be made with regard to the organizational levels involved in the interfirm knowledge transfer. Although in the case with the educational design institute knowledge transfer took place between individuals, teams and departments, the cases with the food research institute and the university only matched to transfer knowledge on an individual and team level. These cases were characterized by intensive communication at these levels, however only the R&D department was involved in these relationships. Knowledge furthermore was transferred by means of involvement in the physical structure of the workplace and the networks formed among the elements in all upstream cases.

The receptivity of Sara Lee in the upstream cases can be seen as sufficient. The organization was willing to absorb various types of knowledge and implemented both interface structures and action routines with their partners in order to realize interfirm knowledge transfer.

3.4. Processes of intrafirm knowledge transfer

This section aims to give an overview of the way in which results of the interfirm knowledge transfer are transferred within Sara Lee. In order to do so, at first the accessibility of intrafirm knowledge will be reviewed (§3.4.1), after which the absorption of intrafirm knowledge will be discussed (§3.4.2) and the section ends with an overview of the utilization of the new knowledge (§3.4.3).

3.4.1. Accessibility of intrafirm knowledge

Concerning the accessibility of intrafirm knowledge, in all cases the informants indicated that internal knowledge which resides outside the organizational unit is not easy accessible. The relationships with the food research institute and the university belong to the same department and there the most positive statements were made about accessibility; here the management implemented certain knowledge management structures to enhance the user-friendliness of the available knowledge. Despite the availability of these structures, challenges were still observed. Across cases, the main barriers to intrafirm accessibility can be defined as following: unstructured way of knowledge transfer impedes accessibility; people work in ‘islands’ and therefore contacts across units are lacking; minor communication with people ‘higher’ in the organization and at last

informants indicate that they not always know to whom they have to go. The following statements reflect these barriers felt by Sara Lee employees:

“I think it would help to have supplier information accessible at one central point.” (Internal informant)

“We are all busy within our own specialism” (Internal informant)

“People are just working project by project and in cluster. There is no project-sharing; there are no innovation meetings with everybody around the table.” (Internal informant)

“It is a big company and you don’t know who is doing what.” (Internal informant)

“What I wanted actually was to make the exhibition public for all employees ... But there were some ideas we wanted to keep secret and you can’t know exactly who passes by. And besides, it cost loads of time to invite everyone” (Internal informant)

“We don’t speak about it with MT members, because you don’t speak with them so often about a project. When you would see them more often, then it becomes also possible to talk about matters outside the core of a project.” (Internal informant)

3.4.2. Absorption of intrafirm knowledge

Although quite some initiatives were undertaken to spread the new external knowledge through the organization, Sara Lee is characterized by several challenges which block the receptivity of intrafirm knowledge.

The internal informants were asked how they processed the new external knowledge internally. A detailed overview of the activities to transfer knowledge across organizational units is provided in table 3.7, whereby the cases are ranked based on how structured the intrafirm knowledge transfer took place.

The ‘educational design institute case’ sticks out, because the new external knowledge is spread through the whole Sara Lee organization. On purpose employees across organizational units were invited to visit the exhibition where the ideas of the educational design institute were presented. Knowledge sharing did not stop after the exhibition; the ideas were still shared in meetings during the time of interviewing. Remarkable is that this intrafirm knowledge transfer was not encouraged (on the contrary) by senior management, but the responsible employees were so enthusiastic that they nevertheless persisted in their idea of an exhibition.

Table 3.7 *Transfer of knowledge across organizational units*

<i>Case</i>	<i>Activities accomplished to facilitate intrafirm knowledge transfer</i>
Educational Design Institute	Exhibition: people invited across organizational groups, departments, divisions, layers (including level of CEO) Not everybody invited due to confidentiality Invitation dispersed itself: 70-80 visitors Guided tours for exhibition visitors Technical development and marketing department involved R&D meetings across divisions Absence of contact at lower level: people don't know each other Knowledge in people heads, not shared
Food Research Institute	Knowledge utilization in following projects Transfer of people across projects Knowledge areas defined, accompanied by knowledge owners (for example knowledge owner 'coffee and milk'); knowledge letters; knowledge website; knowledge billboards Computer program Weekly conversations between project leader and team leader Overall reports for MT and project leaders Informing of people involved in related projects
Food Chemistry Group University	Knowledge areas defined, accompanied by knowledge owners (for example knowledge owner 'coffee and milk'); knowledge letters; knowledge website; knowledge billboards Knowledge transfer across organizational layers delicate
Foil Packaging Supplier	Assignment of a responsible team Weekly team meetings Mainly in the packaging team 'island' Absence of R&D broad knowledge sharing, for example in the form of seminars, symposia or meetings with several departments involved Individual sharing across boundaries of department (packaging with marketing, packaging with innovation team)
Carton Packaging Supplier	Forward interesting information to relevant people by e-mail Know who does what in the department and which projects they are running.

With regard to the food research institute and the university intrafirm knowledge transfer also took place quite structured, however the sharing remained within one department: R&D. In these cases the established knowledge management support structures – like knowledge areas, transferring people and knowledge reports – attracted the attention. Citations below underline the emphasis which is put on intrafirm knowledge transfer within this department.

“R&D is knowledge, we don't make tangible products, in the end it is all knowledge. So we find it extremely important that the knowledge is registered properly.” (Internal informant)

“I think it is essential to transfer project knowledge accurately and also to have a well adjusting among the projects” (Internal informant)

Intrafirm knowledge transfer in the ‘foil packaging supplier case’ is to a large extent dependent of the employee’s willingness to share knowledge. Besides the team meeting of the packaging group there are no structures established for knowledge sharing. In the ‘carton packaging supplier case’ intrafirm knowledge transfer as well is rather dependent of the activities of the persons involved.

Intrafirm knowledge transfer appeared to be not yet a fluent process, this section continuous with an overview of the main obstacles which were observed concerning intrafirm knowledge transfer. Table 3.8 presents the three categories of obstacles which were observed.

Table 3.8 *Obstacles to intrafirm knowledge absorption*

<i>Time / workload</i>	<ul style="list-style-type: none"> - Busy with own specialism - Already running too many projects. - Sharing knowledge takes time - High workload - Time-consuming to establish knowledge transfer systems - No time reserved, has to be done in between - Too less time with MT, only time to talk about bottlenecks
<i>Organization</i>	<ul style="list-style-type: none"> - No structures for knowledge sharing - Too many layers - Work in islands: absence of innovation meetings above group level - Contacts high in the organization, not on a lower level - Not possible to invite everyone because of confidentiality - Accessibility of knowledge - No reward mechanisms - “You don’t know who is doing what” - Supplier information not centrally available - Absence of R&D seminars / symposia
<i>Culture</i>	<ul style="list-style-type: none"> - People want to maintain their power. - ‘I have done this for years’ attitude - ‘Projects have to be successful’ attitude - People are not used to knowledge sharing - ‘We all find it very important ..., but we don’t make time for it.’

The first category can be typified as obstacles regarding time/workload of either the source or the recipient. The following citation makes clear how both workload and lacking time for knowledge sharing impedes knowledge transfer – worth mentioning is that the informant does see the value of sharing.

“The amount of projects which is running causes that reporting is passed over very easily. An appropriate establishment of, for example a knowledge database, that takes much time and anyhow it is expected that it happens in between and that is a huge impeding factor. ... It is impossible to work dedicated on that [knowledge database] two days a week during a half year. While by getting to work in that way I think you can have much extra benefit.”(Internal informant)

Furthermore, context related barriers were found. The second category consists of obstacles due to organizational barriers. The following citations reflect the lack of organizational structures to facilitate knowledge transfer.

“We are all active specifically within our own specialism. Actually my people are not interested in the technology around instant coffee ... and sometimes the people of instant coffee are not really interested what is involved in packaging technology ... What is good is to organise now an then a seminar or a symposium within R&D ... There have been some initiatives, undertaken by different project leaders. ... But in the mean time that has stopped I have understand. That is a pity.” (Internal informant)

“Because I think that knowledge sharing does barely happen. ... It is not, it sounds a bit annoying, rewarded or so.”(Internal informant)

The third category consists of obstacles indicating a culture that hampers effective knowledge transfer. The citations make clear that knowledge sharing is currently not in peoples ‘system’.

“Everybody is busy with own things and I think that you even don’t think about it.”(Internal informant)

“Some people did not understand the idea of the exhibition. It was not stopped, but some questions were asked. ... We thought that this should be seen by lots of people and we wanted to feel what people thought about it.”

This section made clear that although quite some activities were undertaken for the absorption of intrafirm knowledge, it was hard to transfer knowledge across the boundaries of the own organizational unit independent of the case.

3.4.3. Utilization of new knowledge

In the majority of the cases the interfirm relationships resulted in running projects and use of the knowledge in subsequent projects, however the application of knowledge to commercial ends has found place in a minority of the cases.

In the ‘carton packaging supplier case’ one of the externally developed ideas has been converted into an official Sara Lee project, although a jointly developed product is not yet reached. The relationship with the foil packaging supplier resulted in several projects, and also here until the interviewing joint market introductions did not occur. However, it must be noticed that both cases are characterized by quite a short lifetime: these relationships started in January 2007 and July 2007. Several of the ideas of the educational design institute for one of Sara Lee’s

coffee systems were embraced by Sara Lee. One idea is sold to an external party and two ideas are used as the input of the so-called NPD funnel.

“I didn’t expect results that were such useful as these ideas are .One idea can be directly translated to the market, about some others we have to think about a little bit more. But there are concrete results actually. While we really saw it [interfirm relationship] as a source of inspiration” (Internal informant)

Knowledge absorbed during the collaboration with the food research institute was also utilized. Not only were solutions for Sara Lee challenges found in the relationship, but also analysis methods of the partners are incorporated and continuation projects have been started up. The relationship with the university aims more at finding solutions than in producing products. The last consequently didn’t occur: the fifth case resulted in new understanding of problems and application of the new knowledge in other projects.

“Concerning this project I can clearly indicate the surplus value in my daily work. They had certain methods for analyzing which we did not have and in the mean time we have implemented these methods by ourselves.”(Internal informant)

To wrap up, the five interfirm relationships resulted in a sufficient amount of new knowledge, albeit the amount of tangible innovations could increase.

3.5. Conclusion

As this chapter made clear the interviews resulted in valuable data for analyzing interfirm knowledge transfer in interfirm relationships and the absorptive capacity of Sara Lee in this regard. After this first-order analysis the data can be analyzed deeper by means of a second-order analysis, which is done in chapter four. Here the conclusions will be formulated by answering the research questions. After this, the limitations of the research will be discussed and suggestions for further research will be done.

CHAPTER 4 DISCUSSION

This multiple case study investigated five interfirm relationships – among Sara Lee International Coffee & Tea and their external partners – in order to explore interfirm knowledge transfer and the transfer of such knowledge within the focal organization. This section will answer the three sub-questions, after which the central question is answered, so that the objective formulated above will be achieved. This chapter continues with discussing the limitations of this study and ends with several suggestions for further research.

4.1. Conclusions

In this section answers are provided to the research questions. In §4.1.1 presents the conclusions of the first research question ‘which types of knowledge are transferred within relationships with different kinds of partners?’. The section continues (§4.1.2) with addressing the second research question ‘how is this knowledge transferred within interfirm relationships and what are the main obstacles to interfirm knowledge transfer with different kinds of partners?’. After this an answer will be provided in §4.1.3 with respect to ‘how are results of these interfirm knowledge transfer processes transferred within the focal organization?’. The central question ‘to what extent is knowledge transferred within the interfirm relationships of Sara Lee International Coffee & Tea and how is this knowledge transferred within the focal organization?’ will be answered in §4.1.4.

4.1.1. Types of knowledge transferred with different kind of partners

The ability to transfer knowledge between the firms involved in the cooperation is seen as a key factor in the success or failure of an interfirm relationship (Lubatkin et al, 2001); independent of the kind of partner Sara Lee succeeded to do so. Nonetheless, differences were found in the type of knowledge actually transferred. Hereby in general a distinction can be made between the sharing of knowledge aiming at the development of new products (downstream cases + educational design institute case) which indicate strategic behaviour motivations (Kogut, 1988) and the exchange of knowledge aiming at new knowledge and skills in general (food research institute + university case – upstream) which direct at knowledge transfer motivations (Kogut, 1988). At first the distinction of different partners in this research is congruent with the classifying of external partners made in the literature: suppliers – downstream partners – and universities, government and private laboratories – upstream partners (Von Hippel, 1988, in:

Chesbrough et al., 2006). The educational design institute falls beyond these traditional main categories – since academic research for this kind of partners is less developed – it is thus not surprising that this partner sometimes deviates from the traditional distinctions. The different knowledge transfer activities conducted with different partners are in line with the literature. Conform to Chesbrough et al. (2006) and Hurmelinna (2004) the acquiring of knowledge and information itself was the focus of the knowledge transfer with the food research institute and the university. Both packaging suppliers (and the educational design institute) functioned as sources of innovative ideas; this is in line with Wynstra (2006) who stated that knowledge transfer activities with suppliers are mostly related to the improvement of product development performance. These different activities support Faems et al. (2005) in suggesting that the choice of partner affects the type of knowledge which is transferred.

In the majority of the cases both tacit and explicit knowledge has been transferred. Thus, the most important benefit of interfirm relationships – the facilitation of capturing both organizationally embedded and codified knowledge – has been reached (Mariti et al., 1983, in: Mowery et al., 1996; Inkpen, 1998, Muthusamy & White, 2005). Exception is the carton packaging supplier case. Explanation is the absence of regular interaction and communication in this case whereas the other cases are typified by facilitating interface structures; the empirical data underwrite that socialization is the only means to transfer tacit knowledge (Kogut, 1988; Mowery et al., 1996). Hence, differences across cases in the transferring of tacit and/or explicit knowledge are not explained by the differences coming from various types of partners, but are clarified by the degree of socialization which is observed among the various cases.

To wrap up, different types of knowledge have been transferred with different kinds of partners; Sara Lee thus uses its portfolio of relationships appropriately to support various kinds of innovations (Chesbrough et al., 2006).

4.1.2. Processes and main obstacles of interfirm knowledge transfer

Processes of interfirm knowledge transfer

For interfirm knowledge transfer to occur, transparency and receptivity are necessary (Hamel, 1991). Sara Lee is seen as a partially transparent partner in both downstream and upstream cases. What sticks out is that the transparency is quite similar among the different partners. Based on the empirical data it can be concluded that similar processes facilitate and hamper knowledge transfer in interfirm relationships. This is not so surprising on the other hand, as within the literature also certain conditions for interfirm knowledge transfer have been made up regardless of the type of

partner (Hamel, 1991; Doz, 1996). In all cases Sara Lee defines which knowledge they want to disclose and when topics belong within this scope, Sara Lee is completely transparent. The criterion for selection hereby is relevancy of knowledge. In the majority of cases external informants indicated that they did not miss information and that they also do not require absolute transparency. Furthermore, openness of the other partner influences one's own openness. These examples of equal expectations of Sara Lee and their partners regarding the current project are also recognized by Doz (1996). This author states that similar expectations about both the performance of the interfirm relationship and the behaviour of the partner are critical in interfirm relationships. In both downstream and upstream cases contractual agreements facilitated transparency, this can be deduced from the fact that contracts were made up for every single project separately. This factor is also well recognized in the literature where it is stated that contractual agreements are facilitating interfirm knowledge transfer because they restrict the opportunities for opportunism, make expectations predictable and give guidelines for coordination (Szulanski, 1996; Das & Teng, 2001; Klein Woolthuis et al., 2005). Nonetheless, disclosure of knowledge which is not covered in a formal contract also happened. So, within the scope of the initial project formulation knowledge is available and the partners have a transparent attitude.

Independent of the partner a positive intent to internalize external knowledge has been observed. This was underwritten by the valuing of external partners for their fresh point of view and the avoiding of tunnel vision. The presence of a positive internalization intent enables interfirm knowledge transfer since this is necessary condition (Hamel, 1991; Chesbrough, 2003). Sara Lee's emphasis on open innovation was uttered in their knowledge generating strategies; in the majority of the cases an exploration strategy has been observed. Striking was that Sara Lee nevertheless was pushing into a certain direction; independent of the kind of partner. The knowledge transferred in all cases fitted within the scope of the problem definition formulated by Sara Lee. Consistent among all cases was that not only the opportunity to talk about other opportunities was lacking, but also that Sara Lee was incapable to absorb 'unexpected' knowledge. Empirical explanations can be found in the fact that Sara Lee not only was the initiator but also took the lead in the majority of cases. Although Sara Lee in their objectives was willing to explore, in practice they acted exploitative (March, 1991).

The cases differ in the degree of formal establishment of interface structures and action routines. This difference can be explained by whether previous relationships existed or not and whether these conditions were established in an initial stage. In cases where communication took place structural, the project under study was not the first time knowledge was transferred between

the firms. The facilitating role of pre-existing relationships thus is proved empirically (Gupta & Govindarajan, 1986; Hansen, 1999; 2001; Tsai, 2001). Congruent with the findings of Doz (1996) in the cases with an established structure the joint agreement about it took place entirely at the start of the relationship. The way external knowledge was absorbed, differed considerably among cases: from synchronous project teams and joint meetings to an exhibition where the external ideas were directly shown to internal employees. Hereby empirical proof has been found for the facilitating role of structures for a firm's ability to absorb intrafirm knowledge (Foss & Pedersen, 2002; Szulanski, 1996; Davenport et al., 1998). Another difference among cases was the amount of organizational levels involved in the relationship; either several departments involved loosely or one group/department involved intensively. A critical factor in the absorption of new knowledge appeared to be the role of personal contact and the people involved. As communication struggles can seriously impede knowledge transfer (Arias, 1995), it is not so strange that a connection between contacts can facilitate knowledge absorption.

Since several scholars (Kogut, 1988, Mowery et al., 1996) stated that the governance structure influences the transfer of knowledge between firms, it is relevant to know that all interfirm relationships were covered by contractual agreements. Based on the literature this setting on the one hand is not fully appropriate for discovery and assimilation of new knowledge (Chen, 2004; Kogut, 1988), but on the other hand gives the organizations the most strategic flexibility; the opportunity exist to collaborate with various partners (Klein Woolthuis, 1999). Although scholars have shown that the popularity of contractual agreements increases (Hagendoorn, 2002), their dominance in this study is noteworthy. Trust as well has been seen to be facilitating both interfirm relationships (Ring & Van de Ven, 1994; Nooteboom, 2000; et al.) and interfirm knowledge transfer (Hamel, 1991; Kelly et al., 2002). The results, however, made clear that trust is not already established in all cases. This is not surprising, since often cited blocking factors occurred.

Main obstacles of interfirm knowledge transfer

Three major obstacles were found concerning interfirm knowledge transfer; these were observed independent of the type of partner and thus seen as main obstacles.

The first main obstacle 'Sara Lee's internal orientation and organizational inertia' was uttered in several forms during the interfirm knowledge transfer. At first it was a challenge to collaborate outside the scope of the initial assignment. As a consequence, a shortage of proactive information sharing was observed from both internal and external point of view. To a certain extent this shortage can be explained by a fear to collaborate outside the scope of the contractual

agreements. This cause for relative transparency has also been observed by Hamel (1991). But this obstacle seems to have deeper roots as knowledge disclosure beyond the formal contract has been observed. It seems that Sara Lee is not yet fully aware of exploiting external knowledge to accelerate innovation (Chesbrough, 2003). Sara Lee usually was in command and information sharing outside the scope of the problem definition was not encouraged. Therefore, the current interfirm relationships give instead the impression that Sara Lee employs them to get solutions for current problems, which indicate a focus on exploitation on the contrary (Koza & Lewin, 1998; 2000; March, 1991). The moderate transparency and receptivity indicate a compromise strategy (Larsson et al., 1998), which explains why extensive knowledge transfer in broad areas for the present fails to appear. Another indicator of the internal orientation is that in certain cases it was rather difficult to convince the organization of the necessity of an interfirm relationship at the beginning.

The absence of proactive information sharing is explained by either the absence of willingness or the ability to share knowledge (Larsson et al., 1998; Argote et al., 2000; Doz, 1996; Goh, 2002). With regard to willingness, low priority of the unexpected knowledge seems to be a factor which strengthens this obstacle (Hansen, 1999; Szulanski, 1996; Cummings & Teng, 2003). When it comes down to ability, an explanation for the internal orientation and inertia can be a too big knowledge distance between Sara Lee and the external partner; partners were not always possessing similar knowledge (Hamel, 1991; Mowery et al., 1996; Hansen, 1999; 2002).

The second main obstacle is formulated as ‘the tough process of establishing contractual agreements’. Contracts were commonly seen as necessary, although both Sara Lee and external partners got frustrated because of the accompanying time-consuming process. Hereby frequently mentioned impeding factors were 1) the risk of opportunistic behaviour to occur; 2) the time it required to establish contracts; it not only took much time in the initial stage, but also because of the re-establishments which were made for every little change (for instance new projects or people involved); 3) diverging interests of Sara Lee’s legal department and the external partner; for instance the interests of the other partner are not concerned in an early stage. The risk of future opportunistic behaviour to occur is well recognized in the literature (Hamel, 1991; Khanna et al., 1998; Muthusamy & White, 2005; Chesbrough et al., 2006). In order to avoid this impediment, more emphasis could be put on the establishment of trust as trust covers expectations of what others will do in circumstances that are not explicitly covered in a written contract (Nooteboom, 2000). This so-called future competition risk strongly affected the establishment of the contracts. Consequently, the informants felt mainly hindered by the – in practice – complicated process of establishing the contracts. This also have been noticed in the literature as

an obstacle (Szulanski, 1996; Das & Teng, 2001; Klein Woolthuis et al., 2005), although not with so much emphasis as pointed out in the interviews.

The third main obstacle which was identified is 'the occurrence of mainly formal communication'. This is caused because there were scarce opportunities for informal communication. Moreover, the change of positions of relevant people was seen as a barrier to effective communication. Besides, project-related information is usually only discussed in face to face meetings, which only take place in case of urgent matters / running projects and the other media are not used with respect to content. The fact that informal communication is not so usual is a consequence of lack of time, other priorities and changes in people / projects. The absence of informal and regular communication can be explained by an insufficient level of trust; established interface structure and action routines (Ring & Van de Ven, 1994; Nooteboom, 2000; Doz, 1996). The occurrence of mainly formal communication to a certain extent strengthens the first obstacle, as regular interaction and informal communication usually facilitate knowledge sharing in broader areas (Larsson et al., 1998; Faems et al., 2005; Muthusamy & White, 2005).

4.1.3. Processing the new external knowledge within Sara Lee

In order to see how knowledge was transferred within Sara Lee, knowledge transfer was analyzed in terms of accessibility and absorption of intrafirm knowledge and the actual utilization of the new knowledge.

Before absorbing knowledge, accessing the aspired knowledge is essential (Cohen & Levinthal; 1990; Hansen, 1999; 2001; Tsai, 2001). The interview data were obvious: internal knowledge which resides outside the organizational unit is not easy accessible. This consequently is a huge obstacle for knowledge absorption. The shortcoming accessibility can be explained by lacking inter-unit links – which is a critical success factor – and additionally by obstacles related to the context in which the knowledge transfer takes place. Although unwillingness of sources and recipients is seen as one of the hugest obstacles to knowledge transfer (Larsson et al, 1998; Argote et al, 2000; Doz, 1996; Goh, 2002), this was not so obvious in this research. In general employees do see the usefulness of knowledge sharing; however they feel hampered by obstacles coming from the organizational context. The interview data made clear that links among organizational units and frequent communication and interaction were lacking, although these factors are commonly recognized in the literature to be essential (Gupta & Govindarajan, 1986; Hansen, 1999; 2001; Tsai, 2001; Szulanski, 1996). Informants complained about the fact that people currently are only working within the scope of their group and department. Besides these network-related obstacles, the absence of knowledge management structures has been mentioned

as a serious barrier. This is in accordance with several authors who state that organizational structures are critical in realizing intrafirm knowledge transfer (Gold et al., 2001; Davenport et al., 1998; Goh, 2002; Tidd et al., 2005). Thus with regard to accessibility of intrafirm knowledge, so-called internal stickiness has been observed: knowledge is residing in one area and not easy movable to other parts of the organization (Szulanski, 1996).

Logically following from the shortcoming accessibility, intrafirm knowledge absorption is accompanied by some challenges as well. The main obstacles which were found concerning the assimilation of knowledge: 'lack of time to share knowledge, absorb knowledge and to establish knowledge transfer systems', 'absence of organizational support structures and non-accessibility of other units' and 'culture does not facilitate knowledge transfer'. With regard to knowledge management structures it is worth mentioning that these were either absent or shortcoming; presence structures only facilitated of knowledge transfer within the focal unit. These obstacles can be grouped into 1) obstacles regarding the willingness of sources and recipients to transfer knowledge and 2) obstacles where the organizational context hampers the transfer of knowledge. From the extant literature can be withdrawn that these factors can seriously impede intrafirm knowledge transfer (Hansen, 1999; Szulanski, 1996; Gupta & Govindarajan, 1986; Argote et al., 2000; Tsai, 2001). Despite these impeding factors, surprisingly initiatives have been undertaken to spread the new external knowledge with all partners. The occurrence of the initiatives can be largely explained by the willingness of people involved to do so; despite a lacking organization-wide knowledge transfer policy, bottom-up activities facilitated knowledge absorption. The initiatives vary from an organization-wide exhibition to transfer of people over projects and the formulation of knowledge areas. Furthermore, in each case various organizational levels were involved in the knowledge sharing; although the bipartition can be made between knowledge sharing across the unit's level and intensive sharing within the organizational unit.

Organizations need to avoid a gap between what is known within the organization and what is actually put into use (Szulanski, 1996). Although improvements are desirable with regard to accessibility and absorption of intrafirm knowledge, the new knowledge is actually used quite well by Sara Lee employees. In all cases the interfirm relationships resulted in running projects and use of the knowledge in subsequent projects. However, the application of knowledge to commercial ends has found place in a minority of the cases. The ability to apply the new knowledge to commercial ends nonetheless is a critical success factor to assess whether knowledge transfer to the focal organization has been successful (Cohen & Levinthal, 1990; Lane & Lubatkin, 1998). When looking at the four stages of Szulanski (1996) Sara Lee has succeeded in

the initiation; implementation and the ramp-up, but is not yet capable in integrating the transferred knowledge; the achievement of satisfactory results.

4.1.4. **Main conclusions**

In all interfirm relationships existing knowledge have been transferred. The type of knowledge actually transferred differed dependent of the partner; from knowledge related to new product development to knowledge or skills itself. In the majority of the interfirm relationships tacit as well explicit knowledge is shared and absorbed by the partners. Because in general both Sara Lee and the external partners were seen as sufficiently transparent with regard to the focal project, the desirable knowledge was available. Moreover, the people involved were willing to share and absorb knowledge and within Sara Lee several structures were established to facilitate the absorption of external knowledge. Nonetheless, knowledge is not yet transferred optimally among the firms given that interfirm knowledge transfer in current interfirm relationships mainly sticks to the initial problem definition. This is caused by the internal orientation and inertia of Sara Lee and the occurrence of mainly formal communication. Besides, effective knowledge transfer is hampered by the tough process of establishing contractual agreements. In all interfirm relationships initiatives have been undertaken to transfer the new knowledge within the focal organization. In order to do this successfully, intrafirm knowledge transfer is needed. When evaluating the accessibility of knowledge across organizational units, huge improvements need to be made as the organizational context currently blocks the achieving of knowledge outside one's own unit. Because the knowledge is not easy accessible, knowledge absorption has also become more difficult within Sara Lee. The differences among undertaken initiatives therefore can be explained to a large extent on either the presence or the absence of knowledge management structures within the organizational unit and extra personal initiatives which were not required or encouraged. Surprising outcome of the research is that the new knowledge obtained from the interfirm relationships is actually utilized quite well as all interfirm relationships resulted into succession in other projects. Point of improvement can be to not utilize the new knowledge, but also commercialize it. Marginal comment furthermore is that the utilization is mainly restricted to units which were involved in the interfirm relationship. So, the biggest challenge is to take care that knowledge transfer not only takes place within the unit, but also across organizational units. To wrap up, interfirm and intrafirm knowledge transfer within the interfirm relationships of Sara Lee Coffee & Tea is not yet happening optimally.

4.2. Limitations

Like every academic research, this study does not come without limitations. This section gives an overview of these limitations and their affection of the research.

A first limitation can be found in the fact that sensitive relationships were not included in the research, so that current relationships which were already characterized by some tensions were not jeopardized (requested by Sara Lee managers). Therefore, key advantages of the multiple-case study – studying processes and outcomes of various and diverse cases–could not be fully exploited unfortunately. Thus, more variety in the sensitiveness of relationships could have been desirable. The theoretical sampling was constructive however in the sense that the selection of different partners within the scope of the sample population selection could not have been broader. Moreover, a key advantage of the current theoretical sampling was that these cases fitted very well within the scope of the research questions; it were all interfirm relationships with tangible examples of knowledge transfer.

A second limitation is that one can doubt if the food research institute actually is an external partner in innovating or that there is a principal-performer relationship between Sara Lee and the research institute. During the interviews appeared that Sara Lee to a large extent guided the collaboration, because they financed the relationship. In a strict interfirm relationship partners are independent. However, the statements of the informants indicated at the occurrence of interfirm knowledge transfer and joint innovation and therefore this case contributed in answering the research questions.

A third limitation can be found in the difficulty to keep the informants focused on one, retrospective project. When they found a question difficult concerning the focal project, they referred to examples of other projects with the external partner in order to answer the question. This resulted in a larger amount of data. Therefore, strict retrospective data collection became impossible and this led to additional data selection tasks.

Fourthly, one of the advantages of case studies – easier acceptance of results due to previous interaction – has not expressed itself in this research because the research itself was kept confidential for quite a while. Therefore, I did not have the opportunity to freely talk about the results and thereby convince employees of the results in an early stage.

Although the interview questions provided sufficient data to answer the research questions, a fifth limitation is that the interviews could have been utilized more from an open innovation perspective. Because I expected the willingness of external informants to participate to be quite moderate, I applied a protocol strictly relating to the research questions. However, the

informants appeared to be enthusiastic to participate and scheduled quite some time for the interview. When looking at the interviews from an open innovation perspective, these contacts could have been applied to get an external opinion on challenges for Sara Lee like coping with intrafirm knowledge transfer or establishing contractual agreements.

At last, worth mentioning is that the empirical data confirmed the extant literature to a large extent. On the one hand this means that support for the research findings is found; as leading scholars as well observed similar matters. On the other hand, not so many really surprising findings could be drawn from the data. This can be explained by the fact that both the research– and the interview questions were based on the literature and therefore similar concepts were investigated in this research.

4.3. **Suggestions for further research**

During the period of research more emphasis was put on open innovation within Sara Lee International Coffee & Tea. However, consultation of external partners within this regard has not happened so far. One suggestion for further research – which simultaneously tackles one of the limitations –could be to conduct a research among leading organizations to see how they are dealing with some critical elements like governance structure and intrafirm knowledge transfer.

This research putted the emphasis on knowledge transfer in current relationships of Sara Lee, but in order to stay competitive it is highly interesting for the organization to get insight in desirable future interfirm relationships and network choices. Therefore, it can be interesting for a future researcher to dive into this area and investigate future partners.

In addition, it is advisable for Sara Lee to become more aware of their relationship portfolio as a whole. They need to have an overview of the whole scope of external partners and make conscious choices. However, this requires an organizational policy and functions that support expanding of this portfolio.

CHAPTER 5 RECOMMENDATIONS

This chapter addresses the recommendations emerging from this study, which aim to make Sara Lee able to deal more effectively with the challenges of open innovation and knowledge transfer. Table 5.1 summarizes them; the next sections discuss the recommendations in detail and provide suggestions for practical actions.

Table 5.1 *Overview of the recommendations*

<p><i>§5.1 Improving intrafirm knowledge transfer is essential to benefit optimally from interfirm relationships.</i></p> <ul style="list-style-type: none"> • Put knowledge transfer at the senior management agenda • Encourage contacts between departments and implement facilitating structures • Stimulate people to share and absorb knowledge • Make use of the exchange of people <p><i>§5.2 The sharing of tacit knowledge and information sharing outside the formal scope of the relationship need to be enhanced in order to be able to absorb knowledge relevant for innovation.</i></p> <ul style="list-style-type: none"> • Facilitate regular communication • Encourage informal communication • See the interfirm relationship as more than the solution to a specific problem • Involve various people and departments in a project with an external partner • Become more proactive, consequently the external partner will also become more transparent • Make clear to the partner what is done with their ideas in order to stimulate continuous supply of ideas. <p><i>§5.3 Abandon the standard approach</i></p> <ul style="list-style-type: none"> • Radical innovation and incremental innovation require different approaches • Treat different partners differently • Define the aim of the specific interfirm relationship • Formulate expectations of the interfirm relationships together with the partner • Match the actual behaviour with the initial goals (for instance too much directing does not facilitate explorative ideas) <p><i>§5.4 Contracts are the common governance structure; therefore it is unacceptable that contracting is associated with so many impediments.</i></p> <ul style="list-style-type: none"> • Guidelines for contracts for several types of partners developed with the legal department and R&D people involved in the establishment process. • Develop for each partner a 'standard' contract which is easy adjustable to following projects • Choose the ownership more consciously and be aware of the consequences for the interface structure • Fluent process enables adjusting contracts to new knowledge sharing <p><i>§5.5 Maintain approachability and pleasant personal contact.</i></p> <ul style="list-style-type: none"> • Include synchronous project teams in the interface structure • Avoid frequent change of people involved in the relationship
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5.1. Improve intrafirm knowledge transfer

In order to enable Sara Lee to benefit more from their interfirm relationships, the first suggestion is to improve intrafirm knowledge transfer. Nowadays opportunities are sometimes missed, because certain practices remain in their units and are not shared. Cause is that knowledge does not flow smoothly across units. For instance, it takes rather much effort for employees to know where the knowledge can be found and it occurs that employees simply do not know that someone else in the organization has been working on the same topic. It is obvious that this recommendation deserves priority; the actions described below are suggestions for the realization.

Put knowledge transfer at the senior management agenda

Knowledge sharing within the unit is not the biggest challenge; in common established structures and informal linkages are present. Key is that knowledge becomes accessible across departments as well; currently the organizational context does not facilitate the sharing of knowledge optimally. This issue can only be tackled when senior management is involved; developing this capability is above the level of individual employees. Thus, it is up to senior management to take the first step.

Encourage contacts between departments and implement facilitating structures

It already has been mentioned that the organizational context currently does not stimulate knowledge transfer. When senior management support is present, it is essential to change the organizational context into a real facilitator. After all knowledge transfer can not be completely dependent of an individual's motivation to invest time in it. For instance, more emphasis can be put on networks across organizational units in order to enhance the accessibility of both the source and the recipient.

Stimulate people to share and absorb knowledge

Employees do see the added value in knowledge sharing and acquiring, however they feel already busy enough by their current workload and responsibilities. Therefore I suggest to enable and stimulate employees to invest time in the exchanging of knowledge.

Make use of the exchange of people

The exchange of people is a valuable tool to exchange knowledge. Therefore, it is recommended to transfer people across subsequent project teams for instance. One group within Sara Lee has much experience with this; it is therefore recommended to exchange best practices.

5.2. Broaden the sharing of knowledge

Another opportunity can be derived from the fact that relationships with external partners are not fully exploited in terms of open innovation. The sharing of knowledge with external partners is nowadays to a large extent limited to knowledge relevant for the answering of Sara Lee's problems. Because knowledge transfer takes place within the initial scope of the relationship, this comes down to an overlooking of innovation opportunities with the partner. Improvements can be made when there is space to utilize additional ideas of the partner. A tight guiding of the relationship hampers radical innovation. This is undesirable when Sara Lee wants to become better able in breakthrough innovations. Since Sara Lee increasingly prioritizes open innovation, they are recommended to exploit the opportunities with external partners broader. This can be done when partners are seen and treated as sources of both exploitation and exploration. The following actions are recommended:

Facilitate regular communication

Regular communication between the partners is not happening standard yet. Usually conversations take place when the project requires it and that is it. It will contribute to the broadening of knowledge sharing when Sara Lee establishes an interface structure and action routines with their partners. This enables regular communication, which subsequently creates opportunities for broader knowledge sharing. Preferably this is done at the start of a project and together with the partner. Examples are the formulating of a project plan or creating synchronous teams. In this way partners will get the opportunity to update each other now and then, also when there is no project running.

Encourage informal communication

The opportunities to encourage informal communication are not fully exploited. When information sharing outside the scope of the relationship is aspired, a contributor is support for informal communication. Although informal communication can be a key facilitator, it is often not obvious as it takes time while the benefits are not immediately visible. Actions stimulating informal communication can be implemented with little effort. During meetings time can be reserved for a more open-minded conversation and informal contact moments are easily facilitated, for example by scheduling a joint lunch before a meeting takes place. Informal meetings like seminars or product introductions can be an opportunity to enhance regular communication as well.

See the interfirm relationship as more than the solution to a specific problem

Sara Lee is recommended to appreciate the current relationships more and exploit additional opportunities with current partners. Currently, Sara Lee drops a problem at an external partner and jointly a solution is found. However, it is likely that a partner offers more possibilities. It is therefore recommended to exploit the existing relationships in broader areas, like competencies with regard to processes or innovation.

Involve various people and departments in a project with an external partner

An easy way to cope with the challenges of intrafirm knowledge transfer is to establish multiple connections between Sara Lee and the external partner. When employees with various backgrounds are involved in the relationship, the knowledge can flow through various areas in the organization with less effort and thereby the risk of stickiness of valuable information is reduced. Furthermore, currently interfirm relationships with partners mainly take place in one area, while they could also be valuable for other organizational units. As internally this kind of knowledge is not processed optimally, it will be interesting to assess the partners on opportunities with other units within Sara Lee. For example, the opportunities with tea can be explored as many projects take place in the area of coffee.

Become more proactive, consequently the external partner will also become more transparent

Sara Lee can become more proactive by taking some simple steps. Sara Lee is advised to communicate more proactive with their partners, also when there is no project running. A newsletter with the latest market introductions can enable this – without risks of confidentiality – and thereby the partner can eventually be stimulated for the coming up with new ideas.

Make clear to the partner what is done with their ideas in order to stimulate continuous supply of ideas.

At first, it is recommended to enable the partner to suggest ideas outside the scope of the project. Furthermore, when Sara Lee wants to gain explorative ideas it is good to be careful in directing. When a partner comes up with ‘out of the box’ ideas and these are from Sara Lee perspective not utilizable; suggestion is to inform them on time and give insight in the reasons behind the decision. Otherwise the partner will be discouraged to come up with explorative ideas next time.

5.3. Abandon the standard approach

Although diverse partners offer various opportunities for collaboration and innovation, these opportunities are not fully exploited due to a standard approach of external partners. It namely has been observed that Sara Lee treats all its partners more or less in the same way. This standard approach consists of dropping a problem definition at the external partner with the aim to get input on that matter. This does not support the opportunities for radical innovation and the sharing of knowledge outside the initial scope (§5.2). This section outlines manners to open up the possibilities in interfirm relationships.

Radical innovation and incremental innovation require different approaches

When the objectives with regard to interfirm knowledge transfer are different, it is recommend to act different as well. Sara Lee is suggested choose whether they aim at exploration or exploitation and adapt their behaviour to it. Radical innovation on the one hand is stimulated when Sara Lee dares to delegate and thus stimulate proactive knowledge sharing. Incremental innovation on the other hand can benefit from a clear project plan and objectives.

Treat different partners differently

Although Sara Lee cooperates with partners with different characteristics, this can not always be seen in the way these partners are approached. However, this research made clear that doing business with a university deviates from cooperating with a supplier. It is recommended to adapt to these differences, in order to benefit optimally from the interfirm relationship.

Define the aim of the specific interfirm relationship

In order to be aware of the chances with a specific partner, it is advisable to take time to investigate the goals and opportunities of every interfirm relationship separately. After all, it is unlikely that every partner can be treated in the same manner.

Formulate expectations of the interfirm relationships together with the partner

Joint goal formulation and discussion about the expectations was not common. Certain disappointments observed were rooted in this explanation. Therefore, a suggestion for partners is to jointly explicate the aim of the interfirm relationship. A useful tool for this is the including of explicated expectations and project plans and thereby guided the interfirm knowledge transfer.

Match the actual behaviour with the initial goals

It happened that the actual behaviour observed was not congruent with the initial goals of the relationship. For example, when the goal is the acquisition of radical ideas it is advised to be careful with tight problem definitions. Sara Lee will get more out of relationships when attention is paid on alignment between behaviour and goals.

5.4. Free up the contract establishment process

Although each interfirm relationship is covered by contractual agreements, the establishment of them is accompanied by several impediments. The process requires much time and many discussions take place with respect to content. Causes are the fact that the legal department starts the process with a standard list of requirements – independent of the type of partner – while it is known in advance that these contracts are not suited for certain partners. Because of this, the process demands months and months which is not only very frustrating but also blocks opportunities for knowledge sharing. Because contracts are the common governance structure, it is desirable to improve the process. The following actions can contribute to a smoother contract establishment process.

Guidelines for contracts for several types of partners

One possibility is to adjust the contract to the type of partner; various kinds of partners require various contractual agreements. In order to accelerate the process, guidelines are recommended. However, one needs to be aware that common guidelines could not be developed. Therefore different types of partners can be distinguished and guidelines can be distinguished for these types. Moreover, a suggestion is to involve both the legal department and R&D employees in the development of these guidelines as they are aware of the possible hindrances uttered by the partner.

Develop for each partner a 'standard' contract which is easy adjustable to following projects

Currently a separate contract is made up for each project and in the majority of cases various projects are done with one partner. Therefore it would save time to establish a standard contract with a specific partner, which can be easily applied for subsequent projects.

Choose the ownership more conscious and be aware of the consequences for the interface structure.

Contractual agreements are not the only option considering ownership structures. It can be advantageous to also look at more formal structures in certain cases as different ownership structures result in different collaboration situations.

Fluent process enables adjusting contracts to new knowledge sharing

Knowledge spillovers can be avoided when the contracts are up to date. A fluent establishing process contributes therefore not only to less frustrations, but also enables broader knowledge sharing (§5.2).

5.5. Maintain approachability and pleasant personal contact

All external partners indicated that they value their contact with Sara Lee employees and that Sara Lee sticks out in approachability, personal ‘click’ and involvement of the employees in the interfirm relationship. Sara Lee is appreciated because of these characteristics and therefore, it would be wise to continue to benefit from it in the future. By improving the informal communication, this strength can be further enhanced as well.

Include synchronous project teams in the interface structure

Synchronous project teams are appreciated and praised both internally and externally and are seen as a specific competence of Sara Lee and so this could be extended to other projects where this structure is suitable.

Avoid frequent change of people involved in the relationship

Because contacts among people need to be built and take time, it is recommended to avoid frequent change of people. As a consequence, informal communication and trust gets the opportunity to develop and this will facilitate the interfirm relationship.

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APPENDICES

Functions of formal contracts

Table 1 *Functions of formal contracts*

Reference	Function of the formal contract
Hagedoorn, 2002	<ul style="list-style-type: none"> ○ Increase strategic flexibility
Das & Teng, 2001	<ul style="list-style-type: none"> ○ The arrangement of disputes, conflicts and norm violations in social exchanges
Nooteboom, 2000	<ul style="list-style-type: none"> ○ Restriction of the opportunities for opportunism ○ Prevention of misunderstanding
Lyons and Mehta, 1997 in: Klein Woolthuis et al., 2005	<ul style="list-style-type: none"> ○ Legally binding
Klein Woolthuis, 2001, in: Klein, Woolthuis et al., 2005	<ul style="list-style-type: none"> ○ Safeguard intellectual property rights ○ Safeguard spill-over risks ○ Seal the management of the complex relationship
Klein Woolthuis et al., 2005	<ul style="list-style-type: none"> ○ Defining the uncertainty, asset specificity and frequency of transaction. ○ Coordination: Technical aid to managing the relationship. Specification of goals and how these are achieved. ○ Safeguard for external contingencies ○ Sign of commitment: contract as a symbol or signal for commitment
Das & Teng, 1998; Williams, 1988; Lane & Bachman; 1998; Maguire et al. 2001, in: Klein Woolthuis et al.	<ul style="list-style-type: none"> ○ Contract functions as a basis for trust. The expected behaviours and/or outcomes of the partners can be codified and the costs of selfish behaviour increase.
Bradach & Eccles, 1989; Neu, 1991; Lyons & Mehta, 1997 in: Klein Woolthuis et al.	<ul style="list-style-type: none"> ○ Contract can be interpreted as a sign of distrust

Interview characteristics

Table 2 *Characteristics of the interviews and transcripts*

Case	Length of the interview	Number of words transcript	Pages transcript
#1 Carton packaging supplier			
Internal informant	43:25	5.804	15
External informant	44:34	7.651	17
#2 Flexible packaging supplier			
Internal informant	58:48	6.849	17
Internal informant	1:02:06	7.818	19
External informant	47:06	3.797	12
External informant	1:00:22	10.794	21
#3 Educational Design Institute			
Internal informant	43:44	6.551	14
Internal informant	1:00:54	8.545	20
External informant	42:51	5.788	15
#4 Food research institute			
Internal informant	44:11	5.808	20
Internal informant	43:64	6.560	17
Internal informant	51:64	6.272	16
External informant	51:06	8.592	16
#5 Food Chemistry group university			
Internal informant	43:64	6.560	17
Internal informant	51:64	6.272	16
External informant	57:10	6.613	13

Internal interview protocol (in Dutch)

Noteren:

- tijdstip interview
- wel/geen derden aanwezig
- plaats van het interview
- leeftijd + geslacht interviewer
- naam interviewer
- naam geïnterviewde
- casenummer

Gespreksintroductie

Mijn naam is Lonneke van Ravenswaaij, ik studeer Business Administration aan de Universiteit Twente en ik ben momenteel bezig met de afronding van mijn master Innovatiemanagement. Hiervoor doe ik een afstudeeronderzoek binnen Sara Lee Coffee & Tea, in opdracht van Johan Sanders.

We hebben al samen gesproken, maar aan het begin van het interview zal ik nog een aantal zaken langslopen.

Momenteel wordt er binnen Sara Lee International Coffee & Tea bekeken hoe er meer met open innovatie gedaan kan worden. Open Innovatie houdt kort gezegd in, het aanwenden van interne en externe ideeën en gebruiken van interne en externe wegen naar de markt. Open innovatie heeft dus veel te maken met samenwerking met partijen buiten de organisatie.

Met het onderzoek wil ik in kaart brengen hoe er momenteel met externe partijen wordt samengewerkt binnen Sara Lee Coffee & Tea. Het doel is het verkrijgen van een inzicht in het huidige netwerk. Hierbij gaat het er in het bijzonder om inzicht te verkrijgen hoe er kennis wordt uitgewisseld met externe organisaties en hoe deze opgedane kennis vervolgens intern doorstroomt.

Aangezien jij ook betrokken bent bij de samenwerking met een externe partij, namelijk ... , hoop ik door middel van dit interview een beter inzicht te verkrijgen in hoe de samenwerking momenteel verloopt, wat anderen kunnen leren van deze samenwerking en waar verbeteringen gewenst zijn.

Dit interview wordt opgenomen, zodat er geen informatie verloren gaat en ik me kan concentreren op het interview.

Is tot nu toe alles duidelijk?

Aangezien de projecten die binnen dit onderzoek vallen vrij bekend zijn binnen de divisie kan ik lastig anonimiteit garanderen. Wel zorg ik er voor dat ik de interviewresultaten

alleen verwerk en strikt vertrouwelijk behandel. De gespreksgegevens zullen nooit direct doorgegeven worden. Mijn onderzoek behandelt conclusies die uit alle interviews gezamenlijk getrokken kunnen worden. Citeren zal anoniem gebeuren. Informatie die voortkomt uit het interview wordt niet gecommuniceerd naar de externe partij.

Naast dit project onderzoek ik nog een aantal andere relaties met andere partijen, de resultaten uit de gezamenlijke conclusies zijn bepalend voor de conclusies en aanbevelingen voor Sara Lee Coffee & Tea. De impact van de interviews is hierdoor dus vrij groot.

Omdat de externe partij ook geïnterviewd wordt, zal dit interview een zogenaamd 'kijkje in de keuken' opleveren en praktische tips om de samenwerking met de externe partij nog succesvoller en innovatiever te maken.

Om zoveel mogelijk uit het interview te halen ben ik in het bijzonder geïnteresseerd in wat er momenteel goed gaat, maar juist ook specifiek wat er nog verbeterd dient te worden. Hiervan kan geleerd worden!

Ik heb voor het interview anderhalf uur tijd ingepland om alle zaken aan bod te kunnen laten komen. Het geluidsbandje zal ik gebruiken om de informatie uit dit interview zo correct mogelijk te kunnen verwerken en gedurende de resultaatverwerking bewaren. Daarna zullen de interviews gewist worden.

Zijn er opmerkingen of vragen naar aanleiding van het voorafgaande?

Het interview is als volgt opgebouwd. Ik begin met vragen over het initiatief en de doelen van de samenwerking. Vervolgens wordt er gekeken naar de kennis die er uitgewisseld wordt en naar de manier waarop dat gebeurt. Daarna loop ik langs mogelijke obstakels in de samenwerking en ik sluit af met vragen over hoe de kennis intern doorstroomt.

Graag wil ik vragen met het antwoorden zo dicht mogelijk bij de vraag te blijven. Dit ook met het oog op de beperkte tijd. Ik probeer ervoor te zorgen dat alle relevante zaken aan bod komen. Aan het eind is er nog tijd voor het geven van aanpullende input of het stellen van vragen.

Als alles duidelijk is dan zou ik nu graag beginnen.

1. Initiatief samenwerking:

- Hoe kwamen Sara Lee International en ... in contact met elkaar?
- Waarom besloten jullie samen te werken met ...?
- Was er een gezamenlijk doel opgesteld?
- Wat waren vanuit Sara Lee de hoofddoelen voor de samenwerking?
- Kan je iets vertellen over de taakverdeling tussen Sara Lee en ... ?

2. Kennis

- Kan je iets vertellen over de informatie die er wordt uitgewisseld in de samenwerking? (concrete voorbeelden?)
- Wat voor informatie willen jullie uit deze samenwerking halen?
- Hoe komt dit dat dit *ook daadwerkelijk / nog niet* lukt denk je?
- Zijn jullie open over al jullie kennis en routines?
- Heb je het gevoel dat de partner zich open opstelt?
- Kunnen jullie toegang krijgen tot de informatie die jullie uit de samenwerking willen halen?
- Hoe komt dit denk je?
- In welke mate heb je door de samenwerking toegang tot nieuwe informatie verkregen?
- Wat voor soort informatie was dit?
- Zijn er daadwerkelijk veranderingen doorgevoerd binnen Sara Lee n.a.v. de samenwerking?
- Heb je daar een voorbeeld van?

3. Proces

- Kan je iets vertellen over de formele opzet van de samenwerking?
- Waren jullie het snel eens over de inrichting van de samenwerking?
- Kan je iets vertellen over de manier waarop jullie momenteel samenwerken?
- Hoe is de samenwerking precies ingericht?
- Op welke manieren is er zoal contact?
- In hoeverre vind je dat dit werkt?
- Op welke manier wordt de samenwerking gecoördineerd?
- Kan je iets vertellen over de interactie tussen Sara Lee en ... ?
- Hoeveel mensen waren er ongeveer bij betrokken, van welke functieniveaus?
- Ontstond er een relatie met de mensen van de ...?
- Hoe beschrijf je jouw relatie met je contactpersonen?
- Heb je het gevoel dat de huidige inrichting van de samenwerking het makkelijker maakt kennis te delen?
- Wat zou er nog kunnen veranderen om het proces van kennisoverdracht tussen beide organisaties te verbeteren?
- Kan je iets vertellen over de manier waarop de samenwerking geëvalueerd wordt?
- Hoe verloopt de samenwerking over de jaren heen?
- Is de samenwerking in de loop der jaren veranderd?
- Waaraan merk je dat in het bijzonder?

4. Obstakels

- Kan je iets vertellen over moeilijke momenten in de samenwerking?
- Wat is de grootste uitdaging die in deze samenwerking overwonnen moet worden?
- Zijn er obstakels die vanuit Sara Lee komen die de samenwerking bemoeilijken?
- Wat zou er de externe partner moeten veranderen om de samenwerking beter te laten verlopen?
- Kwamen de verwachtingen van Sara Lee en ... overeen?
- Wat ging er boven verwachting goed?
- Wat bepaald of er wordt doorgegaan met deze samenwerking?

5. Interne kennisdeling

- Kan je iets vertellen over hoe informatie uit de samenwerking momenteel doorvloeit binnen SLI?
- Kan je iets vertellen over hoe er over het algemeen wordt omgegaan met kennisdeling?
- Hoe vind je dat het overnemen van kennis uit de samenwerking met ... momenteel verloopt?
- Welke afdelingen zijn er betrokken bij de samenwerking met ...?
- Met hoeveel mensen spreek je standaard over kennis uit de samenwerking?
- Spreek je daarnaast ook nog met anderen over de samenwerking? (Ook mensen met wie je niet dagelijks werkt?)
- Wat leert Sara Lee van de samenwerking?
- Wat zijn volgens jou de grootste obstakels die interne kennisoverdracht in de weg staan?
- Ben je ook betrokken in samenwerking met andere partijen?
- Wat gaat daar beter? Waarom gebeurt dat denk je niet met ...?

6. Eigen input

- Zijn er in dit interview nog relevante punten op het gebied van kennisoverdracht, zowel intern als extern, overgeslagen?
- Zijn er nog zaken waar ik speciale aandacht aan kan geven tijdens het interview met de externe partij?
- *Tot slot:*
 - Wat is je precieze functie (functieniveau)?
 - Op welke afdeling ben je werkzaam?

External interview protocol (in Dutch)

Noteren:

- tijdstip interview
- wel/geen derden aanwezig
- plaats van het interview
- leeftijd + geslacht interviewer
- naam interviewer
- naam geïnterviewde
- casenummer

Gespreksintroductie

Mijn naam is Lonneke van Ravenswaaij, ik studeer Business Administration aan de Universiteit Twente en ik ben momenteel bezig met de afronding van mijn master Innovatiemanagement. Hiervoor doe ik een afstudeeronderzoek, wat ik uitvoer binnen Sara Lee bij de business unit Coffee & Tea.

Met mijn onderzoek wil ik in kaart brengen hoe kennisoverdracht tussen organisaties plaatsvindt, en hoe deze kennis vervolgens doorstroomt binnen organisaties. Om antwoord op deze vraag te krijgen voer ik een multiple case study uit binnen Sara Lee. Sara Lee International Coffee & Tea werkt steeds meer samen met externe partijen waaronder

Aangezien u als contactpersoon vanuit ... optreedt voor Sara Lee, hoop ik door middel van dit interview een beter inzicht te verkrijgen in hoe de samenwerking momenteel verloopt, in hoeverre er onderling kennis uitgewisseld wordt en waar verbeteringen mogelijk zijn.

Dit interview wordt opgenomen, zodat er geen informatie verloren gaat en ik me kan concentreren op het interview.

Is tot nu toe alles duidelijk?

Aangezien de projecten die binnen dit onderzoek vallen vrij bekend zijn binnen de divisie kan ik lastig anonimiteit garanderen. Wel zorg ik er voor dat ik alleen de interviewresultaten verwerk en strikt vertrouwelijk behandel. De gespreksgegevens worden alleen door mij ingezien. Mijn onderzoek behandelt conclusies die uit alle interviews gezamenlijk getrokken kunnen worden. Citeren zal anoniem gebeuren. Informatie die voortkomt uit het interview wordt niet direct gecommuniceerd naar Sara Lee.

Omdat beide partijen geïnterviewd worden zal dit interview een zogenaamd 'kijkje in de keuken' opleveren en praktische tips om de samenwerking nog succesvoller en

innovatiever te maken. Mijn streven is dan ook om n.a.v. mijn onderzoek een gesprek over de resultaten te houden.

Om zoveel mogelijk uit het interview te halen ben ik in het bijzonder geïnteresseerd in wat er momenteel goed gaat, maar juist ook specifiek wat er nog verbeterd dient te worden. Hiervan kan geleerd worden!

Ik heb voor het interview een uur tijd ingepland om alle zaken aan bod te kunnen laten komen. Het geluidsbandje zal ik gebruiken om de informatie uit dit interview zo correct mogelijk te kunnen verwerken en gedurende de resultaatverwerking bewaren. Daarna zullen de interviews gewist worden.

Zijn er opmerkingen of vragen naar aanleiding van het voorafgaande?

Het interview is als volgt opgebouwd. Ik begin met vragen over het initiatief en de doelen van de samenwerking. Vervolgens wordt er gekeken naar de kennis die er uitgewisseld wordt en naar de manier waarop dat gebeurt. Daarna loop ik langs mogelijke obstakels in de samenwerking. Ik wil graag afsluiten met enkele vragen over hoe er met samenwerking met externe partijen wordt omgegaan binnen

Graag wil ik vragen met het antwoorden zo dicht mogelijk bij de vraag te blijven. Dit ook met het oog op de beperkte tijd. Ik probeer ervoor te zorgen dat alle relevante zaken aan bod komen. Aan het eind is er nog tijd voor het geven van aanpullende input of het stellen van vragen.

Als alles duidelijk is dan zou ik nu graag beginnen.

1. Initiatief samenwerking:

- Hoe kwamen ... en Sara Lee International in contact met elkaar?
- Waarom besloten jullie samen te werken met Sara Lee International?
- Was er een gezamenlijk doel opgesteld?
- Wat waren de hoofdoelen die intern waren opgesteld?

2. Kennis

- Kunt u iets vertellen over de informatie die er wordt uitgewisseld in de samenwerking? (concrete voorbeelden?)
- Wat voor informatie willen jullie uit deze samenwerking halen?
- Hoe komt dit dat dit *ook daadwerkelijk / nog niet* lukt denkt u?
- Zijn jullie open over al jullie kennis en routines?
- Hebt u het gevoel dat Sara Lee International zich open opstelt?

3. Proces

- Kunt u iets vertellen over de formele opzet van de samenwerking?

- Waren beide partijen het snel eens over de inrichting van de samenwerking?
- Kunt u iets vertellen over de manier waarop jullie momenteel samenwerken?
- Hoe is de samenwerking precies ingericht?
- Op welke manieren is er zoal contact?
- In hoeverre vindt u dat dit werkt?
- Op welke manier wordt de samenwerking gecoördineerd?
- Kunt u iets vertellen over de interactie tussen ... en Sara Lee International?
- Hoeveel mensen zijn er ongeveer bij betrokken, van welke functieniveaus?
- Ontstond er een relatie met de mensen van de Sara Lee International?
- Hoe beschrijft u uw relatie met uw contactpersonen van Sara Lee International?
- Hebt u het gevoel dat de huidige inrichting van de samenwerking het makkelijker maakt kennis te delen?
- Wat zou er nog kunnen veranderen om het proces van kennisoverdracht tussen beide organisaties te verbeteren?
- Kunt u iets vertellen over de manier waarop de samenwerking geëvalueerd wordt?
- Hoe verloopt de samenwerking over de jaren heen?
- Is de samenwerking in de loop der jaren veranderd?
- Waaraan merkt u dat in het bijzonder?

4. Obstakels

- Kunt u iets vertellen over moeilijke momenten in de samenwerking?
- Wat is de grootste uitdaging die in deze samenwerking overwonnen moet worden?
- Zijn er obstakels vanuit ... die de samenwerking bemoeilijken?
- Wat zou Sara Lee International moeten veranderen om de samenwerking beter te laten verlopen?
- Kwamen de verwachtingen van ... en Sara Lee International overeen?
- Wat ging er boven verwachting goed?
- Wat bepaald of er wordt doorgegaan met deze samenwerking?

5. Extern

- Hoe zien jullie Sara Lee als samenwerkingspartner?
- Wat zijn voor u de belangrijkste succes factoren in samenwerkingen tussen organisaties?
- Wat doen jullie binnen ... om ervoor te zorgen dat kennis uit externe bronnen goed wordt verwerkt?
- Wat doen jullie in samenwerking met andere externe partijen anders dan met Sara Lee International?
- Waarom zou dit *wel/niet* met Sara Lee kunnen?

- Hoe wordt interne kennis doorstroom bij jullie gestimuleerd?

6. Eigen input

- Zijn er in dit interview nog relevante punten op het gebied van kennisoverdracht, zowel intern als extern, overgeslagen?

Tot slot:

- Wat is je precieze functie (functieniveau)?
- Op welke afdeling ben je werkzaam?