



UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Intellectual Property and R&D Contracts:

-a closer relation between patent portfolio and contracts to guide and enhance strategic innovation decisions.

Caroline Steinbock Villarroel

Graduate School
Master of Science in
Intellectual Capital Management
Master Degree Project No.2010:54
Supervisor: Anneli Hildenborg

Abstract

This thesis explores the hypothesis that Multinational Companies (MNC) sometimes lack historic information about contractual obligations attached to the patent portfolio due to poor management routines or processes and therefore MNC become less effective in new collaboration deals. This hypothesis is investigated particularly within the context of the multinational company, Nestlé.

The methods used in this study included structured and unstructured interviews with internal actors involved in R&D collaborations with third parties and contract portfolio management; external interviews with Unilever, General Mills and Nokia; external interviews with intellectual property (IP) management system providers such as Thomson Reuters and Unycom; quality and risks analyses; and different literature on the topic of IP management and contracts.

The study shows that Nestlé has a R&D procedure to collaborate with third parties and different systems to manage the patent portfolio and contracts with third parties. This thesis finds that the lack of a complete IP portfolio and contract management system can expose Nestlé to legal, technical and managerial risks, in addition to jeopardizing strategic decisions for innovation. To minimize these risks, this thesis recommends links to be created between existing systems to strengthen the IP portfolio and contract management systems in order to provide an overview of the contractual obligations linked to the IP, contracts and third parties.

It is also recommended that a responsible function is created to give the overview of the R&D collaboration process within Nestlé in order to identify the gaps and suggest solutions and actions. This thesis also suggests the responsible function to become the hub for receiving information about the IP created from collaboration with third parties and between the different departments involved within contracts and IP management, as well as having the overview of the rights that Nestlé owns or have rights to.

This thesis shows the benefits of having a structure to support the patent portfolio, the contract management, as well as a responsible function to have an overview of the process, such as building a complete patent portfolio and having the contractual terms of a patent properly tracked and monitored.

Acknowledgement

This thesis is the outcome of a joint internship within the departments of Intellectual Asset Management and Legal at Nestlé S.A. (Headquarters at Vevey, Switzerland). I would like to express my gratitude for Mr. Terry Adams, Mrs. Odette Dupont and Mr. Patrick Couzens for their invaluable support, guidance and constant insights, which were essential for writing this report.

Also, I would like to thank all Nestlé interviewees: the intellectual asset management team; the R&D legal counsels team; brand IP legal counsel; M&A legal counsels team, the innovation alliance team and external partnerships and specially to the contract managers of PTC Orbe, PTC Konolfingen, PTC York and NRC.

On the academic part, I would like to thank CIP professionals Mr. Andrew Telles, Dr. Caroline Pamp and Mr. Henrik Rosén for their support.

Moreover, I would like to express my gratitude for the support of external interviewees: Mr. Matt Reed, business director of Unilever; Mr. Doug Taylor, chief patent counsel at General Mills; Mr. Claudio Marinelli, director of Open innovation and Academic relations for Nokia Research Center; Mr. Wolfgang Themessl, strategic partner responsible at Unycon; Mr. Hendrich Schunken, chief executive officer at Unycom and Mr. Jan Hendrik, sales manager at Thomson Reuters.

Finally, I would like to thank my family and friends for their patience, constant motivation and inspiration behind the research process.

Gothenburg, December 17th, 2010.

Caroline Steinbock Villarroel

Table of Contents

Abstract	2
Acknowledgement	3
Table of Contents	4
List of Figures	6
CHAPTER 1: Introduction	7
1.1 Background	7
1.2 Purpose	8
1.3 Research questions	9
1.4 Outline of the thesis.....	9
CHAPTER 2: Research Methodology	10
2.1 Case study at Nestlé.....	10
2.1.1 Partaking in existing structures.....	10
2.1.2 Structured and unstructured interviews.....	12
2.1.3 Data analyses	14
2.2 Literature - books and articles consulted	14
2.3 Literature - theoretical framework.....	15
2.4 Limitations	16
2.5 Scope.....	17
CHAPTER 3: Theoretical Framework	18
3.1 Dynamic Capabilities: Position, Process and Path	18
3.2 Multinational companies	19
3.2.1 Intellectual Property as wealth creation.....	19
3.2.2 Innovation initiatives.....	20
3.2.3 R&D collaboration model and patent portfolio	22
3.3 R&D collaboration process with third parties	24
3.3.1 Phase 3: Negotiate, report and track terms in R&D collaboration with third parties importance	25
3.3.2 Phase 4: Patent portfolio management importance	26
3.3.3 Phase 4: Contract portfolio management importance	27
3.4 Innovation strategic decisions that depend on contractual obligation attached to the patent.....	27
CHAPTER 4: Case study	29
4.1 Nestlé’s position as an innovative company.....	29
4.1.1 Nestlé’s Intellectual Value Opportunities	30
4.2 Nestlé’s R&D collaboration process with third parties.....	31

4.2.1 Nestlé’s R&D collaborative process	31
4.2.2 Nestlé’s phases in R&D collaboration process with third parties.....	31
4.2.3 External actors comparison.....	32
4.3 Nestlé’s stakeholders involvement within R&D collaboration with third parties	33
4.3.1 External actors comparison.....	34
4.3.2 Nestlé’s reporting and tracking terms in R&D collaboration with third parties.....	35
4.3.3 Risks analyses	36
4.3.4 Sub-conclusion: Does Nestlé lack information regarding their IP portfolio? Does the lack of information jeopardize their ability to effectively collaborate? The need to control research possibilities, process and results.....	37
4.4 Internal structures / tools: An opportunity to manage patents from R&D collaboration and enhance Nestlé’s strategic innovation decisions.....	37
4.4.1 Nestlé’s Patent portfolio management	38
4.4.2 Nestlé’s contract portfolio management.....	38
4.4.3 External actors comparison.....	39
4.4.4 Risks analyses	40
4.4.5 Contractual obligations that should be linked to the patent portfolio.....	41
4.4.6 Sub-conclusion: Can this lack of information be changed by utilizing existing IP management structures / tools within the company?	42
CHAPTER 5: General conclusion	45
CHAPTER 6: Future applications.....	48
CHAPTER 7: References	50
CHAPTER 8: Appendices	54
Appendix A –Structured Interview Guideline focused on external actors	54
Appendix B – Structured interview guideline focused on different stakeholders at Nestlé	55

List of Figures

Figure 1 – Research structures of Nestlé Research Center and Product Technology Development ...	11
Figure 2 - Model of intellectual value opportunities in a science based company.....	21
Figure 3 – Patent ownership allocation within the patent portfolio.....	21
Figure 4 - R&D collaboration process overview	22
Figure 5 - Formation process of collaboration according to Fontanari (1995).	25
Figure 6 - Intellectual value opportunities at Nestlé	30
Figure 7 - Overall phases for entering R&D collaboration with third parties.....	32
Figure 8 – General Mills’ R&D collaborative process	33
Figure 9 – Unilever’s R&D collaborative process	33
Figure 10 – Stakeholders involved on the R&D collaborative process.....	35
Figure 11 – Nestlé’s Patent portfolio management	38
Figure 12 - Functional leader to have the overview of contracts and IP portfolio.	44

CHAPTER 1: Introduction

The first chapter introduces the background and purpose of the thesis subject, questions that will be answered and the outline of the thesis.

1.1 Background

“Companies that don’t innovate die”, Chesbrough (2006)¹. In multinational companies (MNC), innovation has been one of the main drivers for maintaining competitive advantage according to Teece et al. (2000); Petrusson (2004) and Granstrand, (2000). As innovation is normally linked to “changes in efficiency, productivity, quality, competitive positioning, market share, etc”², Chesbrough (2006) affirms that companies should use external and internal ideas and paths, as well as combining them to the market in order for the company to advance in technology³.

Through collaboration, different companies can combine their ideas and technology to innovate. Different MNC⁴ have adopted innovation initiatives that accelerate the investigation procedure for research and development (R&D) by collaborating with external institutions, like universities, independent investigations centers, small companies, suppliers, competitors, among others.⁵

Each external collaboration agreement or similar intellectual property (IP) based transactions require time and effort from different departments within MNC, each one of them being responsible for one part of the process. In general the different departments have different primary roles and contribute for one part of the process. R&D structures are responsible to develop or improve a new technology to be applied in a product or company process; the business structure works to define the best strategy for packaging and commercializing the new invention; and the legal structure is responsible for composing the final agreement that will safeguard the MNC’s IP ownership interests.

In some MNC⁶ different actors/departments are involved in this process and, therefore, it is likely they do not have an overview of the entire R&D collaboration process and agreements with third parties. As a result, the company may lack the complete information of what rights, obligations and assets have been attached to the company’s IP, or compromised in a collaboration agreement.

With the increasing number of innovation initiatives⁷, R&D collaboration contracts with third parties may include assets from the company patent portfolio, or generate new patents. And in order to manage and further transact them or apply them in the development of new products, one needs to know if those patents are unrelated to contractual obligations, and thus available for new collaborative innovation transactions.

¹Chesbrough, H.W. (2006). *Open Innovation: The new imperative for creating and profiting from technology*. Boston, Mass: Harvard Business School Press

² Source: <http://en.wikipedia.org/wiki/Innovation> [Accessed 26/08/2010]

³ Ibid.

⁴ The list of the 50 most innovative companies in the world in 2010 include companies as Facebook, Apple, Amazon, Google, Novartis etc. Available at <http://www.fastcompany.com/mic/2010> [Accessed 17/11/2010]

⁵ Source: www.nestle.com/Resource; www.unilever.com; www.generalmills.com [Accessed 26/08/2010]

⁶ Ibid.

⁷ Source: <http://www.fastcompany.com/mic/2010/industry/most-innovative-food-companies> [Accessed 17/11/2010]

The problem arises when the information about a patent that is connected to a R&D contract with third parties is not available or not easily identifiable within the patent or contract portfolio.

The lack of information carries managerial, technical and legal risks. There is the risk of increasing time and effort for tracking the patents involved in R&D collaboration agreements and the risk of not identifying the history of the patent and its ownership. This lack of patent information could lead a company to litigation risks, for example, if the patent has been negotiated twice, with one of them in an exclusive basis. If that happens the company may run the risk of losing the patent.

Moreover, without the proper management of contractual information on a patent or contract portfolio, the company would increase the time for searching this information and loose opportunities to use those patents in further collaborative initiatives. This can hamper the company's competitive advantage in the market.

Hence, this thesis considers that MNC needs to collaborate in order to maintain its innovation and competitive advantage. In this manner, IP protection and management becomes essential according to Petrusson (2004) and Granstrand (2000). Thereby, this thesis explores the hypothesis that MNC sometimes lack historic information about contractual obligations attached to the patent portfolio of a company due to poor management routines or processes, and therefore becomes less effective in new collaboration deals. This hypothesis is investigated particularly within the context of one MNC: Nestlé.

1.2 Purpose

The thesis investigates the hypothesis that the lack of information about previous records of the history of contractual obligations attached to a patent portfolio in MNC's IP portfolio comes from problems in management routines and processes within the context of R&D collaboration with third parties, which consequently could jeopardize strategic collaborative innovation decisions.

Thus, the aim of this thesis is to investigate that hypothesis within the context of a MNC, such as Nestlé. The thesis will give an overview of Nestlé's R&D collaborative process, as well as analyze the different roles involved within R&D collaboration with third parties and identify the main contractual information that should be attached to the patent portfolio not to jeopardize their collaborative innovation decisions. In the end of this analysis, the goal is to use the practical model of Nestlé, including its strengths and weaknesses, as a starting point to suggest a closer relation between the management of patents and contracts to enable the guidance and enhancement of collaborative innovation decisions.

It is not the intent of this thesis to utilize Nestlé's model as the sole model available to better manage IP and contracts, but to make an analyses on the benefits of their process and possible improvements, as well as to give an overview of how their model could be applied at different companies.

1.3 Research questions

According to the purpose of the thesis and hypothesis to be investigated, the main research questions that this thesis aims to answer are:

- 1) Does Nestlé lack information regarding their IP portfolio?
- 2) Does the lack of information jeopardize their ability to effectively collaborate?
- 3) Can this lack of information be changed by utilizing existing IP management structures / tools within the company?

1.4 Outline of the thesis

The thesis is divided into seven chapters.

Chapter one introduces to the reader the purpose and background of the thesis. It presents the research questions and the outline of the thesis.

Chapter two introduces the research methodology used in this study. It presents the case study performed at Nestlé and the manners utilized to gather the necessary information. It explains the different literature utilized to support the fundamentals of the thesis, the scope and limitations.

Chapter three shows the theoretical framework of the thesis, which is based on the proposed innovation strategy by Teece et al. (1997): the dynamic capabilities approach i.e., Positions, Process and Path⁸. This chapter explains the position of MNC to maintain competitive advantage in the market through the management of patents and contracts, its process of R&D collaboration and path to keep track of their rights and obligations to base innovation decisions.

Chapter four explains the case study at Nestlé. The empirical case follows the theoretical framework proposed in chapter three. It outlines the current position of Nestlé and situates the reader on their patent portfolio importance and innovation initiatives to maintain competitive advantage in the market. It answers the research questions by explaining how Nestlé has been managing its R&D collaboration processes with third parties and keeping track of patents and contractual obligations.

Chapter five brings a conclusion based on the case study at Nestlé and answers the main questions by describing an opportunity to improve the management of patents and contracts based on their existing structures.

Chapter six explains how the experience of Nestlé could be applied in other companies, settings and the main knowledge to be taken in consideration.

Chapter seven lists the literature used within this study.

Chapter eight lists the appendices that contain the interview questions.

⁸Teece, D.J., Pisano, G. and Shuen, A. (1997). Strategic management journal: *Dynamic capabilities and strategic management*. STOR: John Wiley & Sons. Vol.18, No.7, pp. 509-503

CHAPTER 2: Research Methodology

The research methodology consists of information from the literature – which allowed the author build the theoretical framework of the study, outline the interview questions and identify the knowledge in the subject - and facts from an empirical case study, based on existing structures of a MNC during five months internship. Both methodologies are explained in this chapter.

2.1 Case study at Nestlé

The research questions were formulated based on the hypothesis that the lack of information about the history of previous records of contractual obligations attached to the patent portfolio in MNC's comes from problems in management routines and processes of R&D collaboration with third parties, which consequently could jeopardize strategic collaborative innovation decisions.

To approach this hypothesis the author participated on a case study in a joint internship at the departments of intellectual capital management and R&D legal department at Nestlé, which lasted five months. As part of the case study, the author was asked to investigate Nestlé's R&D collaboration process, existing management systems to manage IP and contracts, as well as the stakeholders involved in the actual negotiation, reporting and tracking of IP. The purpose of this was to investigate the mentioned hypothesis and identify possible lack of information.

The case study was conducted as investigative analysis, with the review of various internal documents, including collaborative agreements, process analysis, information available at the management systems and internal interviews. Due to confidentiality, some of the analyses performed at the case study are not included in the framework of the thesis, such as, the analyses of the IP allocation in collaborative agreements. However, those analyses helped the author to comprehend the innovation initiatives of the company, their strategy and also limit the scope of this thesis.

The case study included structured and unstructured interviews with internal actors involved in R&D collaboration with third parties, patent portfolio management, contract portfolio management and systems analysts; phone interviews with Unilever, General Mills, Nokia and in IP management system providers, such as Thomson Reuters and Unycom; assessment of quality procedures, instructions and guidelines of IT systems utilized to manage contracts and patent portfolio and quality and risk analyses. The means by how these data helped to build and answer the research questions are shown below.

2.1.1 Partaking in existing structures

The case study is based on the observation and study of the R&D collaboration process and management tools of three research centers: Nestlé Research Center (NRC), Product Technology Center Orbe (PTC Orbe) and Product Technology Center Konolfingen (PTC Konolfingen).

The partaking study within existing structures of the company helped the author to gain insights about the involvement of different stakeholders in the R&D collaboration process and to understand the main information managed within collaborative innovations agreements.

The existing structures also gave the author the overview of the company innovation initiatives as a strategy for maintaining their competitive advantage. It helped to formulate and answer the third research question - *Can this lack of information be changed utilizing existing IP management structures / tools within the company?*

Figure 1 gives the reader the overview of NRC and PTC interaction. NRC is the world's largest private nutrition research institution, specializing in food, nutrition, safety and life science. Its role is to provide scientific and technological basis for renovation and innovation of Nestlé's products⁹.



Figure 1 – Research structures of Nestlé Research Center and Product Technology Development¹⁰

Each Product Technology Center is specialized in a Nestlé product. PTC Orbe is the reference centre for products and technologies in coffee, powdered beverages and cereals consumed in and out of home¹¹, while PTC Konolfingen specialization is shelf stable milk based products, infant and Healthcare nutritional products and dietetic specialties¹².

The structures of NRC and PTC's are alike and closely integrated, where the suited basic research from NRC is transferred to the PTC's and further applied into Nestlé's product and process, until reaching the final market consumer¹³.

The observation of the NRC and PTC's gave the author the insight about its different structures to support R&D collaborative initiatives. Even though NRC is based on early research and the PTC is related to product development, both centers work in close collaboration with third entities, such as universities, suppliers and manufactures.

At NRC and PTC's the author has looked at their collaborative structure and observed that their collaborative structure is alike, within R&D, meaning that both centers follow the same process and have the same goals when collaborating with third parties. That insight helped the author to build

⁹ Source: <http://www.nestle.com/NestleResearch/GlobalRnD/NRC/NRC.htm> [Accessed 11/11/2010]

¹⁰ Source: <http://www.nestle.com/NestleResearch/GlobalRnD/GlobalRnD.htm?pgno=2®ion=&ceso=ASC&coso=ASC> [Accessed 09/11/2010]

¹¹ Source: <http://www.nestle.com/NestleResearch/GlobalRnD/ResearchCenters/PTCOrbe.htm> [Accessed 09/11/2010]

¹² Source: http://www.nestle.com/NestleResearch/GlobalRnD/ResearchCenters/PTCKonolfingen.htm?wbc_purpose=%25 [Accessed 11/11/2010]

¹³ Source: <http://www.nestle.com/NestleResearch/GlobalRnD/NRC/NRC.htm> [Accessed 11/11/2010]

the context of the case study, i.e. to investigate the R&D collaborative process. Their process and structure does not differ, and both contributed for the gathering of data.

In the end of the thesis analyses, the author noticed that the hypothesis investigation and the conclusion from the case study are applicable in both centers, regardless of the focus in early research or product development research. The partaking in existing structures of the case study was the most important source of information and data gathering to support the investigation.

During the case study, the author sensed the necessity of deconstructing the main research questions to motivate the affirmative or denial of the hypothesis investigation. To answer the first research question - *Does Nestlé lack information regarding their IP portfolio?* - primarily, the author had to understand the position of the company regarding IP, for example, its importance and protection strategy. The insight from this investigation helped to understand on what information should be available at the IP portfolio to guide their strategic innovation decisions. The answer of the first question also delimited the scope of the thesis to the investigation of the protection of the technological assets of the company, and not creative or marketing assets¹⁴.

To answer the second research question - *Does the lack of information jeopardize their ability to effectively collaborate?* – the author looked into the innovation initiatives of the company. The insight assisted the author in understanding the main innovative decisions dependent on contractual information available at the patent portfolio. It also guided the author on the risk analyses whether the hypothesis is confirmed.

The third research question - *Can this lack of information be changed utilizing existing IP management structures / tools within the company?* – was answered by conducting an investigation of the existing R&D process structures of NRC and the PTC's and existing portfolio management tools. To answer this question, two sources of information were mainly used: the case study and the literature study. The practical case raised the need of a better understanding of the R&D collaboration process and the main stakeholders involved on the IP reporting and tracking in R&D collaboration agreements. The literature study helped the author to identify what information was already being applied within other multinational structures.

2.1.2 Structured and unstructured interviews

A series of interviews within Nestlé employees with different functions in R&D collaboration were made between April 27 2010 and September 10 2010. The selection of the interviewees was made in accordance to their experience, role and relevance in the involvement of R&D collaboration process in NRC and the PTC's, patent portfolio and contract portfolio management.

A structured interview guideline questionnaire was created in order to clarify roles, process involvement in each phase of R&D collaboration agreement with third parties, as well as the management of IP. The interviews followed the questionnaire guideline, but with certain openness. Also unstructured questions allowed part of the questioning to be lead by the responses of the interviewees. Although open questions produce data, it became challenging to organize the answers. Most of the interviews were held at the headquarters of Nestlé. The average length of the

¹⁴ Spence, M. (2007). Intellectual property. Oxford: Oxford University Press

interviews was 1 hour. After the interviews, sensitive points for further literature analysis and comparison with external parties were identified.

Moreover, the author interviewed other external actors in order to inquire the research hypothesis. The external interviews provided the author with insights of the necessity of correct management of contractual information and the necessity of sharing it with different departments within a MNC. The external interviewees were chosen on the basis of two research topics: MNC with innovation initiatives and IP management system providers. A general interview guideline was created in order to clarify the general topic in need to be covered (included on the appendix). External actors interviewed were:

I. MNC with innovation initiatives:

- a) **Unilever:** the interview was conceded by Mr. Matt Reed¹⁵, business director at Unilever and specialist in open innovation paradigms and development and exploitation of IP as a business asset.
- b) **General Mills:** the interview was conceded by Mr. Doug Taylor¹⁶, chief patent counsel at General Mills. Mr. Doug Taylor has also worked at Elli Lilly and gave some input on their collaboration process and IP management systems.
- c) **Nokia:** Mr. Claudio Marinelli¹⁷, director of Open innovation and Academic Relations for the Nokia Research Centre (NRC), is responsible for the strategic and operational aspects of the collaborative research activities performed by Nokia Research Centers around the world. Even though Nokia is not a consumer good company, the actor was chosen because of his knowledge in IP management towards open innovation initiatives.

II. IP management system providers:

- a) **Thomson Reuters:** the interview was conceded by Mme. Verena Mühlbauer, strategic account manager of IP solutions and Mr. Jan Hendrik¹⁸, sales manager of Europe.
- b) **Unycom:** The interview was conceded by Mr. Wolfgang Themessl¹⁹, strategic partnership responsible, and Mr. Heirich Schunken²⁰, Unycom's Chief Executive Officer.

The internal and external interviews also helped the author formulating the research questions and analyzing the IP management structure and tracking information about patent transactions and obligations attached to it.

It is important to clarify that no document or procedure from the external actors interviewed were examined, meaning that the information contained on the thesis about those companies are just based on phone interviews and Internet information. This differs from Nestlé analyses because it provided more concrete results, while the external interviews brought valuable insights for the thesis about the importance of the contracts, patent management and its links.

¹⁵ Interview conceded in 02/07/2010 by phone.

¹⁶ Interview conceded in 16/07/2010 by phone.

¹⁷ Interview conceded in 16/07/2010 by phone.

¹⁸ Interview conceded in 29/06/2010 by phone.

¹⁹ Interview conceded in 06/07/2010 by phone.

²⁰ Ibid.

2.1.3 Data analyses

Besides the internal and external interviews, an analysis of internal documents used during the internship at Nestlé as a basis for R&D collaboration with third parties, patent management and contract management, were examined. The documents identified were general guidelines; quality procedures for managing contracts; quality procedures to enter in collaboration with third parties; presentations on the topic of patent management, contract management, protection of IP in large companies and tools to support IP decisions. IT systems document instructions utilized by Nestlé were also accessed.

Also, different R&D collaboration agreements were examined in order to construct the building blocks of the contract management analyses. The agreements analyzed included R&D collaboration agreements from NRC, PTC Orbe and PTC Konolfingen.

The data analyzed is confidential information of the company and, thus, will not be disclosed within this thesis or used to answer the research questions. However, the data analyses guided the author on the deconstruction of the research questions, as well as on the understanding of the company structure, innovation initiatives and the demand for the literature study.

2.2 Literature - books and articles consulted

The research questions were formulated based on the hypothesis that the lack of information about the history of previous records of contractual obligations attached to the patent portfolio in MNC's comes from problems in management routines and processes of R&D collaboration with third parties, which consequently could jeopardize strategic collaborative innovation decisions.

The books that were used guided the author to build the theoretical framework of the thesis, as well as to select the most suitable research methodology to approach the research questions and hypothesis investigation. The literature also helped identifying the right delimitation and grasping the innovation, collaboration, R&D process, intellectual asset management and contract management as it was read during the internship at Nestlé in order to make the right assessment of existing structures.

Different articles also brought the most recent information about patent management, R&D collaboration process and industry insight. They guided the author on the analyses of the empirical case, risk analyses, final recommendation and conclusions.

The above mentioned books mainly handled three topics: open innovation initiatives, R&D collaboration with third parties, patent and contract management. The books gave the author the sense of literature available on the chosen fields. The author's objective was to have a broad perspective about the role of an MNC with innovation initiatives and how different authors approach the topics.

When answering the first research question - *Does Nestlé lack information regarding their IP portfolio?* – the texts, mainly Granstrand (1999) and Petrusson (2000,) also gave the author a better understanding of the company's position regarding IP, for example its importance and protection strategy.

In the second research question - *Does the lack of information jeopardize their ability to effectively collaborate?* – the author turned to books about innovation and R&D collaboration. The objective was to have a broad understanding about collaboration. Regarding open innovation, a great deal of literature discusses the benefits of collaborating with other actors as universities, start-ups, suppliers and sometimes competitors. Some authors, as Chesbrough (2006); Gaule (2006) and Linnarsson (2005), bring the topic of innovation strategies and how to maximize the benefits of collaboration.

The literature concerning R&D collaboration was mainly focused on the ownership of the IP generated by collaboration²¹. The majority of the literature approaches the identification of the right partner to collaborate with, the main points to consider when entering in a collaboration agreement and the different kind of agreements. The state of art literature also brought up different collaboration phases that should be considered when entering R&D collaboration. As a reference for the literature study, the review of Bader (2006) was used²².

The third research question - *Can this lack of information be changed utilizing existing IP management structures / tools within the company?* – was answered by the study of different articles²³, which gave an actualized overview of what knowledge companies look at about contractual patent obligations and portfolio management systems, as well as the actual solution provided by some systems providers. The articles available were predominantly about IP management systems; new product process and integral intellectual asset management; IP lifecycle and collaboration; corporate intellectual asset management, and in or out licensing and outsourcing²⁴.

The articles were helpful to identify the risks involved in each collaboration transaction. It allowed the author to do a qualitative risk analyses on the actual process of R&D collaboration with third parties in the case study. Furthermore, they helped the author to recommend how to improve on the case existing structures.

2.3 Literature - theoretical framework

The theoretical framework is based on the approach for innovation strategy by Teece et al. (1997), the dynamic capabilities approach i.e., positions, process and path. Through this approach the author was able to analyze the case study from the perspective of an MNC position, its process and paths to achieve new and innovative forms of maintaining competitive advantage on the market.²⁵

Through the theoretical framework, the author investigated the hypothesis that collaborative innovation decisions are dependent on the company managerial and organizational process²⁶. The author analyzed Nestlé's position in using innovation initiatives to gain competitive advantage, the process and path to be taken to achieve it considering patent and contract management in R&D

²¹Bader, M.A. (2006). Intellectual property management in R&D collaborations: The case of the service industry sector. Physica: Heidelberg

²²Ibid.

²³Source: www.iam-magazine.com [Accessed 01/08/10]

²⁴Source: www.iam-magazine.com [Accessed 01/08/10]

²⁵Teece, D.J., Pisano, G. and Shuen, A. (1997). Strategic management journal. *Dynamic capabilities and strategic management*. STOR: John Wiley & Sons. Vol.18, No.7

²⁶ Ibid.

collaborations. This approach was chosen because of its application on innovation and the exploration of existing firm capabilities²⁷.

This approach considers the financial aspects of maintaining advantages in innovation. However, the financial aspects of collaboration will not be analyzed, since they are limited to management aspects. The analysis framework focuses on the need to have good competencies in production and research, in order to generate innovation. Tidd (2001) affirms that only local demand opportunities and competitive pressures may not be enough²⁸. This framework is compared with the stakeholders involved in the R&D collaborative process.

The approach considers that, to maintain competitive advantage in the market, a company is shaped by the path it has traveled²⁹. This thesis considers the path as an adaptation of the existing structure of the organization.

Choosing just one approach to analyze how a company can maintain its competitive advantage in the market can be risky, because there are different models to make this analyzes, and some of them are complementary. One complementary example of approach is the competitive forces by Porter (1980). Porter sees the achievement of competitive advantage by relating the company to its environment³⁰. On his competitive forces model, he considers the entry barrier, threat of substitution, bargain power of buyers, bargain power of suppliers and rivalry among industry incumbents³¹ as main points for a firm to find a position in the industry.

Porter's model was rejected as a theoretical framework since it is not the goal of this thesis to analyze Nestlé's strategic position on the market, but to investigate its process and path to maintain its position as a MNC with innovation initiatives.

2.4 Limitations

Some operational obstacles occurred while developing the thesis. The major challenge was to use the case study as a basis for the academic work, on the same path, it was the major insight gained. Thus, the major challenge was to choose the correct approach not to disclose confidential information, while investigating the problem with and answer to the research questions. The confidential information was only used to provide the general background knowledge, identify the problem as well as form the research questions.

Another limitation was the phone interviews with external actors. For example to reach competitors for an interview was time consuming as it was necessary to explain the academic interest of the research, and that no exchange of confidential information would be made, as the author was being sponsored by Nestlé. Despite the effort, some of the intended actors declined the invitation. One of the impacts on the thesis as such, was the trust on the credibility of the external actor's answers to

²⁷ Ibid.

²⁸Tidd, J., Bessant, J. & Pavitt, K. (2001). *Managing innovation: Integrating technological, market and organizational change*. New York: Wiley, p.134

²⁹Ibid 25, pp.522

³⁰Teece, D.J., Pisano, G. and Shuen, A. (1997). *Strategic management journal. Dynamic capabilities and strategic management*. STOR: John Wiley & Sons. Vol.18, No.7, pp.511

³¹ Ibid.

the interview. As no document or audit was made within their companies, their answers to the questioner might not correspond to the reality of their company.

The analyses result would differ if the study had been done as a consultancy model, i.e. if the author had not had the access to so many different documents and tools within the company and just approached the hypothesis investigation by suggesting a strategic tool or model. This limitation restricts the scope of analysis, as well as the presented results.

2.5 Scope

In this thesis, the main aspects to be investigated, considering the problem definition, hypothesis to be investigated, research questions as well as limitations of the performance, are the *causes and consequences* of the lack of information on the patent portfolio about contractual obligations attached to the patents. The thesis scope focuses on MNC that invests in innovation initiatives as a strategy to have competitive advantage in the market. The IP strategy to maintain competitive advantage on the market is also narrowed by the patent strategy. The scope is also narrowed by the investigation of the process of R&D collaboration with third parties, instead of other alternatives, such as in-house research and development, patent acquisitions or mergers and acquisitions transactions.

The scope to investigate the path to achieve competitive advantage on the market also place the investigation of the remedy through a redefinition of the interaction between patent management and contracts, from a management perspective, excluding financial and accounting value assessment.

CHAPTER 3: Theoretical Framework

This chapter outlines the theoretical framework based on the proposed innovation strategy by Teece et al. (1997): the dynamic capabilities approach i.e., Positions, Process and Path (3P). By Dynamic capabilities the authors mean “the ability to achieve new forms of competitive advantage”³². This chapter gives a general overview of how MNC can use their innovation initiatives to maintain competitive advantage in the market, as well as the process and path to be taken to achieve it considering patent and contract management in R&D collaborations.

3.1 Dynamic Capabilities: Position, Process and Path

The “3P” framework approach of this study is based on how companies achieve and sustain competitive advantage within their business³³. The authors define dynamics as the flexibility of a firm to renew competences in accordance to the business environment. The term capability refers to the strategic management of “*adapting, integrating and reconfiguring internal and external organization skills, resources and functional competences to match the requirements of the changing environment*” Teece et al. (1997)³⁴.

The authors³⁵ speak of three main elements of corporate innovation strategy: competitive and national position, organizational and managerial process and technological path.

Through position, an innovation strategy is influenced by the national system that the firm is embedded and its market position when compared to its competitors³⁶. They affirm that the “*national system of innovation influence both direction and the vigor of its own innovative activities*” and “*the main national factors that influence the rate and direction of technological innovation in a country are the incentives and pressures to which a firms have to respond, their competencies in production and research, and the institutions of corporate governance*” Teece et al. (1997)³⁷.

By incentives and pressures, it is claimed that what matters to influence a firm position in the market are local investments initiatives, local products input prices and local natural resources. Those initiatives create opportunities for local suppliers, generate different pressures of innovation, and generate pressure for substitute products and innovation opportunities in extraction of upstream and downstream processing³⁸.

The pressure of innovation is established by interest and habits, where competitiveness stimulates the investment on innovation and change, once their business can be threaten by a new innovative technology. To maintain advantage and position in the market, competition is a good sign, once the

³²Teece, D.J., Pisano, G. and Shuen,A. (1997). Strategic management journal.*Dynamic capabilities and strategic management*.STOR: John Wiley &Sons.Vol.18, No.7, p.515

³³Ibid, pp.509

³⁴ Ibid.

³⁵ Ibid.

³⁶Tidd, J., Bessant, J. &Pavitt, K. (2001). Managing innovation: Integrating technological, market and organizational change. New York: Wiley, pp.134

³⁷ Ibid.

³⁸ Ibid, pp. 135

*“lack of competitive rivalry makes firms less fit to compete on global markets through innovation”*Tidd (2001)³⁹.

Teece et al. (1997) claims it is essential maintaining good competencies in production and research in order to generate innovation. This is the focus furthering Nestlé’s position analyses. According to Teece et al. (1997), a process in a firm has mainly four roles: coordination and integration; learning and reconfiguration⁴⁰. Those roles are recognized as major tasks of management. For instance, R&D departments have to coordinate and integrate different competencies such as engineers, scientists and administrators.

The challenge of making a process work in an MNC is to have the same level of involvement of different skills and divisions, meaning that an effective learning requires interaction and feedback between decisions and implementations.⁴¹

Teece et al. (1997) affirms that the path the company has traveled also shapes its maintenance in the market⁴². As innovation requires improvements and changes in operational, technical and organizational systems, it involves trial and learning⁴³.

Having that said, the strategy of a company in relation to its innovation initiatives is seen as dependent on their technological trajectories and its sector. Their path can be distinguished by five major technological trajectories that will have major implications on the basis of experience on its sector: size of the innovation firm; type of product made; objectives of innovation; sources of innovation and the locus if own innovation⁴⁴.

3.2 Multinational companies

Typical sectors of MNC can be chemical and electronics, and fundamental discoveries open up to a major new product market over a wide range of potential implications⁴⁵. These main tasks of a company are to monitor and exploit advances emerging from technological products or to acquire complementary assets, explore them and *“to reconfigure the operating divisions and business units in accordance to changing technologies and market opportunities”* Teece et al. (1997)⁴⁶.

3.2.1 Intellectual Property as wealth creation

“Inventions, know-how, data, computer software, designs, trademarks and artistic works are all potential intellectual properties and may be protected by Intellectual Property Rights”, Granstrand (1999)⁴⁷. Granstrand affirms that these rights are a great stimulus to creative work and innovation⁴⁸.

³⁹Tidd, J., Bessant, J. & Pavitt, K. (2001). *Managing innovation: Integrating technological, market and organizational change*. New York: Wiley, p.137

⁴⁰Teece, D.J., Pisano, G. and Shuen, A. (1997). *Strategic management journal. Dynamic capabilities and strategic management*. STOR: John Wiley & Sons. Vol.18, No.7, p.519.

⁴¹ Ibid 39, pp. 205

⁴² Ibid 40, pp.522

⁴³ Ibid 39, pp.169

⁴⁴ Ibid.

⁴⁵ Ibid, pp. 173

⁴⁶ Ibid.

⁴⁷ Granstrand, O. (1999). *The Economics and Management of Intellectual property: Towards Intellectual Capitalism*. UK: Edward Elgar Publishing. pp.55-56

⁴⁸ Ibid.

At a MNC that premise does not differ. IP rights represent one of the major sources of maintaining the competitive advantage of a firm.

One of the strategies that a MNC can adopt to coordinate and manage its IP is to divide it into two coordination silos: the silo of patent management and the silo of brand management that embodies trademarks, designs and copyrights⁴⁹.

Each silo creates wealth in different ways. Patent management can enhance competitive advantage by securing a position on the market by preventing copying, preventing other firms from patenting a related invention, preventing patent infringement suits, improving their position in cross-licensing negotiations, enhancing the reputation of the company, obtaining licensing revenues, measuring the performance of the company research, etc⁵⁰. The brand silo is aligned with the market, business strategy, co-branding and merchandizing⁵¹. In different matters, both silos add value for MNC.

It is not the intention of this work to analyze in-depth the brand silo, as the focus is on patent management and the creation of competitive advantage.

3.2.2 Innovation initiatives

Usually, MNC do not only invest in technology developed in-house, but also invests in multiple ways to create value through IP. Figure 2 shows some activities where MNC can generate or acquire patents, which can be acquired through new patent portfolios, through technology developed in-house, mergers and acquisitions with other companies, licenses transactions or through R&D collaboration with third parties⁵².

The patents included or generated in those transactions are normally allocated on the patent portfolio of the company. The companies with innovation initiatives can take the opportunity to further transact their patents through cross-licensing deals, IP sales, joint development transaction and license agreements, and sustain its intellectual value opportunities. As a consequence, a solid patent portfolio that should have consolidated information about ownership of its patents supports innovation initiative process.

⁴⁹ Interviews with Unilever and General Mills.

⁵⁰ Petrusson, U. (2004). Intellectual Property & Entrepreneurship: Creating wealth in an intellectual value chain. Gothenburg, CIP Working Paper Series: Center for intellectual Property Studies

⁵¹ Ibid.

⁵² Based on the case study and phone interview with Unilever and General Mills.

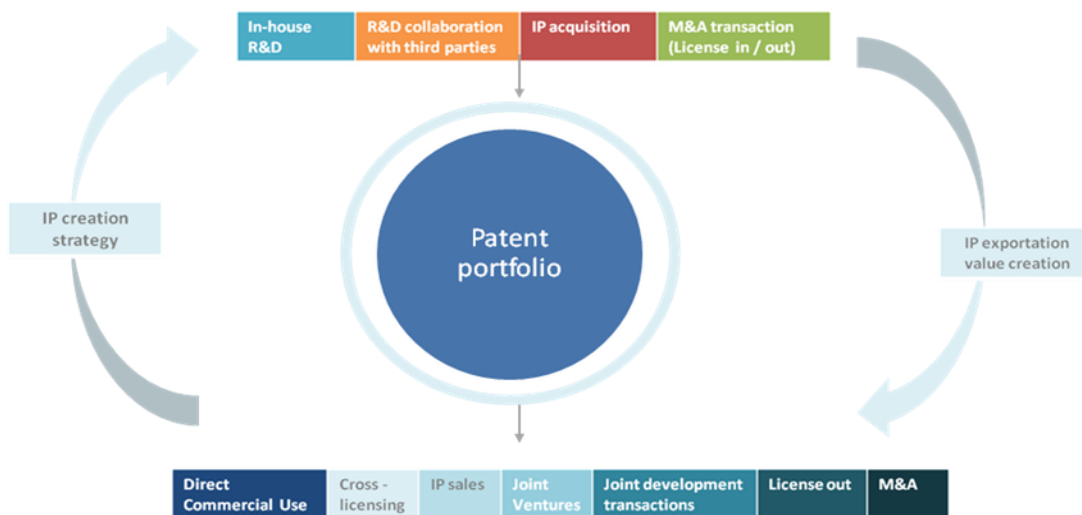


Figure 2 - Model of intellectual value opportunities in a science based company⁵³

This can be seen as a cyclic process, where the “IP creation strategy arrow” represents how MNC acquire the needed patent, and the “IP exportation arrow” represents the means by how the company utilizes the patent in new innovation initiatives.

Depending on how the patent was acquired or generated, different ownership allocation will exist: the company will have fully owned rights and shared or limited rights over the patent.

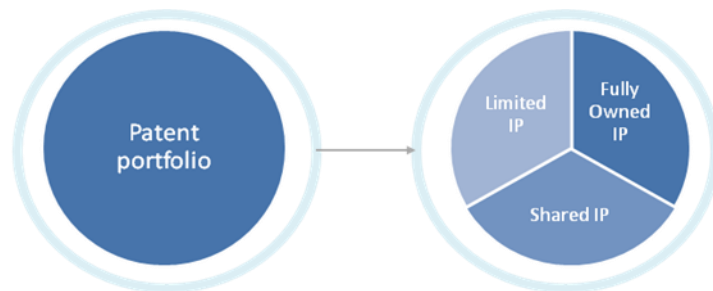


Figure 3 - Patent ownership allocation within the patent portfolio

As the focus of this study is on the management of patent created/generated from R&D collaboration with third parties, rather than the other alternatives, R&D collaboration at this study can be seen as “a strategy for exploring external sources of innovation” Tidd (2001)⁵⁴.

R&D collaborations with third parties can be divided into three different categories: intra-firm, non-intra-firm and inter-firm⁵⁵. According to Bader (2006) their definitions are:

- a) Intra-firm collaborations are partnerships among interdependent business units.
- b) Non-intra firm collaborations are mainly done with universities.
- c) Inter-firm collaborations are with completion partners, suppliers, customers or competitors.

Another way to interpret the categories of collaboration is to look at their innovation process phases, which according to Bader (2006) can be⁵⁶:

⁵³Peters, R. (2010). Taking IP into the boardroom. Available at www.iam-magazine.com [Accessed 01 August 2010]

⁵⁴Tidd, J., Bessant, J. & Pavitt, K. (2001). Managing innovation: Integrating technological, market and organizational change. New York: Wiley, pp.198

⁵⁵Bader, M.A. (2006). Intellectual property management in R&D collaborations. The case of the service industry sector. Physica: Heidelberg, pp.06

- a) Early innovation phase: at this phase a MNC can collaborate with universities and research centers.
- b) New product development phase: normally at this phase, one can collaborate more with suppliers, industries, competitors.
- c) Commercialization phase: MNC can coop with competitors, suppliers and manufactures.

Regardless the category of the R&D collaboration and its phase, information about the origin of the patent and the rights that a company has over it, should be informed at the patent portfolio in order to guide further patent transaction. That is one of the key information points that should be attached to the patent within the patent portfolio.

3.2.3 R&D collaboration model and patent portfolio

According to Petrusson (2009), a MNC collaboration model could be described as the industrial collaboration model⁵⁷. This is based on the premise that the industry aims to own the majority of rights arising from work with third parties to be able to submit patent applications, ensure the possibility to commercialize and reap rewards from the collaboration results, and thus maintain competitive advantage on the market.

3.2.3.1 Nomenclature in R&D collaboration

To situate the reader on the meaning of R&D collaboration in this study, there are some definitions to be made. Figure 4 brings a schematic diagram that explains the different terminology about patents included or generated through R&D collaborations.

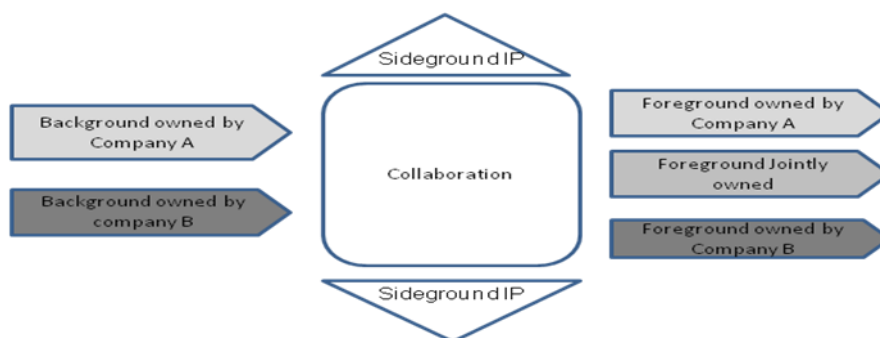


Figure 4 - R&D collaboration process overview

During the collaboration process, the terminologies representing the patents generated through R&D collaboration with third parties are: background IP, foreground IP and sideground IP.

By background, the author means the patent included on the agreement at the time the project has started in a collaborative work, i.e., the patent that each of the parties will remain proprietor and will not share any result that involves that patent. Background IP can also include knowledge,

⁵⁶Bader, M.A. (2006). Intellectual property management in R&D collaborations. The case of the service industry sector. Physica: Heidelberg, pp.20

⁵⁷ Petrusson, U. (2009). "The University in the knowledge economy", lectures notes distributed on the topic of knowledge management. Chalmers University of Technology, Center of Intellectual Property Studies, Gothenburg. pp.23-47

expertise and knowhow of people participating on the project. Nonetheless, the goal of this study is to cover only the background included on a project in the form of patents.

By Foreground, the author means the future results of specific research/collaboration efforts related to the outcome of the specific project, which could be owned by each party or jointly owned.

By Sideground the author means all the IP generated through the project that is not related to the project of field of use of the project.

In practice, the major challenge on the management of patents in R&D collaboration is to identify, map, track and report the background and foreground patent included and created through R&D collaborations. The control by a company of those patents is important for guiding further strategic decisions, such as to further negotiate a patent in a new transaction, as it will be seen in the case study.

3.2.3.2 Division of patents within the patent portfolio

“A patent is a grant from a government that confers upon an inventor the right to exclude others from making, using, selling, importing, or offering an invention for sale for a fixed period of time” Pressman (2008)⁵⁸.

A patent portfolio can be seen as a collection of patents owned by the same entity, such as an individual or company.⁵⁹ As previously stated, there are benefits of keeping an organized patent portfolio, such as securing a company market position. The patent portfolio can be divided by the level of importance for the company or the individual that owns it. There are three main categories: core patents, non-core patents and useless ones⁶⁰.

Those patents can be included in the patent portfolio from different transactions, for example: R&D collaboration with third parties, in-house R&D, IP acquisition or M&A transaction.

Core patents are usually utilized by companies to maintain the company market share, and thus competitive advantage in their business. In some cases those patents can be included in collaborative transactions. However, as they represent a core value of the company, normally they are not transacted, but utilized until entering in public domain. They are predominantly utilized in the company's production or process and included in the company's products. Those are the main patents to maintain the company's competitive advantage, being used as an aggressive strategy to block competitors⁶¹.

The non-core patents are also valuable assets, but as they do not represent the core technology utilized in a company product or process⁶², those patents can be transacted in more defensive strategies, such as in sales, cross-licensing or licensing out.

⁵⁸ Pressman, D. (2008). Patent Yourself. 12th ed. USA: Nolo. pp.07

⁵⁹ Source: http://en.wikipedia.org/wiki/Patent_portfolio [Accessed 26/08/10]

⁶⁰ Source: <http://www.generalpatent.com/consulting/portfolio-triage> [Accessed 10/07/10]

⁶¹ Source: <http://www.generalpatent.com/consulting/portfolio-triage> [Accessed 10/07/10]

⁶² Ibid.

In a patent portfolio there are also patents considered useless for the company. Those kind of patents hold no commercial value for the company that owns it and could be pointless to sustain. The most common strategy would be to, after an evaluation, abandon it, licence it out or donate the patent⁶³.

Among the core, non-core and useless patents, there is another subdivision of the portfolio that can affect the patent utilization strategy. Patents can be divided in three types: utility patents, design patents and plant patents⁶⁴.

Utility patents are the ones that *“covers inventions that function in a unique manner to produce a utility result. Some examples of utility inventions are new drugs, electronic circuits, softwares, semiconductor manufacturing process, new bacteria, newly discoveries genes, new animals, plants, automatic transmission, internet techniques, methods of doing business (even if not technological), and virtually anything else under the sun that can be made by humans”* Pressman(2008)⁶⁵.

Design patents cover unique, ornamental, or visible shape or surface ornamentation of an article or object, even if only on a computer screen. Thus, if a lamp, a building, a computer case, or a desk has a truly unique shape, its design can be patented⁶⁶. And there is also plant patent, that *“covers asexually reproducible plants/that is, through the use of grafts and cuttings), such as flowers (35 USC 161)”* Pressman(2008)⁶⁷.

Depending on the position and the company business, the patent portfolio can include one or more types of patents. However, the type of patent does not affect the need of rights control that the company has over the patent and their transaction. That will help on the strategic decisions, such as to transact it again or to abandon a patent.

3.3 R&D collaboration process with third parties

“R&D collaborations are, therefore of a greater importance today, due to the increased complexity of scientific and technological development, shortened innovation cycles and the higher risks and costs of generating innovation” Bader (2006)⁶⁸.

Different authors⁶⁹ discuss the importance of establishing a process to start collaborate with a third party to ensure the success of the collaboration. The evolution of the collaboration phases is to ensure the decision of seeking external help, negotiate, make decisions and take actions when needed⁷⁰. However, before agreeing to collaborate, the collaborating parties must discuss mutual goals, shared responsibilities, obligations, and, in case of R&D collaboration, discuss who will have

⁶³ Ibid.

⁶⁴ Pressman, D. (2008). Patent Yourself. 12th ed. USA: Nolo

⁶⁵ Ibid.

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ Bader, M.A. (2006). Intellectual property management in R&D collaborations. The case of the service industry sector. Physica: Heidelberg, pp. 04

⁶⁹ Passey, S. J. et al. (2004); Sagal, M.W. (2006); Whincup, M. H. (2001); Clark, R.W. (2007); Gassaman, O. and Zedtwitz, O. (1998).

⁷⁰ Ibid.

access the rights of results (foreground) of the collaborative project⁷¹. For that reasons it is essential to have a process to guide and monitor the decisions of the collaboration⁷².

If a process is in place, its performance can be evaluated to verify the alignment of the initial collaboration goal and its practice. The monitoring process will identify the deficiency that should be improved in order to guarantee the success of collaboration. Fontanari (1995) divides the R&D collaboration process in four phases: the first three describe the early stage of the collaboration and set-up, while the fourth describes the implementation of the collaboration⁷³.

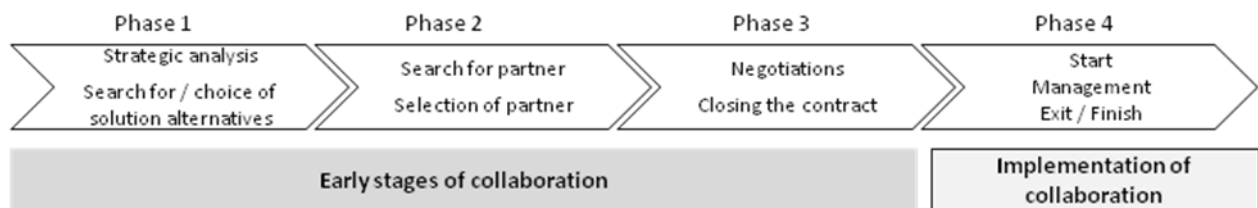


Figure 5 - Formation process of collaboration according to Fontanari (1995)⁷⁴.

From this model, one can say that:

- a) Phase 1 assesses the strategic goals and business environment of the company.
- b) Phase 2 brings the necessity to search for suitable partners to develop a solution that cannot be developed in-house.
- c) Phase 3 brings the negotiation as such, where the parties collaborating need to be explicit and formalize their common goals. At this phase of the collaboration, the parties have to agree on background and foreground IP.
- d) Phase 4 takes care of the contract management post signature, the collaborative implementation and the IP generated from the collaboration.

Having this theoretical collaboration process as a base comparison, the case study focuses the comparison on phases 3 and 4. Phase 1, the strategic analyses and decision to have an external collaboration and phase 2, the search for new partners to collaborate, will not be analyzed on this thesis because of its business and scientific strategic involvement.

3.3.1 Phase3: Negotiate, report and track terms in R&D collaboration with third parties importance

The negotiation phase of R&D collaboration defines the allocation of background and foreground rights. At the negotiation phase the collaborating parties will discuss about the ownership of rights arising from the collaboration. For that reason this is a critical phase for MNC to claim ownership of

⁷¹ Creating collaboration: a process that works. Source: www.managerwise.com [Accessed 10/07/2010]

⁷² Ibid.

⁷³ Ibid 68, pp. 08

⁷⁴ Ibid.

results, to ensure the possibility to commercialize the results and have financial investment return and invest in new innovation initiatives⁷⁵.

Reports are usually a tool to display the “*result of a process, experiment, investigation or inquiry*”⁷⁶. The correct report of R&D collaboration terms and patents can bring essential information to manage the patent and contract portfolio. The right reporting can analyze patents, products, business units and individuals and stay up-to-date about the changing status of any patents⁷⁷.

From a patent management perspective, the tracking of patents in R&D collaboration is important to know if a specific patent is free of any contractual obligation and available to be further negotiated, i.e. if that patent has been part of any contract with a third party that may contain a clause which can jeopardize a strategic decision, such as an exclusive contractual obligation. This is mainly because a patent generated from an agreement (foreground patent) can become a background patent included on further research⁷⁸.

Beyond identifying the contractual obligation attached to a patent, a patent portfolio should keep the record of rights that the company has over it, i.e. if it has full, shared or limited rights over a patent in order to evaluate its patent portfolio.

From a legal perspective, the tracking of patents in R&D collaboration with a third party is important as part of the contract negotiation terms. It is also meaningful to support other innovation initiatives, for instance mergers and acquisitions transactions, where there is necessity of knowing what patent is available and should be included in the transaction. Tracking rights over a patent is also important for minimizing litigation risks.

3.3.2 Phase 4: Patent portfolio management importance

Large companies have been developing strategies to “*detect IPR infringements, govern IPR related conflicts, avoid IPR infringements and decrease the risk of legal consequences*” Petrusson (2004)⁷⁹. On this scene, the management of patent portfolio is important for circumventing key invention, blocking specific competitor behaviors and generating a bargain position⁸⁰.

Through the management of a patent portfolio, a MNC can assure development and monitoring of IP protection plans; competitive and landscape analysis; base training and development; facilitate basic patent searching, and coordinate freedom to operate requests⁸¹.

To do the mentioned analyses, a patent portfolio should give the information about the rights over a patent, i.e. if the company has fully owned shared or limited rights. Having that, the patent portfolio will support strategic decisions, such as in a license transaction.

⁷⁵ Bader, M.A. (2006). Intellectual property management in R&D collaborations. The case of the service industry sector. Physica: Heidelberg, pp. 08

⁷⁶ Source: <http://en.wikipedia.org/wiki/Report> [Accessed 26/08/2010]

⁷⁷ Source: <http://www.innovation-asset.com> [Accessed 10/07/2010]

⁷⁸ Petrusson, U. (2004). Intellectual Property & Entrepreneurship: Creating wealth in an intellectual value chain.

Gothenburg, CIP Working Paper Series: Center for intellectual Property Studies pp.19

⁷⁹ Petrusson, U. (2004). Intellectual Property & Entrepreneurship: Creating wealth in an intellectual value chain. Gothenburg, CIP Working Paper Series: Center for intellectual Property Studies pp.19

⁸⁰ Ibid, p. 18

⁸¹ Ibid.

3.3.3 Phase 4: Contract portfolio management importance

As some MNC have been moving towards innovation initiatives and seeking external help for R&D collaboration, it increases the relevance of managing contracts resulting from those collaborations. The contract management can ensure as follows⁸²:

- a) Alignment between business and technology strategy and the contract.
- b) Fulfillment of legal obligations on the contract, and clarification of legal rights especially in the management of IP.
- c) Financial obligations fulfilled and controlled payments.
- d) Management of the quality and deliverables of the collaboration process.
- e) Management of key milestone, as negotiated in the contract.
- f) Analysis of the contract portfolio can be made for management decisions linking contracts to business needs, technological needs, and project objectives.
- g) Strategic sourcing and management.

3.4 Innovation strategic decisions that depend on contractual obligation attached to the patent

Some strategic decisions, such as decisions to license out or to abandon a patent, depend on the consistency of information of the patent portfolio and contracts. For that reason, the patent portfolio should contain information about the rights that the company has over a patent.

From a patent management perspective, one has to know if the patent is free of any contractual obligation. In other words, one need to know if that patent has been part of any contract with a third party that contains a clause, such as the exclusive use of foreground IP, which may jeopardize future strategic decision.

The information that can jeopardize a strategic decision in relation to a patent can come from any type of agreement that involves an IP transaction with a third party. If the patent portfolio contains information about the rights of a contract, some questions could be answered to help strategic decisions, such as⁸³:

- a) Is there any impediment to transact a patent?
- b) Is there any contractual obligation attached to a patent or patent family?
- c) In case of a decision to abandon a patent, is there any contractual obligation attached to it that should be taken in consideration?
- d) If there is a decision to license a patent, is there any contractual obligation linked to it that would prevent that decision?

⁸² Source: www.iam-magazine.com [Accessed 01/08/2010]

⁸³ Interviews at Nestlé.

- e) If there is a contractual obligation, what are the terms and conditions that prevent the assets from being be transacted?
- f) What party (one party or both) holds rights for an IP included in a R&D collaboration contract?
- g) If there is any contractual obligation, for how long is it attached to the patent?

It is clear that the decisions for innovative collaborations are dependent on patents and contracts information. Having that identified, it leads to the evaluation of the collaborating party.

The next chapter provides an investigation if this information have been managed within the case study. The case study investigates the hypothesis by looking into the R&D collaboration process and the roles that are involved in it, as well as in the patent and contract portfolio management processes.

CHAPTER 4: Case study

This chapter introduces the case study. It presents Nestlé's R&D collaborative process, as well as analyzes the different roles involved within R&D collaboration with third parties. It also identifies if there is a lack of information within their patent portfolio and if it has been affecting their new collaborative initiatives and how it could be changed utilizing existing structures within the company.

4.1 Nestlé's position as an innovative company

To answer the research questions – ***Does Nestlé lack information regarding their IP portfolio? and Does the lack of information jeopardize their ability to effectively collaborate?*** – the author looked into the innovation initiatives of the company. The insight assisted the author in understanding of the main innovative decisions dependent on the contractual information available at the patent portfolio.

At Nestlé *“Innovation is one of key competitive advantages. We have more than 140 years of research, development and scientific know-how. While there is a great deal of pure and applied science research that takes place in our global R&D centers, Nestlé ensures that the consumer, and the consumer benefit, remains at the core of all our activities.”*⁸⁴

By the end of 2005, the company had almost 500 factories in more than 80 countries in the world. Consequently, Nestlé is often described as “the most multinational” of all the multinationals. Nestlé is the global market leader in soluble coffee, infant nutrition, dairy, chocolate, milk beverages, bottled water, pet care and – together with Unilever – ice cream⁸⁵.

Regarding Nestlé's innovation initiatives, Nestlé's web page makes clear that *“at the end of 2006, Nestlé adopted the ‘Innovation Partnership’ model for accelerating the research process. In addition to our own important endeavors in science and research, Nestlé recognized that universities, academia, small start-ups, biotech companies and large industrial suppliers are important sources of innovation. Together, these investments open the doors to promising innovations and bring partners on board when a business case exists”*⁸⁶.

The vision of Nestlé R&D is long term. Besides having 29 research, development and technology facilities in the world, Nestlé has the largest R&D network of any other company. There are over 5,000 people working at R&D for Nestlé⁸⁷. Nestlé has a global network of specialists, including the people in different factories all over the world who are commitment to food safety and technology to maintain global leadership.⁸⁸

⁸⁴ Source: <http://www.nestle.com/NestleResearch/Innovations/Innovations.htm> [Accessed 26/08/2010]

⁸⁵ Pffiffner, A. and Renk, H.J. (2007). Transformational challenge, Nestlé 1990-2005. Switzerland: Nestlé S.A.

⁸⁶ Source:

<http://www.nestle.com/NestleResearch/GlobalRnD/OpenInnovationAndPartners/OpenInnovationAndPartners.htm>
[Accessed 26/08/2010]

⁸⁷ Source: <http://www.nestle.com/NestleResearch/OurVision/OurVision.htm> [Accessed 26/08/2010]

⁸⁸ Source: <http://www.nestle.com/NestleResearch/> [Accessed 26/08/2010]

4.1.1 Nestlé's Intellectual Value Opportunities

Nestlé invests in multiple ways to create value through IP. Within its structure, Nestlé has different Product Technology Centers (PTC's) around the globe that are hubs for global product and process development for one or more businesses of Nestlé and has Nestlé Research Centre (NRC), which provides scientific research for R&D across all Nestlé Businesses⁸⁹. In both structures, PTC's and NRC, technologic IP can be generated through in-house R&D development or R&D collaborations with third parties.

Figure 6 shows the multiple activities of Nestlé to acquire IP and how the IP is exported to create value for the company. The "IP creation strategy arrow" represents how Nestlé acquires the necessary IP, while the "IP exportation value creation" represents the means by how Nestlé utilizes IP in innovation initiatives.

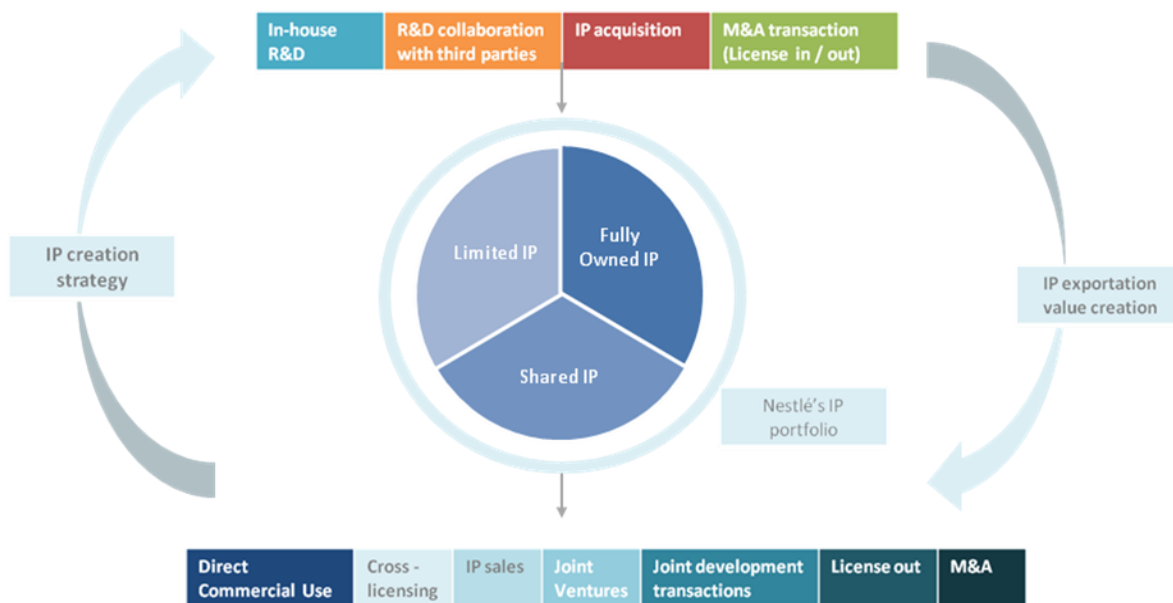


Figure 6 - Intellectual value opportunities at Nestlé⁹⁰

In that structure, different transactions will create distinct IP allocation for Nestlé, such as:

- Nestlé grants rights in the form of background IP to a third party.
- Nestlé has rights from the IP results generated from a R&D contract.
- Nestlé grants a license of one of its IP rights to a third party (in limited terms).
- Nestlé receives a license to use, produce or have produced goods using IP from a third party.
- Nestlé shares IP rights with a third party.

The majority of patent is utilized to support and defend its manufacturing and sale activities through direct commercial use. Regardless of where the IP is originated, the IP will be (solely or jointly) owned or available to Nestlé and generate opportunity for further negotiations. Some patents can generate the opportunity to be further transacted through cross licensing deals, IP sales, joint

⁸⁹ Source: <http://intranet.nestle.com/nestle/> [Accessed 26/08/2010]

⁹⁰ Peters, R. (2010). Taking IP into the boardroom. Available at www.iam-magazine.com [Accessed 01/08/ 2010]

development transaction, license agreements, etc. and sustain the intellectual value opportunities of the company. As a consequence, a patent portfolio that should have consolidated information about ownership of its patents must support their innovation process. However, when the patent portfolio of the company is investigated⁹¹, there is no information about ownership of the patents, which confirms that Nestlé lacks information in their patent portfolio.

4.2 Nestlé's R&D collaboration process with third parties

*The third research question - **Can this lack of information be changed by utilizing existing IP management structures / tools within the company?** – was answered by conducting an investigation on the existing R&D process structures and stakeholders involved in the R&D collaboration agreements. It is an analysis of Nestlé's R&D collaborative process, roles involved and management systems/tools utilized in R&D collaboration with external parties. An external comparison is made with the process of Unilever and General Mills.*

4.2.1 Nestlé's R&D collaborative process

To support Nestlé's collaboration model, Nestlé's IP management strategy is taken as the starting point to analyze how Nestlé has been managing its patents during the R&D collaboration process and IP contractual management systems. R&D is, according to Mr. Werner Bauer⁹²:

"(...) a major source of innovation for Nestlé. In this role we develop, maintain, deploy and use a great proportion of Nestlé's know-how and intellectual property. This is a critical business asset and it is our responsibility to be careful in its generation, management and retention (...)”⁹³.

As part of this structure, R&D is responsible for generating a high proportion of Nestlé's IP and knowhow⁹⁴, that can be generated internally or externally⁹⁵ by the Product Technology Centers (PTCs) or Nestlé Research Center (NRC).

With the rise of Nestlé's innovation initiatives⁹⁶, it is meaningful to maintain a process to assess external collaboration, because new IP can be generated and one has to be able to report and track the IP allocation, since it may not be fully owned by Nestlé. The next topic explains Nestlé's collaboration process structure and how the IP connected to external parties can contribute to the innovation path of the company.

4.2.2 Nestlé's phases in R&D collaboration process with third parties

At Nestlé the flow of the R&D collaboration process can be described as follows:

⁹¹ According to Nestlé interviews.

⁹² Mr. Werner Bauer is the executive Vice President of Nestlé S.A., Chief Technology Officer, Head of Innovation, Technology, Research and Development and interim Head of Strategic Business Units, Marketing and Sales. Source: www.nestle.com [Accessed 24/08/2010]

⁹³ Source: www.nestle.com [Accessed 24/08/2010]

⁹⁴ Ibid.

⁹⁵ Ibid.

⁹⁶ Ibid.

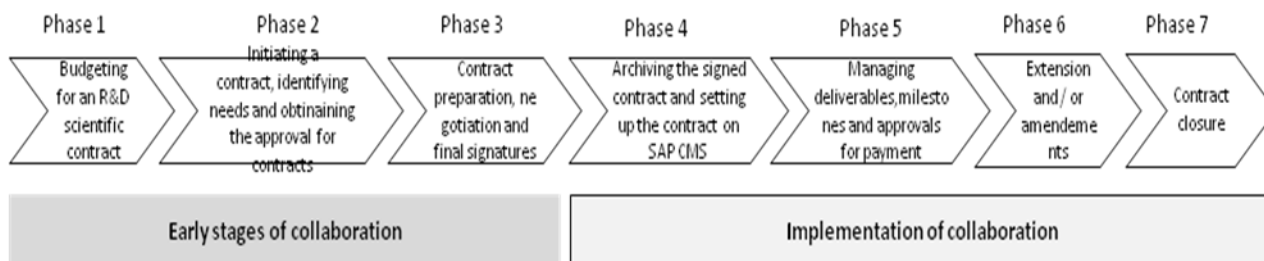


Figure 7 - Overall phases for entering R&D collaboration with third parties at Nestlé.

A closer analysis of collaborating phases at Nestlé does not diverge from the theoretical framework cited by Bader (2006). At Nestlé the phases can be described as:

- a) Phase 1: a budget has to be approved before entering in any collaboration agreement with external parties.
- b) Phase 2: the alignment of scientific and business strategy, protection plan strategy and budget approval.
- c) Phase 3: the involvement of different capabilities to negotiate and transact the negotiation of the contracts.
- d) Phase 4: the insertion of the contract into the contract management system including the IP allocation of Nestlé.
- e) Phase 5: the collaboration deliverables and milestones should be managed.
- f) Phase 6: the management of the extension or amendments of the contracts. The contract portfolio must be reviewed for contracts that are about to expire in three months. The quality and the timing of the work are to be considered.
- g) Phase 7: the consideration of the closing of the contract once all the deliverables are done.

The interview result shows that Nestlé follows a procedure for R&D collaboration agreements, however their focus has been on the allocation of budget and financial management of the terms of the contract and not allocation and reporting of IP ownership.

4.2.3 External actors comparison

External interviews were done in order to compare the Nestlé's flows of R&D collaboration process and inquire the research hypothesis. The purpose of the interviews was to investigate General Mills and Unilever focus on contract and patent management during the R&D collaboration process.

General Mills is a consumer goods company, primarily concerned with food products, that has been investing in innovation and new partnerships⁹⁷. Its process of collaborating with a third party can be described as follows:

⁹⁷ Source: <http://www.generalmills.com> [Accessed 16/07/2010]

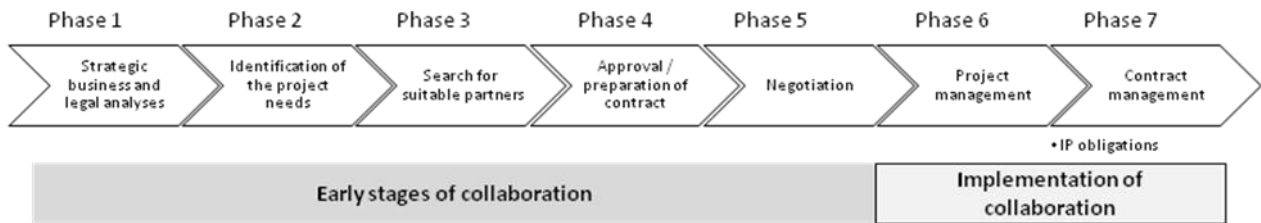


Figure 8 – General Mills’ R&D collaborative process

Mr. Doug Taylor, General Mills chief patent counsel, reaffirmed the importance of the right management of each collaboration phase with a third party. He emphasizes that the link between contractual obligations and IP portfolio is extremely important to manage General Mills IP portfolio and guide their innovation decisions. However, within their portfolio, there is lack of information regarding patent ownership.

Unilever is also a consumer goods company with focus on consumer good brands in foods, beverages, cleaning agents and personal care products⁹⁸. According to Mr. Matt Reed, Unilever’s business director, the more relevant IP is for a company or the investment in open innovation initiatives, the higher the importance of investing in the management of IP portfolio and contractual obligations. Unilever collaboration phases can be described as follows:

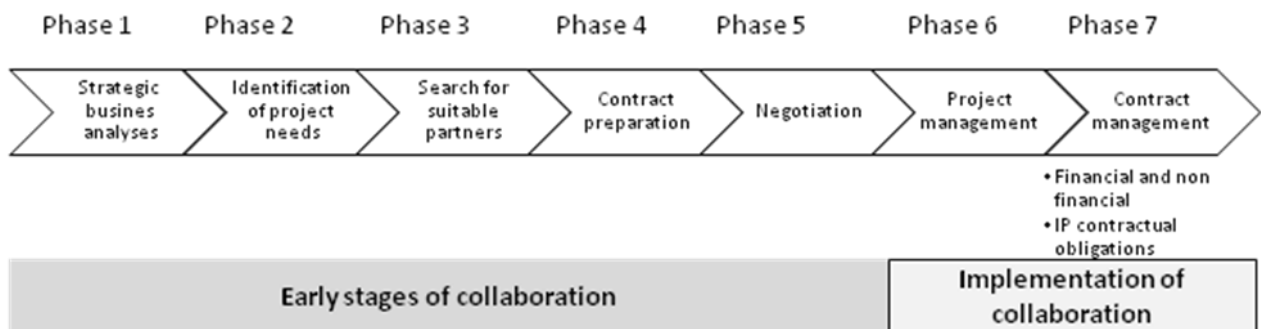


Figure 9 – Unilever’s R&D collaborative process

The comparison showed that Nestlé, General Mills and Unilever are aware of the importance of establishing a procedure in R&D collaborations with third parties. However, when it comes to the control of the contractual obligations linked to their patent portfolio, all the companies lack information in their patent portfolio.

4.3 Nestlé’s stakeholders involvement within R&D collaboration with third parties

At Nestlé the following stakeholders are involved in R&D collaboration process:

- a) The contract owner, normally the project researcher with scientific or technical background, is responsible to drive the negotiation of the collaboration until its conclusion (e.g. identifying the right partner to collaborate with, following the contract signature and involving the right people internally to manage the R&D collaboration process). The contract

⁹⁸ Source: <http://www.unilever.com> [Accessed 21/07/2010]

owner manages the quality and timing of deliverables as well as legal obligations and opportunities on the contract, ensuring milestones and project planning.

- b) The contract manager provides help to the contract owner, ensures that contracts are aligned with Nestlé's applicable procedures and that the process is followed and approvals are done; seeks specialist help when needed, such as patent attorney and R&D legal counsel; advises the contract owner on the right template to use, process to follow, etc. The contract manager also does the contractual reporting and acts as an interface with the purchasing team.
- c) The strategic and operation buyers are not involved in the negotiation process. Instead they are involved in preparing financing, paying expenses, VAT and currency; managing vendor creation; collecting bank details, and raising purchase orders based on contracts input from R&D centre.
- d) The patent attorney is responsible for the IP strategy for the undertaken project, developing and monitoring the IP protection planning for the PTC's and NRC.
- e) The R&D counsel in short, provides legal support in relation to R&D contracts. More specifically, he/she is responsible for handling negotiations of complex contracts; the assessment in conferences with third parties when lawyers are involved and bringing the right legal capability for the process. He/she is also responsible for preparing and updating standard contract templates and customized contracts, providing legal advice, training and supporting to the local contract managers and assisting in contract negotiations and disputes.

To make a process work there is the need to have the same level of involvement of different skills⁹⁹. From the description of the roles above, extracted from the interviews within Nestlé, the roles involvement in the collaboration is balanced and well divided. During the R&D process all the roles are equally involved, i.e. the coordination and integration described by Teece et al. (1997)¹⁰⁰ is existent in Nestlé R&D collaborative process.

4.3.1 External actors comparison

When comparing Nestlé's stakeholders involved in R&D collaborations with stakeholders of General Mills and Unilever, it is evident that the Patent Attorney, Project Leader (at Nestlé called Contract Owner) and Researcher are always present.

⁹⁹Tidd, J., Bessant, J. & Pavitt, K. (2001). *Managing innovation: Integrating technological, market and organizational change*. New York: Wiley p.205

¹⁰⁰Teece, D.J., Pisano, G. and Shuen, A. (1997). *Strategic management journal. Dynamic capabilities and strategic management*. STOR: John Wiley & Sons. Vol.18, No.7, p. 519

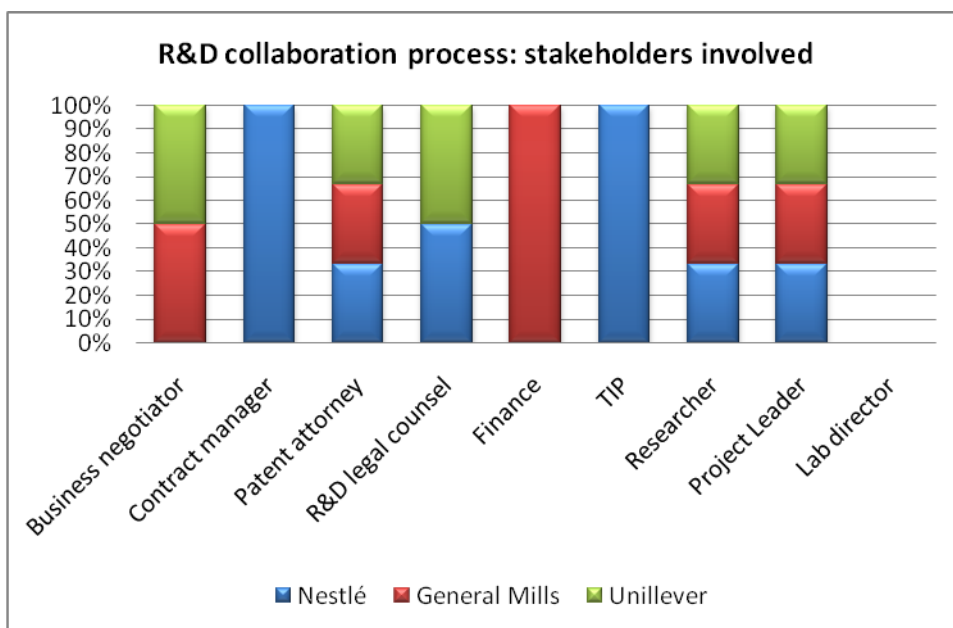


Figure 10 – Stakeholders involved on the R&D collaborative process

However, the difference is that **Unilever** and **General Mills** have a business negotiator directly involved in the negotiation. This function is aware of the projects financial situation and involved directly in the negotiation front-end, meaning that he/she leads the negotiation more efficiently from the beginning since he/she is aware of the options available for the IP negotiation, such as upfront payments and limit of royalties payment (if included).

4.3.2 Nestlé’s reporting and tracking terms in R&D collaboration with third parties

Reports are usually a tool to display the result of a process, an experiment, an investigation or an inquiry¹⁰¹. The correct report of R&D collaboration terms and IP can bring essential information to manage the IP portfolio and contracts. The right reporting can analyze IP assets, products, business units and individuals and stay up to date about the changing status of any IP¹⁰².

According to internal interviews at Nestlé, terms in R&D collaboration with third parties have been reported based on financial terms. Even though the tracking of IP in R&D contracts is relevant for Nestlé’s intellectual asset management and legal perspective, patents or contractual non-financial terms have not been tracked in collaboration with external parties. None of them have been recorded at the R&D management system at Nestlé, Unilever or General Mills.

According to the mapped process of R&D collaboration with third parties at Nestlé, General Mills and Unilever, one could identify missing pieces in the process and (lack of) focus in some phases of collaboration. The identification of the process phases followed by the interviewed actors lead to the following conclusion:

- a) The flexibility of interaction between R&D legal counsels, Patent Attorney and Contract Owner in the negotiation of IP terms in contracts with third parties has been essential for the life cycle of the project and ensuring the alignment of the terms of contracts with Nestlé’s applicable IP strategy;

¹⁰¹ Source: <http://en.wikipedia.org/wiki/Report> [Accessed 26/08/2010]

¹⁰² Source: <http://www.innovation-asset.com> [Accessed 10/07/2010]

- b) Financial terms are the main focus to monitor in R&D contracts, instead of IP ownership.

By not having the report of ownership and the correct mapping of the R&D process, the company faces some risks, as shown below.

4.3.3 Risks analyses

The results of R&D collaboration process with third parties at Nestlé, showed the following risks¹⁰³:

- I. With regards to the capabilities involved on the R&D process one could notice from the comparison with external actors, that the flexibility of the interaction between the R&D Legal Counsel, Patent Attorney and the Contract Owner is essential for the life cycle of the project. These roles are involved in the negotiation and aim to help decisions on IP clauses.
 - a) When it comes to the interaction of the parties involved in the negotiation process, the majority of the interviewees, internally and externally, and literature agree on the importance of the flexibility of communication between the parties.
 - b) When comparing the capabilities involved in the negotiation process of Nestlé and external actors, one can notice that Nestlé lacks the figure of a business negotiator, a person who is skilled and trained in negotiation, aware of the financial situation of the project, involved directly on the front-end of the negotiation and has IP negotiation training skills¹⁰⁴.
- II. An identified gap is driven by the focus of Nestlé on the management of financial obligations of the contracts. No IP information from the R&D contracts with third parties is identified, included or monitored in the contract portfolio.
 - a) The lack of IP tracking or exclusivity clauses has caused Nestlé to lack of information on the patent portfolio, which, consequently, could jeopardize strategic decisions based on Nestlé's IP portfolio.
 - b) On the other hand, the inclusion of IP information extracted from the contracts on the contract management system could cause Nestlé to insert the wrong information.

¹⁰³Kindinger, J.P. and Darby, J.L. (2000). Risk Factor Analysis: Anew qualitative risk management tool. Proceedings of the project management institute annual seminars & symposium September 7–16, 2000, Houston,Texas,USA. Available at <http://www.lanl.gov/orgs/d/d5/documents/risk-fact.pdf> [Accessed 02 June 2010]

¹⁰⁴ According to Nokia and General Mills interviews.

4.3.4 Sub-conclusion: Does Nestlé lack information regarding their IP portfolio? Does the lack of information jeopardize their ability to effectively collaborate? The need to control research possibilities, process and results¹⁰⁵

According to the identified R&D collaboration process and risks, due to Nestlé's IP strategy management model, Nestlé has to claim ownership of its IP to support its innovation initiatives. The identified collaboration phases have direct influence on Nestlé's IP portfolio management.

To maintain Nestlé's collaboration model, it becomes increasingly important to form a solid process to clarify the benefits of collaborating with a determined partner and the best possibilities for collaboration. According to the interviews and mapped R&D process, Nestlé follows a solid R&D collaborative process and its stakeholders are well-coordinated and integrated to safeguard Nestlé's IP interest. The process makes it possible to structure, organize and develop capabilities. Especially in R&D collaborations, there is a need to identify the assets brought to the project in relation to the assets that shall be created¹⁰⁶. One needs to clarify who will have access and right to use the collaboration results¹⁰⁷.

Moreover, this information should be available at Nestlé's patent portfolio. However, according to the interviews, that information is not available in the company patent portfolio. Thus, one could verify that the lack of that information has jeopardized the new strategic innovative decisions, such as abandoning or licensing out a patent, and not the ability to effectively collaborate in new R&D agreements.

Therefore a process to control and monitor the patents connected to collaboration is necessary from the first phases of entering a new collaboration until its closure. Such a process will help to identify the collaboration background and foreground IP. It appears pretty obvious to maintain a historic of the assets included in a collaboration, however, the problem is that MNC nowadays, have been increasing its collaboration numbers and, as a result, the tracking of past historic negotiations become more challenging¹⁰⁸.

This happens especially because there are different stakeholders and management tools to administrate information about contracts, IP ownership and patents.

4.4 Internal structures / tools: An opportunity to manage patents from R&D collaboration and enhance Nestlé's strategic innovation decisions

*After the R&D collaboration process analysis and identification of the lack of historic information regarding contractual obligations linked to patent portfolio, the author investigated Nestlé's means to manage its patent portfolio and contracts. This investigation will answer the research question: **Can this lack of information be changed utilizing existing IP management structures/tools within the company?***

¹⁰⁵Petrusson, U. (2009). "The University in the knowledge economy", lectures notes distributed on the topic of knowledge management. Chalmers University of Technology, Center of Intellectual Property Studies, Gothenburg.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid 106.

¹⁰⁸ Interviews with General Mills and Unilever.

4.4.1 Nestlé's Patent portfolio management

Nestlé's patent portfolio contains records from technologies developed in-house, collaboration with external parties and IP acquisitions. Even though M&A transactions may include patents, those patents might be difficult to identify both in the patent portfolio of Nestlé and in the R&D contracts management system. Furthermore, license transactions have been managed in a different portfolio. Consequently, the patents generated from those license agreements are not easily identified in the patent portfolio.

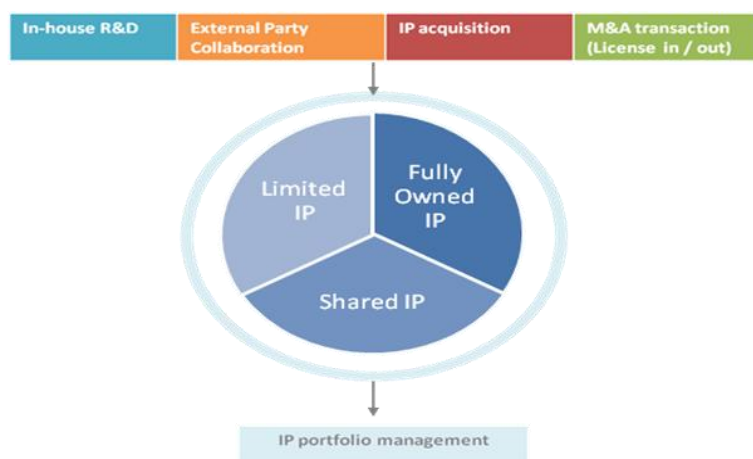


Figure 11 – Nestlé's Patent portfolio management

Nestlé's patent system manages information related to patents and patent families, and it is a tool to guide the intellectual asset management team in making strategic decisions. In order to support and maintain Nestlé's innovation initiatives, Nestlé's patent portfolio should be able to provide consistent information about the patents, if they are available for further transactions and the rights are attached to it, i.e., if Nestlé has limited, shared or fully owned rights over the patent (Fig.11).

4.4.2 Nestlé's contract portfolio management

Nestlé has different contract management structures to manage its contract portfolio. The R&D contract management tool contains information about R&D scientific contracts and R&D product development contracts such as:

- a) Clinical trial agreements
- b) Collaboration agreements
- c) Confidentiality agreement
- d) Consultancy agreement
- e) Research agreement
- f) Service agreement
- g) Material transfer agreement
- h) Trials agreement and
- i) Unsolicited ideas agreement.

All the contracts above may include patent information in a transaction. The management of the contract portfolio at Nestlé is decentralized and focused on financial obligations such as: total value of contract, budget amount per year, travel expenses, historic of payments. However, beyond the financial obligations of the contract, a contract management tool should manage the contractual obligations as well as the related IP in the contract¹⁰⁹.

Even though these contracts may contain IP transaction information and contractual obligations linked to an IP, none of the contracts mentioned above are related to the patent portfolio, which has been contributing to the inconsistency of information in the patent portfolio.

4.4.3 External actors comparison

Other companies have been attempting to enhance its strategic innovation decisions through a closer relation between their IP portfolio and contract management. A comparison was made between General Mills and Unilever.

4.4.3.1 General Mills

According to Mr. Doug Taylor, General Mills chief patent counsel, the link between contractual obligations and IP portfolio is extremely important to manage General Mills IP portfolio. However, at the moment General Mills does not have a unique system or link to manage this obligation. The company has been handling it on a case-by-case basis, which is time consuming from a managerial point of view.

The company has two different systems, where one is used to manage the trademark and patent portfolio and the other is a database which manages the contracts. However, those systems are not interconnected. General Mills has an ongoing project to build links between their IP portfolio and contract management system. When their project is finished, one will be able to extract the following information:

- a) Is the IP attached to a contractual obligation?
- b) What is the duration of the contractual obligation?
- c) Is the IP ownership, owned entirely by General Mills or shared with a third party? The new system will bring a flag highlighting important information whether a patent is attached to a contract and, therefore, cannot be further negotiated.

To date, according to Mr. Doug Taylor, General Mills has faced some significant infringement dispute due to the lack of that relation when the company transacted a patent on a non exclusive term with a determined company, and there was no information of any contractual obligation. Later, General Mills discovered that the patent transacted with that company was already attached in a contract with a different party on an exclusive basis. Luckily, said Mr. Doug Taylor, General Mills was able to convert the exclusive license into non-exclusive, but it was a time and effort consuming situation.

4.4.3.2 Unilever

According to Mr. Matt Reed, business director of Unilever, *“the more relevant IP is for a company or the investment in open innovation initiatives, the higher the importance of investing in the management of IP portfolio and contractual obligations”*.

¹⁰⁹Interviews with Unilever, General Mills and Nokia.

Unilever also has different systems in place to manage their IP portfolio and R&D contracts. And at the moment Unilever does not have any link between the two systems. The company is aware of the consequences and risks involved with the lack of information. Unilever has started an investigation process to implement this relation, and the goal is to have a system that links at least the following information:

- a) Is the patent attached to any contractual obligation?
- b) For how long is that patent attached to a contractual obligation?
- c) Is the patent owner Unilever, another party or both?
- d) Is the asset linked to any exclusive contractual obligation?

With the lack of the relation, Mr. Reed Matt believes there is a risk of exposing the company to a litigation procedure, since the company has to have the understanding of the limitations of their patent portfolio.

4.4.4 Risks analyses

As shown, not just Nestlé has different systems in place to manage the patent portfolio and agreements with third parties. Thus, to know if a patent is free of any contractual obligation with a third party and is available for further transaction or strategic decisions has been a challenge for Nestlé. Moreover, the lack of relation between a patent portfolio and contractual obligations can bring different risk perspectives, such as:

I. Legal risks:

- a) Litigation procedures. For example, if Nestlé licenses a patent to a third party that is already attached to other contractual obligations with a different third party on an exclusive term.
- b) Not fulfilling contractual obligations, as it is not uncommon for companies to have difficulties tracking their contracts.

II. Managerial risks:

- a) Increased time and effort for tracking possible contractual obligation linked to a patent, as there are many systems involved and a division of contract management with third parties.
- b) Abandon a patent that is linked to a contractual obligation.
- c) Increased time on the analyses of the patent portfolio.
- d) Loss of overview of the contract portfolio and IP connected to a contract.

III. Technical risks:

- a) Insufficient information in patent portfolio that support innovation strategic decisions of Nestlé.
- b) Loss of information about IP ownership in-licenses or out-licenses.

4.4.5 Contractual obligations that should be linked to the patent portfolio

As stated on the item above, the link between the IP portfolio and contracts would help to build a consistent IP portfolio and consequently guide and enhance innovation strategic decisions based on patents. Thus, the information that should be related between a patent portfolio and contracts are:

- a) Contract number: identifies the contract that has originated the patent.
- b) Project Number: identifies the business from which the patent has generated.
- c) Parties involved: help identifying the parties that participated on agreement.
- d) Term/Termination of the contract: identifies the patent linked to the contract and link the contractual obligations, and consequently when it is available for further transactions.
- e) Type of contract: facilitates the identification of the contract and its contractual implication.
- f) Ownership of results: indicates if the IP generated from the contract belongs to Nestlé, the other party or both.
- g) Ownership of patent rights: states if the right to apply for a patent right belongs to Nestlé, the other party or both.
- h) Scope of the contract: help identifying the purpose and the technology involved in the agreement.
- i) The IP included or generated from a R&D contract.
- j) A field showing which IP is part of the R&D collaboration contract should contain the following options:
 - o Patent number, patent family and utility models.
- k) Grant of license: monitors the origin of the new IP. If there is new IP licensed in or out of Nestlé. That information should be available to manage Nestlé's IP portfolio and know to whom the IP belongs.
- l) Renewal date of the contract: manages the life cycle of the contract.
- m) Exclusivity: shows if Nestlé is engaged into an exclusive contract.
- n) Contract Territory: shows in which countries the contract is valid, and consequently, if there is any license included on the contract and the granted territory.

The mentioned information is the minimum necessary to manage the patent portfolio in relation to its contractual obligation. It is also for basing strategic decisions on a consistent patent portfolio. The information above will help defending Nestlé rights, making strategic decisions, analyzing the contracts portfolio, managing risks, ensuring compliance of obligations and mainly defending Nestlé's IP portfolio.

4.4.6 Sub-conclusion: **Can this lack of information be changed by utilizing existing IP management structures/tools within the company?**

4.4.6.1 *Nestlé's current position*

This thesis reviewed Nestlé's R&D collaboration process with third parties as well as patent and contract management systems. The outcome is that Nestlé has a R&D collaboration process with third parties that enables collaboration with the best partners and builds trust and long term relationships.

Nestlé has a flexible team of R&D counsels, contract managers, contract owners and intellectual asset managers that ensure consistence on IP negotiation terms and align it with Nestlé's IP strategy.

On the other hand, Nestlé's patent portfolio is not complete to support and maintain Nestlé's innovation initiatives. It is noticed that neither General Mills nor Unilever have the ideal link between the ownership information in their patent portfolio.

As a consequence of the identified gaps on R&D collaboration process, the existing portfolio management system requires consolidation. Both the patent portfolio and contract management systems do not have enough information to monitor or track what rights Nestlé owns or has access to concerning a patent. Thus, the missing pieces of process and management have a direct influence on Nestlé patent portfolio, which is not complete since it has no information about the contractual rights attached to a patent.

4.4.6.2 *Nestlé's desired position and improvements after the case study*

Long term M&A transactions, R&D collaborations and in-house development have been generating various records of IP at Nestlé. *"Unless such records are consolidated, maintained and regularly reviewed it can become very difficult to identify and compile full details of registered rights"* IPO¹¹⁰.

Therefore, to consolidate Nestlé's patent portfolio and contract management system, it is necessary to include contractual information in the patent portfolio to build a strong base for taking strategic innovating decisions. That information can be linked by utilizing the existent portfolio management tools.

The thesis does not represent an ideal improvement and does not intend to be exhaustive. But by having the overview of the origin of patents, i.e., from which collaborative agreement they came from, the major challenge of identifying the historic of contractual obligations attached to a patent could be avoided.

Nestlé aims to have a complete patent portfolio that contains necessary information about ownership and contractual obligations linked to a patent to guide and support its strategic innovative decisions. The aim is also to have the overview of agreements involving IP among the different departments and IT systems of Nestlé to build a complete contract portfolio.

¹¹⁰ Source: <http://ns3.ipso.gov.uk/news/newsletters/ipinsight/ipinsight-200904/ipinsight-200904-2.htm> [Accessed 03 June 10]

To achieve the desired position the process of controlling research results needs to be improved, as well as the closer relation between the patent portfolio and contracts. Thus, an alternative solution is to integrate the patent management with the contract management, which from the patent portfolio management perspective would allow to:

- a) Enter in a new collaboration involving a patent.
- b) Abandon a patent considering the contractual obligations attached to it.
- c) Renew a license deal.
- d) Continue to collaborate with a third party considering the outcome of patent applications.
- e) Consider the contracts in relation to the patent.
- f) Share rights with a third party based on further transactions.

And from a contractual management perspective, it would allow to:

- a) Help to decide to continue to deal with a third party based on the accomplishment of contractual obligations.
- b) Monitor the third parties agreements.
- c) Ensure the contractual obligations in relation to IP generated from the agreement.
- d) Monitor the quantity of contracts with the same parties by Nestlé's affiliates.

After the investigation and affirmative of the lack of information regarding contractual obligations within the patent portfolio, Nestlé can minimize the risks by consolidating the information of their existing patent portfolio and contract portfolio system. As the management of the contracts has been decentralized and different departments have been involved within contracts that may contain IP, it is recommended to point a **functional leader** to coordinate the relation between contracts and IP portfolio, with the following responsibilities:

- a. Over viewing of R&D collaboration process to identify gaps and suggest solutions and actions.
- b. Over viewing of the process and being able to map and do a constant quest for new partners to collaborate with and transmit it to the PTC's and NRC.
- c. Being the hub for receiving information about patents included or received from collaboration with third parties and creating a strong patent portfolio considering contractual obligations, as well as having the overview of rights that have been granted to Nestlé and rights that Nestlé has granted to a third party.
- d. Identifying the contracts that contain patents, monitor, report it and do a contractual governance of ownership claims.
- e. Being the relation hub between the groups involved within contracts and IP management.
- f. Monitoring and report IP information from contracts into the IP portfolio.

- g. Building a reliable and consistent relation within the contracts and IP portfolio.
- h. Coordinating the information flow within the different functionalities involved with the contracts and IP portfolio.

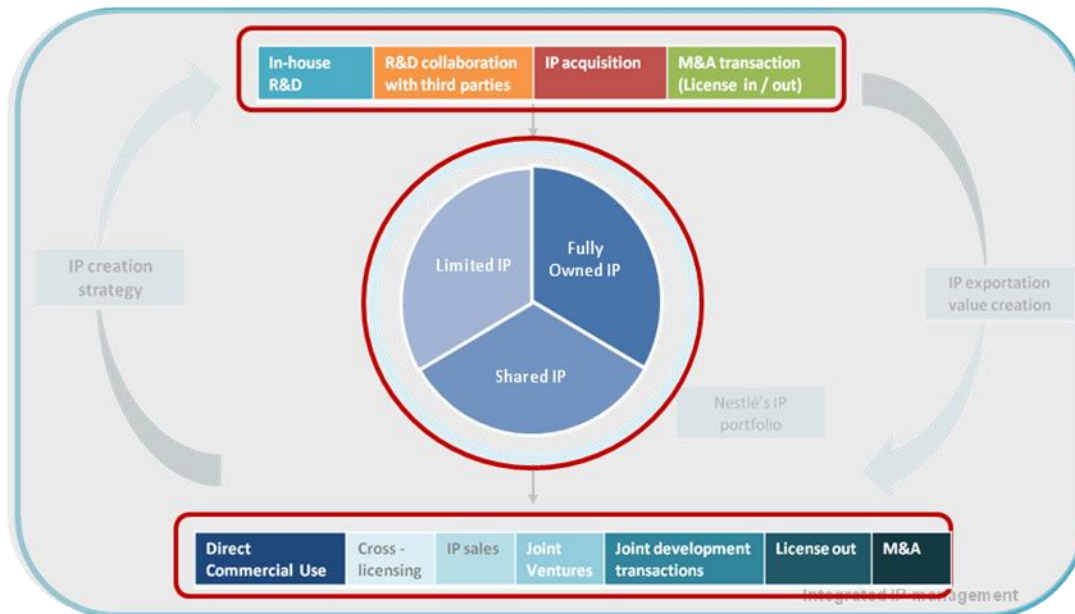


Figure 12 - Functional leader to have the overview of contracts and IP portfolio.

If the information is consistent, Nestlé will have the possibility to monitor, track and build a consistent patent portfolio considering contractual obligations and also support further innovation transactions. Furthermore, a responsible function would have an overview of the R&D collaboration process and an overview of the rights that have been granted to Nestlé or that Nestlé has granted to a third party.

By having a structure to support the patent portfolio, contract management and a responsible function to have a process overview, Nestlé can benefit from building a complete and consistent patent portfolio, having the contractual terms of a patent properly tracked and monitored; basing strategic innovation decisions on a consistent patent portfolio, and limiting litigations risks and guaranteeing competitive advantage.

CHAPTER 5: General conclusion

This chapter summarizes the outcome of the thesis and answers the research questions. It also suggests a closer relation between patent management and contracts to enable best guidance and enhancement of collaborative innovation decisions.

Three main questions were stated in the beginning of the thesis:

- 1) **Does Nestlé lack information regarding their IP portfolio?**
- 2) **Does the lack of information jeopardize their ability to effectively collaborate?**
- 3) **Can this lack of information be changed by utilizing existing IP management structures/tools within the company?**

Those questions were formulated in order to investigate the hypothesis that MNC sometimes lack historic information about contractual obligations attached to the patent portfolio of a company due to poor management routines or processes, and therefore making MCN less effective in new collaboration deals. The hypothesis was specifically applied within the context of one MNC: Nestlé.

To answer those questions the author used different sources of information, such as interviews and literature study. The result of the case study investigation can, to a certain extent, confirm the hypothesis.

As stated before, it is not the intent of this thesis to utilize Nestlé's model as the sole model available to better manage patents and contracts, but to be an eye opener for the management of patents and contracts. The thesis creates awareness of the need to integrate different stakeholders involved on R&D collaboration process, and highlights the consequences and risks on strategic decisions that do not consider the contractual historic of a patent.

The case study and interviews helped analyzing the first research question: ***Does Nestlé lack information regarding their IP portfolio?***

According to existing structures, Nestlé has a decentralized model of contract management, due to different PTC's and NRC. Each PTC and NRC is responsible for their collaboration process and overview of their own contracts. A responsible function or coordination to have the overview of IP included in a contract was not identified.

According to the interviews, Nestlé lacks information in their patent portfolio and contract portfolio regarding the contractual obligations related to a patent, i.e. if Nestlé has included a patent as a background IP within a contract, none of the portfolios contain that information. The interviews also showed that Nestlé focuses on the financial management of contractual obligations. For the financial management of contractual terms there is a designated team of stakeholders that control payments and reception of royalties among others.

To answer the second research question - ***Does the lack of information jeopardize their ability to effectively collaborate?*** - it was necessary to look into the collaborative initiatives of the company. The outcome is that Nestlé has been investing in multiple ways to achieve competitive advantage

within IP, such as in-house R&D, R&D collaboration with third parties, IP acquisition or mergers and acquisitions. This insight guided to identify the company position in relation to their innovative strategy regarding R&D collaboration with third parties. It was not the intention to look into other alternatives, like entering in joint ventures, licenses deals or spin offs.

In order to continue to innovate and use the non-core patents in further collaboration, Nestlé needs to know if the patents included on these collaborative initiatives, or arising from them, are available, i.e. if Nestlé has full ownership, shared or limited rights over a patent. The interview and internal structure of the company demonstrated that this information is not available within the patent or the contract portfolio and the major challenge has been to identify the information due to the contract management decentralized model.

During the interviews with internal and external actors, the majority of the respondents agreed on the importance of managing and tracking information about patent transactions and obligations. Although the interviewed internal and external actors agreed, none of the actors have the link between patents and contracts connected to it.

Nevertheless, the affirmative that Nestlé becomes less effective in collaborating because of the lack of information in their patent portfolio could not be completely tested due to the involvement of different departments within the company. The interviews showed that the company has been dealing with the lack of information on a case-by-case scenario. The interviews showed that this actual solution has been time consuming and jeopardizing some strategic decisions, such as to license out or abandon a patent. This was because previously of such decision, there is the need to know if there is any contractual impediment to transact the patent; if there is a contractual obligation attached to it; for how long is the obligation attached, and if any other collaborating party holds rights for the patent. Such information has not been easily identifiable within Nestlé's patent or contract portfolio.

To answer the third research question - ***Can this lack of information be changed by utilizing existing IP management structures/tools within the company?*** - it was necessary to look into Nestlé's existing R&D structures.

From the analysis of Nestlé's R&D collaboration process, one can conclude that Nestlé has an established R&D process to collaborate with third parties. This process includes the decision to collaborate, the choice of right partner to collaborate with, and the negotiation of the final agreement, where Nestlé has a flexible team to negotiate IP terms, which allows the company to build trust and work with the best partners. However, on the implementation phase of the collaboration contract, the interviews showed that the management focus of collaborative agreements has been financial, instead of IP management post signature.

Due to the decentralized structure of the company, there are different stakeholders involved within the R&D collaboration process, and their interaction flexibility has been helping innovation initiatives of the company.

Consequently, the conclusion from the first two questions is that the lack of information could jeopardize some innovative strategic decisions. To deal with the lack of information, Nestlé has some

alternatives solutions to change the scenario through using existing structures of the company. In the existing structures of Nestlé, the patent and the contract portfolio was identified. One option considered was to correct the lack of information through both portfolios. There is an ongoing project, based on the case study, to build a close relation between the patent portfolio and the information contained on the contract portfolio.

The solution suggests a responsible function to coordinate the identification of contracts that contain Nestlé's proprietary patents, or granted to Nestlé, and to link that information into the patent portfolio in order to enhance their innovation decisions. The contractual information that should be included in the patent portfolio is about the patent number, patent family or utility model; the information about licenses involved and the information about exclusivity. If that information is easily identified in the patent portfolio, Nestlé can eliminate the presented risks.

The author has limited the innovation initiative of the company to R&D collaboration with third parties. However, more innovation initiatives along the company could have been approached, such as in-house R&D and mergers and acquisitions structure. Those structures would demand more resources and time to be investigated.

A critic about the research model used in this study is that different confidential documents could not be used to sustain the research answers. However, the documents were used as background information and to formulate the research questions. This limitation restricts the scope of analyze as well as the presented results.

The approach by Teece et al. (1997) helped the author to analyze the case study, from the perspective of a MNC position and its processes and paths to achieve new and innovative forms of maintaining competitive advantage on the market, as well as on their dependency on managerial and organizational process¹¹¹. Despite the dynamic capability approach regarding the financial aspects of a company, it could not be covered within the study. If there had been more time available, the financial aspects could have been analyzed to better locate the company when compared with the competitors.

¹¹¹Teece, D.J., Pisano, G. and Shuen,A. (1997). Strategic management journal.*Dynamic capabilities and strategic management*.STOR: John Wiley &Sons.Vol.18, No.7

CHAPTER 6: Future applications

This thesis does not intend to use Nestlé's model as the sole model available to better manage patents and contracts, but to give an overview of how their model could be applied within the context of different companies. This chapter gives a starting point to perform this investigation process.

Along this study, it was identified that is not just Nestlé that lack information about contractual obligations attached to patents. General Mills and Unilever also do not control contractual information about patents before making innovation strategic decisions, even though they are aware of its importance and risks. Those companies are positioned as multinational consumer goods companies, and their current management of IP can differ from other industries.

If a company intends to start this investigation process about having control of their patent portfolio in relation to their contractual obligations, it is recommended to follow starting points below.

Company innovation position

Regardless of the area of actuation of a company, whether it is an MNC or a start-up, the correct management of the patent portfolio together with contracts can guide innovative decisions and avoid unnecessary risks. So this case study is recommended to companies that are proprietary of a patent portfolio and intend to innovate through collaborative incentives and need to know what to take in consideration regarding contractual obligations before transacting a patent.

Not all companies work in close relation with the legal department. Thomson Reuters affirms that the more integrated companies are the chemical and pharma¹¹². High-tech MNC, as Nokia, have been addressing this topic. According to Mr. Claudio Marinelli, Nokia's open innovation director for the Nokia Research Center, the management of the legal terms, financial, technical terms and patents is part of Nokia process from the beginning. It is on the DNA of the company. He says that Nokia has more than one system to manage their patent portfolio and R&D contracts. There is a separate patent portfolio database and contract database. However, they do communicate by an overlap of the databases, allowing each patent record to have the history of the contractual obligation attached to it. The main information that the database overlap shows whether if the patent is co-owned, linked to a non-exclusive license and if the asset is owned by Nokia, and if not, it states whether Nokia has a license to it or a cross license.¹¹³

Innovative strategies of the company

On this study, only the R&D collaboration with external parties was investigated as an innovative strategy of the company. Due the lack of resources, it was not the goal of the study to consider other alternative process such as entering in joint ventures, licenses deals, spin offs, mergers and acquisitions. However, to look into the alternatives is also a starting point to test the investigation hypothesis since they can also be sources for innovation. The other alternatives investigation leaves room for further research.

¹¹² Thomson Reuters interview.

¹¹³ Nokia interview.

The stakeholders involved in the IP management

Organizational structures can vary depending on the size of the company. Some companies take siloed approach to manage their IP portfolio¹¹⁴. For this reason, it is important to involve the right stakeholders in the investigation process. One has to consider the key people participating on the IP management and contracts are, such as researchers, project leaders, patent attorneys and legal advisers. By involving the right people in the process, one can avoid risks such as lacking visibility of the process or not knowing what IP asset is in use.

Research and Development Centers focus

In the end of the analysis, the author noticed that the hypothesis investigation and the conclusion from the case study are applicable at both research centers conducting research at an early stage and research centers focusing on product development. This is due to the collaboration with different partners at both centers.

Types of collaborations

Again, because of the siloed approach of some companies to manage their IP portfolio, the company needs to know what assets are transacted and involved in a collaborating transaction. The new investigation should take into consideration all collaborative agreements that may involve IP at the company. Besides intra-firm agreements, it includes agreements with universities and inter-firms.

Final observation

These considerations are not meant to be exhaustive. Instead they are a starting point for an investigation process in a company's IP portfolio and the company's contractual obligations, as well as an eye opener for the company to avoid future risks and to maximize the use of their assets through collaborative innovations. As the study was based on a case study and some of the questions could not be answered, it leaves room for further research.

¹¹⁴ Source: www.iam-magazine.com [Accessed 01 August 10]

CHAPTER 7: References

- Adams, M. and Hofman-Bang, P. (2009). The weakest link in corporate IAM. Available at www.iam-magazine.com [Accessed 01 August 2010]
- Bader, M.A. (2006). Intellectual property management in R&D collaborations. The case of the service industry sector. Physica: Heidelberg
- Barendrecht, M. (2007). Principles of European Law, Study Group on a European Civil Code. Service Contracts. Munich: Sellier European Law Publisher
- Breizman, A.F. and Mogee (2002). The many applications of patents analysis. Journal of Information Science pp.187-205. Available at <http://jis.sagepub.com> [Accessed 06 June 2010]
- Carson, R. (2008). Get your assets in gear: aligning IP strategy and business strategy. Available at http://www.wipo.int/sme/en/documents/pdf/ip_business_strategy.pdf [Accessed 06 June 2010]
- Chesbrough, H. (2001). Is the Central R&D Lab Obsolete? If the old model for innovation is dead, what comes next? Available at <http://www.technologyreview.com/business/12357/?a=f> [Accessed 12 July 2010]
- Chesbrough, H.W. (2006). Open Innovation: The new imperative for creating and profiting from technology. Boston, Mass: Harvard Business School Press
- Chrocziel, P. and Scherenberg, O. (2007). Licensing and outsourcing. Available at www.iam-magazine.com [Accessed 01 August 2010]
- Clark, R.W. (2007). Evaluating the collaboration process. Available at <http://ohioline.osu.edu/bc-fact/0007.html> [Accessed 13 July 2010]
- Cronin, J. and Shore, K. (2008). Managing IP in open innovation partnerships. Available at www.iam-magazine.com [Accessed 01 August 2010]
- Cusumano, M. A. & Selby, Richard, W. (1995). Microsoft Secrets. New York: The Free Press pp.157-175, 384-391
- Davis, J.L., Harrison, S.S. (2001). Edison in the boardroom: how leading companies realize value from their intellectual assets. New York: John Wiley
- Davis, J. (2008). Intellectual property Law. US: Oxford University Press
- DiMatteo, L. A. (2000). The law of international contracting. London: Kluwer Law International.
- Eastwood, D. (2008). The importance of post agreement monitoring of licensees. Available at <http://www.iam-magazine.com/issues/Article.ashx?g=6a323ce3-0702-4435-8901-d3da1906bed5> [Accessed 01 August 2010]
- Ellis, L. (2009). Managing Intellectual property rights and contracts law. Available at <http://www.gillhams.com/articles/413.cfm> [Accessed 16 August 2010]
- Enkel, E., Gassmann, O. and Chesbrough, H. (2009). Open R&D and open innovation: exploring the phenomenon. USA: Blackwell Publishers Ltd. pp. 311-316.
- Finne, T. (2003). R&D Collaboration: the process, risks and checkpoints. Available at <http://webcache.googleusercontent.com/search?q=cache:6FMRZrN1RrIJ:www.itgi.org/TemplateRe>

direct.cfm%3Ftemplate%3D/ContentManagement/ContentDisplay.cfm%26ContentID%3D16221+R%26D+collaboration+process&cd=1&hl=en&ct=clnk [Accessed 02 June 2010]

Fritz, J.A. and Hudson, F. W. (2001). R&D Collaboration between large firms and individual inventors/fledgling start-ups: "Seeking a blueprint for successful collaborations." Available at <http://www.iamot.org/conference/index.php/ocs/7/paper/view/810/261> [Accessed 15 July 2010]

Gardner, P. J. (2004). How to decide when it's time to work with lawyers. Available at www.iam-magazine.com [Accessed 01 August 2010]

Gassaman, O. and Zedtwitz, O. (1998). Organization of industrial R&D on a global scale. Available at http://www.alexandria.unisg.ch/export/DL/Max_Zedtwitz/63219.pdf [Accessed 12 July 2010]

Gaule, A. (2006). Open Innovation in Action. How to be strategic in the search for new sources of value. London: H-I Network. pp. 51-79

Gaze, L. (2008). Capitalizing on your intellectual assets through in and out licensing. Available at <http://www.iam-magazine.com/issues/article.ashx?g=136591aa-3a53-4692-82e6-b4bd099e1168> [Accessed 01 August 2010]

Geary, S. and Bawden, P. (2007). Intellectual property – a strategic asset and a strategic threat. Available at <http://www.iam-magazine.com/issues/article.ashx?g=9ccd0aae-5e58-4de4-a9c8-1eeb17348e52> [Accessed 01 August 2010]

Giesen, G. (2007). Creating collaboration: a process that works. Available at <http://www.managerwise.com/article.phtml?=-538> [Accessed 13 July 2010]

Goldense, B. and Cronin, J. (2009). Integral IAM and new product process are the future. Available at http://www.ipcg.com/thoughtleadership/IAM_38_Integral_IAM.pdf [Accessed 01 August 2010]

Granstrand, O. (1999). The Economics and Management of Intellectual property. Towards Intellectual Capitalism. UK: Edward Elgar Publishing

Granstrand, O. (2003). Economics, law and intellectual property: seeking strategies for research and teaching in a developing field . Boston, Mass: London: Kluwer Academic

Guidance for Industry Q9 Quality Risk Management [online]. (2006). ICH: U.S. Department of Health and Human Services. Available at www.bvv.sld.cu/download.php?url=regulaciones/123939803530.pdf [Accessed 02 June 2010]

Hamel, G. (2006). The why, what and how of management innovation. Harvard business review article. Available at www.hbrreprints.org [Accessed 03 June 2010]

Important contracts and IP (online). WIPO. Available at http://www.wipo.int/sme/en/e_commerce/contracts.htm [Accessed 03 June 2010]

Kelly, M.J, Schaan, J-L. and Joncas H. (2002). Managing alliance relationships: key challenges in the early stages of collaboration. USA: Blackwell Publishers Ltd. pp. 11-22

Kenney, A. (2009). Promoting collaboration across IP lifecycle. Available at http://thomsonipmanagement.com/docs/Collaboration_IAM_AKenney_1009_FINAL.pdf [Accessed 01 August 2010]

Kindinger, J.P. and Darby, J.L. (2000). Risk Factor Analysis—A New Qualitative Risk Management Tool. Proceedings of the Project Management Institute Annual Seminars & Symposium September 7–

- 16, 2000, Houston, Texas, USA. Available at <http://www.lanl.gov/orgs/d/d5/documents/risk-fact.pdf> [Accessed 02 June 2010]
- Linnarsson, H. (2005). *Alliances for Innovation. A structural perspective on new business development in cooperative ventures*. Stockholm: Stockholm School of Economics
- Mahnke, V. and Overby, M.L. (2000). *Portfolio management of R&D collaboration: the case of mobile services*. Denmark: Copenhagen business school. Available at <http://www2.druid.dk/conferences/viewpaper.php?id=2664&cf=18> [Accessed 02 June 2010]
- Milbradt, C. and Fairbairn, D. (2009). IP issues in outsourcing R&D. Available at <http://www.iam-magazine.com/issues/article.ashx?g=1a24f914-16f8-44c5-a409-08fd63650f90> [Accessed 01 August 2010]
- Miyake, M., Mune, Y. and Himeno, K. (2004). *Strategic intellectual property portfolio management: technology appraisal by using "technology heat map"*. Nomura Research Institute Papers. Available at <http://www.nri.co.jp/english/opinion/papers/2004/pdf/np200483.pdf> [Accessed 12 July 2010]
- Motzek, R. (2007). *Motivation in Open Innovation. An Exploratory Study on User Innovation*. Saarbrücken: VDM, Müller
- Passey, S. J., Pritchard M. C.; Nagarajan R. P.; Wong P. L.; Seow Y. Y.; Chee F. Y. and Lee I. (2004). *Business process analysis of collaboration in the product development life cycle*. Research report TR/04/049/SP. Available at <http://www.simtech.a-star.edu.sg/Research/TechnicalReports/TR04PR04.pdf> pp. 293-298 [Accessed 15 July 2010]
- Pérez, S.E. and Schwars, H-G. (2009). *Developing an analytical framework for mapping, monitoring and assessing transnational R&D collaboration in Europe. The case of the ERA-NETs*. Luxembourg: Institute for Prospective Technological Studies. pp. 1-46
- Peters, R. (2010). *Taking IP into the boardroom*. Available at www.iam-magazine.com [Accessed 01 August 2010]
- Petrusson, U. and Heiden, B. (2008). *The ins and outs of licensing*. Available at www.iam-magazine.com [Accessed 01 August 2010]
- Petrusson, U. (2004). *Intellectual Property & Entrepreneurship: Creating wealth in an intellectual value chain*. Gothenburg, CIP Working Paper Series: Center for intellectual Property Studies
- Petrusson, U. (2009). "The University in the knowledge economy", lectures notes distributed on the topic of knowledge management. Chalmers University of Technology, Center of Intellectual Property Studies, Gothenburg. pp.23-47
- Petrusson, U. and Pamp, C. (2009). *Intellectual property, innovation and openness*. In Arup, Christofer & Caenegem, William Van. *Intellectual Property Policy Reform: Fostering Innovation and Development*. UK: Edward Elgar Publishing, pp. 154-171
- Pisano, G. P. (2004). *The R&D boundaries of the firm: an empirical analysis - research and development - Technology, Organizations, and Innovation*. Articles from Administrative Science Quarterly, March, 1990. Available at http://findarticles.com/p/articles/mi_m4035/is_n1_v35/ai_8306460/ [Accessed 02 June 2010]
- Pfiffner, A. and Renk, H.J. (2007). *Transformational challenge, Nestlé 1990-2005*. Switzerland: Nestlé S.A.

Prefontaine, L., Ricard, L., Sicotte, H., Turcotte, D. and Dawes, S. (2000). New Models of Collaboration for Public Service delivery. Available at http://www.ctg.albany.edu/publications/reports/new_models_wp/new_models_wp.pdf [Accessed 13 July 2010]

Pressman, D. (2008). Patent Yourself. 12th ed. USA: Nolo

Sagal, M.W. (2006). Allocating rights in collaborative research agreements: prospective partners can implement a legal structure that maximizes the value of their research collaboration. Available at http://findarticles.com/p/articles/mi_6714/is_1_49/ai_n29243369/ [Accessed 12 July 2010]

Schroeder, R. (2010). Understanding the market for advanced IP management systems. Available at www.iam-magazine.com [Accessed 01 August 2010]

Shavinina, L. V. (2003). The international handbook on innovation. Amsterdam: Pergamon

Slind-Flor, V. (2007). P&G goes inside out. Available at <http://www.iam-magazine.com/issues/article.ashx?g=f0f62427-e526-4ce7-8545-de88c31c8be4> [Accessed 01 August 2010]

Slowinski, G. and Sagal, M.W. (2006). Allocating patent rights in collaborative research agreements: prospective partners can implement a legal structure that maximizes the value of their research collaboration. Available at http://findarticles.com/p/articles/mi_6714/is_1_49/ai_n29243369/ [Accessed 02 June 2010]

Spence, M. (2007). Intellectual Property. Oxford: Oxford University Press

Stjernström, S. (2006). Knowledge creation in collaborative product development. Linköping: Linköpings Universitet

Särefjord, D. (2006). Open Platform Design: Towards a theoretical framework and a practical toolbox. Gothenburg: Chalmers University of Technology, Center of Intellectual Property Studies

Teece, D.J., Pisano, G. and Shuen, A. (1997). Strategic management journal. *Dynamic capabilities and strategic management*. STOR: John Wiley & Sons. Vol.18, No.7, pp. 509-503

Tidd, J., Bessant, J. & Pavitt, K. (2001). Managing innovation: Integrating technological, market and organizational change. New York: Wiley

Whincup, M. H. (2001). Contractual Law and Practice: the English system and continental comparisons. London: Kluwer Law International

CHAPTER 8: Appendices

Appendix A –Structured Interview Guideline focused on external actors

1. PROFILE:

- a. Background of the person being interviewed

2. R&D NEGOTIATION PROCESS FLOW AND COMPETENCES

- a. Could you describe in general terms how do you carry on the negotiation process of IPR on collaboration agreements with external actors?
- b. How is the process to identify the necessity of involving the right people on the contractual negotiation with third parties? What are the competencies involved? How do they interact?
- c. In your opinion who has the right position to be involved on the IP negotiation?
- d. What kind of tools / documents or information do you use as a base for the negotiation? (e.g. agreement template, term sheet, guidelines)
- e. How do you coordinate the negotiation process between the R&D and business and legal?
- f. How do you coordinate the collaborations between the Research Centers and the external parties involved? Is it centralized or decentralized?

3. MANAGEMENT OF CONTRACTS AFTER THE SIGNATURE / SYSTEM

- a. How do you manage /monitor agreements with an external party after the signature of it?
- b. What tools do you use? (e.g. systems, reports)
- c. Does your "tool" link the registered IPR with its contractual obligations?
 - i. If, yes, what are the parameters you consider important to keep track in relation to each contract? (such as, ownership, confidentiality, milestones, contractual extension, renewals, termination, exclusivity, non exclusivity, IP background of each party, right for improvements)
- d. What are the main terms you consider important to be reported on a contractual IP?
- e. How do you keep track of the obligations contained on it? (i.e. IP licensed in or out)
- f. How do you know if an asset in your IP portfolio is available for further negotiation or is linked to a contractual obligation? Or for how long it is linked to a contractual obligation? Or if it is not available, what is the impediment (e.g. exclusivity)?
- g. What is your opinion on centralization or decentralization of the management of contracts?
- h. What about the importance to have a responsible function for the management of the contractual obligations with external parties in relation to IP?
- i. How do you link contractual obligations with the IP portfolio that you have? (general explanation)

4. CHALLENGES :

- a. What are the challenges of managing IP in relation to contractual obligations?
- b. Do you foresee any trend / solution to oppose the challenge? (As better communications, new tools to be done, policies, etc.)

Appendix B – Structured interview guideline focused on different stakeholders at Nestlé

1. What is your role on the R&D collaboration process?
2. Areas of actuation? Regions, centers?
3. How do you interact with the other stakeholders?
4. How do you keep track of IP from R&D negotiations?
5. When is the first time you are involved in a collaborative project?
6. How is the IP management?
7. Who makes decision on the IP allocation?
8. Once the collaborative contract is signed, what happen next with the information about the contract?
9. Where are the contracts stored? If they include IP, are they linked to the IP portfolio?
10. Do you foresee any risk in not having the contractual information attached to the IP?