

Allocating IPR Generated in R&D Collaboration with Chinese Universities

A negotiation framework for managers

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Master Thesis, Technology Management – No. 179/2009
ISSN 1651-0100
ISRN LUTVDG/TVTM--09/5179--/SE

KFS Lund AB
Lund 2009
Printed in Sweden

Abstract

- Title:** Allocating IPR Generated in R&D Collaboration with Chinese Universities: A negotiation framework for managers
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- Issue of study:** There is no clear framework for IPR negotiation to support the establishment of I-U collaboration by balancing their competing interests. For I-U collaborations within the same country, several sets of guidelines have been produced to emphasize IPR-issues in R&D collaborations. These have helped to increase awareness, but corporations and universities still report problems when establishing agreements on IP ownership (Lambert 2003; Collins 2006). This lack of clarity increase the time and costs involved in negotiating R&D collaborations and prevent some engagements from being completed. The costs of protracted negotiations can be high, both financially and in tying up staff. When western managers bring the IP negotiation process to China, it is further complicated by, for the manager, more unfamiliar aspects such as different laws, governmental incentives and personal incentives.
- Purpose:** The purpose of the thesis is, from a business perspective, to propose a negotiation framework regarding IPR ownership for western managers of manufacturing-engineering-oriented

MNCs when negotiating R&D collaboration agreements with top ranked Chinese engineering universities.

Methodology: The main methodology used has been an iterative inductive social science methodology, but complemented with legal methodology when needed for reliability and validity.

Conclusions: The ²(CH)OPSTIC Framework is a tool that helps western managers to prepare for patent negotiation when entering into R&D collaborations with Chinese engineering universities. The framework is based on theoretical and empirical best practice, and gives the manager a legal astuteness and an understanding of its counterpart and positions the manager well before entering the negotiation process.

Keywords: Chinese University-Industry collaboration, research and development collaboration, intellectual property rights, patent, negotiation framework

Acknowledgement

Working with this master thesis has been extremely interesting and inspiring, but yet tough and demanding. The most valuable knowledge we have received from this period when conducting our research is that we have learned a lot about ourselves. When we came to China we got a chance to meet a totally different culture and society. This obligated us to adjust our behavior to the context we were situated in and got a chance to understand who we really are and how we can adjust the way we act.

We would like to thank our sponsor, Tetra Pak China, for giving us the opportunity to conduct this master thesis project at their site in Shanghai. This project would not have been possible without the time, support and encouragement from a wide range of people. We would especially like to thank Lars Binder for initiating the project and supporting us, Professor Robert Björnemo, Marianne Steneroth Sillén and Jonas Ledendal for tutoring us, Catharina Eklund and Sophia Chen at The Foreign Ministry of Sweden in Shanghai for opening up doors for us.

We would like to express great gratitude to all the employees that we meet at the Tetra Pak office in Pu Dong, for their openness and support that made us feel warmly welcomed. We would also like to thank all our interviewees, for taking their time to discuss our research topic, our friends: Helena Svensson, Sandra Guo, Shirley Zhang and Yang for their help and support.

Finally, we would like to thank our opponents Louice Rosdahl and Simon Quick for their feedback.

We will remember this adventure for the rest of our life.

May 2009

Ambjörn Håkansson and Hugo Lang

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Abbreviations

Background IP	IP brought into a collaboration, and constructing the foundation for foreground IP
Company	When using company we refer to well established large Multi National Corporations.
Contract	A signed agreement between parties
CSR	Corporate Social responsibility
Design Patent	Design Patents is a protection for original designs relating to the shape, pattern, color or a combination thereof of an object.
EI	Engineering Index, a worldwide spread European ranking index covering journals within engineering and applied science fields
Foreground IP	IP generated within the collaboration
IP	Intellectual Property, further explained in chapter 3.3
IPR	Intellectual Property Rights, further explained in chapter 3.3
I-U	Industry-University
I-U Collaboration	We refer to I-U R&D collaboration
Legal Inventor	The first person to invent an idea – as opposed to the first person to file a patent – is the legal inventor
MNC	When we in this thesis refer to well established large western Multi National Corporations.
MOST	Minister of Science and Technology
R&D	Research and Development
RMB	Ren Min Bi. Chinas currency, all so known as the Chinese Yuan
RTU	Rights To Use, further explained in chapter 4.1
SCI	Science Citation Index, a worldwide spread American index ranking the worlds journals and their impact factor
SKL	State Key Laboratory, further explained in chapter 6.1
Substantive law	Substantive law is the statutory or written law that governs rights and obligations of those who are subject to it.
Utility Model	Utility Model is a patent for smaller technical improvements with a shorter protection period. The requirements for acquiring a utility model are less stringent than for patents and are also cheaper to obtain and maintain

1 Introduction

In this chapter, the aim is to introduce the thesis' subject, present an overview of the topic, and define the purpose of the study. In addition, a short presentation and the involvement of the thesis' sponsor can be read as well as delimitations and target audience. At the end of the chapter, a general outline of the thesis is presented and is important to have in mind when reading the thesis.

1.1 Background

China, the world's largest emerging economy has become the most important investment destination for many Multi National Corporations (MNCs) (Gassman and Han 2004). The research and development (R&D) expenditure in China has increased heavily since the mid 1990s and has mainly been driven by MNCs. This explains the current interest in conducting R&D in China (Lundin and Serger 2008). However, China is still a developing country by many standards. The business and R&D landscape is far from mapped and there are many uncertainties for MNCs who are thinking of starting R&D collaborations in China. Since collaborative R&D alliances have become a normal and strategically important part of business decision making, the increasing significance of foreign R&D activities in China cannot be ignored (Maximilian von Zedtwitz et al. 2007; Nakamura 2003). China has launched long-term measures to support R&D collaboration between local organizations and MNCs (Bing Wang and Ma 2007a).

Along with the emerging economy in China, western MNCs are rapidly increasing the search for new forms of R&D collaborations stimulated by R&D opportunities and cheap human resources created from a growing pool of highly skilled engineers and researchers (Gassmann and Han 2004; Maximilian von Zedtwitz et al. 2007). To compete in innovation and to build a so-called science-based industry in the currently emerging knowledge economy creating Industry-University (I-U) collaboration has been considered the key strategy for nations and corporations to compete. (e.g., Lundvall et al. 2006)

The main goal of the I-U collaboration is the generation and exchange of knowledge. Parts of this knowledge can be legally protected, e.g. by patents and utility models. The legal term used for this is intellectual property rights (IPR) and is an intangible asset that has become critical in knowledge-based competition. The value of IPR can be different for the involved parties. Universities e.g. claim that they need ownership to ensure that their future research is not held back. Industry often argues that it needs ownership to protect the investment that will be required to develop the IPR into a commercial product. Several issues and interests have to be considered before determining a collaboration engagement.(Jelinek and Markham 2007; van den Berghe and Guild 2008)

Partnering with a university to develop new technology also exposes the MNC to risks, such as leaking of information through publications, disclosing of technical

information to other industry players and having the technology available to competing MNC. These factors act against the company's ability to appropriate the benefits of the new technology (Teece 1998). To reduce such risks, companies often pursue exclusivity agreements with their university partners in the hope of protecting their investments and increasing the probability of appropriating the benefits anticipated. (van den Berghe and Guild 2008:92-93)

1.2 Issue of Study

There is no clear framework for IPR negotiations to support the establishment of I-U collaboration by balancing parties competing interests. For I-U collaborations within the same western country, several sets of guidelines have been produced to emphasize IPR-issues in R&D collaborations. These have helped to increase awareness, but corporations and universities still report problems when establishing agreements on IP ownership (Lambert 2003; Collins 2006). This lack of clarity increase the time and costs involved in negotiating R&D collaborations and prevent some engagements from being completed. The costs of protracted negotiations can be high, both financially and in tying up staff. When western managers bring the IP negotiation process to China, it is further complicated by, for the manager, more unfamiliar aspects such as different laws, governmental incentives and personal incentives.

1.3 Purpose

The purpose of the thesis is, from a business perspective, to propose a negotiation framework regarding IPR ownership for western managers of manufacturing-engineering-oriented MNCs when negotiating R&D collaboration agreements with top ranked Chinese engineering universities.

1.4 Initiator of the Master Thesis

The scope of this thesis was initiated by Tetra Pak. Tetra Pak is also the sponsor of the thesis, but Tetra Pak has not been involved nor been an object of the study per se. Our supervisor at Tetra Pak has, however, continuously been aligned with our progress and has given us input from his general industrial perspective. Tetra Pak's interest in this thesis is to obtain a general understanding of I-U IPR negotiations in China and thus to have access to a best practice framework for MNCs in similar industries as Tetra Pak.

(For more info about Tetra Pak please visit www.tetrapak.com).

1.5 Delimitations

The master thesis will not comprise any theoretical or analytical studies of Chinese culture and society. Due to limited time and resources available, the study will not include an analysis of the legal environment. The thesis is also limited to the study of five MNCs and two top ranked universities in the Shanghai area. Any generalizations

concerning Chinese universities made will be based on the findings derived from the two participating universities. Further, juridical recommendation and aspects should be verified by lawyers and primary or secondary legal sources.

When we refer to companies or MNCs we refer to well established large MNCs. When I-U collaborations are mentioned in this thesis we refer to Industry-University collaborations regarding research and development.

Since the IPR issues resulting from R&D collaborations mainly concern patents, the discussion is constrained to patent rights, though it may be applicable to other intellectual property rights.

The intention of the proposed legal framework is to support managers of MNCs when negotiating for IPR ownership in a collaboration agreement, prior contract drafting with lawyers, i.e. the framework is not a legal framework per se for lawyers. Further, this study does not discuss the negotiation process itself.

1.6 Target Audience

The target audience for the thesis consists mainly of western MNC managers responsible for R&D activities and strategic planning functions in western MNCs operating in China, and academics with interest in Chinese IPR, R&D and cross-border collaboration. Additionally, other corporations not involved in the manufacturing industry, scholars or students who may find inspiration for further investigation.

1.7 Outline and Disposition

The thesis is divided in different chapters that are described below. Chapter 3 can be pictured as shown in **Figure 1** to grasp the correlation of the chapter's different parts.

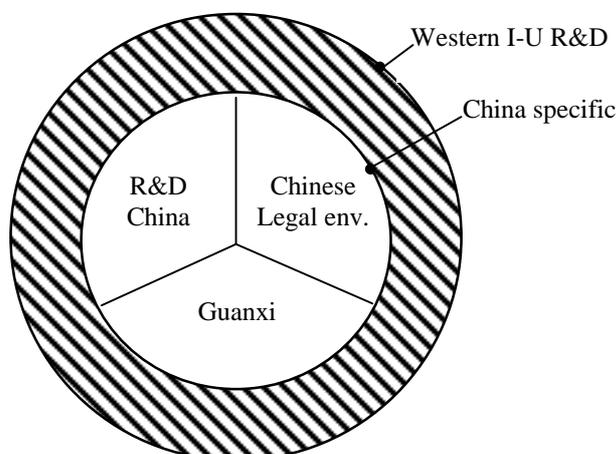


Figure 1: Illustration of the correlation of the different parts of chapter 3

Chapter 2: Methodology

The chapter presents the working process and methodology used in this thesis. The reader will also find an account for the data collection process and a discussion of validity and reliability.

Chapter 3 I-U Collaboration

The purpose of this chapter is to create an understanding and to introduce issues, motivations and challenges when doing industry-university (I-U) collaboration. The first part will start off by presenting I-U R&D collaboration based on secondary research data of Western I-U R&D collaboration. After presenting I-U R&D collaboration in the West it will continue by moving focus on China and related subjects to R&D in China i.e. intellectual property rights, patent law, law enforcement and guanxi

Chapter 4: Theoretical Framework

This chapter will present a theory outline of patent allocation in Western industries regarding collaborative R&D agreements. Further, theory on the importance of trust in contracting and R&D collaboration will be presented.

Chapter 5: Theoretical Contributions to the Framework

In this chapter summarized theoretically important findings regarding IPR negotiation from chapter 3 and chapter 4 are presented. Each finding contributes to the final negotiation framework.

Chapter 6: Empirical Study

Data and material from our empirical study is presented in this chapter.

Chapter 7: Empirical Contribution to the Framework

Chapter 8: The ²(CH)OPSTIC Negotiation Framework

In this chapter the negotiation framework is to be constructed and presented. Each brick in the framework is a result from theoretical and empirical findings, and with an analysis summarizing our final negotiation framework for IPR.

Chapter 8: The ²(CH)OPSTIC Negotiation Framework

In this chapter the negotiation framework is to be constructed and presented. Each brick in the framework is a result from theoretical and empirical findings, and with an analysis summarizing our final negotiation framework for IPR.

Chapter 9: Conclusions

Chapter 10: Epilog

2 Methodology

In this chapter, the research methodology in our thesis work is described. The first part aims to clarify the overall working process employed, while the second part presents the theoretical research methodology and data collection.

2.1 Working Process

The research topic can be too broad and complex to manage in a master thesis. To get an understanding of the topic we want to establish an academic setting based on research publications and case studies as the theoretical foundation. It will increase our ability to narrow down purpose and provide us with the relevant background to make sufficient delimitations. The working process will mainly be iterative but can be broken down to four main areas: *Background screening, Empirical and theoretical findings, Analysis of findings and construction of the framework.*

Background screening:

In the background screening we will screen and investigate both theoretically and empirically. It will be done in close dialog with advisors and people with knowledge of universities, IPR, MNCs and China. All the background screening will be done in an attempt to create a suitable scope for the thesis.

Empirical and theoretical facts findings process:

We will start of by analyzing what needs to be a part of our framework to fulfill the purpose set out for this thesis. The empirical and theoretical facts finding process needs to be built on solid foundation based on interviews of professors, representatives from MNCs with wide knowledge on their Chinese I-U collaborations as well as including also interviews with western law firm representatives. Interviews with university professors and MNCs will be carried out to get a first hand understanding and information from the different parties involved in the negotiation process.

Analytic process and construction of the framework:

The findings of our empirical and theoretical study will be analyzed in detail as these facts form the foundation of our framework.

2.2 Theoretical Research Methodology

When studying negotiation of patent rights, there is a thin border between business perspective and legal perspective that we actively will work hard not to cross. It is important to use a legal methodology to assure that the basic assumption of our negotiation is valid. If this is not valid, our framework will be useless. The optimal way to create such a legal validity would be to go straight to the Chinese law,

however due to limited legal training and knowledge in Chinese legal terminology we will use some primary sources but also mainly secondary sources when working with the legal aspects, in accordance with legal methodology (2009b, 2009a). All of the legal study will all be placed in the first theoretical chapter, even if it from a legal methodology perspective will also include analysis and empirical study. A negotiation is complex and can be studied with different methodological approaches, since we have chosen to approach it from a business perspective the main methodology being used will be based on social science methodology approach.

There are limited studies made within the area of interest for this thesis. We will therefore use induction to avoid the risk of basing our conclusions on wrong assumptions which can be a risk when using deduction (Jacobsen 2002). By using induction, we will start with empirical research, and then find theories explaining our findings. The process will be iterative to make sure that potential wrong assumptions are corrected and the depth and validity of the study continuously develops. Since the aim of the thesis is to deliver a valid framework for MNCs to use, it is important that conclusions are based on as true assumptions as possible. Even though the working process will be iterative and inductive we will start by presenting the theory followed by the empirical findings to make it easier for the reader to follow.

2.3 Data Collection

We will utilize a qualitative method that allows a deeper and more detailed understanding of the scope (Kvale 1997; Jacobsen 2002). Quantitative data is limited, because of the actuality of the subject and the difficulty to quantify. We will study five MNCs and two top ranked universities and in addition to this establish some informal chats with PhD and graduate students as well as with MNC executives. In order to deepen our understanding we will look for MNCs with experience from I-U collaborations and in different negotiation situations to diversify the input to scope. (Eisenhart 1989). When applicable we will use a triangulation approach, merging qualitative and quantitative data, in order to attain a comprehensive view of the scope. (Jick 1979) The triangulation approach will increase validity and reliability which would not be possible if only one method is used. (Jack and Raturi, 2006) One point of concern is the actuality of the scope which we believe will limit the access of quantitative data. When quantitative data is not available we will try to confirm the data using independent sources.

2.3.1 Primary Data – Interviews

The primary data source will be the personal interviews. Most of the interviews will be done face to face but when geographical circumstances prohibited this possibility, phone interviews will be conducted. The aim of personal interviews is to gain a deeper understanding of the situation of the people interviewed and hopefully more detailed answers. (Kvale 1997; Jacobsen 2002) According to Hofstede the Chinese culture makes it difficult to talk about sensitive topics and intermediaries are therefore

preferred.(Hofstede 1991) Thus, we believe it can be beneficial for us to come as a more independent part when approaching both the universities and then MNCs.

In China it is more challenging to get access to adequate information (Ostry 1999) compared to what it can be in western countries. Chinese culture is also considered to be built up on relationship and trust (Guanxi). This fact makes personal relationship more important to get access to relevant information (Luo 2000; Provis 2008; L Wang 2002; I. Y. M. Yeung and Tung 1996).

To build up the trust needed and acquire adequate information we will use our personal and extended network. The personal network will also be used and to bridge the trust of getting access to relevant interviewees. We will make sure that all interviewees and material is anonymous to further make the interviewees comfortable and willing to give honest and non-modified answers. In order to minimize negative external influence on honesty and openness, interviews will be conducted individually when language skills allows it (Kvale 1997; Jacobsen 2002).

We will use semi structured interviews, to cover the topics we are interested in but at the same time give the interviewee the possibility to move on to other topics of interest, e.g. anecdotes and personal reflections (Kvale 1997). To make the interviewee even more comfortable the location of the interview will be chosen by the interviewee (Jacobsen 2002).

2.3.2 Secondary Data – Literature

As literature, we will use books, research reports, and academic publications. Secondary data will be used to build up the theoretical framework, explain and complement primary data. Our main source of finding secondary sources for our thesis will be the database Electronic Library Information Navigator (ELIN), administrated by Lund Universities Libraries.

2.4 Validity and Reliability

Validity and reliability is a challenging topic when dealing with business and management research. To compensate for this uncertainty we have established a critical standpoint to detected possible lack of objectivity from interviewees and from secondary data.

To improve the validity of our findings conclusions will iteratively be communicated and double checked with supervisors and interviewees. The transcriptions and interpretations will be made shortly after the interview to avoid misinterpretations, loss of information and increase the validity and reliability of the study. During all the interviews both authors will be present to further diminish the risk of misinterpretations and context misunderstanding.

To minimize the risk of wrong assumptions the MNC cases will be studied separately and we will put emphasis on analyzing each case based on its unique background.

We are aware of the fact that the different background of the people interviewed, type of industry and position will reflect both their interpretation of our questions as well as influence their answers. In order to minimize the impact we will put emphasis on presenting our scope and the way we comprehend the scope. The fact that we will use semi-structured interviews will further help us by allowing us to investigate topics that we believe will be influenced by our different background and perception.

It is a well-known fact that the transparency in the Chinese society is limited and the Chinese government often is accused of modifying the official data. We will actively search for multiple sources for breaching this challenge. When collected data differs we will try to further validate it by independent sources and if estimations will be necessary, our estimations will be done in collaboration with experts within the field. Also the Chinese cultural aspects of difficulties of talking about sensitive topics will need to be balanced (Hofstede 1991). We believe it will be beneficial for our data validation process that one of the authors has spent longer period of times in China and has several years of experience of working with Chinese culture.

3 I-U Collaboration in China

The purpose of this chapter is to create an understanding and to introduce issues, motivations and challenges when doing industry-university (I-U) collaboration. The first part will start off by presenting I-U R&D collaboration based on secondary research data of western I-U R&D collaboration. After presenting I-U R&D collaboration in the west it will continue by moving focus to China and related subjects to R&D in China i.e. legal environment and guanxi.

3.1 Industry-University R&D Collaboration

Studies show that a business's ability to keep up with technological progress and continuously innovate is critical for its survival and growth (e.g. Collins 2006; Harryson, Kliknaite, and Max von Zedtwitz 2008; Lichtenthale and Ernst 2009). Accordingly to Harryson et.al. 2008 many multinational corporations (MNCs) has reached an inner limit in terms of flexibility and innovation ability due to excessive internal technological development. A consequence of this is that companies which relies entirely on internal technological development are facing a difficult dilemma, which makes it difficult for them to innovate as a result of focusing too much on internal development (Harryson et al. 2008; Guan, Yam, and Mok 2005).

3.1.1 Motivation for MNCs

In order to compete in a competitive global environment with an accelerating trend of technological complexity and shrinking product lives, MNCs finds it necessary to enter R&D collaborations as a solution to excessive internal technological development Harryson et al. (2008). The trend has big implications for universities, which are potentially very attractive partners for R&D collaboration. Universities attract MNCs with their possession of skilled researchers working with cutting-edge technology in international communities that is being constantly refreshed by new intellectuals (Nakamura 2003; Lambert 2003; Heikkinen, Blomqvist, and Hong 2007).

There has been an increased interest and awareness of I-U collaboration between MNCs and universities, and other research institutes as a response to the growing demand for industrial innovation in the global market place (see e.g. Guan, Yam, and Mok 2005; Maximilian von Zedtwitz et al. 2007; Harryson, Kliknaite, and Max von Zedtwitz 2008). MNCs are moving closer to their important markets by moving away from the system in which their R&D was done mainly in their own laboratories, preferably in secret. The trend is now that MNCs are collaborating in new forms with outstanding research institutes in the local markets (Lichtenthale and Ernst 2009; Collins 2006). Local I-U collaboration is often viewed as essential for creating industry standard platforms and technology innovation on which new technology can be developed (van den Berghe and Guild 2008). Their home country is no longer the automatic first choice for their R&D (Lambert 2003).

There can be many different kind of I-U collaboration, a few commonly used types of collaboration are: co-financed research, self-funded research, sponsored research,

commissioned research, consulting services, industrial or co-financed Ph.D. studies, and examination projects.(Oddershede and Krog 2004)

3.1.2 Motivations for University

One of the major differences between MNCs and government entities, such as universities, is their business goal. Universities normally have various goals while MNCs have one major goal – to maximize profit (Tirole 1994). The three main purposes for a university are normally to conduct research, educate students and transfer research results to the public. Consequently, universities motives for collaborating with industry are primarily to raise additional funds for research and to expose students and faculty members to applied technological areas and generate employment openings for the students (Santoro and Chakrabarti 1999). A challenge for the universities is that their goals are normally in a conflict with each other. If a researcher spends time on one of the goals he or she at the same time choose not to focus on any other goals.(Sellenthin 2004).

Western universities are built up by values such as openness, independence and freedom for individual faculty members and the ability to receive and develop novelty and expertise. In the university society researchers' reputation and respect are built up from the ability to publish papers in renowned journals and the contribution to the academic community. Especially novelty researchers are more eager to focus their work on publishing papers. If they manage to get their work published in renowned journals their chances to get a tenured position will increase (MacDonald and Capart 2004). The chances to be appointed professorship is also based on reputation and publications, thus will also increase with a higher ability of publishing in renowned journals. The professorship gives a high employment security and normally brings a good pension plan, which also gives the academic career ladder a financial dimension. An interesting aspect to keep in mind is that in the western academic career ladder commercial accomplishments and patents are generally not regarded as accrediting. (Sellenthin 2004)

Universities funding structure

The trend of base funding for universities is in many western countries stagnating or decreasing makes the universities increasingly dependent on external financing. One funding source which is steadily increasing is the funding from private companies. Between 1987 and 1997 the private industry more than doubled its spending on university funding in Germany. (Sellenthin 2004) Sweden and US show similar development. The US had an immensely growth of funding from private companies between 1970s and 1980s.(Mansfield 1995; Hällsten and Sandström 2002). When the base fund trend is stagnating or negative, researchers needs to find funds of their own, from for example private funding sources.(Sellenthin 2004) Mansfield also notes that researchers in the US have a significant interaction with potential funding partners.(Mansfield 1995)

The increase of external and private funding put higher pressure on the IPR management since the private companies or industrial consortium normally are interested in controlling the IPR of an invention.(Sellenthin 2004)

3.2 R&D Collaboration in China

According to von Zedtwitz et al. there are six major reasons for MNCs to engage in R&D collaboration in China:

- Accessing and developing local markets;
- Accessing local talent and science and technology;
- Cost advantages (in terms of salaries);
- Local production and infrastructure;
- Supporting local business incentives;
- Following customers;

(von Zedtwitz et al. 2007)

However, there should be considerations other than cost-advantages that motivate engagement in R&D collaboration in China: cost compensations for education shortcoming (e.g., in project management, teamwork and English language), high turnover rates are a risk, and will result in additional search and replacement costs. Misunderstanding of expectations and weakness in quality can lead to greater involvement of senior managers in R&D, i.e., micromanagement, which will ultimately reduces R&D performance. Much of the infrastructure, such as computers and real-estate, is just as expensive as it is in developed countries, and hence no cost advantage can be gained in this area. (von Zedtwitz et al. 2007)

3.2.1 R&D Expansion in China

Before the mid 1990s, only a small proportion of R&D expenditure in China was spent by the industry compared to the portion for research institutes and universities. Research institutes and universities had more researchers and greater financial resources than researchers engaged in industry (see Table 1). There has been a lack of direct linkage between industry and university on R&D projects, and according to the study of Guan and Gao, about 85% of R&D projects aimed at industrial production fail to make it to the market-place. (Zhou 2004; Quan 2007)

Along with the Chinese economic development, China has strived for a more market-oriented and high quality research system by implementing a number of policy initiatives e.g. the Chinese government issued a new policy¹ to encourage R&D collaboration with foreign countries and international organizations, and urges the building of diversified international collaboration relationships between Chinese R&D institutes, universities and foreign counterparts (e.g. Wang and Ma 2007). The

¹ The policy “Law on the Progress of Science and Technology of P.R.C” was introduced 1993 with a detailed implementation plan.

policy initiatives started a market reformation and R&D expenditure increased dramatically. As this policy encourages I-U collaboration, the scope of research, knowledge mode and ways to collaborate has greatly expanded (Guan et al. 2005). In a study conducted by (Guan et al. 2005), a large-scale survey² of Chinese industrial enterprises, it was found that the most common model of collaboration, between industry and institutes/universities regarding industrial innovation activities, was to develop R&D results jointly. Other forms include 1) Purchase R&D results directly from universities, 2) Entrust R&D tasks to universities, 3) Establish R&D organizations with universities, 4) Employ technological personnel from universities, 5) Participate in joint national projects (Guan et al. 2005). Collaboration in China includes R&D partnerships both between companies and between companies and various research institutions including university labs and public and private research institutes. Among all types of R&D collaboration, R&D alliance between companies and universities are far more important than collaborations between companies. (Zhou 2004:3-4)

One of the fears that companies have related to collaborative R&D is the leak of the results to the competitors. The number of patents generated from collaboration is still somewhat small and most of the patents are utility model³ and design patents⁴ (Gao and Tisdell 2004). China has developed a national strategy for science and technology activities, which include e.g. strengthening the IPR protection and management, and developing national technical standards in such fields as IT and biotechnology (Fischer & von Zedtwitz 2004).

² A survey of the Chinese manufacturing industries in Beijing was conducted in 1996. More than 2000 companies participated and were asked to answer a questionnaire about their innovation activities in the period between 1993–1995. Questionnaires were sent to 462 state-owned large and medium-sized enterprises (LMEs) and 1750 high-tech enterprises in Beijing, covering all the manufacturing sectors.

³ Utility Model is a patent for smaller technical improvements with a shorter protection period. The requirements for acquiring a utility model are less stringent than for patents and are also cheaper to obtain and maintain.

⁴ Design Patents is a protection for original designs relating to the shape, pattern, color or a combination thereof of an object.

Table 1. Share of national R&D expenditures by sectors

Year	Research institutes (%)	Universities (%)	Enterprises (%)
1987	54	16	30
1990	50	12	27
1993	50	18	23.4
1994	43	15	32
1995	44	14	32
1996	41	13	37
1997	43	12	43
1998	43	10	45
1999	38.5	9.3	49.6
2000	28.8	8.6	60.0
2001	27.7	9.8	60.4
2002	27.3	10.1	61.2
2005	21	10	68

Source: China Science and Technology Statistics Data Book (1987–1999) and China Statistical Yearbook on Science and Technology (2003, 2006).

3.2.2 MNC- Chinese I-U collaboration

Since foreign funded R&D centers is a modern phenomena, Chinese universities has a less structured way to indulge in collaboration with MNCs which makes it difficult for the MNCs to assess the quality of the professors and the universities. Sometimes professors also, unlike in the west, withhold the most talented researchers from company exposure (Harrysson & Kliknaite 2008).

Western MNC are mainly involved in basic research with Chinese universities and not product development. Chinese companies on the other hand are more effective and efficient in its collaboration with universities when it comes to development (Harrysson et al. 2008; Lu, Tsang, and Peng 2008).

Chinese universities have seen a growth in MNCs collaborations since the mid 1990s. The initiatives are also supported by the Chinese government trough different incentive programs. Both the universities and the Chinese government see it as a part of the universities strategy to start collaborations to compete with top-universities in the world. (Collins 2006:17)

3.3 Intellectual Property Rights

Intellectual property right is a collection name of exclusive rights for creations of the human mind, both artistic and commercial. Under intellectual property law, owners are granted certain exclusive intellectual property rights (IPR) to protect the interest of creators by giving them property rights over their intangible assets. (WIPO 2004)

Some of the most frequently used IP laws are:

- Patent law, protecting “technical” inventions such as products and processes
- Copyright law, protecting “artistic” creations such as songs and papers
- Trademark law, protecting “distinguishing” features, such as signs and words

In China there are also several other laws for protection such as: industrial design, utility model, undisclosed information, lay-out design of integrated circuits. (Chien-Hale 2007) (Please note this thesis is delimited to focus on patents)

3.3.1 IP Rights Are Territorial

Intellectual property rights are territorial and that includes patent law. That means that a patent granted in a specific jurisdiction is only valid within that jurisdiction and the law of that jurisdiction is the only law applicable for the patent. This is also known as the principle of territory. The patent is also only enforceable in that jurisdiction. The governing law that grants the rights for a patent is also granting the rights related to the patent, i.e. it defines to what extent it is protected, what remedies that can be used when facing infringement actions. (Cornish and Llewelyn 2007; Blumer 2005).

Most countries, including China, are members of international treaties and conventions which harmonize the IP laws and give a minimum standard of IP protection, such as World Intellectual Property Organizations (WIPO) and Trade Related Aspects of Intellectual Property Rights (TRIPS)⁵. This means e.g. that an initial filing date for a patent application made in one jurisdiction is still reliable when subsequently filing within another jurisdiction with the same or modified application. However, to get granted patent rights in different jurisdiction with essentially the same application it still needs an application in every jurisdiction. This means that patent rights in one country is not valid and protected in another country until an application for the same patent is filed in the preceding country (Chien-Hale 2007).

⁵ TRIPs is the latest and most dominant global agreement, which unifying the member-countries IPR-laws and setting a minimum standard

3.4 Chinese Patent Law⁶

China's first patent law was introduced in year 1985 and covers three distinct subject matters: inventions, utility models, and designs^{7 8}. The Chinese Patent Law was in the beginning strongly favoring government interest of owning patents and other intellectual property rights by regulating the owner rights. The universities consider patents very important not only due to its ability to license and transfer them but also because universities can set up high-tech enterprise and take the patent as an investment for the start up, which gives the universities a great deal of economic interest.(Bing Wang and Ma 2007)

The Chinese Patent Law had its first major review in 1992 where the patent protection was extended and its effectiveness strengthened. However as the Chinese socialist market-economy developed, a second amendment was composed to meet up with the requirements of the economy. The second amendment was also a move towards alignment with TRIPS and a preparation for entering into WTO .(Feng and Liu 2001).

3.4.1 Initial ownership

From the beginning and also during the rule of the amendment in 1992, a service invention⁹ could not be owned by a university or by other State owned entity. The Chinese people as a whole were always the owner of the patents. This in reality meant that the government owned and controlled the patents and had the power to grant State-planned licenses¹⁰ without consulting the university or research institute. Not only the central government had the power of granting the licenses but also the governments of provinces, autonomous regions or municipalities could grant such licenses. (Bing Wang and Ma 2007b; Feng and Liu 2001)

In the second amendment Article 6 is now changed from “the patent shall be held by the entity” to “the entity shall be the patentee”, this means that if a university or research institute is approved a patent it will be the patentee and own that patent. It also means that the university or research institute can transfer or license its patent

⁶ English translation of *The Patent Law* (2000) and *Contract Law* (1999) of the People's Republic of China was provided by *State Intellectual Property Office of The P.R.C* (SIPO) which has been used in this chapter.

⁷ The Chinese Patent Law is now protecting the three different patents accordingly; invention patent for 20 years, utility models 10 years and industrial designs for 10 years.

⁸ For further specification of utility models and design patent please consult the abbreviation list on page 9

⁹ A service invention/creation is by Chinese Patent Law, the second amendment (2001) defined as, an invention made by a person in execution of the tasks of the entity to which he belongs, or made by him by mainly using the material and technical means of the entity is a service invention

¹⁰ A license in the Patent Law intended to solve conflicts between the State plan and patent system implemented in the 1985.

and receive royalties from licensees as they please.(Bing Wang and Ma 2007b; Feng and Liu 2001)

“Article 6. An invention-creation, made by a person in execution of the tasks of the entity to which he belongs, or made by him mainly by using the material and technical means of the entity is a service invention-creation. For a service invention-creation, the right to apply for a patent belongs to the entity. After the application is approved, the entity shall be the patentee.

For a non-service invention-creation, the right to apply for a patent belongs to the inventor or creator. After the application is approved, the inventor or creator shall be the patentee.

In respect of an invention-creation made by a person using the material and technical means of an entity to which he belongs, where the entity and the inventor or creator have entered into a contract in which the right to apply for and own a patent is provided for, such a provision shall apply.”

This revision in article 6 gave the university stronger incentives for expanding the workforce working with applied research and technology development, which the universities also have done. It also gives the scientist, technicians, and entities the possibility to reach agreements in advance which states that their inventions should be treated as non-service inventions. In the agreement it should be stated what kind of compensation the inventor give, return funds or pay exploration fees.(Feng and Liu 2001; Bing Wang and Ma 2007b)

The second amendment also extended the protection of the inventor when it comes to remuneration, before the inventor was only guaranteed an reward, but it was not stated that this should be an financial reward. The change further indicates a development away from the planned economy in China. (Feng and Liu 2001)

Also the patent allocation from joint projects or contract projects is regulated by the Chinese Patent Law, which states:

“For an invention-creation made jointly by two or more entities or individuals, or made by an entity or individual in execution of a commission for research or design given to it or him by another entity, the right to apply for a patent shall belong, unless otherwise agreed upon, to the entity or individual that made or the entity or individual that jointly made the invention creation. After the application is approved, the entity or individual that applied for it shall be patentee.”

However, the second amendment has in Article 14 limited, not removed, the governments ability to grant State-planned licenses. Before provinces, autonomous regions and municipalities under direct control by Central Government all had the power to grant such licenses. Article 14 still provides following:

“For any patent for invention belonging to State-owned enterprises or entities, which is of great significance to national or public interests, the competent departments concerned of the State Council as well as the People’s Governments of provinces, autonomous regions or municipalities directly under the Central government have the power to decide after approval by the State Council, that the patented invention be spread and exploited within the prescribed scope and to allow designated entities to exploit it. The entities that exploit it shall, according to the prescriptions of the State, pay exploitation fees to the patentee.

Any patent for invention belonging to a Chinese individual or an entity under collective ownership, which is of great significance to the interest of the State or to the public interest and is in need of spreading and application, may be treated alike by making reference to the provisions of the preceding paragraph”

3.4.2 Transfer of patent of rights

Regarding commission¹¹ development, The Chinese Contract Law (1999), Article 339 states:

“With respect to inventions and creations achieved in the performance of a commissioned development, the right to apply for a patent belongs to the party that undertakes the research and development, except as otherwise agreed upon by the parties. Where the party that undertakes the research and development is granted a patent right, the commissioning party may exploit the patent for free.

Where the party undertaking the research and development transfers the right to apply for a patent, the commissioning party shall have the right to priority in acquiring such right on equal conditions.”

Its Article 340 states also:

¹¹ Commission project is a kind of research or development project, which is entrusted by an one party (principal) to another party (trustee). Generally principal provides the research funds for a contract project. The trustee accepts contract project and conducts research or development by its manpower, utilizing its equipment and premises.(Bing Wang and Ma 2007b)

“With respect to inventions and creations in cooperative development, the right to apply for a patent shall be jointly owned by the parties who participated in the cooperative development, except as otherwise agreed upon by the parties. Where one party transfers its part of the jointly owned right to apply for a patent, the other party or parties may have the right to priority in acquiring such right on equal conditions.

Where one party to the cooperative development contract declares that it renounces its part of the shared right to apply for patent, the other party may apply for it alone or the other parties may apply for it jointly. Where a patent is granted to the applicant, the party that renounced its right to apply for a patent may exploit the patent for free.

Where one party to a cooperative development contract declares that it renounces its part of the shared right to apply for a patent, the other party may apply for it alone or the other parties may apply for it jointly. Where a patent is granted to the applicant, the party that renounced its right to apply for a patent may exploit the patent for free.

Where one party to a cooperative development contract does not agree to apply for a patent, the other party or parties may not apply for it.”

The above mentioned articles mainly states that if a contract is agreed upon regarding the assignment of rights or the right to file a patent, it will be enforce once its been registered according to article 10, Chinese Patent Law. If there is no contract the patent rights will belong to the R&D party. (Bing Wang and Ma 2007b)

“Article 10. The right to apply for a patent and the patent right may be assigned. Any assignment, by a Chinese entity or individual, of the right to apply for a patent, or of the patent right, to a foreigner must be approved by the competent department concerned of the State Council.

Where the right to apply for a patent or the patent right is assigned, the parties shall conclude a written contract and register it with the patent administration department under the State Council. The patent administration department under the State Council shall announce the registration. The assignment shall take effect as of the date of registration.”

This means that if a contract is not registered it is not valid, yet as soon as it is registered it will come into force.(Feng and Liu 2001)

“Article 126. The parties to a contract involving foreign interests may choose the law applicable to the settlement of their contract disputes, except as otherwise stipulated by law. If the parties to a contract involving foreign interests have not made a choice, the law of the country to which the contract is most closely connected shall be applied. “

If the parties do not state in the contract which law should be governing law, by default the Chinese law will be the governing law if the major part of the contract is related to China.

3.4.3 Choice of Law

When more than one jurisdiction is involved in a constellation, and the substantive laws of those jurisdictions differ, problems can arise when disputes occur. It is uncertain which substantive law is to be governing if there is no enforcing clauses in contracts that select the applicable law. It is therefore necessary to decide which country's court have jurisdiction to hear the case and it is important to determine under which law the dispute can be decided (O'Hara and Ribstein 2000).

The decision on applicable law can be agreed in contracts and the governing law does not have to be one of the laws from the involved jurisdictions, e.g. parties within Chinese and Swedish jurisdiction can agree on using British Contract Law.

3.5 Law Enforcement in China

When talking about legal aspects in China, the concern about law enforcement automatically comes up. Many foreign companies are still worried about the Chinese enforcement and are hesitant about being a part of the Chinese legal system.(Eames et al. 2009) In the Chinese national IP strategy China acknowledge that they have problem with their IP enforcement. China also recognizes the lack of knowledge in IPR. The public awareness of IPR in China is weak compared to many other countries. According to the Chinese government, the knowledge is lagging behind the social and economical demand for beneficial development of the country.(Yan 2008)

Despite or maybe due to the governments IP statement, the legal enforcement is improving (J. La Croix and Eby Konan 2002; Ollier and Qu 2008). China is joining many international collaborations to develop its knowledge and IP practice (the Chair 2008; Ollier and Qu 2008; Yang 2003). However, it can be discussed whether or not it is a part of China's national interest to extend patent protection beyond necessity, i.e. go beyond the protection in the TRIPS Agreement (J. La Croix and Eby Konan 2002; Ollier and Qu 2008).

The difference between developed and developing countries' level of enforcement can be analyzed by using the definition of net exporter and net importer of IPR by Croix et al., where the net exporter is considered to represent the developed countries and net importer the developing countries. From the net importers perspective, IP

protection and payment of royalties only make the products more expensive. IP enforcement destroys potential bridges of technology transfer such as reverse engineering. (Cox and Sepetys 2009) There is an underlining difference in the incentives of net exporter and net importer of IPR which also reflects in the reluctance of enforcement and protecting of IPR (Gruen, Prior, and Bruce 1996).

Perhaps the most important force for enforcement improvement is the domestic force (J. La Croix and Eby Konan 2002; Yang 2003). Foreign companies suffers huge lose of potential income due to counterfeit, however the Chinese firms loose even more. But also in the domestic Chinese market the phenomenon of net exporter versus net importer reoccurs. The wealthier costal regions have more to gain from stronger enforcement then the poorer regions in the inland. (J. La Croix and Eby Konan 2002)

Looking at the Chinese trends in litigation and economic damages, There can be found large inconsistency in the rulings depending on the venue (Ollier and Qu 2008). One controversial case that has been debated is the Chint versus. Schneider case.¹² In this case the French electronic producer, Schneider, was fined with approximately 45 million U.S. dollars in a local Wenzhou court in Zhejiang province for breaching a utility model granted to the Chinese company Chint. Some argue the case is breaking ground for the trend of increasing damage awards and see the advantage of Chinese companies starting to benefit and see the possibilities of IP law and the court systems (Barner and Wegner 2007). On the other hand, there are also those with a more pessimistic point of view. They see the Chint versus Schneider case as an example of local protectionism and stress the fact that the ruling was based on a utility model, which in Chinese IP system is given out without any in-depth evaluation of the invention (Ollier och Qu). From either point of view this specific case can be considered an irregularity in the IP system. More then 90 percent of all IPR damage awards between 2002 and 2008 were awarded under 100,000 U.S. dollars. Another example of the limited damage awards is the fact that in year 2006-2007 the median across all IPR damage awards was approximately 15,000 US dollars. (Cox and Sepetys 2009)

Both US and EU are actively pushing China towards stronger enforcement in the WTO but do also officially expresses their gratitude for the active steps China has taken regarding IPR in recent years. However, US and EU are still very much concerned about the protection and enforcement and still believe China has several severe problems left to solve. (the Chair 2008; Athanasakou 2007; J. La Croix and Eby Konan 2002). For example since China entered the WTO the seized counterfeit items with Chinese origin has been increasing every year in US. At the EU borders the amount of counterfeit goods has been decreasing from 2007 but still 60 % of all the seized items come from China.(the Chair 2008)

Despite the pressure from WTO members put on China regarding its IP enforcement China holds a strong case based on Article 41 in the WTO Agreement. Article 41

¹² Please see Appendix 1 for further background on the Chint vs Schneider case.

states that the efforts put on intellectual property enforcement cannot be required to be higher than on other important areas of law enforcement. China can use its severe problem with other enforcements as an argument in WTO to state that they put enough emphasis on IP enforcement, e.g. the argument of tax collection. In general for a state, tax collection is considered one of the most important enforcements with much higher priority than IP. China uses a comparison of their IP enforcement, which is greater than the tax collection enforcement in China, as an argument that their IP enforcement is adequate. (Chien-Hale 2007)

China's IP law is actually quite modern and in the larger cities increasingly well enforced. However, many counterfeiters are outside those metropolitan areas and in central China, where IP enforcement is still weak. (Cox and Sepetys 2009)

3.6 Chinese Guanxi

Guanxi is widely studied and can be understood as personal relationships or connections that involve trust, commitment and communication between the counterparts (Ramasamy, Goh, and M.C.H. Yeung 2006; Davies Howard et al. 1995; Leung et al. 2005).

In China personal ties are nurtured and people show high loyalty to their personal networks known as guanxi, which are commonly used to get things done in the everyday life. Guanxi therefore plugs into the heart of economic and political life. It is an individual's private social capital that works at a personal level, at the owner's own will (Leung et al. 2005). However, it is also a dynamic process that is based on social interaction. In a broader sense, it can be understood as relationships between organizations and governmental bodies.

For a foreign company it is necessary to build up guanxi in order to gain an insider position in Chinese markets (Davies Howard et al. 1995). It may act as a significant marketing variable and a determinant of success in business negotiations (Leung et al. 2005). Yet, it plays a critical role in knowledge sharing as it has a positive impact on the willingness of a Chinese counterpart to open access to their knowledge base (Ramasamy et al. 2006). It is noted that guanxi also antecedes trust in relationships. It is something that business men has to go through in order to get the business started. A certain level of guanxi must be obtained to become a non-stranger. However, one must realize that building guanxi is a time consuming process. (Heikkinen et al. 2007)

4 Theoretical Framework

This chapter will present a theory outline of patent allocation in Western industries regarding collaborative R&D agreements. Further, theory on the importance of trust in contracting and R&D collaboration will be presented.

“Planning and negotiating a collaborative R&D alliance requires creative thinking based on disciplined structured methodology.” (Slowinski and Sagal 2006a)

4.1 Concepts in Patent Rights Allocation

The value and interest of patent rights can be different for the involved parties in R&D collaboration. The main reason to conflicts and problems in collaborations is misunderstanding of the collaborative parties' different technical and business strategies. This means that several issues concerning alignment of strategies have to be considered before drafting an appropriate agreement regarding patent rights. A profound understanding of the parties' strategy will also be important when it comes to settle patent ownership. Misalignments of strategies need to be acknowledged in an early stage (Slowinski and Sagal 2006a). To avoid unnecessary barriers in the collaboration, all patent ownership questions should be resolved before establishing collaboration (Slowinski and Sagal 2006b; Austin and Fitzgerald 2008). If patent ownership is not resolved on beforehand, it can be both difficult and expensive to solve after an invention is brought forward, e.g. different interests may have occurred or bargaining power may have changed (Lambert 2003).

If the strategies are not understood it will be difficult to agree on how patent should be filed, what should be claimed, who should own it etc. An easy way of understanding the underlying technology and business strategies of the different parties is to discuss “rights to use” (RTU)¹³ of patents instead of the legal aspects such as, initial ownership, license and assignment. Yet the manager still needs to have sound legal astuteness and be well aware of the legal framework surrounding the negotiation. Slowinski et al. have found that if the discussion focuses on initial ownership and legal aspects straight away the discussion will easily get stuck. When RTU, the technical and business strategies are aligned and agreed upon it is much easier for the parties' lawyers to make the adequate legal arrangements. If the legal arrangement is not easily settled it can be seen as a sign of misalignment in the strategies. Aligned strategies does not mean that the strategies need to be the same and aligned under all conditions but they need to be aligned in the circumstances under which the parties will compete in the market and under which circumstances the parties will not cooperate. (Slowinski and Sagal 2006a)

¹³ Important to keep in mind is that this not a legal term, more for managers to avoid a sensitive topic, and be more efficient in the negotiation process. RTU is mainly focusing on the result of the collaboration i.e. Foreground IP but also background IP and the legal framework needs to be taken in to consideration.

An effective negotiation of patent ownership requires understanding of three key concepts: background and foreground intellectual property, boundaries of the collaboration, joint or sole patent ownership

4.1.1 Background and Foreground Rights

When considering intellectual property (IP) in the context of an R&D project, there needs to be a distinction between the foreground and background IP rights. Background IP can be defined as IP developed prior to the collaboration that is owned or can be accessed individually by each part (Binns and Driscoll 1998). Foreground on the other hand is generally less scattered in its definition, it refers to IP created by either party individually or both jointly during the collaboration agreement. When talking about foreground IP it is important to think through the circumstances under which the foreground rights ownership occurs. Who owns background IP that could have impact on the project? Will there be a difference depending who owns the background IP? Will there be a difference depending on who is the legal inventor? These questions are closely linked to joint versus sole ownership described below.

“The project will often involve the use of the background IP of the researching party and, although a product may have been based on ideas and results from the project (which form part of the foreground IP), it may be impossible to exploit that product without access to that party’s background rights. Thus, both foreground and background IP have to be dealt with adequately when negotiating the R&D contract.” (Binns and Driscoll 1998) If this description of background IP is not included in the agreement, there is a risk that the IP may be treated as only foreground IP.

4.1.2 Boundaries of the collaboration

To make sure the collaboration will work smoothly it is essential to have the boundaries well defined. Who should and can do what, how can background IP and foreground IP be used? To be able to make well-defined boundaries the parties need to understand and accept each others different strategies. If the strategies are not clearly understood and respected there will be consciously or unconsciously misinterpretations of the agreement and will lay the foundation for further disagreements and conflicts. (Slowinski and Sagal 2006a)

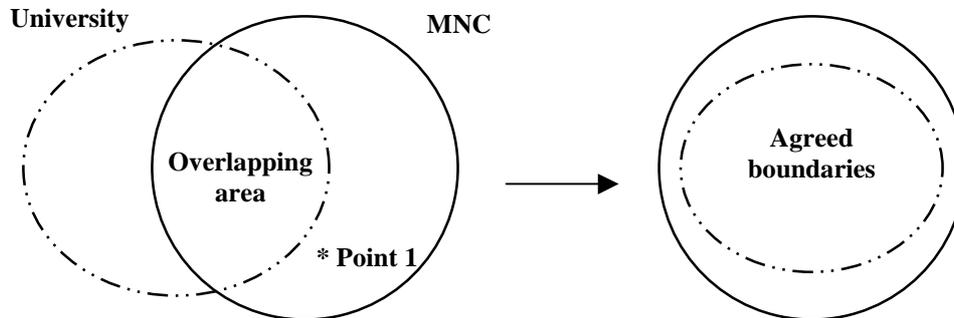


Figure 2: Parties must clearly understand and agree upon the boundaries of the collaboration. Differing view lead to conflict when one university uses MNC’s background patents at Point 1

4.1.3 Joint versus Sole Ownership

Sole ownership refers to that the party who creates an invention will get a privileged situation and hence benefit from the invention contrary the non-inventing party. This does not mean or need to mean that the non-inventing party does not have RTU, it merely means the privileges are different depending on who is the inventing party.

Joint ownership means that parties will get equal rights of the invention and benefit equally, independent of other circumstances such as background IP, legal inventor, funding etc. However, even in a joint ownership the legal inventor will need to be kept track of when the patent law requires it. (Pires de Carvalho 2002)

When talking about joint versus sole ownership it is important to keep in mind the implications of the different choices. The sole ownership for example may affect the collaboration negatively. Since the inventing party will benefit more then the non-inventing part an internal competition might evolve which will reduce the willingness to help the other party in fear of loosing the advantages of being the inventor. (Slowinski and Sagal 2006a) The joint ownership on the other hand can demonstrate more legal challenges (If for example the different parties have different key interest areas which they would like to have covered in a patent claim). In some countries all owners of a patent need to sign a potential lawsuit for prosecuting on infringement, if they do so, how will a potential contra lawsuits affect them? (Slowinski and Sagal 2006a) Other aspects, which need to be handled with care, are each corporation’s responsibility related to patent filing, such as patent maintenance, selection of countries, and enforcement. (Slowinski and Sagal 2006a; Barton and Siebeck 1994)

4.2 Agreement clauses

Barton and Siebeck shows in their study on different aspects that can be included in a contract regarding protection of IP.

A clause with "for research purpose only"

Use a clause with “for research purpose only” when the corporation intends to share its IP for further science studies, but do not like the other party to commercially compete with them in its marketplace or by using its patent. This is most common for non-profit organizations in industrialized countries. However in most cases what research purpose means is not classified but is normally considered to be the phase up till the point of commercialization.

Obligation to share royalties or profits

This clause is used to make sure potential profits and gains of an invention are shared. Yet it is normally impossible to define a reasonable royalty on forehand. If clause is used the common pattern is to negotiate the exact terms at the time when the profits take place. However it is difficult to predict potential bargaining power of the different parties hence arbitration is then normally used if the parties can not settle on their own. (Barton and Siebeck 1994)

Oblige not to file patent

This clause intends to motivate the counterpart not to file for patents. However, depending on country the clause will not make patent per se invalid but will allow for the infringing part to pay damage awards of different kinds can be agreed up on. The reason for using this clause can be many. For example if there is a willingness to make an invention publicly used, but also if the party would like to prevent it being publicly known, which it would be if a patent is filed.

Obligation to grant a license

When an obligation of granting a license is agreed up on, the inventing party is obliged to grant a license to the non-inventing party. Yet the terms under which the license should be granted will need to be agreed up on. This clause can for example be used to loose up the sole ownership and would prevent a non-inventing part from being locked in by the inventing part on its products or research.

Limiting third party access

Confidentiality terms are commonly put in to an agreement. But a good way to make the risk of information leakage lower is to agree upon preventing measurements such as limiting the amount of people having access to the material to be restricted, oblige the other party to physically distance the collaborations research from the rest of the researchers’ research.

Acknowledgements

In an academic context it is especially important with acknowledgement. An acknowledgement clause can be put in to the agreement, to make sure the need of acknowledgement is satisfied. Acknowledgements can concern contribution of technology, materials etc. (Guan et al. 2005)

Obligations to inform before filing patents and publishing

This clause is about obligation of informing before filing patents and publishing. It is normally put into the contract to prevent actions being taken that could damage either of the parties' strategic goals. This information clause may also facilitate the application process if for example the filing part needs information from the non filing part.(Barton and Siebeck 1994; Slowinski and Zerby 2008)

4.3 Balancing Trust and Contract in R&D Collaboration

In general, contracts serve several purposes. Contracts binds the parties to carry out the actions needed to achieve the mutual goals, and enables joint rules for the collaboration to be established. Thus, contracts help in creating and maintaining a long-term relationship between the parties (Frankel, Whipple, and Frayer 1996). The negotiation and preparation of the contracts help the parties to notice issues that might cause problems later on. Contract, in this thesis, refers to a formal, written and binding legal agreement between two competent parties, which creates obligations, whereby one party becomes bound to another to do or omit to do certain acts that are the subject of that contract.

Trust and contracts has been identified both as key issues affecting the effectiveness and success of R&D collaborations (Spekman 1996; Herzog 2001), and as critical success factor for collaboration when comes to meeting agreement goals, mutual understanding and ground rules (Barnes, Pashby, and Gibbons 2002). The parties should invest in building up trust from the very beginning. Contracts may create a common ground and future expectations further generating trust. Understanding the emotional side is the key to successful R&D collaboration. Trust and contracts may both be used as tools to build mutual understanding, adaptations and commitment in R&D collaboration (Davenport, Davies, and Grimes 1998). In some cases, too much trust may be just as bad as too little. For example, friends usually try to avoid conflict in their business dealings, and the decisions made may not be the most efficient or rational. In sum, trust affects both the negotiations and the contract itself in many ways (Cullen Penny-Anne 2000). Informal relations and trust have a major effect on how the contracts are drawn up.

Trust takes considerable time to develop among partners, particularly when there are cultural and mission differences. Parties are more likely to trust other that are socially similar to them, a tendency that has been termed "character-based trust" (Davenport et al. 1998). Corporations and universities are not natural partners: their objectives and activities are different and so are the ways of thinking and doing things. In order to encourage trust, both prior experience of working together and prior experience of collaboration (in the broadest sense) are important factors in the success of university–industry collaboration (Barnes et al. 2002). Furthermore, it is recommended that "new" partners should be introduced through smaller projects, thereby providing the opportunity for trust to develop in a situation where a greater degree of one-to-one contact is possible. Another benefit with smaller projects is that also tend to be lower risk with regard to the likelihood of failure, since they are easier

to manage and potential problems are more easily identified and dealt with (Barnes et al. 2002). Collaboration demands trust, and starting contracting and collaboration is not possible without the presence of some trust. Trust and contracts can be seen as complementary, not alternative, modes of governance, which supplement each other (Blomqvist, Hurmelinna, and Seppänen 2005). Without a complementary trust between the parties the contract is just a formality.

In global markets it is crucial to understand the norms and conditions a company faces on foreign ground. As Doney et al. (1998) wrote, *"The importance and benefits of trust, and the emerging global and multicultural workplace, highlight the need for us to understand how trust develops and the ways national culture impacts the trust building process."*(Doney, Cannon, and Mullen 1998). Trust is one key element in collaboration and business transactions. Trust is especially fragile in cross-cultural trading relationships, because the divergent national cultures affect the involved parties' behavior. The importance of trust and trust-building processes emerge especially when a company has business units in separate countries, which have their own national and various local cultures like the case in China. Building trust is one precondition for starting collaboration, and in order to collaborate effectively in China you need to have personal connections. (Blomqvist et al. 2005)

5 Theoretical Contributions to the Framework

In this chapter summarized theoretically important findings regarding IPR negotiation from chapter 3 and chapter 4 are presented. Each finding contributes to the final negotiation framework. See Figure 3.

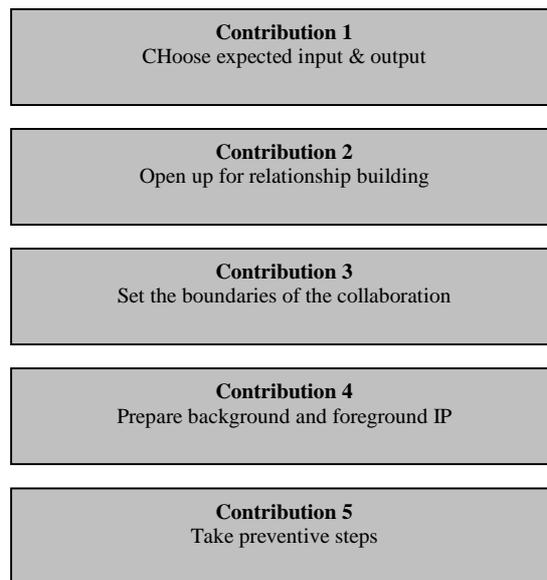


Figure 3: Summarized theoretical contributions to the negotiation framework

5.1 Input & output of the collaboration

MNCs' motives and strategy for collaborating with universities are many as well as for universities thinking of entering collaboration with MNCs. However, there are essential differences in the motives and overall goals, where MNCs are profit oriented and universities are interested in research and publication of research results to the public. Leaking of sensitive project results and information that can e.g. inhibit a patent filing can be a risk for MNCs if not expected input and output of the collaboration project are considered aligned before start collaborating. If an understanding of MNCs and universities strategy is aligned a set of expected input and output results can easily be created that satisfies both parties. Therefore, the first contribution of the negotiation framework will be:

Contribution 1. Choose expected input & output

5.2 Building trust

Collaboration needs trust to create mutual understanding of parties' different way of thinking and doing things. Cultural and social differences take time to bridge, hence parties are more likely to trust other that are socially similar to them i.e. "character-based trust".

Trust is getting more complicated when dealing with China as trust is becoming a broader aspect that also include an increased factor of personal interconnections and relationships that involve trust i.e. Guanxi. Guanxi is well established in China and can be seen as a superior adaptation of trust in China. Guanxi is not only including trust but also personal relationship, commitment and communication. To the contribution to the framework, building up trust and Guanxi in China as an essential foundation and complement to the contract:

Contribution 2. Open up for relationship building

5.3 Boundaries of the collaboration

Agreeing on the boundaries of the collaboration between MNCs and Chinese universities can be difficult. To make sure the collaboration will work smoothly it is essential to have collaborations boundaries well defined to address to question of who should do what and how background IP and foreground IP be used? To be able to make well-defined boundaries the parties need to understand and accept each other's different strategies. If strategies are not clearly understood and respected there will be consciously or unconsciously misinterpretations of the agreement that will lay the foundation for further disagreements and conflicts.

Contribution 3. Set the boundaries of the collaboration

5.4 Background and foreground IP

What different parties are contributing to the collaboration must be considered especially when it comes to IP. When considering IP in the context of an R&D project, it is important to distinguish between the foreground and background IP. When talking about foreground IP it is important to think through the circumstances under which the foreground IP ownership occurs. Who owns background IP that could have impact on the project? Will there be a difference depending who owns the background IP? Will there be a difference if depending on who is the legal inventor? If this description of background IP is not included in the agreement, there is a risk that the IP may be treated as project IP.

The increased interest of collaborating with Chinese universities resulting in that one university can have several collaboration projects with MNCs, in different forms of collaboration. Multiple projects create an environment where background IP easily can cross project borders. The fact that foreign funded R&D collaboration for Chinese universities is a modern phenomenon and therefore has less structured way to

indulge in collaboration, establishing background and foreground IPR is essential to on beforehand agree on ownership of IPR.

Contribution 4. Prepare background and foreground IP

5.5 Confidentiality

Leakage of information before filing patents and publishing can normally be a risk for MNCs. To prevent information leakage in the collaboration parties can discuss confidentiality terms in an agreement.

Difference in information sensitivity and importance of results that can be patented is a concern when collaborating with universities whose purpose is to conduct research and publish results to the academic community. Within the academic community, publishing research results and acknowledgements are important and leakage can therefore easily be an unforeseen problem.

Contribution 5. Take preventive steps

6 Empirical Findings

Data from the empirical study that was conducted in the Shanghai area will be presented here. The study was made on five MNCs having R&D collaboration with Chinese universities and two top-ranked Chinese universities. Additionally, collected data from other companies with relevant inputs is also presented. The original company names are modified to veil their identities and will be presented with the following names: Electronic Ltd, Mechanics Ltd, Plant Ltd, Power Ltd, Tele Ltd, Windpower Ltd, and the universities; University A and University B.

6.1 MNC interest drivers in I-U collaboration

Many multinational corporations (MNCs) have discovered China's capacity and willpower to fulfill government goals and have taken action to take part of the enormous engineering resources and knowledge that China possess and are building up. The companies are aware of the risks they are taken when setting up R&D in China, but also the risk of not entering China with R&D It is a question of "winning the battle of infringement or losing the war". (Sonny Mechanics Ltd 2009; James Plant Ltd 2009).

The motives for collaborating with Chinese universities vary for different companies. Many motives have been recognized and among them are:

- Public relations
- Access to knowledge/know-how
- Access to presumptive employees
- Branding
- Being a good corporate citizen in China
- Influential in the governmental and national policy
- Influence the view of MNC's strategic interests
- Getting access to test facilities

(Han Electronic Ltd 2009; Kent Power Ltd 2009; Wolfgang Windpower Ltd 2009; Sonny Mechanics Ltd 2009; Tim Tele Ltd 2009)

All studied companies are reporting that they find many other benefits other than the result outputs from a R&D project when collaborating with universities in China. Tele Ltd view on university collaboration in R&D is more like a "vehicle" for developing new technology (Tim Tele Ltd 2009). Electronic Ltd share a similarly view with having R&D of new technology, but not within their core business, in China and are working with both top-ten ranked Chinese universities as well as local companies (Han Electronic Ltd 2009; Daniel Windpower Ltd 2009). The companies are mainly into basic research and limited product development just in fields distant from core

business, defining it as somewhere between basic research and applied research but not to the extent of product development. (Kent Power Ltd 2009; Tim Tele Ltd 2009; Sonny Mechanics Ltd 2009; Wolfgang Windpower Ltd 2009).

The Chinese universities have great ambitions to get ranked as world-class university and compete with top universities around the world, and many of the top ten Chinese universities' faculties are no doubt already there (Sonny Mechanics Ltd 2009; George University A 2009). Technology leader as Windpower Ltd and Mechanics Ltd believe working with the top universities today gives the MNCs a first mover advantage by building up a reputation and brand awareness. Tele Ltd and Mechanics Ltd. benefit from e.g. staying active, sponsoring equipment and creating brand awareness at the universities' campuses and hoping to attract talented students. (Tim Tele Ltd 2009; Daniel Windpower Ltd 2009; Sonny Mechanics Ltd 2009) In terms of R&D, Windpower Ltd says that they want to explore the diversities of R&D agendas in China (Wolfgang Windpower Ltd 2009). The companies benefit also by being influenced of what universities are doing, what they are thinking, and how they perceive the companies in the academia in China. (Tim Tele Ltd 2009; Daniel Windpower Ltd 2009)

MNCs are aware of the actuality, and importance, of the government's ambitions and policy programs and consequently, by enter collaborations with universities and influential professors and researchers to influence in the political understanding and developmental aspirations of the Chinese industry (Wolfgang Windpower Ltd 2009). Tim at Tele Ltd expresses the same thoughts:

“... the universities and specifically the professors, they are influential in the governmental of the national policy making process [...] in terms of decisions of new technologies. So through our university collaborations we actually have access to some of the influential professors and this maybe let us understand what they are thinking and what part of the government is thinking though them, and also for us to influence their view in line with their sort of strategic interests.” (Tim Tele Ltd 2009)

The majority of the top universities in China have so called State Key Labs (SKL) that is appointed by the government to be the best in China in its field. They possess high-class lab facilities and equipment and are very influential with in the government. The departments with these laboratories are highly ranked by companies because they have more international collaboration experience, are easier to approach and are very knowledgeable in its fields. However it does not mean that the companies only collaborate with these labs or universities with such labs (Kent Power Ltd 2009; Sonny Mechanics Ltd 2009; Tim Tele Ltd 2009).

Found advantages for a MNC to collaborate with SKL:

- More international experience

- SKL have better understanding of MNCs interests
- Normally more know-who
- Access to influence governmental decisions
- Ability to use top labs
- Get a “Chinese certification” accepted by the Chinese market
- Make it easier to assess the quality of the professor
- Reduce the risk of conflict due to stronger awareness of its reputation

Disadvantages

- Popular collaboration partners
- Limited need of funding
- Stronger negotiation part
- Strong support in the Chinese court system

(Tim Tele Ltd 2009; Sonny Mechanics Ltd 2009; Han Electronic Ltd 2009).

The studied MNCs uses a 100 % company funded R&D collaboration to assert the IPR ownership except Tele Ltd. Mechanics Ltd says that, when doing partly funded research then one will have the question who will own the rights of the results and starting doing this, things are getting more complicated (Sonny Mechanics Ltd 2009). Normally, the companies initiate the projects and provide all funding. The reason and a part of the motivation for this is that the companies do not want a complex IP ownership structure and want to be able to justify why they want ownership of all IP (John Power Ltd 2009a). When Power Ltd collaborates with lower ranked universities, which depends on the level of prestigious of the university, there can be a financial transaction and all IP rights will belong to Power Ltd. Universities that are more prestigious are well funded by the government, which decreases their interest of company funding and decrease the MNCs ability to use funding as a bargain power when negotiating IP. In these cases, the universities are not interested in the additional funding, but the IPR and making use of the knowledge and the well-known brand of the MNC. (John Power Ltd 2009b; Kent Power Ltd 2009). When IP ownership is not a requirement, MNCs normally do not supply 100 % funding (Han Electronic Ltd 2009).

Concerning the settling of governing law and dispute resolution, MNCs normally prefer to use a law with longer history of conflict resolution than the Chinese law. To be able to choose non-Chinese law as governing law, one of the parties needs to be a legal entity from outside of China. In addition, since China is a part of the New York convention the verdict will be valid for enforcement in China (Karin & Qun Legal B 2009; John Power Ltd 2009b; Ulrich Legal A 2009). Regarding the dispute resolution, some MNCs choose to have it in arbitral tribunals in Shanghai or Beijing and state that they are very competent. (John Power Ltd 2009b; Han Electronic Ltd 2009)

6.2 Chinese University Drivers in I-U Collaborations

University Level

Universities are positive to I-U collaborations (Gui University A 2009; Edward University A 2009). How the universities expect the professors to conduct research and collaborate with industry depends on which field the professors are active in, some fields and departments are considered to have higher requirements of collaborative focus than others (Edward University A 2009; Gui University A 2009).

The university ranking is very important for universities in China. There are several different rankings of universities and are based on different achievements. An important influential factor for all rankings is the number of papers published (Edward University A 2009; Gui University A 2009). The government does not have any control mechanism or a minimum amount of papers that should be published but the amount will affect the ranking. The universities' patents are also considered important but there is no specific expected amount of patents to be filed. Even though patents are important for the university there are no financial incentives for the researcher who is filing for patents or utility models (Gui University A 2009).

Chinese engineering universities are using four factors to evaluate the research result: SCI, EI, patents and normal papers. Same factors are also the most frequently used in measuring the competitiveness of the universities and its ranking. Hence these factors are the main factors used as control and measurement instrument by the universities. The importance of different factors is ranked as follow:

1. SCI, Science Index , a worldwide spread American index ranking the worlds journals on their impact factor
2. EI, Engineering Index, a worldwide European ranking general engineering and covers specific engineering and applied science fields
3. Patent
4. Normal paper, a paper normally published in Chinese in a Chinese journal

Both SCI and EI are global citation indexes and are very important in China (Gui University A 2009). Engineering papers normally falls under the EI and science papers under SCI.(George University A 2009; Gui University A 2009; Gong University B 2009). Papers produced by a university and are published in any of the journals watched by the indices; strengthen the university's reputation in an evaluation.

Department Level

The success of a department very much depends on the personal drive and potential of the head of the department. If the department head can show strong research results and financial independence it gives the professor more independence within the university. (George University A 2009; Edward University A 2009) In addition, the

departments' international interaction and collaboration will give the department credit and recognition from university management.(George University A 2009)

To build an approved SKL, the university firstly should choose its strongest subjects/majors and assess its possibility to get the approval compared with other universities. The government approves the best one of the applications, and lets it build a SKL. The SKL is normally built on their strong subject instead of the whole department. It is considered an honor to be appointed a SKL; subjects strive for the SKL-status. Every four or five years the government will evaluate all the labs in all the universities and rank the top ones. To be able to receive the nomination you need to publish more papers, have more professors, improve the education, and have more funding than the current SKL. The funding from the government is the one that is taken in to consideration in the evaluation process. The difference in importance of the funds is as follows.

1. National funds
2. Well known companies, usually not Chinese companies
3. Normally collaboration funds, normally more product development focused

The way to get more national funds is to apply for more national funds and publish more papers on these topics. Even if a laboratory would receive a lot of funding from a multinational company, which would give them a higher overall funding than the SKL, it is not guaranteed that the lab will move since funding is only one part of the evaluation process. Nevertheless it will benefit the lab, since if you have more funding you will have more professors, more professors brings more graduate students and more papers.(Gui University A 2009; George University A 2009; Gong University B 2009)

Researcher, Professor and Students Level

The motivation factor for the professor to collaborate with companies is financial incentives, both privately and for the department (Gui University A 2009; Edward University A 2009; George University A 2009). The professors at the Chinese universities strive to earn more money and publish more papers. There are two different ways of becoming a renowned professor, earn more money and enter in to I-U collaboration agreements or publish more papers. From the university perspective both ways are just as good. (Gui University A 2009)

The universities evaluate the professors on their ability to find funding. All funding is taken into consideration no matter if it is public or private funding.(Edward University A 2009; Gui University A 2009) The tutorship is a motivating way for the associate professors and full professors to feel appreciated. Both for professors and associate professors are motivated and to have its own group of PhDs/masters students. (George University A 2009)

Chinese universities are very hierarchic. The professors are controlling a lot more than for example in Sweden, and the PhD-students are more of student and a support function to the professor than in for example in Sweden (Edward University A 2009). Furthermore, in China the master and PhD-students form a much closer relation to the research team than in for example in Sweden, and I-U exposure for students and masters student is normally limited. The only exposure PhD-students get is if they are involved in projects that the professor has in collaboration with companies. The same thing goes for masters students. The involvement of private companies is not as developed as in western countries. When either researcher independent of seniority gets the opportunity to apply for patents, they will do it. Patents are considered a merit and are stated when applying for new positions.(Edward University A 2009)

Students who are motivated wants to be busy and learn a lot will choose a professor with a big lab (e.g. State Key Lab) and a large research force(Gui University A 2009). One problem not only related to China is that theoretical research is faster than experimental research which is reflected in what kind of research PhD-students would like to do. Yet in China, the PhDs have an even stronger urge to publish papers more then they do in other countries (Edward University A 2009). A Chinese PhD who succeeds well can be offered a successful academic career that also gives him/her a finical secured future. Consequently, this makes the Chinese PhD prepare to take more measures to reach results than e.g. a Swedish PhD with much lower financial risk.

Every paper published in the indexes (SCI and EI) is checked at the end of each year, after which the researchers get a bonus depending on who many papers they have published and where (Edward University A 2009; Gui University A 2009; George University A 2009). When it comes to PhD-Students and masters students, the bonus will be paid to the tutor who decides how the money will be distributed, normally most of the bonuses goes back to the students yet it is possible for the tutor not to forward anything. A financial incentive is a good incentive that works well in China (George University A 2009). Students in China have tight budgets roughly 1,000 RMB per month (George University A 2009) and the bonus for a paper depends on where it is published but receiving a bonus of 6,000 RMB for a publication in a well-known journal is not unusual. (George University A 2009; Gui University A 2009)

6.2.1 Financial Incentives

China's funding system is different from western countries like e.g. Sweden. At Chinese universities, if you are a preminent researcher money is not a problem unlike for example in Sweden where funding often is a challenge also for strong researchers (Edward University A 2009). In China there are two kinds of funding, vertical funding and horizontal funding. In the vertical, funding comes from the government or different research funds and is normally very strictly regulated. The horizontal funding comes from private companies and is normally a bit less strict regulated and can cover overhead cost such as PhD salaries and office supplies that often are neglected in China. Theoretically, the vertical and horizontal funds are

supposed to be the same kind of funds but in practice the private funds are more freely managed. (George University A 2009). From the universities side there is no major difference where the money comes from; it is more a matter of the size of the money pile that matters, the bigger the better. (Edward University A 2009; Gui University A 2009; Gong University B 2009)

The professor does not have to publish papers. Whether professors need or do not need to publish papers depends on the circumstances and who is funding. Governmental funding is usually used for research and requires the professors to publish papers. Funding from the industry on the other hand is normally tied to product design and development. Nonetheless this also depends on the circumstances, it does not necessarily mean that a professor with a lot of private funding is less researched focused and vice versa. (Gui University A 2009)

The salary of a professor is divided into three parts.

- Basic salary
- Amount of projects
- Amount of lectures

The most important of the three are the projects, for most departments. The importance of the different project is ranked in the same way as the funding. Most important are the projects initiated by the national funds, secondly the famous companies such as fortune 500 companies, thirdly the “normal” collaborations with local Chinese companies.(Edward University A 2009; Gui University A 2009)

The size of the projects can differ a lot, from smaller projects around a couple of 100,000 RMB with 1-2 researchers involved up to larger projects with 5 or more researchers and covering more than 1 million RMB. The projects from I-U collaborations more often than not consist of more applied research such as product development. Today the universities mainly enter in collaborations with local Chinese companies however the international collaborations are becoming more frequent. (Edward University A 2009; Gui University A 2009)

It is important for the university to have partners in frontline research. Collaborations with strong trademarks are normally also promoted within the university and externally. In such cases the company does not always have to cover all the expenses for a research project and can for example still demand all the IPR. However, if the project is not fully funded by the company there may be expectations from the university side that the next one will be fully funded. (George University A 2009)

6.3 Professors' thoughts on R&D Collaborative Agreements

Background to the negotiation of the agreement

When initiating collaboration it is important to address the right person to get the project moving. If a MNC intends to start collaborating with a university, the most

efficient way is normally to start by contacting head of the department. The head of the department is the highest level you need to go for the initial contact. Yet in larger projects it can be in the interest of both the department and MNC to have a closer alignment with university management. In smaller projects and in departments where professors and associate professors are more independent it can be sufficient just to address them directly. (Gui University A 2009; George University A 2009)

The speaking part from the university side concerning negotiation, and potential conflict solving is the project owner, which can be a professor or an associated professor. Yet the agreement needs to be brought pass the relevant university management levels but this is done by the project owner and the project owner is also the one who makes the recommendation to the university. It is very rare that the university do not approve an agreement. Hence, in practice the project owner is the part with negotiation power (George University A 2009; Gui University A 2009; Gong University B 2009).

It is easier for both the university and the MNC if the project owner is a person who has previous experience from international collaborations. It will ease the understanding of the parties' different interest and will lower the language and cultural barriers (Gui University A 2009; Gong University B 2009; George University A 2009). Nevertheless, the amount of professors in China with experience from abroad is steadily increasing. At the department of Professor A, roughly 20% of the professors had experience from outside of China. (Edward University A 2009)

Contract aspects

The universities normally have a standard agreement template that they use when collaborating with companies. The universities also have their own lawyers to help with the contract but since they are not contract specialists, they normally take help from outside lawyers when drafting the contract. The in-house lawyer at the university is responsible for the contract and controlling the risk, however the lawyer assesses the risk by asking the professor if the proposed project is manageable. (Gui University A 2009)

Contracts can be project specific or more of a framework character. For example, contract of framework character can run for several years and then the exact research scopes are renegotiated every year (George University A 2009). If one deliverable is not reached the university and the company normally have a dialog about it the reason for this. Professor C sees three alternative solutions: stop collaborating and return funding, stop collaborating and return back parts of the funding or continue the research (Gui University A 2009).

Intellectual property rights

The opinion about ownership of a potential patent is differing, but all professors agree on that it depends on situation and the IP ownership is 100% a question of negotiation. (Edward University A 2009; George University A 2009; Gui University

A 2009; Gong University B 2009; Rui University B 2009). The universities have neither direct interest in or have any regulation stating that IP ownership is necessary. However, some professors say there is a correlation between the amount of funding and IP ownership, yet it is not related to whether or not the funding is covering the research expenses (Gui University A 2009; Rui University B 2009).

Concerning remuneration for the inventor of a potential patent in Chinese I-U collaborations there is no standard way. Many times it is considered to be a part of the project to deliver patents and then also considered a part of the agreement, yet the universities have resources to both fully and partly fund potential patents if it would be needed. (Gui University A 2009; George University A 2009).

Confidentiality

Concerning confidentiality it is usually only the professor and the students involved in the project who are the ones who know about the project. The university knows that there is an agreement signed but they do not know about the technical parts within the agreement. The period of confidentiality is a question of negotiation, it can be from a few months to unlimited years from the date the agreement is signed. In practice there is also a spread between the different department, and professor's view. This is an area of interest conflict since the research focused professors need to get there work published. One professor go as far as stating if it is not possible to publish, it will not be possible with collaboration.

Conflicts

Conflicts between top-universities and MNCs are close to non-existing, regarding confidentiality or any other conflict. (Edward University A 2009; George University A 2009; Gui University A 2009) At the universities where disputes between university and industry have occurred, they have been confined to local companies – not MNCs. (Gui University A 2009) In a conflict, the project owner will represent the university and the conflict is normally settled in court or with arbitration. The arbitral tribunal is then composed by representatives of the Chinese local government, which local government is less important from the university perspective. E.g., a dispute in Zhejiang can easily be settled in an arbitration tribunal in Shanghai. It is usually preferred by the university, and sometimes a requirement, to have the dispute resolution in China. In theory, it is acceptable to have a dispute settled abroad, but in practice it is difficult because most professors in China are not familiar with the law and feel the Chinese law is their law.(Gui University A 2009; George University A 2009)

7 Empirical Contribution to the Framework

From the empirical data, three complementing and important contributions to the negotiation framework have been identified and are summarized and presented in this chapter. The contributions are empirical aspects concerning IP negotiation in excess of the theoretical findings in chapter 3. See Figure 4.

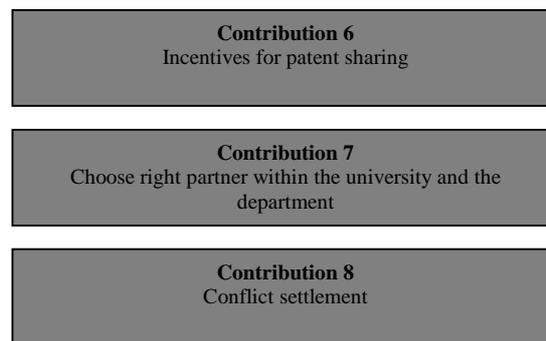


Figure 4: Empirical contributions to the negotiation framework

7.1 Inventors reward

Remuneration for the inventor of a potential patent in I-U R&D collaborations is not taken for granted in Chinese academics. Many times it is considered a part of the project to deliver patents and then considered a part of the agreement. Moreover, as financial incentives are strong motivating factor for professors and PhD-students to collaborate with MNCs, patent remuneration can improve the motivation.

Contribution 6: Incentives for patent sharing

7.2 Negotiation partner

Finding the right negotiation partner for collaboration with the university/department and discussing IPR is determining the success of a mutual agreement. A person from the university with experience from previous international collaboration will ease the negotiation and lowering the barriers for understanding of the parties' different interest.

Contribution 7: Choose the right collaboration and negotiation partner within the university and the department

7.3 Conflict settlement

Conflicts and disputes between Chinese universities and companies are close to non-existent. However, there have been conflicts between local Chinese company and

universities. Disputes can be settled abroad but one difficulty is that most professors in China are not familiar with law and regulation outside of China and feel more comfortable with Chinese law.

Contribution 8: Conflict settlement

8 The ²(CH)OPSTIC Framework

In this chapter, according to the purpose, the negotiation framework is constructed by analyzing the eight contributions found in earlier chapters. The analysis results in eight “bricks” constituting the final negotiation framework.

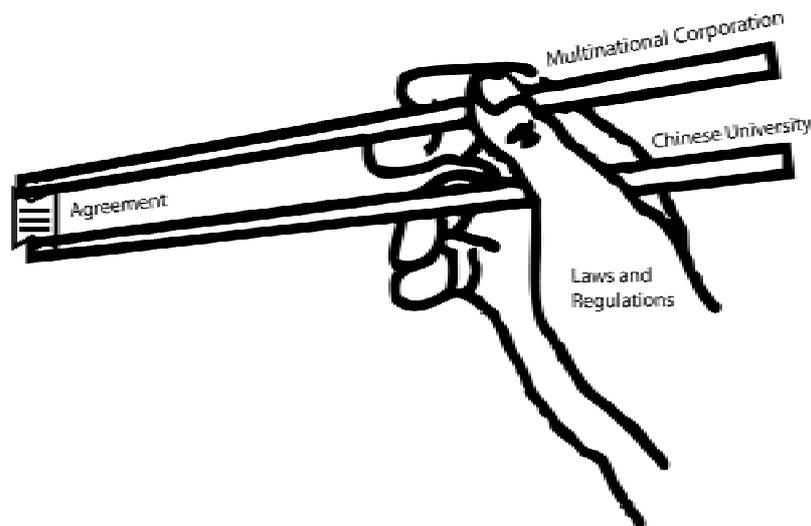


Figure 5: Symbolic illustration of the ²(CH)OPSTIC-Framework, where one stick represents a MNC and the other a Chinese university bound to collaboration agreement by laws and regulations

8.1 Building the Framework

Findings from the preceding chapters are in total eight contributions, they are:

1. Choose expected input & output
2. Choose the right collaboration and negotiation partner within the university and the department
3. Open up for relationship building
4. Prepare for background and foreground IPR
5. Settle the boundaries of the collaboration
6. Take preventive steps
7. Incentives for patent sharing
8. Conflict settlement

The different contributions are important findings regarding negotiation summarized from the theoretical respective empirical data. Each contribution is analyzed with additional data from the empirical or theoretical study and is named a “brick”, which construct the negotiation framework.

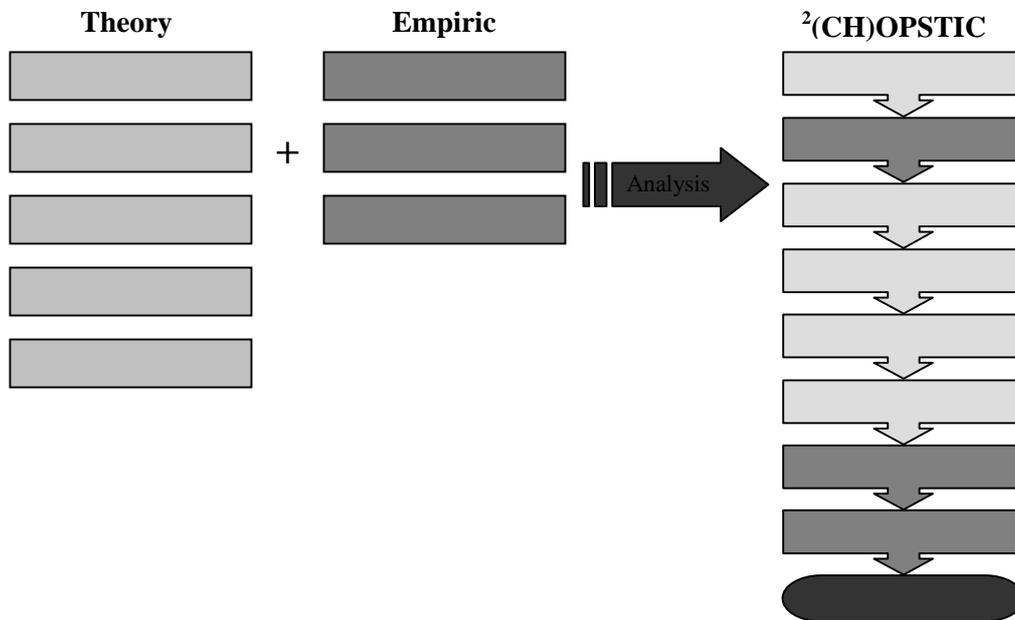


Figure 6: Illustration showing the process of building the negotiation framework from the theoretical and empirical contributions to the constituting “bricks” of the negotiation framework.

8.1.1 Brick 1. CHoose expected input & output (I/O)

MNCs’ motives and strategy for collaborating with universities are many and so are the universities’ when entering I-U collaboration. From the empirical and the theoretical study, it can be concluded that MNCs’ and universities’ motives and strategies differs. An essential difference is that MNCs’ business goals are more profit oriented compared to universities. Furthermore, universities are getting stronger financially and top ranked universities in China have good reputation, possess highly influential professors and researchers, which creates a complexity of different levels of motives.

The importance to clear-out MNCs’ motives and strategy with consideration to universities’ motives and strategy lays a foundation for successful IPR negotiation and collaboration. In addition, setting well-defined expected I/O prior collaboration will lower the risk of leaking sensitive project results and information for MNCs.

In practice, MNCs needs to decide how to prioritize different motives. If the main motive or the underlying motive is to collaborate for branding purpose, to influence government policy or public relations probably the IP ownership is not important. But if more company specific product-related R&D is in focus or motives e.g. to get

access to expertise and know-how, expected I/O is of great importance with an increasing level of risk. Consequently, none core technology related information should be in consideration when establish expected I/O.

Example 1, Paint Mixer (PM) Ltd is a large and well-established MNC whose main goal for collaboration is to bring out a concept for a new product to the Chinese market that complements its core business, by coming up with a new concept suitable for the Chinese market, and give PM a low cost alternative. Hence, PM is expecting a draft of a low cost paint shaker coming out of the collaboration. PM is not interested in sharing its core competence but has sent out a few criteria's, such as cost of production and quality, which needs to be filed for the draft to be considered valid, which they have chosen to develop without sharing to much of their knowledge about quality measurement. PM has a requirement of non-disclosure of information and potential patentable inventions will not be shared with the public or anyone else.

PM are not giving away any core competence and in this case do not want to share the findings of the collaboration with anyone and PM needs to realize the limited theoretical value of the development. From university perspective the interest in this project would be strictly for horizontal funding, and also to a limited extent exposure to the private industry. It will not give the professor or the department any possibility to publish frontier research or and hence it will not contribute to their academic carrier, but they will be given both exposure to the students, private companies and practical product development training.

Example 2, PM also has other challenges and wants the help from external R&D to develop. The rubber mix they have in their damping construction needs to be changed every second year. The rubber today has some specific characteristics, which are highly appreciated and boost the lifetime of the rest of the machine that PM really would like to maintain. Even though PM is a large and well established MNC it does not have its core competence or R&D resources focusing on rubber material development. It is something that would benefit PM but also other industries such as shoe industry, marine industry and other industries which pushes the limits of the rubber performance. PM's expected deliverable is a development of rubber performance, when it comes to exhaustion. PM believe the value will benefit the society in general and do not see a unique competitive advantage in the findings. The research project PM is interested in is costly and is in the interest of other industries and the government. Hence PM is only interested in supplying

In this case the development falls closer into the scope of the university, since it will be more related to the research frontier of material science and the researcher, which also will increase the probability of finding something unique which could be published some of the more well-known journals. Hence compiling with two out of three goals of the university, conducting frontier research and share it to the public.

8.1.2 Brick 2: Choose right partner within the university and the department

Choosing the right partner for negotiating collaboration is imperative for a successful negotiation and collaboration. From the MNCs' perspective it is beneficial if the speaking part from the university and the collaboration's project owner has experience from working with MNCs to breach potential communication barriers and understand each others expectations and agreed deliverables i.e. I/O of the collaboration. The expected I/O frames the MNC's motives for collaborating with a certain university and sets the target for a negotiation partner matching those motives. Depending on motives, there will be different suitable partners from the university to negotiate collaboration. Finding a partner with matching motives facilitate the negotiation process.

The Chinese universities are reflecting China's hierarchy management structure and choosing partner from right hierarchy level can be a delicate line to balance. Natural project owner and negotiation partner from the universities are usually a professor whose level of influence on decision makers within the university can vary. If a professor is well known and has a strong reputation within the university, the negotiation process and alignment of the project will go faster and smoother since the professor can take more decisions without going through different layers of hierarchy. However, well-known and recognized professors has stronger bargain power and have no problem raising funds which gives them other incentives than financial when negotiating e.g. IP ownership. Recognized professors are also attracting bright students and hence it is important to not only evaluate the professors by person but also the quality of the professors' research team.

When dealing with hierarchy at a Chinese university it is important to keep in mind that a professor would not approach and have the negotiation dialog with a "mere" company researcher. To get access and start up a successful collaboration it is important for MNCs to have the senior management performing the dialog with the professor.

For example if the main motive is to get influence on the governmental and national policy makers a good way to find the most influential professors is to build up relationships with knowledgeable parties within MOST who can tell who must normally consult when they discuss about China's science and technology future. Having a project owner within the SKL is beneficial when the motive is to get access to test facilities since a SKL is appointed for being the best laboratory in China. In general the head of the different SKL are very well considered, since they are pointed by the government to be the best within their field. If MNCs are not as famous and/or the projects are small and mismatching the professors research field, it can be difficult to get access to a head of a SKL. If a project is small it can be beneficial and sufficient to have an associate professor as project owner then MNC can have a more direct dialog with the researcher who is doing the work. A SKL normally has several different professor connected to the lab, yet there are also other professors who are

influential. SKL professors are also possessing bright students and research team. However when the main motive is more applied research our study show a bit of ambiguity. The project owner can just as well, and sometimes even preferred, be less famous which are easier to access and has more time. Professors with motives to find real-world problems to apply their research and letting their students to get in touch with potential employers are much easier to negotiate with.

In *example 1*, PM preferably finds a project owner within the university which is used to and motivated by working with product development, and practical engineering research, it is preferably not one of the most theoretically focused. The professors should also be more motivated by funding and the contact with private companies than by academic results, such as publications and developing the research field per se. It will be helpful and put the MNC in a stronger negotiation position, since PM considers 100% exclusive IPR ownership is necessary. PM needs to consider the project owners other engagements needed to taken into consideration that the Chinese companies normally have easier to develop good product development relationships with universities than western MNCs. The project owner may already have established collaboration with PM's local competitor without PM knowing about it. If so will it benefit PM by bringing good knowledge into its work, or will it increase the risk of leakage of information.

In *example 2*, PM is also dependent of the skills of the professor, but not as dependent of the negotiation position since PM is not fully funding the project or request 100% IPR ownership, rather just worldwide free access to license and maybe sublicense the invention and patent.

In both examples, it is beneficial for the MNC to align with the top management at the university yet this is normally more smoothly done trough the network of the project owner and since PM is not a Fortune 500 company they will also need to promote themselves to successful build up the relationship.

8.1.3 Brick 3. Open up for relationship building

In China trust is getting more complicated when dealing with China as trust is becoming a broader aspect that also include an increased factor of personal relationships and connections that involve trust i.e. guanxi. Guanxi is well established in China and can be seen as a superior adaptation of trust in China. Guanxi is not only including trust but also personal relationship, commitment and communication.

Independent of the goal of the collaboration, to build guanxi is a major part of the Chinese business life, and can easily be underestimated and so also when it comes to university collaborations, it is important to keep in mind that building trust takes time. A company preferably starts by doing smaller projects to test their collaboration partner and also to evaluate the project owner and lower the financial risk. It is also a good way of slowly building up trust and guanxi. However one challenge with this is that it might limit the company's access to the head of a SKL especially if the

company is not well-known on forehand. For the motive of getting influence, a closer dialog with the head of the department is preferred. To get the attention of the head of the department requires larger projects consisting of larger funding. It also requires even more involvement and relationship building from senior management. The head of the SKL are well-regarded researchers they also put more emphasis on doing frontier research and publish papers in well-known journals and they put more pressure on the MNC when negotiating.

Yet the most important thing for the MNC is to build up trust with the project owner and people useful to him/her. This should be done first to ease the process, after the project is established and negotiated. After which the MNC beneficially also put emphasis on getting to know university top management to make sure they also are aware and aligned with the collaboration.

In both *example 1* and 2, PM should spend time and money on building up trust and guanxi.

8.1.4 Brick 4. Prepare for background and foreground IPR

The increased interest of collaborating with Chinese universities resulting in that one university can have several collaboration projects with MNCs, in different forms of collaboration models. Multiple projects create an environment where background IP easily can cross project borders. The fact that foreign funded R&D for Chinese universities is a modern phenomenon the way it is structured can in many cases be limited, yet regarding the establishment of background and foreground IPR is essential to on beforehand determent ownership of all IPR.

The majority of the MNC prefer to own all foreground IP even though most of the time they have little or no belief in that a new invention valid to patent will be made. Universities in this study on the other hand do at the moment not have any official requirement for IP ownership. Patent is still ranked very low in their evaluation of research and recognition. But governmental incentives program have been started and through our interviews with MNCs we can see that the trend is that the university interest for IP ownership is increasing in China. This indicates that the request for IP might increase in the Shanghai area as well. Important aspects to take into consideration will be; Does the collaboration need any access to background IP owned by any of the parts? How will this be dealt with? If foreground IP is agreed to belong to the MNC should the university have the ability to license it for further studies? All these questions also depend on the first question what does the MNC like to put in to the collaboration and what would they like to get out of it? If that and the universities and the MNCs Right To Use (RTU) are well defined, it is easier to understand how and with what the parties can negotiate. Yet today there are several MNCs who are having a “my way or the highway” approach. This so far seems to work in most cases. Yet if it is true that the trend is increasing and more universities will request IPR. The highway model will make it impossible for MNC to work with the university.

There are also alternative approaches to full IPR owning, e.g. its complete opposite to instead request worldwide non exclusive free licensing, which motivates the university for to share their innovation and but this is better to use when conducting basic research which develops the technology development in the society rather than just company specific.

Taking into the consideration that the MNCs normally do not see the collaboration bringing forth inventions worth patenting and if there is a patent, the MNCs limited interest in the patent per se but rather the interest in the monopoly which the patent brings commercially. These aspects bring one to a tempting conclusion, to let the university own the patent and then let the MNC license it exclusively worldwide. However the downside with such an approach is that it will give the MNC a more complicated licensing agreement and it will put a lot of faith and trust in the Chinese university. Even if the MNC agree with the project owner who might be a very influential person at the university, the project owner will still have management above him/her. And even if the MNC have a good relationship and trust the project owner and the university it is still a part of the government and de facto it is someone above the university in the hierarchy who will control the patent. Of course also this can be agreed in the contract but 20 years is a long time and many things can change. Another thing to keep in mind is that if the State Council believes and approves that a patent owned by a university is of great significance to the state they can according to the law allow designated entities to exploit it, as well as the universities can start up high-tech company and use their patents.

The motivation of the university and the researcher is mainly to get the patent in its name so they can show the world of their patents portfolio. The interest is in some cases also to be able to use the invention for further research, later is more relevant when it is concerning basic research than mere product development.

There are also more personal interests to take into consideration when negotiating the background and foreground IP even though the patent officially should belong to the employer of the researcher, personal interest can be financial, recognition among peers and increase the researchers value for a future employer.

The background and foreground IP distribution very much depends on the strategy, the input and output expected from the MNC and of course joint with the interest from the university, but the interest from the university are in this case more unified between different universities than the ones of the MNCs.

If nothing else is agreed up on the foreground IP will belong to the inventor and inventing entity, hence it is important to agree on this topic beforehand. One important aspect to take into consideration here is that in order for the MNC to be able to unify its patents in a patents holding company outside of China, the MNCs tend to transfer the technology the holding company before filing for a patent, which

is a bit in the grey zone of the law. The law states that such transfer need to be approved by the government.

Example:

Depending on the collaboration several different kinds of clauses and arrangements can be used. For example, the MNCs can grant the university for research only clause or other similar clauses. In the first example PM will be interested in 100 % ownership of the foreground IP. Since PM does not put any of its own patents into the collaboration as background IP this is not a problem for PM, but if the university were to base any of the result on background IP owned by the university or someone else. PM must clearly state how this should be regulated, i.e. worldwide free licensing and sublicensing. If it is of importance for the future research of the university, e.g. if the project owner found by PM is more research motivated, the university can request grant back clauses to be able to continue its research on within the IPR field. *Example 2* on the other hand to avoid a scattered and complex joint IPR ownership, it might be easier to let the university have the foreground IPR ownership, and use a similar clause as in the first example regarding background IP with world wide free non exclusive licensing.

8.1.5 Brick 5. Set the boundaries of the collaboration

Agree and communicate the boundaries of the collaboration between MNCs and Chinese universities can be difficult since universities and MNCs are not natural partners. Universities are normally more transparent than the MNCs. However, the collaboration boundaries are also affected by the way the communicated and agreed goals are interpreted.

Depending on how background and foreground is agreed their can be further challenges in the definition of boundaries. If a foreground patent is agreed to be jointly owned, the interpretations can be very different on what is allowed to do and not with the jointly own patent. On the other hand, if the patent is licensed back to the university with the clause “for research only” can the university then use it when they join research projects with competitors? The settling of boundaries complements and make sure there is no misunderstanding in expectations of the collaboration and what the limitations are of background and foreground IP.

Another area where the boundaries can be challenging is on the topic of publishing collaboration results. One of the universities three purposes is to transfer knowledge to publish which in many cases is a direct contrast to the motive of the MNC. Hence avoid making this a conflict area the MNC needs to keep the interest of the universities and the researchers in mind. In the publication example, the MNCs should also take into consideration that PhD students need to publish a specific amount of papers within a limited period. If the MNC is not carefully on this topic it can lead to strong dissatisfaction and effect the collaboration, or if the university and the MNC have very distant views of what is reasonable it might even block the negotiation. A further consideration when setting up boundaries is to think of

researchers or consultants that enter the project. How is this to be handled? Is the researcher included in the agreement or is it not and therefore gets IP ownership since there is no cover in the contract for researchers from outside the project that is entering the project.

In *example 1* the boundaries of the collaboration should be well defined and hopefully mutual understood. Here also a clause about obliging the other part to inform before using the invention in anyway can prevent any unpleasant surprises. *Example 2* is a little bit different, since PM is only interested in using the results and support the spread and usage of the results, the boundaries are more easily defined as well.

8.1.6 Brick 6. Take preventive steps

Difference in information sensitivity and importance of keeping the results confidential is a concern when collaborating with universities whose purpose is to conduct research and publish results to the academic community. Confidentiality is even more important in China since IPR protection and management is still weak, and that law enforcement is still evolving. None of the MNCs interviewed have experienced any problems with confidentiality but they all talk about taking preventing measures, be careful about what kind information being shared, e.g. they don't share core technologies and keep it to "need to know" bases. Another important aspect that needs to be taken in to consideration is the relationships between the different research team. If researchers are disappointed by the way things are managed their loyalty to the professor will be lower, which will make it more likely for them to spill information and also change research post so that their information and knowledge is transferred both deliberate and more accidental. It is in the interest of the MNC to also make sure that the negotiated terms will motivate all parties involved not only the formal negotiating part but everyone, the more indirectly involved as well. It will ease the fulfillment of the contract. There are also different clauses which can be put in to the contract to formally prevent the leakage, such as, obligations not to file patents, to inform before filing or publishing and limiting the access to third parties.

In *example 1* PM should make sure that only a limited amount of people knows about the scope. Another example of preventive steps for PM to take is to educate the researchers about IPR so they will not publish anything that can hinder a potential patent application. Also in the contract a clause about liquidity damages can be used but the university will then of course take on a larger risk, which they might be offended about. Take into consideration problems with confidentiality has been close to non-existent, so this is not a good way to go for PM.

Regarding *example 2*, also in this case it is important that all parties are knowledgeable about the IPR process if the university should file a patent, but since PM are not interested in exclusive rights the inventions can just as well be published which will make it free to use for PM.

8.1.7 **Brick 7: Incentives for patent sharing**

Praxis for western MNCs in China is to give fixed remuneration to the inventor of a presumptive patentable innovation. Comparing average invention remuneration in western countries with monthly salary of a PhD-student, which is roughly 1,000 RMB, remuneration will give PhDs and other researchers a strong input to their financial situation. The remuneration would also balance researchers eager to publish since even the bonus for publishing in one of the more well-known journals would give a much lower financial compensation. Yet according to the universities there are no expectations of remuneration to the inventor per se. The inventions within a project are considered a part of the sponsorship agreement. Chinese researchers on the other hand are considered to be strongly motivated by financial measures. If the company has an efficient invention evaluation process to also offer this remuneration to inventions which does not fall directly under the sponsored scope but in the surrounding areas it will motivate the researchers to present all their inventions to the sponsoring MNC, also the inventions which are on the edge of the scope, which the researcher might choose to patent on their own with the support of the university outside of the scope if not compensated. Another important aspect which should be taken into consideration is the personal need for acknowledgements which is considered to be even especially important in the academic world, also in China it is a strong merit for the researcher if they can show that they have made an invention worth patenting. The question of joint versus sole ownership has also an impact on the willingness of sharing the patent which should be taken into consideration. If jointly owned there are stronger incentives for sharing potential inventions. On the other hand if there is a sole ownership or the rights and benefits will be divided up differently based on who makes the invention the willingness to share the invention will be lower and can prevent the parts from sharing thoughts and input which even can prevent the invention from being made in the first case. A solution can be putting in a paragraph in the contract stating an obligation to share royalties or profits generated by an invention from the collaboration.

In *example 1* to further motivate the PhD students involved, PM should pay and market their remuneration for inventions with IP potential, as well as they should make a note were the researcher who made the invention will get a written acknowledgement letter when they write the invention over to PM. PM should also make sure a potential invention is transferred to PM before it is patented so PM's global IPR holding company can file the patent.

Concerning *example 2* the university will do all of the research and also own the patent which hopefully make the university motivated to file for patents, yet sometimes the universities neglect to acknowledge PhD students and more junior researchers, to further motivate also them and make sure they are not neglected, PM should argue for and put in the contract that an individual remuneration will be paid to the inventor of an patentable invention.

8.1.8 Brick 8: Conflict settlement

Conflict settlement is a sensitive topic. The professors and the universities prefer using the Chinese law and Chinese arbitration or court as governing law and for dispute resolution. The professors (project owners) are not familiar with the law in general and they normally feel that the Chinese law is “their” law. The MNCs on the other hand prefer having both a non-Chinese governing law and preferably have the dispute resolution outside of China. Both MNC and the Chinese university on the other hand generally prefer arbitration as dispute resolution. Some of the MNCs have lost collaboration possibilities due to its requirement of using its homelands law. In other cases they have also raised the funding to get their legal requirement through. It is also interconnected to the MNCs brand and its negotiation power, other MNCs have had no problem with insisting on both less than 100% funding and at the same time using its home country’s law as governing law and getting 100% IP ownership. However it is important for the company to show there is foreign involvement in the contract so they have the ability to negotiate about the governing law, which can be more difficult if a 100% Chinese subsidiary signing the agreement. Concerning the dispute resolution, different in-house councils have stated their trust and confidence in Shanghai and Beijing arbitral tribunals are well considered and experienced among some MNCs.

Example 1, PM when concerning the conflict settlement would prefer to use its home countries law as governing law, yet to build up trust with the Chinese university they should aim to meet halfway and settle with for example Hong Kong law as governing law, which has a much richer case history. However when it comes to arbitral tribunal, even though there are MNCs having good experience of the tribunals in Shanghai and Beijing, PM should be a bit hesitant, due to its limited experience of Chinese arbitral tribunals and its not as famous brand, and also propose arbitration outside of China.

Concerning *example 2* it can be beneficial for PM to enter the contract using PM’s Chinese subsidiary so they can avoid potential paper excises, with exporting the technology when licensing it from the university. If the Chinese subsidiary signs the contract Chinese governing law and dispute resolution will according to Chinese law have to be used as conflict settlement. PM does not predict any major conflicts in this example and do see the benefit of not having to arrange with technology export licensing outweigh the disadvantages by using Chinese law and settlement.

9 Conclusions

In this chapter conclusion of the study that has been conducted will be presented. The purpose of the thesis will reveal to be fulfilled and recommendation for further studies will be presented. See Figure 7.

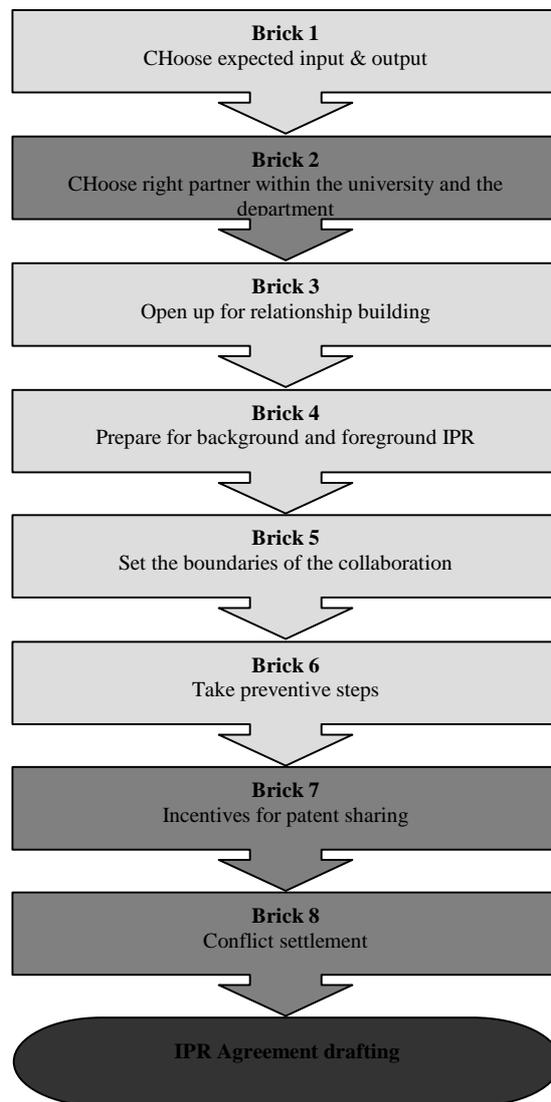


Figure 7: The ²(CH)OPSTIC-Framework

The purpose of this thesis has been to create a practical IPR negotiation framework for western managers when indulging in R&D collaborations with Chinese universities. The underlying objective has been to create an understanding of MNCs' and Chinese universities' interest and motivation in I-U collaborations to be used as an essential foundation for the framework. As IPR is territorial and regulated within jurisdictions, the Chinese Patent Law has been highlighted and considered in the study. The study has been carried out in Shanghai, China consisting of both theoretical and empirical research and has resulted in the ²(CH)OPSTIC-Framework, presented in chapter 8. The aim of the ²(CH)OPSTIC-Framework was to support western managers to prepare for win-win IP negotiations with Chinese universities. The framework is divided in eight major bricks that help managers to systematic determining important aspects that have to be considered prior negotiation. Along with the ²(CH)OPSTIC-Framework, we believe the purpose has been fulfilled and hope the reader feel the same way.

9.1 General Conclusions

As global business is expanding and cross boarder I-U collaboration is increasing to keep up with the growing demand for industrial innovation factors as culture differences and jurisdiction overlapping is becoming an issue. Western MNCs considering collaborating with Chinese universities are facing a complex situation; not only will there be motivational differences but also incentive differences for determining foreground IP.

When discussing IP ownership within I-U collaborations in China, the governing law is granting the initial ownership to the inventor. However, if MNCs are interesting of owning IPR from the collaboration they have to reach an agreement with the university in a negotiation process.

To support managers in negotiation process for IPR the ²(CH)OPSTIC-Framework has been developed in this thesis. The first three steps give managers a foundation in preparation for negotiation of IPR when considering I-U R&D collaboration. The following two steps are of more strategic character regarding the parties' interest in and handling of IP rights and deliverables. The last three steps are clause specific areas which need to be taken into consideration and put specific focus on in Chinese I-U collaborations.

The framework will hopefully give western managers some new supporting thoughts regarding IP negotiation in China with Chinese universities. Our great hope is also that the readers find this thesis interesting and inspirational.

9.2 Recommendations for further study

The research process have found that there a few studies made on a topic that combines research areas in IPR ownership, R&D collaboration in China and MNCs

collaboration with Chinese universities (I-U). This combination of different research areas are crossing multiple disciplines and makes it very complex. The conducted research in this thesis has used a social science research methodology approach with a business perspective. This opens up for further studies with an approach of other research methodologies such as legal research methodology. The focus in this thesis has not been to analyze issues of laws and therefore further studies with legal research methodology on the Chinese Patent Law and other substantive law for IPR in China would develop the field. Further, studies has to be made on the law enforcement in China regarding IPRs generated from I-U collaboration between western MNCs and Chinese universities, since the IPRs have a long period of protection many changed condition can occur during that period.

The Chinese legal system is in general undergoing a very rapid development and other areas such as technology export, court system, the development of SIPO, would be interesting and contributing to the field to follow its development.

The developed negotiation framework has not been tested in a real negotiation situation. Even though both empirical and theoretical data and material was used to develop the framework and aligned from a hypothetical point of view, further studies has to be made on how the framework best can be utilized in practice. Additionally, further quantitative studies of Chinese university and western MNCs have to be made to verify its usability in different Chinese universities and negotiation situations.

We hope someone will pick up the model and develop it with future studies. If someone would do this please share the results with us (ambjornhakansson@gmail.com).

10 Epilog

In this chapter a discussion of different consequences of the delimitations in this thesis is made as well as a discussion about the possibilities to apply the ²(CH)OPSTIC framework in different settings then the one used in this thesis and at the end of the chapter coming law changes are acknowledged.

The framework is brought forth to answer our purpose and has focused on two top universities in the Shanghai area. The possibility of using our framework on different industries and jurisdictions and also on different universities in China may differ, however the conclusions of this thesis is that many of the different bricks are theoretically applicable on other universities and industries and maybe even countries. But of course there will be differences when it comes to laws and MNCs' motivation under each brick. To be kept in mind is that the framework has not yet been used in an IPR negotiation situation, which makes the actual use unwise. Hence the full use of the framework will not be confirmed until it has been used and evaluated in extensive amount of actual negotiation situation. However to make a "pretest" the framework has been distributed and shared with the key professors and MNC interviewees.

If the framework will be applied on other universities, industries or countries, a study of the actual validity of the framework will have to be preformed. Even if the overall structure will be helpful, a watch out for potential deviations needs to be taken in to consideration.

The five MNCs we have studied have had an impact of our contribution, however for the framework per se we do not believe the framework would have been different if other MNCs were studied. Since each MNC has its own individual interests and motivation each needs to evaluate its own situation and apply the framework on their situation, which is already taken into consideration in the framework.

The two universities studied in the Shanghai area, which have been the target of this thesis, are considered the leading engineering universities, which we believe, will give them an incentive of being in the front also when it comes to collaborating with MNCs and in the top when it comes to leverage its academic reputation and requirements. The fact that we have interviewed and studied two universities will of course also affect the applicability of our framework on other universities. However, the empirical studies joint with the theoretical motivations of a universities and situation, we believe, has made the framework well applicable also for other universities. Of course, also from the university perspective modifications will have to be done as our empirical findings insinuates that there might be a stronger urge for IPR ownership at universities in other provinces in China, such as Nanjing and Beijing.

With the framework we hope to help managers to understand its own and the universities' incentives and also help the manager to think trough its negotiation process. But the fact that the framework is not preformed to help managers to do the

actually negotiations with the university, the actual outcome of the negotiation will depend on the managers' negotiation skills.

In October 2009 a revision of the Chinese Patent law will take effect. For further information please see appendix 2.

11 References

Literature

- Athanasakou, Konstantina K. 2007. "China IPR enforcement : Hard as steel or soft as tofu?Bringing the question to WTO under TRIPS." *Georgetown Journal of International Law* 39.
- Austin, Anthony, and Brian Fitzgerald. 2008. "Streamlining Collaborative Agreements in an e-Research World."
- Barner, Sharon, and Harold Wegner. 2007. "Second generation chinese patent sophistication: Lessons from Chint v. Schneider." Tokyo, Japan.
- Barnes, Tina, Ian Pashby, and Anne Gibbons. 2002. "Effective university-industry interaction: A multi-case evaluation of collaborative R&D projects." *European Management Journal* 20.
- Barton, John H., and Wolfgang E. Siebeck. 1994. *Material transfer agreements in genetic resources exchange: the case of the International Agricultural Research Centres*. Bioversity International.
- van den Berghe, Larry, and Paul D. Guild. 2008. "The strategic value of new university technology and its impact on exclusivity of licensing transactions: An empirical study." *Journal of Technology Transfer* 33:91-103.
- Blumer, F. 2005. "Patent law and international private law on both sides of the atlantic." in *WIPO Forum on Private International Law and Intellectual Property, Geneva, January*, vol. 30.
- Chien-Hale, Elizabeth. 2007. "Intellectual property aspects of doing business in China." *Practising Law Institute*.
- Collins, Luke. 2006. "Opening up the innovation process.." *Engineering Management* 16:14-18.
- Cornish, W. R., and D. Llewelyn. 2007. *Intellectual property: patents, copyright, trade marks and allied rights*. Sweet & Maxwell.
- Cox, Alan J., and Kristina Sepetys. 2009. "Intellectual Property Rights Protection in China: Trends in Litigation and Economic Damages." http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1330619.
- Cullen Penny-Anne. 2000. "Contracting, co-operative relations and extended enterprises." *Technovation* 20:363-372.
- Davenport, S., J. Davies, and C. Grimes. 1998. "Collaborative research programmes: building trust from difference." *Technovation* 19:31-40.

- Davies Howard, Leung Thomas K P, Luk Sherriff T K, and Wong Yiu-hing. 1995. "The benefits of "guanxi"." *Industrial Marketing Management* 24:207-215.
- Doney, P.M., J.P. Cannon, and M.R. Mullen. 1998. "Understanding the influence of national culture on the development of trust." *Academy of Management Review* 23:601-620.
- Eisenhart, K. M. 1989. "Building theories from case study research." *Academy of Management Research* 14:532-550.
- Feng, X., and J. Liu. 2001. "A Review of recent developments in patent law in the People's Republic of China." *Journal of World Intellectual Property* 4:827-869.
- Frankel, Robert, Judith Schmitz Whipple, and David J Frayer. 1996. "Formal versus informal contracts: achieving alliance success." *International Journal of Physical Distribution & Logistics Management* 26:47-63.
- Gassman, Oliver, and Han Zheng 2004. "Motivations and barriers of foreign R&D activities in China" *R&D Management* 34:423-437
- Gao, Zhicun, and Clem Tisdell. 2004. "China's reformed science and technology system: An overview and assessment." *Prometheus* 22:311-331.
- Gruen, N, G Prior, and I Bruce. 1996. *Extending patent life: Is it in Australia's economic interest?* Canberra, Australia: Australia Industry Commission.
- Guan, Jian Cheng, Richard C M Yam, and Chiu Kam Mok. 2005. "Collaboration between industry and research institutes/universities on industrial innovation in Beijing, China." *Technology Analysis & Strategic Management* 17:339-353.
- Harryson, Sigvald, Sandra Kliknaite, and Max von Zedtwitz. 2008. "How technology-based university research drives innovation in Europe and China." *Journal of Technology Management in China* 3:12-46.
- Heikkinen, Johanna, Kirsimarja Blomqvist, and Jianzhong Hong. 2007. "Evolution of Ba in Sino-Western University-Industry Collaboration." in *EBRF 2007: Business, Technology and Growth*. Jyväskylä.
- Herzog, V.L. 2001. "Trust building on corporate collaborative project teams." *Project Management Journal* 32:28-37.
- Hofstede, Geert. 1991. *Cultures and Organizations - Software of the mind*. Cambridge: McGraw-Hill Book Company.

- Hällsten, M, and Ulf Sandström. 2002. "Det nya forskningslandskapet." *Nya Doxa SISTER Skrifter* 79-108.
- J. La Croix, Sumner, and Denise Eby Konan. 2002. "Intellectual Property Rights in China: The changing political economy of Chinese–American interests." *Blackwell Publishers Ltd.*
- Jacobsen, Dag Ingvar. 2002. *Vad, hur och varför? Om metodval i företagsekonomi och andra samhällsvetenskapliga ämnen.* Lund, Sweden: Studentlitteratur.
- Jelinek, Mariann, and Stephen Markham. 2007. "Industry-University IP Relations: Integrating perspectives and policy solutions." *IEEE Transactions on Engineering Management* 54:257-267.
- Jick, Todd D. 1979. "Mixing Qualitative and Quantitative Methods: Triangulation in Action." *Administrative Science Quarterly* 24:602-611.
- Kvale, S. 1997. *Den kvalitativa forskningsintervjun.* Lund: Studentlitteratur.
- Lambert, Richard. 2003. *Lambert Review of Business-University Collaboration.* London: HM Treasury on behalf of the Controller of Her Majesty's Stationery Office.
- Leung, T.K.P., Kee-hung Lai, Ricky Y.K. Chan, and Y.H. Wong. 2005. "The roles of xinyong and guanxi in Chinese relationship marketing." *European Journal of Marketing* 39:528-559.
- Lichtenthale, Ulrich, and Holger Ernst. 2009. "Opening up the innovation process: the role of technology aggressiveness." *R & D Management* 39:38.
- Lu, Yuan, Eric W. K. Tsang, and Mike W. Peng. 2008. "Knowledge management and innovation strategy in the Asia Pacific: Toward an institution-based view." *Asia Pacific Journal of Management* 25:361-374.
- Lundin, Nannan, and Serger, Sylvia Schwaag 2008. "Globalization of R&D and China - Empirical observations and policy implications." ITPS, Swedish Institute For Growth Policy Studies
- Luo, Y. 2000. *Guanxi and Business.* 2nd ed. Singapore: World Scientific Publishing Co.
- MacDonald, Laura, and Gilles Capart. 2004. *Management of intellectual property in publicly-funded research organisations: Towards European Guidelines.* Belgium: European commission research.

- Mansfield, E. 1995. "Academic research underlying industrial innovations: Sources, characteristics, and financing." *Review of Economics and Statistics* 77.
- Nakamura, Masao. 2003. "Research alliances and collaborations: Introduction to the special issue." *Managerial and Decision Economics* 24:47-49.
- O'Hara, E. A., and L. E. Ribstein. 2000. "Conflict of laws and choice of law." *Encyclopedia of Law and Economics* 5:661-691.
- Oddershede, Jens, and Ole Krog. 2004. *Contacts, contracts and codices: Research co-operation between universities and companies*. Copenhagen: The Confederation of Danish Industries and The Danish Rectors' Conference.
- Ollier, Peter, and Janice Qu. 2008. "IP enforcement in China debated." *Managing Intellectual Property* December.
- Ostry, Sylvia. 1999. *China and the WTO transparency issue*. Centre for International Studies, University of Toronto <http://www.icrier.org/pdf/ostry.pdf>.
- Pires de Carvalho, Nuno. 2002. *The TRIPS regime of patent rights*. Kluwer Law International.
- Provis, Chris. 2008. "Guanxi and conflicts of interest." *Journal of Business Ethics* 57-68.
- Quan, Xiaohong. 2007. *MNCs rush to set up R&D labs in China: What is the nature?* National University of Singapore: East Asian Institute.
- Ramasamy, B., K. W. Goh, and M.C.H. Yeung. 2006. "Is guanxi (relationship) a bridge to knowledge transfer?." *Journal of Business Research* 59:130-139.
- Santoro, M. D., and A. K. Chakrabarti. 1999. "Why collaborate? exploring industry's strategic objectives for establishing industry-university technology relationships." *Management of Engineering and Technology, 1999. Technology and Innovation Management. PICMET '99. Portland International Conference on* 46.
- Sellenthin, Mark O. 2004. *Who should own university research? An exploratory study of the impact of patent rights regimes in Sweden and Germany on the incentives to patent research results*. Linköping University: Department of Technology and Social Change.
- Slowinski, Gene, and Matthew W Sagal. 2006. "Allocating patent rights in collaborative research agreements." *Research-Technology Management* 49:51-59.

- Slowinski, Gene, and Kim William Zerby. 2008. "Protecting IP in collaborative research." *Research Technology Management* 51:58-65.
- Spekman, R.E et al. 1996. "Creating strategic alliances which endure." *Long Range Planning* 29:346-357.
- Teece, David J. 1998. "Capturing value from knowledge assets: The new economy, markets for know-how, and intangible assets." *California Management Review* 40:55-79.
- Tirole, Jean. 1994. "The internal organization of government." *Oxford Economy Papers* 46:1-29.
- Wang, Bing, and Jun Ma. 2007. "Collaborative R&D: Intellectual property rights between Tsinghua University and multinational companies." *Journal of Technology Transfer* 32:457-474.
- Wang, L. 2002. *Grass Fortune*. New York: Penguin Camberwell.
- WIPO. 2004. *WIPO Intellectual property handbook: policy, law and use*. 2nd ed. Geneva: World Intellectual Property Organization.
- Yan, Yangtze. 2008. *Outline of national intellectual property strategy*. State Council of the People's Republic of China http://english.gov.cn/2008-06/21/content_1023471.htm.
- Yang, Deli. 2003. "The development of intellectual property in China." *World Patent Information* 131-142.
- Yeung, I. Y. M., and R. L. Tung. 1996. "Achieving Business Success in Confucian Societies: The Importance of Guanxi (Connections)." *Organizational Dynamics* 2:54-65.
- von Zedtwitz, Maximilian, Ikeda Tadashi, Gong Li, Carpenter Richard, and Hämäläinen Seppo. 2007. "Managing foreign R&D in China." *Research Technology Management* 50:19-27.
- Zhou, W. 2004. "R&D collaboration and Chinese firms in reform era." San Francisco, CA: Cornell University.

Interviews

- Daniel Windpower Ltd. 2009-04-30. "E. Asia Relationship Manager Technology Collaborations.", Phone interview
- Han Electronic Ltd. 2009-03-05. "In-house Legal Counsel China.", Phone interview

Han Electronic Ltd. 2009-04-03. "In-house Legal Counsel China.", Phone interview

James Plant Ltd. 2009-03-06. "Chief Executive Officer China.", Personal interview

John Power Ltd. 2009-03-27. "In-house Legal Counsel China.", Phone interview

Karin & Qun Legal B. 2009-03-03. "Lawyers.", Personal interview

Kent Power Ltd. 2009-02-19. "Head of Research and Development China.", Phone interview

Sonny Mechanics Ltd. 2009-03-25. "Head of Research and Development China.", Personal interview

Tim Tele Ltd. 2009-03-25. "Head of System and Technology China", Phone interview

Ulrich Legal A. 2009-03-16. "Lawyer.", Personal interview

Wolfgang Windpower Ltd. 2009-03-20. "Head of Strategic Communication China", Phone interview

University A, Edward. 2009-03-10. "Professor.", Personal interview

University A, George. 2009-03-18. "Professor.", Personal interview

University A, Gui. 2009-03-18. "Professor.", Personal interview

University B, Gong. 2009-04-03. "Professor.", Personal interview

University B, Gong. 2009-05-18. "Professor.", Written response

University B, Rui. 2009-03-30. "Professor.", Personal interview

Internet

- 2009a. "Legal research methodology." *Law Library of Congress*.
<http://lcweb2.loc.gov/ammem/awhhtml/awlaw3/legal.html>. (Accessed May 5, 2009).
- 2009b. "Research methodology."
http://www.law.harvard.edu/library/research/guides/united_states/research-methodology.html. (Accessed April 15, 2009).

- Binns, Richard, and Bryan Driscoll. 1998. "Intellectual property issues in R&D contracts." *Pharmaceutical Science & Technology Today* 1.
<http://www.sciencedirect.com/science/article/B6VJY-3V8D9M8-6/2/6cb550276bb6a4220a1f5c6809cc7348> (Accessed May 5, 2009).
- Blomqvist, Kirsimarja, Pia Hurmelinna, and Risto Seppänen. 2005. "Playing the collaboration game right - balancing trust and contracting." *Technovation* 25.
http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V8B-4DK67P3-2&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=7ee15bee2b4756585c66e4d2a60bdb36 (Accessed March 16, 2009).
- The Chair. 2008. "Transitional review under section 18 of the protocol on the accession of the Peoples Republic of China." *Report to the General Council by the Chair*.
http://www.export.gov/China/Nov_18_2008_China_WTO_IPR_Transitional_report.pdf. (Accessed May 25, 2009).
- Eames, Elizabeth, Qian Wang, Steven Stoddard, Spencer Cross, and Christina Chae. 2009. "Intellectual property protection and China."
http://www.core.org.cn/NR/rdonlyres/Electrical-Engineering-and-Computer-Science/6-901Fall-2005/58D64F30-7CFB-45AE-AE6B-ABE293402E38/0/24578_ip_china.pdf. (Accessed May 25, 2009).

Appendix 1

Chint vs. Schneider

Enlightenment in Respect of IP Protection Strategy of Foreign Enterprises in China: A Lesson Learned from the Patent Infringement Litigation Case against Schneider Electric (Stolen with pride from <http://www.lianandlien.com/en/download/wgqyzzgdzscqbhcl.pdf>)

Recently, wide attention has been drawn to a utility model patent infringement litigation case (CHINT Group (Wenzhou, Zhejiang Province) vs. Schneider Electric (Tianjin)) which is known as “the patent infringement case involving the highest damage” among related industries, IP and law circles. In light of the above-mentioned case and the many IP infringement cases (dealt with through both administrative and judicial ways) represented by the author in recent years, the author hereby would like to present the author’s considerations concerning the trend of IP infringement cases, especially problems in IP protection in China, IP protection strategies and proposals for our esteemed clients’ consideration.

Case

1. Disputing Parties

Chint Group Corporation (hereinafter referred to as Chint)

Schneider Electronic Low Voltage (Tianjin) Co., Ltd. (hereinafter referred to as Schneider (Tianjin))

2. Background

In the 90s of 20th century, Schneider Electronic developed a C60 breaker which is provided with the fast contact closing mechanism (FCCM) for the first time and started its production in Europe in 1991. In 1993, Schneider Electronic began exporting C60 series products to China. On December 23, 1996, Schneider Electronic filed a patent application (FR9616151) in France for its improved C60 series, which disclosed clearly the technical drawings of FCCM. Later Schneider Electronic filed a Chinese patent application claiming the priority of the French application. On November 11, 1997, Chint filed a utility model patent application in China and obtain the utility model patent on June 2, 1999 (No. ZL97248479.5). The utility model is entitled Miniature Circuit Breaker with High-Rupturing Capacity.

In 2000, Schneider Electronic transferred the C60 production technology to Schneider (Tianjin), a joint venture established by Schneider Electronic and its Chinese partners.

In July, 2006, Chint sued Schneider (Tianjin) in the Intermediate People’s Court of Wenzhou, claiming that the latter’s C65 series products had infringed its utility model patent.

3. Focus of Disputes

Whether or not the C65 series products of Schneider (Tianjin) infringed Chint’s utility model patent.

4. Progress of the Case

In August, 2006, Schneider (Tianjin) requested the Patent Reexamination Board of SIPO to announce the invalidation of Chint’s utility model patent.

In April, 2007, the Patent Reexamination Board upheld Chint's utility model patent.

In July, 2007, Schneider (Tianjin) instituted an administrative litigation in the First Intermediate People's Court of Beijing, requesting revocation of the decision by the Patent Reexamination Board.

In September, 2007, the Intermediate People's Court of Wenzhou made the first instance court decision that Schneider (Tianjin) had infringed Chint's utility model patent and 330 million CNY should be paid by Schneider (Tianjin) as the compensation for the damage. In October, 2007, Schneider (Tianjin) appealed to the Higher People's Court of Zhejiang Province.

Appendix 2

Upcoming changes in the Chinese patent system

Roadmap for Intellectual property right in China, Patent protection in China, page 4, http://www.ipr2.org/images/stories/ipr2_roadmap_patent_en.pdf

The Chinese lawmakers adopted a revision of the Patent Law on 27 December 2008. This third revision of the law will take effect on 1 October 2009 and will bring a number of substantial changes to the Chinese patent system. Important changes include the following:

- Foreign filing requirements: Before a patent application for an invention which is “completed” in China can be filed abroad, a confidentiality examination will be required. Details of this examination are not yet published, except that failure to comply with this requirement will result in the non-patentability of this invention in China. On the other hand, the current requirement that inventions “completed” in China must be first filed in China will be removed.
- Absolute novelty standard: The new definition of prior art and prior design will include any technology/design known to the public in China or abroad before the filing date. Currently only domestic use (and worldwide publication) destroys novelty.
- Prior art defense: The new law will codify the current practice that if the alleged infringer in a patent infringement dispute has evidence proving its/his technology or design belongs to the prior art or is a prior design, it will not constitute patent infringement.
- Statutory damages: Courts will under the new law be able grant statutory damage compensation up to a maximum of RMB 1 000 000 (currently up to RMB 500 000 only) in cases where the losses of the patentee, the profit of the infringer or the appropriate exploitation fee are difficult to determine.
- Fines for passing-off: In cases of passing off, local Intellectual Property Offices will under the revised law be able to impose a fine amounting to four times the illegal income of the infringer or, if there are no illegal earnings, a fine of up to RMB 200 000.
- Design patent protection: Currently, an offer to sell does not constitute infringement of a registered design. The exclusive right of the patentee to exploit a design patent will under the revised law include offering to sell the patented product for production or business purposes.
- Two-dimensional designs: Patent protection will no longer be available for two-dimensional designs of images, colors or combinations of the two that mainly serve as indicators.

- Multiple designs: Will be allowed in one design application.

Co-ownership: A new provision on co-ownership will provide that the exercise of a jointly-owned patent application right or patent right shall be consented by all co-owners. The only exception is, if no special agreement between the co-owners exists, each of the co-owners may independently exploit or license others to exploit the patent through a non-exclusive license. Any royalties obtained through the licensing shall be distributed amongst all the co-owners.

- Compulsory licensing: A number of additional grounds for granting of compulsory licenses will be introduced e.g. in case of non-exploitation of patent or in case patent exploitation creates a monopoly of the patentee.

- Bolar defence: Manufacture, import or use of a patented drug or patented medical apparatus by any person in order to acquire information necessary for regulatory approval (or manufacture or import of the drug/apparatus by any person solely for others to acquire such information) will be deemed as an exception to patent infringement. This will allow competitors to apply early for approval to launch a drug immediately after the expiration of patent protection.

- Genetic resources: No patent will be granted for an invention based on genetic resources, if the latter are obtained or utilized illegitimately. Where such resources are used, their initial/direct origin must be disclosed in the patent application; and reasons must be given if the disclosure is absent.

- International exhaustion of rights: Parallel importation will not constitute patent infringement if the product was first put on the international market with authorization or consent by the patent owner.

The new features of the Chinese patent system will be further defined and explained in the respective amendments to the Implementing Regulations of the Patent Law which are currently being drafted and are expected to be passed by the State Council in due time before the revised law takes effect. All relevant changes to the legal framework for patent protection in China as well as their practical implications for the protection and management of patent portfolios in China will be introduced in the second edition of this Roadmap which is scheduled for late 2009.