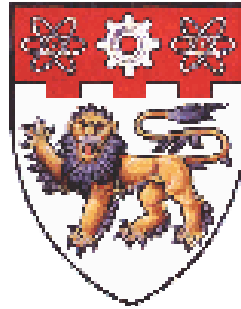


# **NANYANG TECHNOLOGICAL UNIVERSITY**



## **INTELLECTUAL PROPERTY PROTECTION IN CHINA**

Submitted in Partial Fulfillment of the Requirements  
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by

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## **ABSTRACT**

Nowadays, the concept of intellectual property has been drawn much more attention in the worldwide arena than before. And the protection of intellectual property all over the world is now at a dynamic stage of transformation. With the international cooperation on science and technology, and the development of economy and trade, the legal protection of intellectual property is playing an increasingly important role in society and is receiving even greater attention worldwide. No one should overlook the significance of intellectual property protection in economic formation and development progress. But in developing countries, the situation of intellectual property protection presently does not match that of the developed countries.

This study gave a brief introduction of the definition and evolution of intellectual property, the different forms and intellectual property rights in the global economy. And the focus of the study was to assess the awareness of intellectual property, explore the current situation of intellectual property protection in China—one of the brilliant stars in the new world economy arena. The study also examined the change of intellectual property protection in China up to its accession to the World Trade Organization (WTO), as well as investigated the problems and possible measures of intellectual property protection in China. This study will directly benefit those readers who have interest to know more about intellectual property protection especially in the context of China. They can use the information and findings to understand the topic better and gain the up-to-date insight into China's intellectual property protection especially with its entry into the WTO in Dec 2001. From a research perspective, this study can also be used as a pilot study for future research about intellectual property protection in China.

With the aims which were derived from the research objectives of this study to assess the current awareness of intellectual property protection in China, and to investigate the current intellectual property protection status (especially up to China's entry into the WTO) as well as problems from the view of conducting respondents' business, a questionnaire survey was conducted among some employees within selected

companies in China. The responses were preferably good which had laid a solid foundation for the further analysis of questionnaire data from where valuable findings to solve the research problems were obtained.

The study to assess the awareness of intellectual property protection in China demonstrated that nowadays people in China have a fundamental awareness of intellectual property protection. As agreed by many scholars and International Intellectual Property Alliance (IIPA), China had made great effort in revising and upgrading its intellectual property related legislations to meet up with the requirement of becoming a member of the WTO and there had been big improvement in protecting intellectual property. However, the actual implementation and enforcement of intellectual property protection were found to be unsatisfactory. In other words, the study showed that although the existing intellectual property protection framework could be evaluated as sufficient, the main problem of insufficiency of effective, intensive and extensive enforcement of intellectual property existed.

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## **ABBREVIATIONS**

<b>BSA</b>	Business Software Alliance
<b>CPO</b>	Patent Office of the People's Republic of China
<b>CTO</b>	Trademark Office of the People's Republic of China
<b>ETFs</b>	Enforcement Task Forces
<b>EU</b>	European Union
<b>GATT</b>	General Agreement on Tariffs and Trade
<b>IACC</b>	International Anti-Counterfeiting Coalition
<b>IIPA</b>	International Intellectual Property Alliance
<b>IP</b>	Intellectual Property
<b>IPRs</b>	Intellectual Property Rights
<b>NCA</b>	National Copyright Administration of China
<b>PCT</b>	Patent Cooperation Treaty
<b>PRC</b>	People's Republic of China
<b>RMB</b>	Chinese Currency Unit
<b>SIPO</b>	State Intellectual Property Office of People's Republic of China
<b>TRIPs</b>	Trade Related Aspects of Intellectual Property Rights
<b>WIPO</b>	World Intellectual Property Organization
<b>WTO</b>	World Trade Organization

## **CHAPTER 1**

### **INTRODUCTION**

In real life, we may not have realized that everything with which we live is the product of human creativity (World Intellectual Property Organization [WIPO], 2002). And these things are creations of the human minds—Intellectual Property. The concept of Intellectual Property Rights is not just a unique ownership for those who work in the academic field, with the emerging and carrying out of the various intellectual property related legislation, undeniably, it becomes widely acknowledged and implemented in the knowledge based society. This chapter serves as an introduction to the concept and history of intellectual property, and brief description of intellectual property protection in China.

#### **1.1 Definition of Intellectual Property**

The definition of Intellectual Property given by World Intellectual Property Organization is “Intellectual property refers to creations of the human minds: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce.” (WIPO, 2002). Basically, it’s different from any other forms of property which can be assigned, montaged and licenced. Intellectual property is a kind of intangible assets owned by the creators, but it is a property in a legal sense that can be owned and deal with.

In the real life, everything with which we live is the product of human creativity. And these things are creations of the human minds—Intellectual Property (WIPO, 2002). The concept of Intellectual Property Rights is not just a unique ownership for those who work in the academic field, with the emerging and carrying out of the various intellectual property related legislation, undeniably, it becomes widely acknowledged and implemented all around the world.

What are Intellectual Property Rights (IPRs)? Some will sound familiar—for example, copyright, trademark and patent—while others will be less familiar—for example, the industrial property, geographical indication and trade secrets/undisclosed information. Basically, intellectual property is divided into two categories: industrial property, which includes inventions (patents), trademarks, industrial designs, and geographic indications of source; and copyright, which includes literary and artistic works, musical works, artistic works. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and those of broadcasters in their radio and television programs (WIPO, 2002). In recent years, with the irresistible development trend of hi-tech and bio-tech, there are also copyright issue in these two fields which are drawn much attention than other fields.

Another definition of Intellectual Property—Intellectual Property Rights, more commonly, covers a range of different instruments that can be used to define, protect and exploit new ideas that an individual, or a company, has created (Fitzsimmons & Jones, 2002). These range from the most well-known—patents—through to probably the hardest to define, know-how. At a high level the types of intellectual property rights that exist and their key applications are:

- Patents: protection for inventions;
- Copyright: protection for creative output whether words, music, media or art;
- Trademarks: protection for signs which distinguish products or services;
- Design rights: protection for external appearances of products; and
- Know-how: internal knowledge that is kept within the organization.

In terms of being able to provide barriers, they are increasingly recognized as assets that strengthen corporate competitiveness. Apart from that, they also can be traded, can create new opportunities, and most notably, if managed properly, can create value. Being in the context of information, intellectual property has several uses, can easily be moved around, can be added to and divided, and most important, through the licensing avenue, the same piece of Intellectual Property can be sold numerous times.

There is a brief introduction about the different forms of intellectual property rights in the Appendix 1, for more detailed information about them, please refer to related References section.

Meanwhile, new forms of intellectual property are being created, patents are being granted for gene sequences, Internet business methods and even software. Companies are now aggressively policing and protecting their intellectual property as shown by a series of high-profile court cases involving Kodak, Microsoft, Amazon and Napster (Fitzsimmons & Jones, 2002). These changes prove that in the twenty-first century and beyond, for either large or small organizations, if they aim to compete effectively in the market, they should be capable to master intellectual property.

## **1.2 Evolution of Intellectual Property**

Intellectual property has mixed origins: patents can be traced back to the fifteenth century; copyright to 1662; design right to the end of the eighteenth century; and trademarks to 1875 (Fitzsimmons & Jones, 2002). These are all dates when these intellectual property rights first acknowledged in a legal and therefore about executable sense, though. If its origin was traced in another method, it was the scholars of ancient Greece and the Roman Empire who were the first to be concerned about who should be recognized as authors of work. However, at that time, such awareness was purely raised from the perspective of intellectual ownership and acknowledgment of creativity rather than any economic rights or value.

Intellectual property was brought into being a legal entity in certain fields for the purpose of protecting invention, and securing returns from the ownership of intellectual property. In this section, there will be some prominent milestones of each of the intellectual property rights in their evolution. For detailed evolution of intellectual property timeline, please refer to Appendix 2.

For patents, it was first awarded and recorded by the city council of Florence in 1421 for the production of glass (Fitzsimmons & Jones, 2002). At that time, such activity was intended to provide specific grants of privilege to favored manufacturers and traders. In the Great Exhibition of 1851, with the demand for reform, the Patent Law

Amendment Act of 1852 thoroughly examined the UK system, setting down a simplified process and founding the world's first patent office. The Paris Convention for Intellectual Property Protection was the first major international treaty coined in 1883 to ensure the protection among multiple countries. Ten years later, the United International Bureau for the Protection of Intellectual Property was founded, which became the World Intellectual Property Organization (WIPO) in 1970. By then, the Patent Co-operation Treaty (PCT) also came into force. The next major development in patenting for over a century was initiated in the UK with the 1977 Patents Act, which set out to ensure intellectual property legislation system today is more suited to modern industry accommodating changes in technology in an international context. Since 1980 there has been a significant change in how organizations approach the management of intellectual property, and particularly patents. Besides, several landmark decisions have made new areas of technology patentable such as biotechnology, pharmaceutical and agricultural arena. In the USA in 1981, software was seen as being patentable and hence activity in this area increased dramatically.

For copyright, in 1709, it was the Statute of Anne in England that first introduced the concepts of an author being the owner of copyright and the principle of a fixed term of protection. Following on from the example of England, in 1790, the USA also made copyright law federal "to secure for limited times to authors and inventors exclusive rights to their respective writing and discoveries", it was at the same time as the establishment of its first patent law. Nevertheless, the formalization of copyright protection was considered to be the result of the advent of the evolving printing industry. However, only until the 1886 Berne Convention that the International Copyright Act first established a wider framework and an International Bureau for Copyright was founded (in 1893, it was integrated into the United International Bureau for the Protection of Intellectual Property). In 1908, the Berlin Act set the duration of copyright as the life of the author plus 50 years. Ever since 1980 there had been much broad range of products that can be protected by copyright laws around the world. With the advance of digital copyright and Internet, there might be continuous change of copyright laws in the coming years.

For design right it was the growth of textile production that prompted associated protection. In the USA, it was actually included in the protection of patent which is

known as one of the three kinds of patents, namely utility patents, plant patents and design patents. Whereas in the UK, the protection of design rights had been treated separately and aimed to protect the appearance of ornamental features from being copied. Having experienced nearly one century of changes and amendments in the UK's Design Act, it might still be necessary future works on the protection of design right as the UK moves closer to in coordination with national systems of registered design protection.

Finally for trademark, it was the marking and associated goodwill of providers of a trade or service and only in the nineteenth century that the idea of trademark developed again in the UK. The Trade Marks Registration Act of 1875 established a register of marks and the Trade Marks Registry opened in London the following year. The Law was largely unchanged until 1994 despite of the amendments during the time interval. Likewise, in the US, the 1870 Trademark Act defined the standard and the 1946 Lanham Act subsequently allowed for users to establish "nationwide constructive use" of their marks. By the late twentieth century and the major changes in the 1994 UK Trade Mark Act coming into place, the range and scope of trademark law had increased considerably.

Since the patents started the intellectual property protection prelude five centuries ago, till today, with the driving force of protection of business methods, software, genes and Internet images, many organizations take intellectual property into consideration when making thinking and growth strategies. Meanwhile, a massive change has taken place in the perception and context of what intellectual property is and how to manage it.

### **1.3 Intellectual Property Protection in China**

As a developing country, China is striving to catch up with the developed countries in many fields. Among them, the intellectual property protection which may contribute a lot to the economy development has been highlighted in recent years. "There have been many instances of a growing interest, on the part of governments of developing countries in various parts of the world, in making industrial property an effective tool in the economic and technology development process." (World Intellectual Property



Organization [WIPO], 1997). But the fact is that China's enforcement of its intellectual property laws has been inadequate although the framework of intellectual property protection has been well established. It is undisputed that China's enforcement of its intellectual property laws has been insufficient. The Chinese themselves admit it (Endeshaw, 1996).

In the 70s, when China was developing the so-called "Four Modernization" and trying to adopt intellectual property laws from the industrialized countries of western Europe, those laws were not adapted to, or made to reflect, the social and economic situation in China (Endeshaw, 1996). At that time, the government just imported foreign laws which had relatively little value for local people and business since they were not proper ones for newly developing countries. The fact was that the higher the standards of intellectual property laws that it had been forced to adopt, the less suitable those laws have become to the state enterprise system and to the social and economic order in China. As a result, the operation of these laws had put a burden on the Chinese economy and hindered the process of the industrialization.

After several decades, with the development of China, there arise growing internal demands for more social, economic and technological information. Consequently, the demands for protection of creative works in China have been sharply increased. This is not only for the propelling of China's domestic technological grow, but also to gain access to the rich treasure of technological advances in the developed countries. The Chinese have portrayed their desire of attracting foreign capital and technology into China as the major justification for their introduction of intellectual property laws in rapid successions (Endeshaw, 1996).

The Chinese government has established and implemented quite a few intellectual property laws to encourage more active inventions of creative works, what's more, to ensure a better invest environment for both domestic and foreign investors. The whole nation has realized the position of intellectual property in the economy growth in order to catch up with the developed countries. The fact of China's accession to the WTO in December 2001 is definitely an accelerator of the improvement of the existent laws of intellectual property (isinolaw, 2002).

In Chapter 2, there will be more comprehensive review of the current status of intellectual property protection in China.

#### **1.4 Motivation and Objectives of the Study**

Nowadays it has become common knowledge that technology and information as a whole are key elements in the industrial progress and economic well being of countries. The transformation of many of the developed countries in the world was achieved in the past through continuous and judicious use of technology and information (Endeshaw, 1996). And the rights of ordinary individuals and businesses in the technology and information they generate and exploit have been protected for many countries through what are called intellectual property laws. But other people may wonder why we need to understand what intellectual property is and what will intellectual property rights benefit us and the society.

In the real life, we may have not realized that everything with which we live is the product of human creativity (WIPO, 2002). And these things are creations of the human minds—Intellectual Property. The concept of Intellectual Property Rights is not just a unique ownership for those who work in the academic field, with the emerging and carrying out of the various intellectual property related legislation, undeniably, it becomes widely acknowledged and implemented in the knowledge based society.

But for a long time, the lack of conformity to any single standard in intellectual property throughout the world and existence of disparities and discrepancies encouraged by the main intellectual property conventions has been a constant source of irritation and dispute among the foremost countries such as the USA, UK, Switzerland and France that possess a wealth of technology and information (Endeshaw, 1996). It implies that the significance of protection and enforcement of Intellectual property haven't been stressed out enough in other countries especially developing countries.

Being one of those developing countries which are being paid more concern than the rest, China is striving to keep pace with the developed countries in the world arena including the area of intellectual property. Especially after China's accession to the WTO in December 2001 and the undisputable development trend in China today, it

will be interesting and practical to look into the topic of intellectual property protection in China. In the latest version of WIPO's website, the Chinese language version has been newly established. From such a coincidence, the significance of intellectual property protection in China can also be implied (WIPO, 2002).

This study coalesces a few perspectives of existing study in an attempt to raise the understanding and importance of intellectual property protection in general. However, the main objective here is intending to explore the current intellectual property protection and enforcement status, examine the change of intellectual property protection and enforcement in China up to its entry into the WTO, assess the awareness of intellectual property protection in China. Last but not least to investigate the problems and possible measures of intellectual property protection and enforcement in China.

The specific objectives of this study are:

- To assess the awareness of intellectual property protection in China.
- To explore the current status of intellectual property protection in China.
- To examine the change of intellectual property protection in China up to its accession to the WTO.
- To investigate the problems and possible measures of intellectual property protection in China.

### **1.5 Scope of the Study**

This paper is trying to give a brief introduction of the definition, evolution and the different forms of rights or areas that together make up intellectual property, followed by the importance of the intellectual property protection and enforcement in the global economy. During the literature review of intellectual property, in general, there are few materials available discussing the up-to-date situation of intellectual property protection in China comparing to other topics in this field. After China's accession to the WTO and the undisputable development trend in China nowadays, it will be quite interesting and practical to look into the topic of intellectual property protection in China. Therefore, the focus of this paper is on the case study of the current situation,

awareness of intellectual property protection in China. At the same time, this paper also investigates the problems and possible future measures to protect intellectual property effectively in China.

Hence, this paper is trying to provide people who don't have too much knowledge about intellectual property and its protection with a general introduction. For those who already understand the meaning of intellectual property quite well, it might be helpful for them to know a bit more about the current situation of intellectual property protection in China with the information and findings provided here. But they may not be so in depth, for more information, please refer to those books and websites listed in the References section. In general, this study will directly benefit those readers who have interest to know more about intellectual property protection especially in the context of China. They can use the information and findings to understand the topic better and gain the up-to-date insight into China's intellectual property protection especially with its entry into the WTO in Dec 2001. From a research perspective, this study can also be used as a pilot study for future research about intellectual property protection in China.

### **1.6 Organization of this Dissertation**

This dissertation is divided into five chapters. Chapter 1 serves as a general introduction of the definition, evolution of Intellectual Property and the Intellectual Property Protection in China, followed by the motivation, objectives, scope and organization of this study. Chapter 2 will present a literature review on the topic of intellectual property rights in the global economy in support of highlighting the importance of intellectual property protection nowadays. At the same time, it will also examine the current intellectual property protection in China based on existing related literature. There will also be a brief introduction of established intellectual property rights enforcement authorities, laws, regulations and amendments of them for the purpose of China's accession to the WTO.

Chapter 3 provides a theoretical overview of research, research design, sample selection, data collection methods. Meanwhile, it introduces the specific research methodology undertaken in this study, which is essentially the explicit research design,

sample selection, sample size determination, questionnaire design, actual data collection methods, and procession of data. Unavoidable, there will be some limitation of each study. Therefore, the last section in Chapter 3 highlights the specific limitations of employing survey as research design in this study.

Chapter 4 will present data analysis and findings of the survey on the current awareness of intellectual property protection in China, the investigation of the current intellectual property protection status especially up to China's accession to WTO, as well as problems and possible measures from the view of conducting respondents' business.

The last chapter will be a discussion section which is formulated based on both the findings from the survey and some literature review. It is the place where the findings are related to the statement of research objectives. It will also conclude the dissertation by summarizing some conclusions from previous chapters, as well as pointing out the limitations of this study.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Intellectual Property Rights in the Global Economy**

Over the past century, the importance and relevance have grown and been recognized significantly. Initially, it was introduced in the fifteenth century as a method of providing a monopoly for production, nowadays it is acknowledged not only as a mechanism for protection but for creating value that sits at the forefront of corporate strategy. Companies like IBM use their IPRs to generate nearly 10% of their annual revenue from licensing, and stars like ARM and Qualcomm can achieve nearly 100% (Fitzsimmons & Jones, 2002).

In recent tens of years, the rapid development and expansion of the worldwide science and technology has changed the worldwide economic formation and development progress. Especially, there have been many instances of a growing interest, on the part of governments of developing countries in various parts of the world, in making industrial property an effective tool in the economic and technology development process (WIPO, 1997).

Economists and policymakers increasingly recognize that managing the powerful forces of technological change and market globalization requires establishment of legal institutions that both promote the benefits of those changes and restrain their excesses. Central to this challenge is international reform of intellectual property rights (IPRs) which provide the foundation for building and extending markets for new technologies (Maskus, 2000).

Today's even greater advances in protection anticipate the importance of IPRs in supporting the high-technology, information-based economy of the new century (Maskus, 2000). The protection of intellectual property all over the world is now at a dynamic stage of transformation. With the international cooperation over science and technology, and the development of economy and trade, the legal protection of

intellectual property is playing a more and more important role in the society and is receiving even greater attention worldwide. Nations around the world are attempting to formulate the development strategy facing the new century, and content for first place to seize the commanding height in science and technology, industry and economy. Facing such a situation, we must conform to the trend of times, and catch the time to march forward triumphantly. The development of knowledge-based economy requires establishment of the consistent with the legal system, so as to protect the advanced productive forces involved in new knowledge and new economy. Just as the ownership of means of production and means of livelihood as well as the obligatory right formed by market transaction need to be confirmed by the law, the property such as immaterial knowledge form product etc. gained by human's mental labor must also be confirmed and protected by the law.

Moreover just as civil and commercial legal systems have natural ties with commodity economy and market economy, the legal system of intellectual property has also natural ties with market economy and knowledge economy. Establishment and development of intellectual property system is an inevitable result of human civilization, social progress and development of commodity economy.

The key in development of knowledge economy is resided in innovation of knowledge, while the intellectual property system, in terms of property, gives owner of innovation the exclusive right in a certain period, so that to recovery the high amount input and gains of innovation, to drive the economic development. The establishment of legal system of intellectual property offers the "knowledge" turning to the "right" with the legal basis. It gives full play to the value of intellectual property, and materializes the maximization of interests of owner, mobilizing thereby in full the people's enthusiasm to innovate.

Concerns extend to information and technology users in developed countries as well, with significant reservations expressed about the emergence of patents in biotechnology and software and about limitations on fair use of copyrighted Internet materials (Maskus, 2000). Nowadays, we have the technology to digitize and disseminate intellectual property products globally. The Internet provides an easy and intensive way to reach a large audience, which may be advantageous for authors who

wish to distribute their work directly to a large number of consumers. For the readers, there will be much convenient and most up-to-date access to those references especially in the fast developing academic fields. As we can see, there are more and more online publishing and digital libraries available all around the world. But due to the copyright issue which is so difficult to control over the cyber space and not so many people can promise fair use of those resources, the process of the development of electronic publishing and digital library is critically hindered.

Besides, protecting intellectual property rights is essential to fair competition, research and innovation. While the focus of competition shifts increasingly toward invention and innovation, the costs of many creative activities rise even as it is becoming much easier to copy them (Maskus, 2000). This mainly involves pharmaceutical products, biotechnological inventions, operating software, and theatrical films, which are expensive to produce and expose to significant uncertainty in costs and demand but are often easy to duplicate in mass. Clearly, stronger rights will provide competitive advantages for innovative firms, allowing them to appropriate larger returns from creative activity and generating incentives for additional invention (Maskus, 2000). Therefore, successful IPRs protection is about producing effective, commercially driven results. And like any other facet of business, IPRs protection needs to demonstrate a return on investment. The best indications of a return on investment are increased market share and sales attributable to intellectual property rights protection. Improved media and public perception are other indications. Ultimately, companies can only maintain a competitive advantage through actively protecting the results of investment, knowledge, creativity and through more than a little hard work.

However, Intellectual Property Rights are globally controversial stems from their remarkable unequal distribution across countries (Maskus, 2000). The United States, Japan, and a few Western Europe produce the majority of internationally marketable technologies and goods. People in these countries are more interested in strong global protection than the developing countries. They appeal that the successful conclusion of the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) as a founding component of the World Trade Organization (WTO) elevates recognition and enforcement of IPRs to the level of inviolable international commitment. International efforts are also under way to enlarge intellectual property protection for critical new



technologies (Maskus, 2000). Ideally, if such agreements are implemented, global protection for creative invention and expression will increase remarkably, as will the gradual coordination of national IPRs policies. By then, the actual contribution of IPRs to the technology transfer, local innovation and global economic growth can be fully demonstrated throughout the world.

## **2.2 Current Status of Intellectual Property Protection in China**

Intellectual property, very broadly, means the legal rights which result from intellectual activity in the industrial, scientific, literary and artistic fields. Countries have laws to protect intellectual property for two main reasons. One is to give statutory expression to the moral and economic rights of creators in their creations and the rights of the public in access to those creations. The second is to promote, as a deliberate act of government policy, creativity and the dissemination and application of its results and to encourage fair trading which would contribute to economic and social development (WIPO, 1997).

In Chinese, the intellectual property is a word of foreign origin, and is directly translated from English, intellectual property. As to the concept of intellectual property, there are numerous various ideas and arguments in Chinese academic circles. To sum up, there are three schools of thought. The first, the theory of scope or theory of listing, the second, the theory of summary, and the third, the theory of intangible property system (isinolaw, 2002). In recent years, there arise growing internal demands for more social, economic and technological information. Consequently, the demands for protection of creative works in China have been sharply increased. This is not only for the propelling of China's domestic technological growth, but also to gain access to the rich treasure of technological advances in the developed countries. The Chinese government has established and implemented quite a few intellectual property laws to encourage more active inventions of creative works, what's more, to ensure a better investment environment for both domestic and foreign investors. The whole nation has realized the position of intellectual property in the economy growth in order to catch up with the developed countries.

Counterfeiting and piracy are very much ‘live’ issues in China (Asia Law & Practice, 1995). There have been numerous cases in China of violation of IPRs such as the counterfeit food, drink, and healthcare products some of which have led to poisoning and illness. Nowadays the high-tech industry brings out many more counterfeiting. Although the Chinese government has been trying to stop counterfeiting as much as possible by various methods and the co-operations among different authorities, it’s still popular and hard to control the counterfeiting situation in China. In the Seventh Annual Business Software Alliance Global Software Piracy Study report (which aims to review the available data and utilize a systematic methodology to determine the worldwide business software piracy rates and the associated dollar losses), the result shows that the Asia/Pacific region increased its rate of piracy to 54% in year 2001 which is the highest level since 1996 (Business Software Alliance [BSA], 2002). This unfortunate trend, combining with the growing importance of the Asia/Pacific region, helped make it the region with the largest dollar losses due to piracy as shown in Figure 2.2.1. In another figure in that report which lists down the 25 countries with the highest software piracy rates, China stands for the second top among the offenders with a software piracy rate of 92% in year 2001 (and 94% in year 2000). In response to the announcement from Clinton Administration in 1996, China agreed to set out the steps to insure effective intellectual property protection (Gutterman, 1997). For example, China has closed down a number of factories and illegal production facilities and unauthorized Laser CDs, CDs, Video CDs and other publications. The amount of fines collected by Chinese authorities for violation of intellectual property laws has increased significantly.

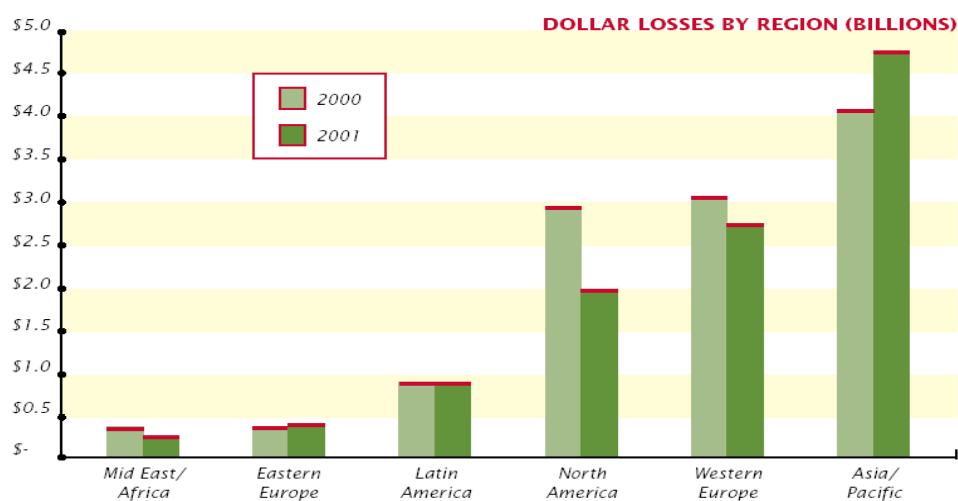


Figure 2.2.1 Dollar Losses by Region (US\$ Billions) Due to Piracy

Source: (BSA, 2002)

It's widely acknowledged that Asia is the source of most counterfeits (Asia Law & Practice, 1995). Asian countries might have a cultural basis for weaker intellectual property protection. This assumption was implied from the opinion that throughout Asia there is a shared consciousness evident in the idea that the use of another's intellectual property should not be regarded as stealing or piracy, but as a sort of non-culpable usage (Asia Law & Practice, 1995). Among those Asian countries, China is drawing most attention, with respect to intellectual property. There can be little doubt that in the next few years, a tremendous amount of counterfeiting activity will take place as China develops at a high speed. Although China's efforts to tackle and control these problems have been increased over the past few years in response to international pressure. In the long term, provided that this pressure is sustained and that China continues to demonstrate a willingness to address the issue, it is hoped that it can undergo a transformation similar to Singapore and Hong Kong (Asia Law & Practice, 1995).

Counterfeiting has been an integral part of the economic development of many countries (Asia Law & Practice, 1995). It is possible to observe a correlation between counterfeiting and the economic development of a country and how a country's infrastructure and manufacturing base is growing. Research shows that in the early years, as a country grows and develops its manufacturing base, there will be increased counterfeiting. Once the country has reached the stage where it is developing its own research and development, the impetus to protect intellectual property grows from within and counterfeiting starts to tail off (Asia Law & Practice, 1995). The current development situation of China and United States is good example of each stage respectively.

If we take a close look into China's current progress in intellectual property protection, there has been distinct improvement in the past few years. The investment climate for technologically advanced industries in China has improved greatly in the past few years owing to the promulgation of a series of intellectual property legislation (Maskus, 2000). Since China started to establish its intellectual property system, it has entered into the international framework on the protection of intellectual property. Looking into the brief chronology of intellectual property rights protection in China,

the Trademark Control Act was promulgated in April 1963. It became a member of the World Intellectual Property Organization (WIPO) in 1980. The Trademark Law was published in August 1982 and the Patent Law was publicized in March 1984. China entered the Paris Convention for the Protection of Industrial Property in 1985, the Madrid Agreement on the Registration of Marks in 1989, the Berne Convention for the Protection of Literary and Artistic Works in 1989. Its Copyright Law was promulgated in June 1991 and entered the Universal Copyright Convention in 1992. China became a member of the Berne Convention for the Protection of Literary and Artistic Works in 1992 also. And it entered the Patent Cooperation Treaty in 1994 etc. For a detailed Chronology of IPRs protection in China, please refer to Appendix 3. China's participation in the international arena has clearly indicated that it has already entered into the international system on the protection of intellectual property (isinolaw, 2002). In order to better fulfill the obligations under these international treaties and conventions, the Chinese government has introduced and implemented several regulations and laws related to intellectual property protection such as the “Decision on Intellectual Property Protection” announced by the National People’s Congress in the end of 1994.

Apart from the internal promulgation and implementation of IPRs protection, the agreements and momentums reached between China and the United States also contributed a lot to China’s entry to the WTO and its amendments of intellectual property related laws and regulations. China and the United States reached the Agreement on Trade Relations in 1979, the Memorandum of Understanding on Enactment and scope of Chinese Copyright Law in 1989, the Memorandum of Understanding on Intellectual Property Rights in 1992. In March 1995, China entered into an agreement with the United States regarding protection of intellectual property rights in China (Gutterman, 1997). China made commitments that it would publish all laws, rules, regulations, administrative guidelines, or other official documents concerning any limitation on, regulation of, or permission required to engage in the above-referenced types of activities. Finally in 1999, China and the United States reached the agreement on China’s accession to the WTO.

But as things stand, the prevailing view among victims of theft of their intellectual property is that its proper protection in China is still in its early stage, and not yet

mainstream and mature enough to warrant proper consideration and development by Chinese authorities and the public at large. In intellectual property protection, China started much later than developed nations, but it is catching up quickly, faster than anyone could ever have expected.

Full integration into international trade necessitates a strong foundation in intellectual property protection to facilitate healthy economic growth and fair trading practices. Recent history shows that IPRs are not a luxury, rather a necessary ingredient for a stronger legal system to protect the long term interests of the economy as well as those of foreign businesses – especially in the wake of technological advances that have encouraged international trade by simplifying the transaction process. But as legitimate business people have reaped the rewards of an increasingly open international market, so too have the less savory types who feed, like parasites, on the ideas and inventions of others.

In China, much is made of the need for higher financial penalties and harsher other punishments for intentional and repeat intellectual property offenders. Most punishments meted out are sufficient, in addition to imposing compensation to victims, and fines, it is also ordered that the perpetrators should issue a formal apology. But the counterfeiters and pirates still seem largely to sail safely on, often unscathed and still proverbially laughing all the way to the bank, regardless of improvements to the legal framework.

### **2.3 Intellectual Property Rights Enforcement in China**

Generally speaking, intellectual property law aims at safeguarding creators and other producers of intellectual goods and services by granting them certain time-limited rights to control the use made of those productions. Those rights do not apply to the physical object in which the creation may be embodied but instead to the intellectual creation as such (WIPO, 1997).

During the literature review of intellectual property protection in China, it is found that China introduced intellectual property legislation as early as 1950 (Asia Law & Practice, 1995). And the other fact showed that the authorities in China are willing to

take action to enforce intellectual property rights. It is generally accepted that in many respects the Chinese intellectual property laws meet international standards as a result of changes made over the past twenty to twenty-two years. And they are working actively to carry out the helpful support to stop counterfeiting activities. But the principle criticism has related to the Chinese enforcement regime and the lack of action against counterfeiting and piracy (Asia Law & Practice, 1995).

***Intellectual Property Law Enforcement Authorities:***

China has established an enforcement network of organizations and processes designed to enforce its intellectual property laws. The prominent feature of the Chinese intellectual property enforcement network is the combination of administrative enforcement and judicial enforcement (Asia Law & Practice, 1995). The examination of the current situation in China also shows the same infrastructure of such combination. Together with the Chinese intellectual property laws, the administrative and judicial enforcement authorities that enforce the laws provide a basic framework for the protection of intellectual property in China.

Before going into the introduction of current situation of intellectual property enforcement authorities in China, there is a comment about it made in early 1996 but is still accurate even nowadays. Chinese intellectual property law is complex and confusing. Different agencies and government bureaucracies have control over different industries, intellectual property rights are governed by a separate legal regime and foreign business are treated differently from local business. The laws are also constantly changing, leaving many foreign investors frustrated over the lack of clear up-to-date practical intellectual property information (Asia Law & Practice, 1996).

***Administrative Enforcement Authorities:***

A law is not an end in itself for the country concerned. It provides an important framework within which its intellectual property system will function. The law must be administered and used, and for that purpose suitable administrative machinery and procedures are required (WIPO, 1997).

The State Intellectual Property Office of People's Republic of China (SIPO) is a government institution directly under the control of the State Council. It is the

competent authority in charge of patent affairs and the coordinating authority for foreign-related intellectual property issues. It's one of the results of the restructuring of the government agencies, formerly it was the Patent Office of the People's Republic of China (CPO). Its main responsibilities include (State Intellectual Property Office of People's Republic of China [SIPO], 2002):

1. Draft the revision of the Chinese Patent Law and its implementation regulations; formulation of the related intellectual property regulations; organization and formulation of the patent execution.
2. Study and formulation of the foreign related intellectual property policies; study of the development of the international intellectual property; comprehensive coordination of foreign related intellectual property (including intellectual property negotiations); responsibilities for the international communication, cooperation and exchange in the field of patent;
3. Formulation of the general development and plan of the national patent administration as well as the planning of patent information network;
4. Formulation of the standards of the patent infringement and patent right discretion and appointment of institutions administering right discretion; guidance for the local settlement of the patent disputes and investigation of passing off of the patent; the examination of the patent agencies and qualification of the patent agents; appointment of the foreign-related patent agencies;
5. Organization and promotion of the dissemination of the Chinese Patent Law and related regulations; formulation of the general plan for the education and training in intellectual property.

From that have been defined as responsibility, we can see the SIPO plays two important roles in China's intellectual property enforcement. One is the overall coordinate of the policies and measures for the effective protection and enforcement of intellectual property rights, the other is the role of former "the Patent Office of the People's Republic of China (CPO)."

Besides it, there are also National Copyright Administration of China (NCA), the Trademark Office of the People's Republic of China (CTO), with a concentration of the management on copyright and trademark respectively (SIPO, 2002). In different

provinces of China, there are local bureaus of copyright, trademark and patent. In recent years, several intellectual property affairs offices and intellectual property institutes have been established all over the country. Apart from those intellectual property related bodies, there are different ministries of various industries such as the Ministry of Electronics and Ministry of Agriculture etc. which are also participating actively in the protecting of intellectual property.

The establishment and organization of these authorities are after China's signing of the Action Plan for Effective Protection and Enforcement of Intellectual Property Rights between China and the United States in February 1995 (Asia Law & Practice, 1995). And they are also named under Enforcement Task Forces (ETFs). Each ETF is to have all necessary authority and is to use its resources to initiate and carry out investigations of any suspected infringement of intellectual property rights.

Another important administrative organization is Chinese Customs. After the State Council issued the order of protection of intellectual property in May 1994 (Asia Law & Practice, 1995), the Chinese Customs is authorized to protect intellectual property rights relating to articles imported into and exported from China, including patents, trademarks and copyrights, may record his rights with the relevant customs authorities. Recently they strict enforce the laws and regulations and check the imports and exports of IPRs – violated goods effectively. Depend on the law, when the owners require the intellectual property customs to protect the IPRs of their imports and exports goods, the customs should input all the file record materials into the web of the customs computer system. The information can reach every customs nationwide in China and the customs enforce the protection of China.

#### **Judicial Enforcement Authorities:**

China has a four-tier court structure, namely the Basic People's Court, Intermediate People's Court, Higher People's Court and the Supreme People's Court.

The People's Court's roles in intellectual property enforcement include (Asia Law & Practice, 1995):



1. Securing evidence through pre-litigation raids and post-litigation raids, which plaintiffs are unable to obtain due to objective causes (for example, they can not enter the premises of the defendant);
2. Hearing all intellectual property related cases and rendering binding decisions;
3. Reviewing intellectual property related administrative decisions and supervising the executive branch, so that intellectual property laws and regulations are properly enforced;
4. Handling intellectual property related criminal cases and imposing sanctions on criminals so as to deter intellectual property related criminal activities;
5. Carrying out compulsory execution of court decisions and rulings of administrative tribunals, so as to guarantee the lawful intellectual property rights interests of intellectual property owners.

China's judicial departments have stepped up efforts to strengthen enforcement of intellectual property rights laws in a bid to bring the country into the requirements of the World Trade Organization (WTO). The Trade Related Aspects of Intellectual Property Rights (TRIPs) is one of the major principles followed by the WTO members. Meeting TRIPs' requirements is crucial for China's accession to the WTO (isinolaw, 2002).

There are also some Intellectual Property Trial Chambers established nationwide with the main responsibility of investigating the intellectual property related cases (Gutterman, 1997). Recently, Chinese courts have made positive efforts on establishing special trial chambers of intellectual property. Up to now, special intellectual property trial chambers have been established in Higher People's Courts in Beijing, Shanghai, Tianjin, Guangdong, Fujian, Jiangsu, Hainan, Sichuan, Chongqing, Henan, Liaoning, etc. as well as in Intermediate People's Court of a number of cities. This type of intellectual property trial chambers have also been established in the district court of a certain number Hi-tech Economy Development Zone, focusing on the intellectual property cases and disputes of technology transfer contract. The Supreme People's Court also set up its intellectual property trial chambers in October of 1996. In those courts without intellectual property trial chambers, a fixed panel has gradually handled all intellectual property related cases. This is a signal showing that the intellectual property judiciary field is taking off along the specialization road. In

order to higher level of intellectual property judiciary protection, considering the comparative fewer case number, intermediate People's Court has become the first instance court for civil intellectual property cases in the area without intellectual property trial chambers.

***Current Intellectual Property Related Laws and Regulations in China*** (SIPO, 2002):

1. Patent Laws and Regulations

- Patent Law of the People's Republic of China
- Implementing Regulations of the Patent Law of the People's Republic of China
- Regulations on the Protection of Layout-Designs of Integrated Circuits
- Regulations on Patent Commissioning

2. SIPO's Regulations

- Notice Concerning Handling of Deposited Micro-Organisms by the Chinese Patent Office
- Rules of Notice Concerning Handling of Deposited Micro-organisms by the Chinese Patent Office
- Provisional Provisions Concerning Entry Quarantine for Micro-Organisms(Viruses) and Culture Used for Patent Procedures

3. Related Laws and Regulations

- Trademark Law of the People's Republic of China
- Copyright Law of the People's Republic of China
- Law Against Unfair Competition of the People's Republic of China
- Contract Law of the People's Republic of China

Here let's take the Copyright law for example. The new Copyright Law came into force in 27 October, 2001 (SIPO, 2002). The law brings China into closer compliance with the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) after its entry into the WTO in 11 December, 2001.

The new Copyright Law expands protection for compilation works (so that databases are protected) and adds the right to transmit via the Internet to the list of copyrights. It also regulates assignment of copyright. And it also strengthens enforcement measures

against infringement, introducing a preliminary injunction procedure to stop infringement and preserve evidence. There are detailed guidelines for the award of appropriate damages. These take into account any illegal profits made by the infringer or the claimant's actual loss. If these cannot be determined, statutory damages up to RMB 500,000 may be awarded.

For more detailed information about each form of these intellectual property rights related laws, please refer to the website links of State Intellectual Property Office of People's Republic of China in Appendix 4.

#### **2.4 WTO and the Amendments of Intellectual Property Laws in China**

In order to resolve the discord over international trade, the member countries of the WTO signed the General Agreement on Tariffs and Trade (GATT) in 1947. From 1947 to 1993, there were altogether eight rounds of negotiation. The eighth was held in Uruguay, therefore, is known as the Uruguay Round. In year 1994, twenty-one treaties were signed among its member countries and the World Trade Organization was established then. One of those signed treaties was Trade Related Aspects of Intellectual Property Rights (TRIPS), from that time on, the protection of intellectual property has become one of the most important topics of discussion in the WTO. During the Uruguay Round negotiation, there was drastic dispute of whether including the topic of intellectual property protection between the developed and developing countries. In the end, both parties agreed to sign on the TRIPS, however, it was only the temporary compromise of such dispute.

China's entry into the World Trade Organization (WTO) has long been a certainty, and now it has become a reality already. In December 11, 2001, after fifteen years' struggling, China finally became a member of the WTO. Not only for China itself, but also for the WTO and the rest of the world including the United States, there has been profound and lasting significance.

As required, the obligation to introduce and enforce intellectual property laws became mandatory on member countries of the WTO (Endeshaw, 1996). China has been preparing for the entry for a long time to fully compliant with the conditions required

by the WTO, and to its credit the government continues to work feverishly on its legal framework on all fronts for intellectual property protection. Legalese is being tightened, and work continues apace on amending current laws. Amendments and revisions to the Trademark Law, Copyright Law and Patent Law are at various stages of completion. In October last year (just one month before China's entry into the WTO), during the Ninth Standing Committee of the National People's Congress meetings, the Copyright, Trademark Laws had been amended and released to the public (SIPO, 2002). By then, the basic content of China's main intellectual property laws namely Patents Law (after two times revision in September 4, 1992 and August 25, 2000), Trademark Law (after two times revision in February 22, 1993 and October 27, 2001) and Copyright Law (after one time revision in October 27, 2001) had reach the standards of the TRIPs, including the object of the protection, the scope of the rights and the duration of the protection and so on. However, till Sep 2002, in terms of the revision of China's IPR laws and regulations in conformity with the TRIPs agreement which have been submitted to the WTO, the date of implementation of the followings laws and regulations are still "Upon Accession": Copyright Law of the People's Republic of China, Regulations for the Implementation of the Copyright Law of the People's Republic of China, Regulation for the Protection of Computer Software, Trademark Law of the People's Republic of China, Detailed Rules for the Implementation of the Trademark Law of the People's Republic of China (Kong, 2002). Although not implemented yet, all of them which have been revised in order to be conformed to the TRIPs agreement had laid a solid foundation and contributed to China's accession to the WTO in the aspect of protecting the intellectual property.

These historic developments were accompanied by other actions during the year 2002 designed to better regulate the audio and audiovisual market, to deal with corporate end-user piracy of software and to begin tackling the enormous problem of wholesale journal piracy throughout the nation. These actions were accompanied by statements from Chinese leaders citing the critical need for China to better protect its intellectual property and to do a better job fighting widespread piracy throughout the land. All these were very positive developments –indeed, IIPA members believe that China is now fully aware at the highest levels that intellectual property protection must become a part of the national tapestry of economic growth (International Intellectual Property Alliance [IIPA], 2002).

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 Theoretical Overview**

Research is a careful and systematic process of inquiry to find answers to problems of interest or achieve the research objectives being set out (Tan, 2002). To do “research” is to investigate the problem systematically and thoroughly which requires the researcher to follow a process, a sequence of steps from formulating the research problems to publishing the results. Therefore, research is not defined by the object of inquiry but by its method (or technique) of arriving at valid statements, or generating knowledge, about the empirical world.

The goal of research is to solve “problems” of interest. Directing attention to problems forces us to formulate them carefully long before tentative solutions appear (Popper, 1975). The solution is always tentative as researchers search for better and better explanations all the time. The problems should be of interest to the researcher and, more importantly, the academic community, industry or society.

If researchers hope to provide tentative solutions to problems of interest, then the aims of research should be to describe, predict, explain or interpret phenomena (Tan, 2002). In particular, research may help to describe phenomena we know little about. In descriptive studies, no attempt is made to infer correlation or causality. However, the importance of good descriptive work can not be overlooked since it can lay a solid foundation for other researches such as correlational research which is used to predict trends. The two types of researches mentioned above make no attempts to explain phenomena, whereas explanatory studies researchers are interested in explaining phenomena because a causal explanation provides a stronger foundation than correlation. That is, sometimes we want to establish correlations and propose a causal mechanism (also known as a “theory” or its testable part, a “hypothesis”) to explain the

events. But such theorized causality is only a “tendency”, implying that it does not always hold true. First, causation is interpreted in terms of probability rather than deterministic interpretation. Second, the causation is conditional because some other factors may distort such relation. A correlational research merely measures associations between variables, if an explanatory model is used for projecting future trends, the term forecast rather than prediction is sometimes used. Further, knowledge of the causal mechanism holds the answer to the problem under investigation which may then be used to attain desired outcomes. Researchers are also interested in interpretive research which is to understand (or interpret) the reasons and intentions behind individual action. Although no one denies that human actions are meaningful, it is important not to be carried away with the view that society is composed only of individuals (Tan, 2002). There are structural or institutional constraints to the choices we make and, for most situations, decisions are made collectively by teams, groups or communities.

There are some other ways of classifying research. One way is to classify by function. There are basic or pure research which aims to advance theoretical knowledge, and applied research which is concerned with applying scientific theory to real-life problems (Tan, 2002). Applied research is action-oriented, evaluative and developmental. A final classification is to distinguish between quantitative and qualitative research (Tan, 2002). The quantitative research emphasizes the importance of numbers whereas qualitative research pays more attention to human intentions and meanings in given situations.

What, then, are scientific modes of inquiry? The term of modes infers that there is more than one way of doing science. This is what debates on methodology are all about. Methodology may be defined as the ways of producing and analyzing data to test hypotheses (Tan, 2002). It consists of general philosophies of science and detailed research methods (such as surveys and statistical analyses) that are used to analyze data. The philosophy of science is a difficult subject to define and hence master. In a simplified version, the philosophy of science includes: (1) ontology or the nature of

reality, that is, what is reality? (2) epistemology or the theory of knowledge, that is, how we know reality. For details of philosophy of science, please refer to books by Crotty (1998) and Blaikie (1993).

If research is to be systematic, it should follow a series of steps called the research process as given below (Tan, 2002):

1. Formulation of the research problem;
2. Determination of research design;
3. Selection of data collection method;
4. Data collection and processing;
5. Data analysis;
6. Conclusion; and
7. Research report.

Steps 2-5 constitute the research method. It is sometimes called the research methodology but as explained in last paragraph that methodology consists of general philosophies of science and detailed research methods. Therefore, strictly speaking, what we normally discuss and adopt in our research is research method but not research methodology.

### **3.2 Research Design**

Research design may be defined as the plan for getting from the research question to the conclusion. It is a blueprint for data collection and interpretation. In order to solve our research problems, we need to determine appropriate research design. The most common research designs are case studies, surveys, experiments, correlational research, causal-comparative research and historical research (Tan, 2002). In this study, survey and correlational research designs were used, that is, both descriptive and correlational study approaches were attempted to achieve my research objectives.

A survey is a systematic method of collecting primary data based on a sample (Tan, 2002). Surveys are suitable for descriptive or correlational studies such as when

different groups are asked to rank their preferences and we wish to determine their correlation between ranks. They are also used for causal or interpretive work, for instance, to find out why certain actions were taken or not taken. Although surveys provide a relatively quick and efficient method of assessing information about the population, they are sometimes criticized as a “soft option” among research designs due to its main weakness of not demonstrating causality.

Survey research is all about quantifying the relationships between variables. The variables are from the data we collect on our subjects. In this case, there are four subject groups – demographical data about participants, organizational profile, intellectual property related information and opinions on certain statements from the viewpoint of participants. Suitable data mining tools were then used to facilitate the analysis of the relationships between these variables.

Research studies aimed at quantifying relationships are of two kinds: descriptive and experimental. In a descriptive study, no attempt is made to change behavior or conditions—you measure things as they are. The objective is to describe the distribution of a phenomenon in a population, thereby ascertaining facts. Descriptive studies are also called observational, because you observe the subjects without otherwise intervening. In an experimental study, you take the requisite measurements, try some sort of intervention and thereafter take measurements again to see what happened. Due to the nature of this research topic, the study here was a descriptive but not an experimental approach to quantify relationships.

As to correlational studies, it examines associations between two or more variables which are derived from the result of the survey. The reason of employing this research design is that it helps to identify some highly correlated variables. And we can say the dependent variable and the independent variable “move together” with one “depends on” or “causes” the other relationships with the assistant of some data mining tools. In return, such result will facilitate better understanding the variables and relationships among them.



### 3.3 Sample Selection for Survey

A sample survey is one type of surveys which uses a sample. Sampling may be defined as methods of selection from a population. In sampling terminology, the population is the set of all elements of interest. The sampling frame is the actual list of elements from which sampling takes place. As shown in Figure 3.3.1, the sampling frame should be as 'close' to the population as possible. Otherwise, sampling is likely to be biased. A sample is a selected subset of the sampling frame. Finally, a sampling element or sampling unit is a member of the population.

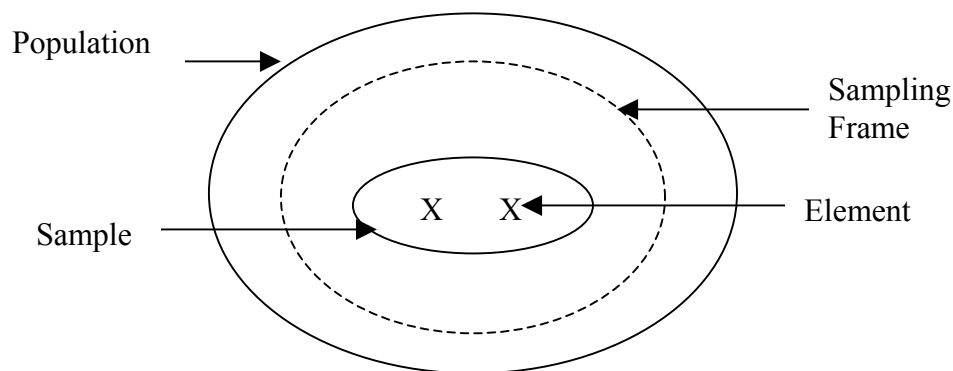


Figure 3.3.1 Basic Sampling Concepts

Source: (Tan, 2002)

There are two main categories of samples, namely probability sample and non-probability sample (Tan, 2002). In a probability sample, the elements are selected by chance and there is a known probability of each element being selected. A sampling frame is required to calculate the probabilities. Probability samples may be selected using: simple random sampling, systematic sampling, stratified sampling, and cluster sampling. On the contrary, a non-probability sample is one in which chance selection procedures are not used. Hence, it is not possible to determine how representative the sample is of the population and the techniques of statistical inference can not be used. Non-probability samples may be drawn using convenience sampling, purposive sampling, quota sampling, or snowball sampling. It is preferable to use probability samples unless a sampling frame is not available. The trade-off is between accuracy and cost.

In this study, convenience sampling was used in which the criterion for selecting sample elements is convenience to the sampler. Convenience sampling is unlikely to be representative and it is used mainly for exploratory work, for protesting of questionnaires or in cases where time is short and a quick opinion is required. Besides, snowball sampling was also employed which begins with a few respondents who provide referrals for additional respondents. Snowball sampling may be used when a sampling frame is not available and where the initial sample is very small. Although as mentioned in last paragraph that the usual statistical tools can not be used on non-probability samples, as long as the bias is small, the procedure is perfectly acceptable (Tan, 2002).

As noted before, sample size depends on the trade-off between cost and precision. This trade-off may be derived using the Central Limit Theorem. It states that as the sample size ( $n$ ) increases, the sampling distribution of the sample mean ( $\bar{X}$ ) approaches the normal distribution with mean  $\mu$  and variance  $\sigma^2/n$ . Thus, if  $S$  is the sample estimate of  $\sigma$ , then, after some rearranging,  $n = (ZS/E)^2$  where  $Z$  is the level of confidence required and  $E$  is the specified level of precision (Tan, 2002). Although  $S$  is not known prior to the survey, it is estimated as one-sixth of the range. No matter the sample proportion  $\rho$  is known or not, the formula may be written as  $n = [Z^2 \rho (1-\rho)] / E^2$  (Tan, 2002). If a 95% level of confidence is required (as most social science required), the value of  $Z$ , from the standard normal distribution table, is 1.96. Meanwhile, if the sample proportion is unknown, researchers tend to use  $\rho=0.5$ . Consequently, if a precision of  $\pm 3\%$  ( $E=0.03$ ) is required, the sample size will be 1,067. That's why a sample size of 1,000 is often used in such surveys.

In this study, a 95% level of confidence was required. Since the sample proportion of this survey was also unknown, the conventional  $\rho=0.5$  was adopted. Due to the cost and time constrains, such sample size of 1,000 with a precision of  $\pm 3\%$  ( $E=0.03$ ) is not possible. The precision of this survey was defined as  $\pm 7.5\%$  ( $E=0.075$ ), therefore, the required sample size of this study was  $n = [1.96^2(0.5)(1-0.5)] / 0.075^2 = 170$ .

The required sample size is not the same as the number of questionnaires sent to potential respondents. In this study, a response rate of 50% was expected, and the required sample size was 170, hence, at least 340 questionnaires should be sent out.

Last but not least, survey errors can not be overlooked. There are non-sampling errors and random sampling errors (Tan, 2002). Non-sampling errors consist of administrative and respondent errors. Administrative errors arise from mistakes in data collection or processing. Respondent errors occur if the response is biased. In view of these possible errors, there is some distrust of survey results. Even if non-sampling errors have been eliminated, there are still random sampling errors that arise from chance variations between sample and population characteristics. In contrast, non-sampling errors are not due to chance but may arise from mistakes in recording data, cheating, and so on. For this reason, sampling errors, unlike non-sampling errors, can not be eliminated. They should, however, be taken into consideration in making inferences about the population. A variety of statistical techniques have been devised for this purpose.

### **3.4 Data Collection Methods**

After determining the research design, the next step in the research process is to select the methods of collecting data. A variety of data collection methods may be used in a project. They include questionnaires and interviews, observation techniques, the analysis of past documents and simulation (Tan, 2002).

In this study, questionnaires were employed to collect information and opinion by communicating with respondents in a structured, standardized manner. Compare to other methods, email and self-administered questionnaires provide greater geographic flexibility and produce uniform quantitative results which are statistically significant. Moreover, respondents are free not to reveal their identity and they will have more time to think about the questions before responding. However, there may be

incomplete replies or low response rates. For email questionnaires, the method is biased if sampling elements such as some people do not have computer access.

In using questionnaires to collect primary data, the questions themselves are as important as the answers. Wrong questions lead to unwanted answers. Vague and badly phrased questions result in inaccurate answers. Badly worded personal questions may result in no response. Lastly, biased questions, even if unintentional, prejudice the answers (Tan, 2002). A good questionnaire design includes: (1) deciding what should be asked with main considerations of relevance and accuracy, (2) phrasing the questions correctly such as design the questions to be fixed-alternative which helps to avoid non-standard answers (provided there are all the possible choices), avoid leading questions, not ask two questions at the same time because of the possibility of conflicting replies, not provide vague answers, be careful about asking questions of future intentions, (3) deciding on the sequence in which the questions appear, (4) deciding on the layout which aims to be neat and uncluttered layout, (5) undertaking a pretest to determine whether the questionnaire is likely to pass the test on an actual run (mostly, the pretest sample may not have the same characteristics as the actual sample).

Scales play an important role in questionnaire design which are used to assess orders of magnitudes and preferences (Tan, 2002). Scales follow from the types of variables used. For discrete (or categorical or non-metric) variables, the nominal or ordinal scale may be used. For continuous or metric variables, the interval or ratio scale is used. Discrete variables are integers and used for categorization or ranking. Continuous variables are based on real numbers (including integers). The choice of scale influences the statistical techniques used. Thus, use the appropriate scale to gather as much information as possible.

A nominal scale represents the lowest level of measurement since it merely categorizes data. The numbers used in a nominal scale represent categories that are coded in a suitable form for subsequent data procession, but these categories can not be ranked. In

the simple attitude scale, only two response categories are required, for example, “Yes” or “No” and “Agree” or “Disagree”.

In many cases, a wider range of responses (ranks) using the ordinal scale is more appropriate. Normally numbers are attached to the responses, for example, in this questionnaire survey, 4 = “Strongly Agree”, 3 = “Agree”, 2 = “Disagree” and 1 = “Strongly Disagree”. Such scale is known as a semantic scale. A variation is to state a condition (statement) and ask respondents to tick their answers which were used throughout the fourth section of this questionnaire survey. There is no hard and fast rule whether a 4-point, 5-point, 7-point or 10-point scale should be used as long as one pays attention to the sensitivity of the responses (Spector, 1992). The difference between using odd and even numbers lies in whether “Neutral” is an acceptable answer. In this questionnaire survey, a 4-point scale was used which means a neutral response is not allowed. Besides, there is little difference in the scores in practice, therefore, the decision of using whether a 4-point scale or a 10-point scale lies in whether greater precision is meaningful. In this study, a 4-point scale range was enough for gathering desired opinions from respondents.

There is a Likert or summated rating scale where the scores are summed or averaged. Then, the mean ratings may be ranked. And there can be a count column giving the number of responses for each variable. However, if only the scoring intervals are nearly equal (for example, from 1 to 10), a summated rating scale may be used. In this study, since a 4-point scale was used and the intervals were not so equal, summated rating scale could not be used.

For continuous variables, the interval scale contains predetermined and equally spaced intervals and allows differences to be compared. However, there was no continuous variable in this study due to the design of questionnaire and such interval scale was not applicable. In the questionnaire, even the “Age Group” and “Years of Working” were categorized as 1,2,3,4 and 5 which stood for each age group and years of working. Therefore, they were also defined as ordinal variables.

### **3.5 Questionnaire Design**

With the aims which were derived from the research objectives to assess the current awareness of intellectual property protection in China, and to investigate the current intellectual property protection status (especially up to China's entry into the WTO) as well as problems from the view of conducting respondents' business, a questionnaire survey was conducted among some employees (acquired from convenience sampling) within selected companies in China.

The questionnaire was composed of several sections. The first section was about personal details. These details were needed to validate the respondents, as respondents' background might affect the way they answer the questions. The second section was about respondents' organizational profile. This profile was needed to examine the relationships between type, main business and size of the organization with the awareness of intellectual property protection existence in the organization and respondents' answers to the questions. The third section attempted to review the awareness of intellectual property protection targeting at respondents and their companies. The fourth section of the questionnaire, which was the main section of the survey, comprised statements about intellectual property protection in China. These statements attempted to elicit respondents' personal viewpoint on intellectual property protection in China, whether agree (or strongly agree) or not (or strongly not) agree with the statements and no neutral opinion since a 4-point scale system was used. The last question was an open-ended one seeking for free expression of opinions related to intellectual property protection, but not covered in this survey.

Since this survey was conducted in China, the questionnaire was also translated to Chinese to cater for respondents who were not proficient in English. The English version questionnaire can be found in Appendix 5 of this dissertation.

### **3.6 Data Collection and Processing of Data**

The next step in the research process after determining the research methodology is the actual collection and processing of data. As described in section 3.2, convenience

sampling and snowball sampling were used to select my sample due to time and cost constraints. Hence, the questionnaires were sent out to my previous classmates, ex-colleagues, friends and family members through emails or delicate deliverer in China. They were from different industry and different types of company. Subsequently, the questionnaires were “snowballed” through my initial respondents referring to additional respondents.

There were unavoidable errors in the survey, as discussed in section 3.2, non-sampling errors consist of administrative or respondent errors. Administrative errors may be reduced through careful selection of interviewers and equipment, training and proper supervision. In this study, since there was only questionnaire but no interview, such approaches could not be made use of. Respondent errors may be divided into non-response error and response bias. These errors depend on the respondent, environment, questionnaire and interviewer. For example, after collecting the questionnaires, it was found that some respondents ticked the same preference for different questions in section four of this survey. Such falsified information could not be included in the final valid questionnaires.

After data had been collected, the next step was to process, clean, and transform recorded data into information suitable for analysis. Initially, editing or screening the data to ensure completeness, consistency and readability before they were coded. During this step, errors and omissions were checked, falsified information and “almost blank” answers were rejected. However, outliers were not rejected because there were still possibilities of occurring. As to the missing data, it’s too luxury to discard questionnaires with incomplete data since the sample size was small. Although there are many ways of imputing new value to missing data such as using sample mean, random component, matching, interpolation or prior knowledge to guess the missing value (Tan, 2002), in this case, they were just coded as standard missing data value which was “99”. In the end, there were altogether 173 copies of valid questionnaires to be used in this study.

The next step was to code them which allowed data to be classified and processed, whether manually or by computer. In this study, SPSS was used when tabulating the final valid questionnaire data. Therefore, coded data were organized into variables and records. Each variable stood for one question in the questionnaire, whereas each record stood for one valid respondent.

Since almost all of the questions were close-ended, it's relatively easy to code them in order to facilitate analysis and establish the relationships between variables. Based on the nature of each variable which was defined during the questionnaire design stage, variables were measured by nominal scale, ordinal scale or interval scale correspondingly. During the inputting process, errors were minimized by immediately checking on hard copies and examining the existing data output to see whether there were any obvious outliers that hadn't been imputed during the coding process. For open-ended questions, since all of them were just string, wherever available, they were typed in the variable named "comments" in SPSS.

After data had been edited, coded and checked, the next step was to display them for exploratory data analysis (EDA). EDA is about looking at data to see what it seems to say, and what we never expect to see (Tukey, 1977). It is numerical, counting and graphical detective work in search of patterns before more complex statistical tools are used for knowledge extraction. Standard statistical software packages such as Excel, SYSTAT, SAS, SPSS, MINITAB or LOTUS 123 may be used. The display may take many forms such as simple frequency distribution tables, cross tabulations, pie charts, bar charts, histogram or frequency polygon wherever appropriate. In this study, SPSS and Excel were employed as the exploratory data analysis tool. The relationships between various variables were analyzed, as well as consolidate perceptions on the research problems. The analyzed findings are presented in Chapter 4.



### **3.7 Limitations of the Survey**

As with all survey of this nature, there are a few areas to be improved for this study wherever have been missed out due to various constrains. Regarding the survey, although it is acknowledged that surveys provide a relatively quick and efficient method of assessing information about the population, its weakness of not demonstrating causality is undeniable. This study was supposed to be compensated with a correlational analysis of the questionnaire data, however, due to the cost and time constraints, a generally required sample size of 1000 by most social science was not possible. Finally the sample size was only as small as 173 with a precision of  $\pm 7.5\%$  after sending out more than 340 copies of questionnaires (expected response rate was set to 50%). Therefore the results of this study could not be completely representative. And while applying statistical or other types of techniques to these questionnaire data, it was pretty difficult to find out pattern or discover knowledge from the viewpoint of data mining.

As to the sample selection, the non-probability sample selection in this study was not as ideal as a probability sample. Since there was no sampling frame, the probability of each element being selected could not be calculated. Consequently, it was not possible to determine how representative the sample was of the population and the used techniques of statistical inference or other types were not so appropriate (even though the procedure was still acceptable as long as the bias was small). However, as a result of trade-off between accuracy and cost, convenience sampling and snowball sampling were still employed to select the final non-probability sample.

The data collection methods approached in this study was only questionnaire. If only time, cost and conditions allowed, interviews would be advantageous if probing questions were involved, visual demonstrations were required or when instant feedback was desirable.

For the questionnaire itself, the main section was the statements provided by the author. Some of the questions might be criticized as leading questions which would sometimes lead respondents to the desired answers. Besides, the sequence of the questions was not ideally appropriate. As to the format of the questions, almost all of

them were close-ended producing structured and standardized answers which would be suitable for further data analysis. However, it unavoidably restricted the width and depth of the survey implying that some other related questions might be missed out by the author. Besides, there was no pretest of the questionnaire with a protest sample which theoretically should have the same characteristics as the actual sample. Lastly, from the perspective of the respondents, this research topic might be quite unfamiliar and vague for some of the respondents, hence, they might interpret the questions from a different aspect as the author and produce in-accurate responses.

The data analysis tools used in this study were SPSS and Excel which are all known as powerful data mining tools. However, with limited knowledge of statistics and data mining skills, the actual analysis of the questionnaire data by the author was not as professional and as in-depth.

## **CHAPTER 4**

### **DATA ANALYSIS AND FINDINGS**

This chapter will present data analysis and findings of the survey on the current awareness of intellectual property protection in China, the investigation of the current intellectual property protection status especially up to China's entry into the WTO, as well as problems and possible measures from the view of conducting respondents' business.

The questionnaires were disseminated to my previous classmates, ex-colleagues, friends and family members through emails or delicate delivery in China. They were from different industries and various types of companies. And subsequently, the questionnaires were "snowballed" through my initial respondents referring to additional respondents. In the end, after the pro-processing of data that excluded the falsified information and "almost blank" questionnaires, 173 copies of valid questionnaires were eligible to be analyzed in this study. The findings will be discussed in this chapter. As to the missing data in the questionnaires, they were not included in the final analysis, that is, for each question, the total valid respondents number varied from each other according to the number of missing data. Therefore, the percentage derived was taken the valid respondents number but not 173 as the denominator.

#### **4.1 Demographics of Respondents**

To ensure confidentiality and honesty in respondents' response, the anonymity of the respondents were kept confidential in nature and no individual will be identified. The main purpose of the "Personal Profile" section was to classify and group responses to the other questions.

Among the valid respondents to the questionnaire, 42.9% were female and 57.1% were male. This fact shows that relatively male group has more interest to response to such

survey and more open to the concept of intellectual property protection, as male gender is perceived to be more adaptable to law related information improvements and changes.

Respondents who participated in this study came from a wide range of age groups. As shown in Figure 4.1.1, out of the total valid number of respondents, 4.7% came from  $\leq 20$  group of age, 62.9% came from 21-30 group of age, 17.1% came from 31-40

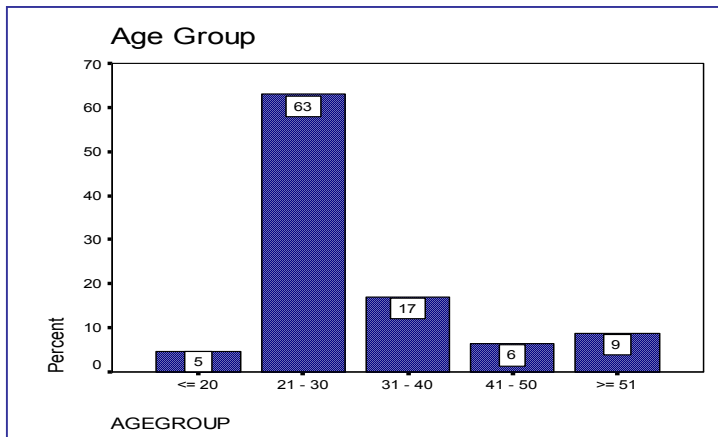


Figure 4.1.1 Demographics of Respondents by Age Group

group of age, 6.5% came from 41-50 group of age, and 8.8% came from  $\geq 50$  group of age. The second and third age groups account for the majority of respondents who fall into 21-40 range of age. This demographical result is

logical because people of this age group tend to be more exposed to the current affairs about the nation and make up the main working force of the society.

Though the respondents were from different industries, undeniable, due to the fact that

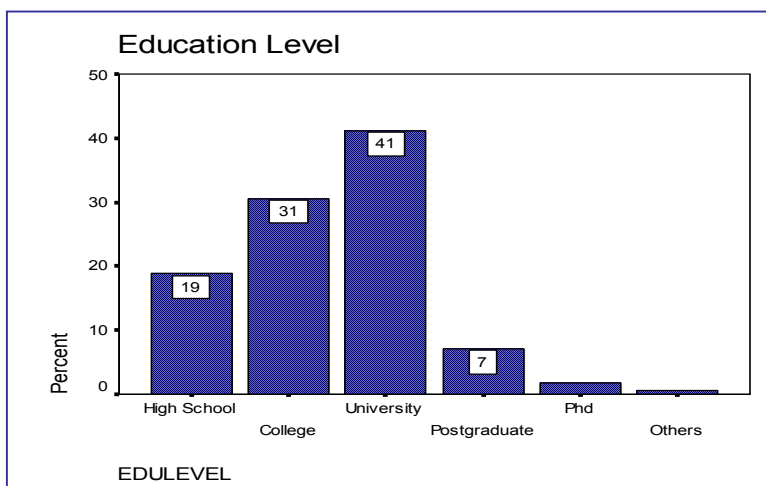


Figure 4.1.2 Demographics of Respondents by Education Level

the respondents I had reached were from the convenience sampling and snowball sampling, it could not stand for the actual education level distribution of the whole nation but just a small proportion of people with relatively better

education. As shown in Figure 4.1.2, the majority of respondents were from College and University education background. Only 28.3% of the respondents were from all the other education levels.

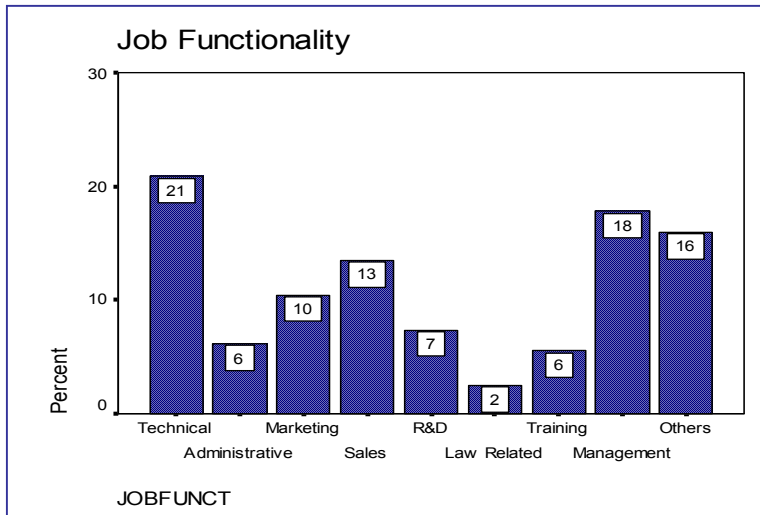


Figure 4.1.3 Demographics of Respondents by Job Functionality

Figure 4.1.3 shows the job functionality distribution of the respondents. There are nine categories altogether in the pre-defined job functionalities in the questionnaire. The distribution is not so extreme, 20.9% of the respondents were from Technical job, 6.1% of the respondents were from Administrative job, 10.4% of the respondents were from Marketing job, 13.5% of the respondents were from Sales job, 7.4% of the respondents were from R&D job, 2.5% of the respondents were from Law Related job, 5.5% of the respondents were from Training job, 17.8% of the respondents were from Management job, and 16.0% of the respondents were from other jobs which were not covered in these nine categories.

The years of working of respondents varied from 52.1% of them had  $\leq 5$  years working experience, 21.8% of them had 6-10 years, 8.5% of them had 11-15 years, 5.5% of them had 16-20 years, to 12.1% of them had  $\geq 21$  years. Here the majority of respondents had  $\leq 10$  years working experience. This result is corresponding with the result shown in Figure 4.1.1 since most respondents are from the age group of 21-40 years old.

#### 4.2 Profile of Respondents by Organization Profile

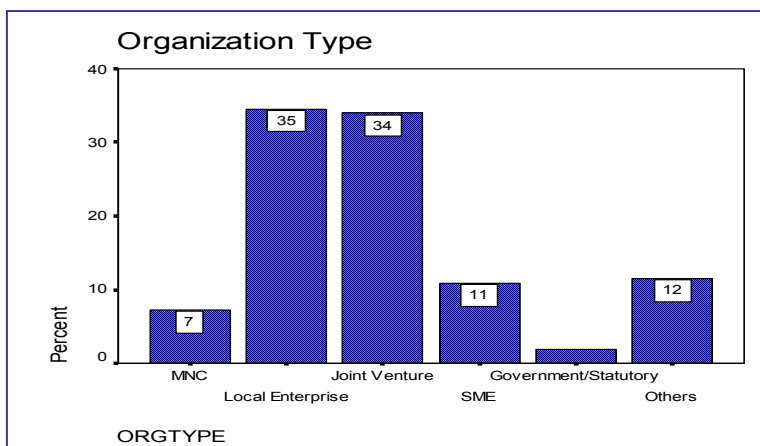


Figure 4.2.1 Profile of Respondents by Organization Type

There are six categories of organization types in the questionnaire, as present in Figure 4.2.1, out of all the respondents, 7.3% were working in MNC, 34.5%

were working in Local Enterprise, 33.9% were working in Joint Venture, 10.9% were working in SME, 1.8% were working in Government/Statutory board, and 11.5% were working in Others which was not covered in the six categories. Among all these companies, there were 7.5% of them had 0-50 employees, 4.4% of them had 51-100 employees, 13.1% of them had 101-200 employees, 25.0% of them had 201-500 employees, 21.9% of them had 501-1000 employees, and 28.1% of them had >1000 employees.

The main business activities of these companies involve Government, Manufacturing, Information Service, Commerce, Consultancy, Computer Related, Telecommunication, and others.

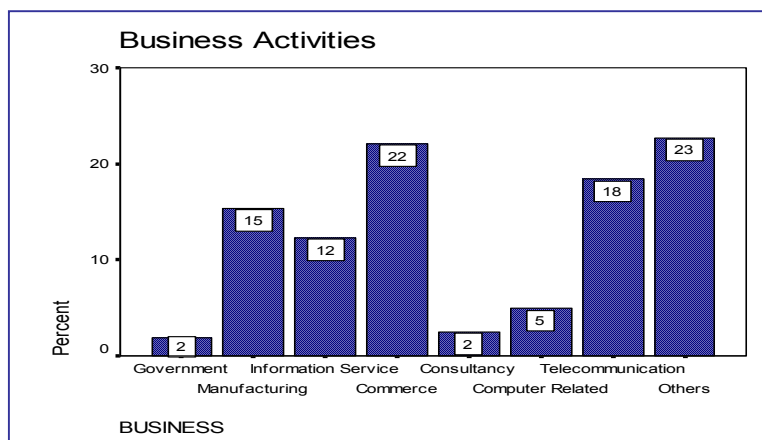


Figure 4.2.2 Profile of Respondents by Business Activities

Information Service, Commerce, Consultancy, Computer Related, Telecommunication, and others. Figure 4.2.2 shows the distribution of the main business activities of the companies from where

the respondents come. 1.8% of the respondents were from Government, 15.3% were from Manufacturing, 12.3% were from Information Service, 22.1% were from Commerce, 2.5% were from Consultancy, 4.9% were from Computer Related, 18.4% were from Telecommunication, and 22.7% were from others. If these business activities are categorized in another method, that is, by whether the business involves intellectual property or not, 58.7% of the respondents indicated their business involving intellectual property, 14.8% indicated not involving, and 26.5% indicated “Not Know”. As to the question about whether their companies have intellectual property related department, 35.5% of the respondents specified that their companies had such department, 26.3% of the respondents specified “Not Have”, and 38.2% of the respondents specified “Not Know”.

From most of the responses to the questions about organization profile, it is found that there is still certain proportion of respondents who are not clear about or do not concern about intellectual property related issues in their companies’ business

activities. It may be implied to some degree that the awareness of intellectual property of that proportion of respondents are still not so good.

### **4.3 Awareness of Intellectual Property in China**

#### **4.31 Understanding of Intellectual Property**

Among all the respondents, there were 44.2% of them claimed that they understood the meaning of intellectual property, 31.4% of them claimed not, and 24.4% of them had no comments on it. Though the percentage of respondents who understand the meaning of intellectual property is not very high, it is going to reach 50% and still represents the majority of all the respondents. And it helps to demonstrate that nowadays people in China have had a basic awareness of intellectual property protection already. With the development of the society and the open policy, people in China are more exposed to the intellectual property concept and start to appreciate the importance of intellectual property protection for not only individual life but also the business.

With the function of Cross-tabulation in SPSS, the relationships between respondents' personal profile or organization profile or the way their companies handles intellectual property related issues and respondents' understanding of intellectual property can be tabulated in various cross-tabulations. In this study, the sampling distribution was assumed to be normal distribution and the level of significance was defined at 5% as discussed in section 3.3. The null hypothesis here was that the corresponding pairs of variables were not significantly related with each other. After performing a Chi-square test of independence for each pair of variables during the cross-tabulation practice, certain variables had been proven to have the significant relationships with the understanding of intellectual property. That is, the null hypothesis about the independence between these variables was rejected at the 0.05 level and they were significantly related.

To make it easier to understand, the following figures after visualization of those raw cross-tabulation results show the corresponding relationships between respondents' personal profile or organization profile or the way their companies handles intellectual property related issues and their understanding of intellectual property. As shown, not all the personal or organization variables had been chosen to be analyzed since only

those statistically significant variables could be related to respondents' understanding of intellectual property. Though the other variables might also show some statistical results of the questionnaire, they were not statistically proven to be solid and no inference could be made from them.

These figures show that in each category of one variable, the result of whether they understand the meaning of intellectual property is different. And such difference is significantly related to respondents' age group, years of working, whether their companies' business involving intellectual property, whether the companies have intellectual property related department, whether they use original software, and whether they are able to handle violation of intellectual property or have specific lawyer agency to consult. That is, these factors will affect a person's understanding of intellectual property.

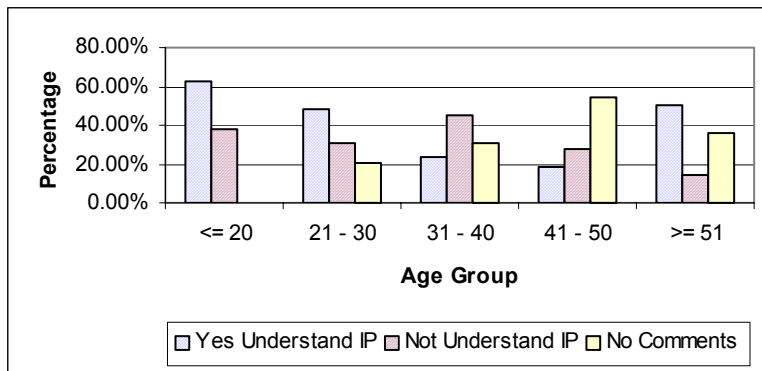


Figure 4.31.1 Percentage of IP Understanding among Different Age Groups

As shown in Figure 4.31.1, the majority of respondents in <=20, 21-30 and >=51 age groups indicated that they understood the meaning of intellectual property. And

surprisingly, respondents <=20 years old had the highest percentage of understanding intellectual property. Since this result had been proven to be statistically significant, we can draw some conclusion that people in <=30 and >=51 age groups are prone to have a better understanding of intellectual property than the other age groups.

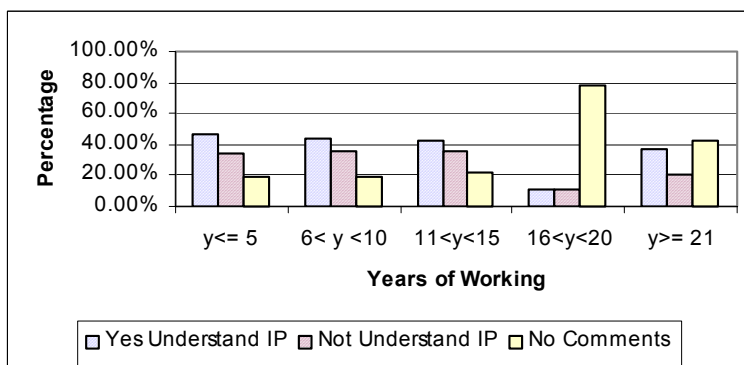
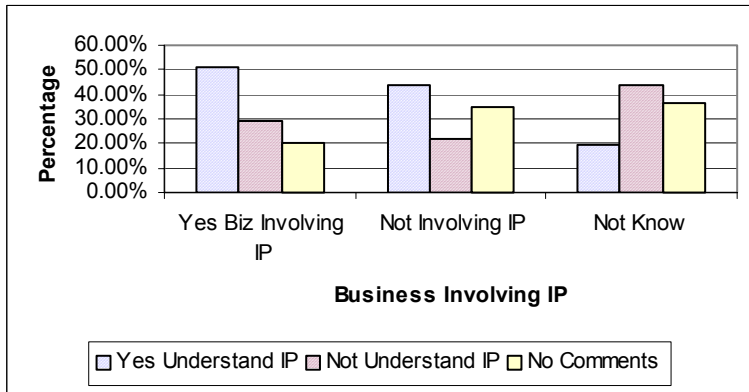


Figure 4.31.2 Percentage of IP Understanding among Different Years of Working

For the variable of years of working, the result from Figure 4.31.2 infers that respondents with <=5, 6-10, and 11-15



years of working experience have a relatively better understanding of intellectual property than others, especially those people with  $\leq 5$  years of working experience. And the factor that how long a person has worked will affect whether he understands intellectual property or not.



When looking into the distribution of understanding of intellectual property as in Figure 4.31.3 by whether the business of respondents' companies involves intellectual

property, the majority of respondents who were clearly aware of whether their business involved intellectual property or not involved intellectual property indicated that they understood the meaning of intellectual property. And if their business involves intellectual property, respondents of such category commonly understand intellectual property meaning. However, most of respondents who did not even know whether their companies' business involved intellectual property or not indicated that they did not understand the meaning of intellectual property. This result is reasonable since if a person does not even know whether his company is doing any business that involves intellectual property, how can we expect him to understand the meaning of intellectual property?

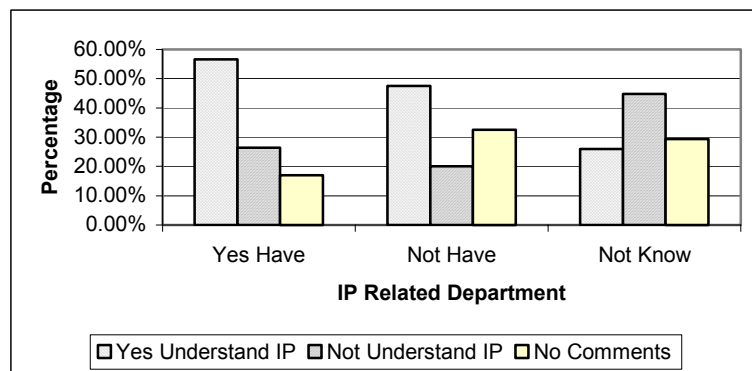


Figure 4.31.4 Percentage of IP Understanding by Whether Companies Have IP Related Department

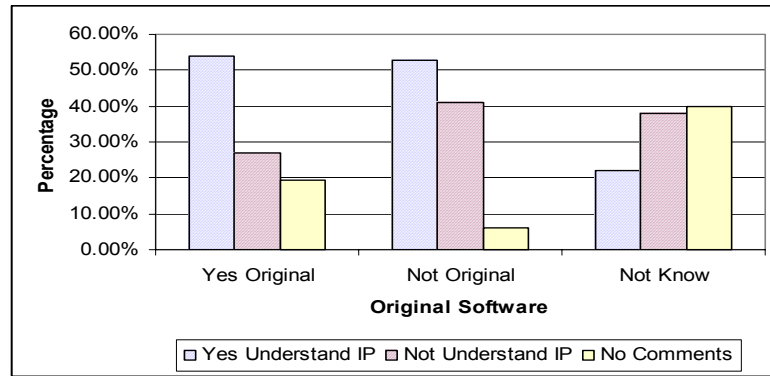


Figure 4.31.5 Percentage of IP Understanding by Whether Companies Use Original Software

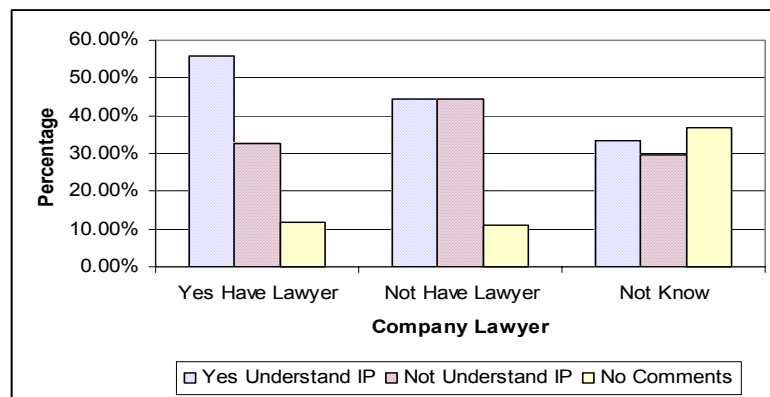


Figure 4.31.6 Percentage of IP Understanding by Whether Companies Have Lawyer Agency

Similarly, from Figure 4.31.4 to Figure 4.31.6, for the respondents who knew exactly whether their companies had intellectual property related department, whether their companies were using original software, or whether their companies were able to handle intellectual property violation or had specific lawyer agency to consult, most of them indicated that they understood the meaning of intellectual property. From where inference can also be made that such factors will also affect whether a person understand the meaning of intellectual property. And people who are clear about these company issues especially if the answer is “Yes” are prone to understand the meaning of intellectual property better than the others.

However, though these results introduce the factors which may affect whether a person understands what is meant by intellectual property or not, we can observe that there are still a certain proportion of respondents who do not understand the meaning of intellectual property. And since such proportion is not as small as to be ignored, the education and propagation of the concept of intellectual property is still necessary

especially after China's entry into the WTO as the nation is striving very hard to keep abreast of the development of the whole world.

#### **4.32 Concern about Intellectual Property**

There is a question in the questionnaire asking whether respondents often hear people talking about intellectual property, for example, through media. It can help to reflect whether people in China are concerned about intellectual property related topics, as well as whether the nation is trying to publicize and promote the awareness of intellectual property among citizens. Overall, 80.8% of the respondents indicated that they often heard people talking about intellectual property related topics, 8.1% of respondents indicated that they did not often hear about such topics, and 11.0% of the respondents did not bother whether people were taking intellectual property related topics.

Using the cross-tabulation test in SPSS, the variables representing respondents' personal profile, organization profile, and the way their companies handles intellectual property related issues were employed to test their relationships with whether they were concerned about people's talking about intellectual property related topics. The null hypothesis was that the corresponding pairs of variables were not significantly related. Similar to what had been tested in 4.31 section, not all the results were positive, that is, not each variable had the significant relationship with respondents' concern about intellectual property. The result of whether a person is concerned about intellectual property related topics is significantly related to his age group, education level, the employee number of the company he works in, whether his company has intellectual property related department, whether his company uses original software, whether his company knows how to handle intellectual property infringement issues or has lawyer agency to consult.

The following figures illustrate the relationships between corresponding variables which had positive results in the cross-tabulation tests, that is, the null hypothesis was rejected at a 0.05 significance level.

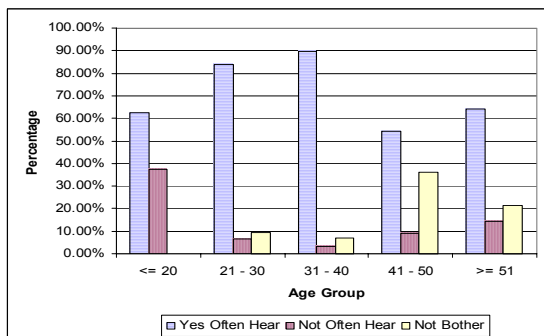


Figure 4.32.1 Percentage of Concern about IP by Age Group

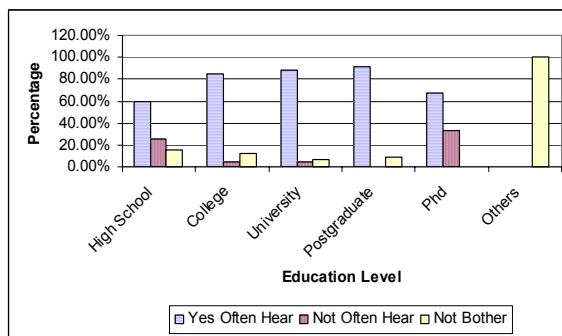


Figure 4.32.2 Percentage of Concern about IP by Education Level

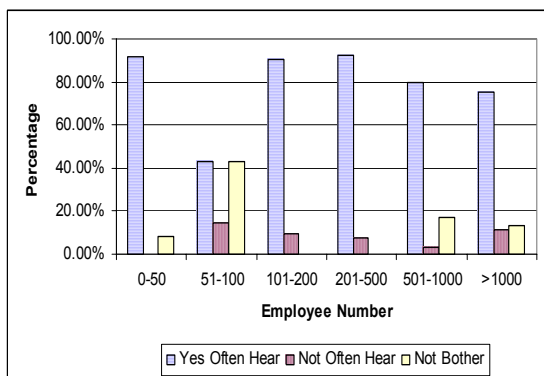


Figure 4.32.3 Percentage of Concern about IP by Companies Employee Numbers

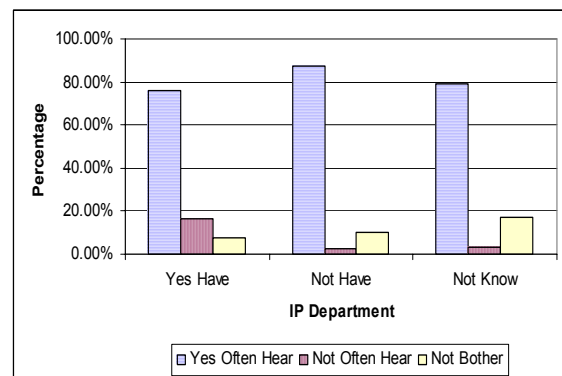


Figure 4.32.4 Percentage of Concern about IP by Whether Companies Have IP Department

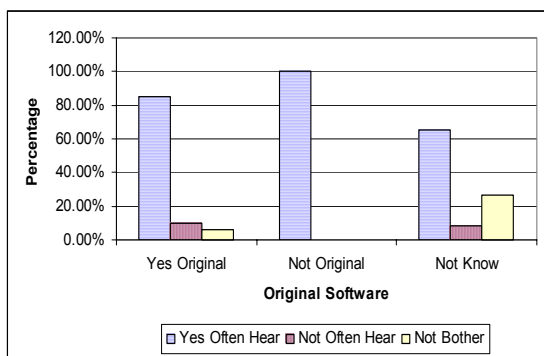


Figure 4.32.5 Percentage of Concern about IP by Whether Companies Use Original Software

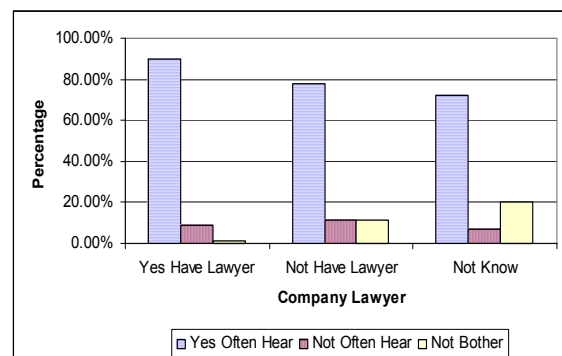


Figure 4.32.6 Percentage of Concern about IP by Whether Companies Have Company Lawyer Agency

As shown in Figure 4.32.1 to Figure 4.32.6, no matter which categories respondents belonged to, for example, in each category of age group, the majority of respondents indicated that they often heard people talking about intellectual property. Being a fact that in the real life, everything with which we live is the product of human creativity and these things are creations of human minds—Intellectual Property (WIPO, 2002). The concept of intellectual property is not just a unique ownership for those who work in the academic field. From the results we can see that intellectual property concept

becomes widely acknowledged and nowadays people in China are starting to be concerned about intellectual property related topics.

Meanwhile, in recent years, there arises growing internal demand for more social, economic and technological information. And consequently, the demands for protection of creative works in China have been sharply increased. The Chinese government has established and implemented quite a few intellectual property laws to encourage more active inventions of creative works, what's more, to ensure a better investment for both domestic and foreign investors.

The results from the survey help to demonstrate that the whole nation has realized the position of intellectual property in the economy growth in order to catch up with the developed countries. The publicity and promotion of the awareness of intellectual property protection among citizens can be evaluated as adequate based on the result of this survey.

#### **4.4 Current Status of Intellectual Property Protection in China**

##### **4.41 Intellectual Property Protection Status at the Individual Level**

Counterfeiting and piracy are very much 'live' in China (Asia Law & Practice, 1995). Although the Chinese government has been trying to stop counterfeiting as much as possible by various methods and co-operations among different authorities, it's still popular and hard to control the counterfeiting situation in China. From the result of the questionnaire, 68.0% of the respondents had ever bought pirated CDs or copied other people's work without permission, however, only 16.9% of them indicated that they had not bought any pirated CDs, the remaining 15.1% of them had no comments on this question. This result can account partially for the fact that according to the Seventh Annual BSA Global Software Piracy Study report (BSA, 2002), China stands for the second top among the offenders with a software piracy rate of 92% in year 2001 (and 94% in year 2000). Though it is required to have the obligation to introduce and enforce intellectual property laws as a member country of the WTO, and China does have worked feverishly on its legal framework on all fronts for intellectual property protection as discussed in section 2.4, the survey result still demonstrates a high intellectual property infringement rate compare to those developed countries (for

instance, United States only has a piracy rate at 25% in year 2001 according to that BSA report).

If we look into the factors that may affect whether a person buys pirated CDs or not, that is, use the cross-tabulation in SPSS to determine whether the variables in the questionnaire and the dependent variable (whether a person buys pirated CDs or not) have significant relationships, the cross-tabulation results show that there are a few variables that are significantly related to the dependent variable with a positive chi-square test statistical result at a 0.05 significance level. That is, the result of whether a person buys pirated CDs is significantly related to his age group, education level, years of working, the employee number of the company he works in, and whether he understands the meaning of intellectual property. The following figures present the relationships between corresponding variables which have positive results in the cross-tabulation tests.

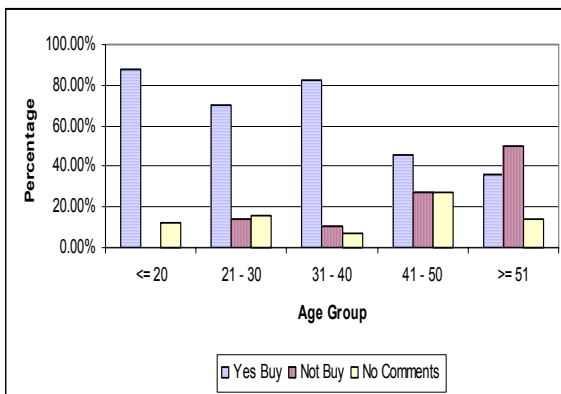


Figure 4.41.1 Percentage of Buying Pirated CDs by Age Group

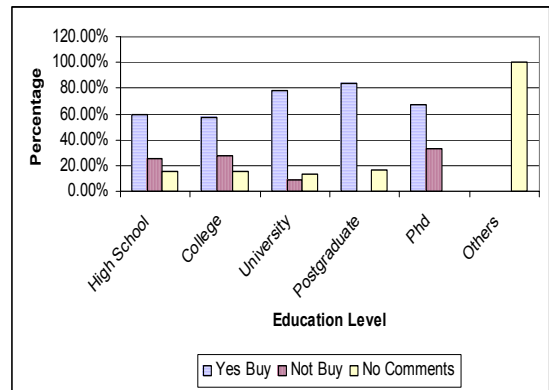


Figure 4.41.2 Percentage of Buying Pirated CDs by Education Level

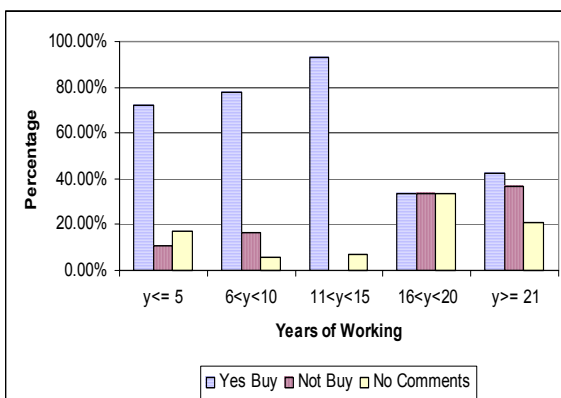


Figure 4.41.3 Percentage of Buying Pirated CDs by Years of Working

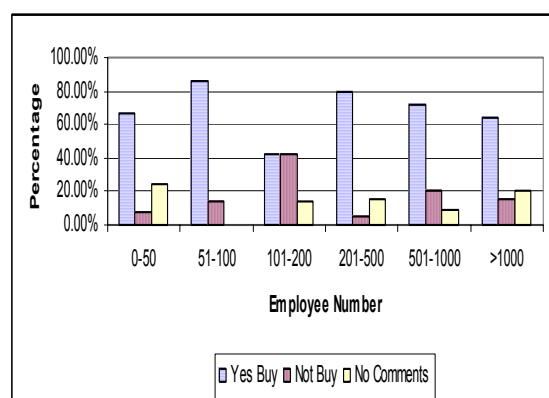


Figure 4.41.4 Percentage of Buying Pirated CDs by Companies Employee Numbers

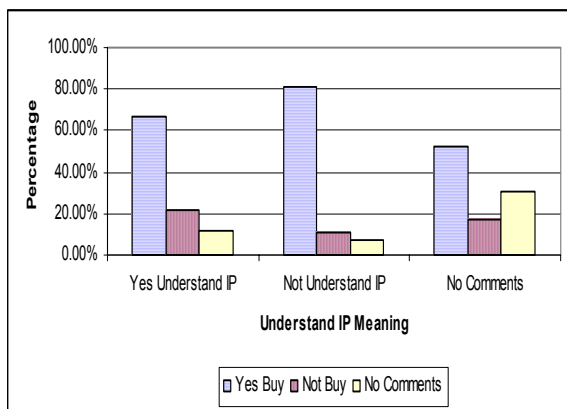


Figure 4.41.5 Percentage of Buying Pirated CDs by Whether Respondents Understand IP Meaning

As we can see from Figure 4.41.1 to Figure 4.41.5, no matter the respondent was in which age group, or possessed what kind of education level, or had how many years of working, or the company he worked in had how many employees, or whether he understood the intellectual property meaning, a large percentage of them indicated that they had ever bought some pirated CDs. Take the education level variable for example, there were 78.6% of the respondents who possessed university degree claimed that they had ever bought pirated CDs and 83.3% of them with postgraduate degree had bought also. And even for those respondents who understood the meaning of intellectual property, there were still 66.7% of them claimed that they had ever bought pirated CDs or copied other people’s work without permission. This is not a good phenomenon since people in these categories are well-educated and more exposed to the concept of intellectual property protection, and logically they should play their roles in not supporting piracy and in protecting the products of human creativity. Such survey result reveals the severity of piracy problem in China from a more explicit aspect than the general buying pirated CDs activity percentage result. It is found that the current intellectual property protection in China is obviously not sufficient at individual level, that is, the individuals of the nation are not playing their roles as supposed to be in promoting and implementing intellectual property protection in China.

#### 4.42 Intellectual Property Protection Status at the Company Level

Though the individual activities of intellectual property infringement are quite frustrating, when being asked whether respondent’s company uses original software,

the result is completely different from the result of individual buying pirated CDs activities. Based on whether the company used original software. 61.0% of the respondents claimed that their companies were using original software, and only 9.9% of them claimed not using, the remaining 29.1% of respondents did not know whether their companies were using original software or not.

As to the personal and organization profile of the respondents that lead to different results of whether the company he works in uses original software, there are a few variables that show significant relationships with the dependent variable (the result of that question). Specifically, the result of whether a company the respondent works in uses original software is significantly related to his age group, education level, whether the company has intellectual property related department, whether the company has encountered intellectual property violation and resulted in revenue loss, whether the company knows how to handle intellectual property related issue or has specific lawyer agency to consult, whether the respondent understands the meaning of intellectual property, and whether he is concerned about intellectual property related topics. The following figures illustrate the relationships between corresponding variables which have positive results in the cross-tabulation tests.

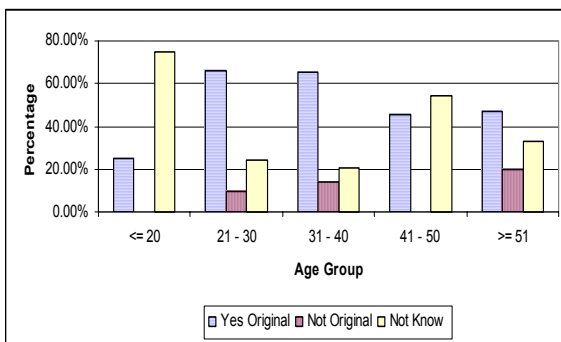


Figure 4.42.1 Percentage of Companies Using Original Software by Age Group

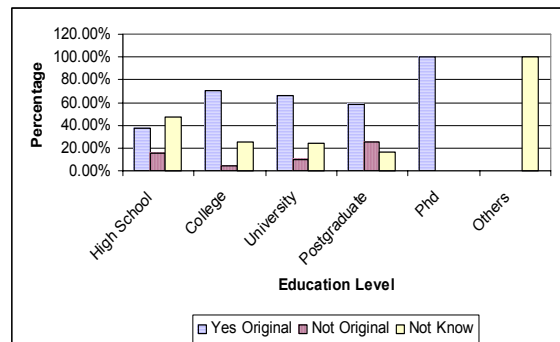


Figure 4.42.2 Percentage of Companies Using Original Software by Education Level

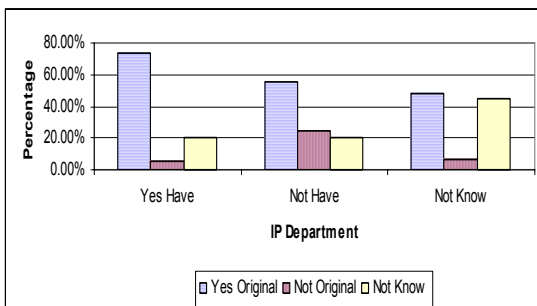


Figure 4.42.3 Percentage of Companies Using Original Software by Whether It Has IP Related Department

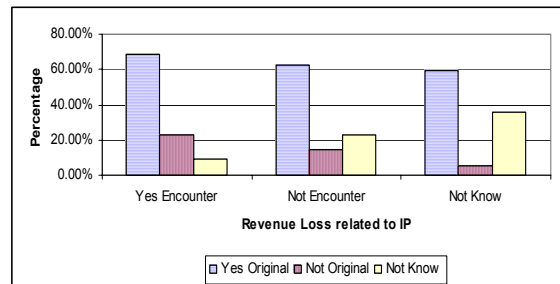


Figure 4.42.4 Percentage of Companies Using Original Software by whether It Has Encountered Revenue Loss Due to IP



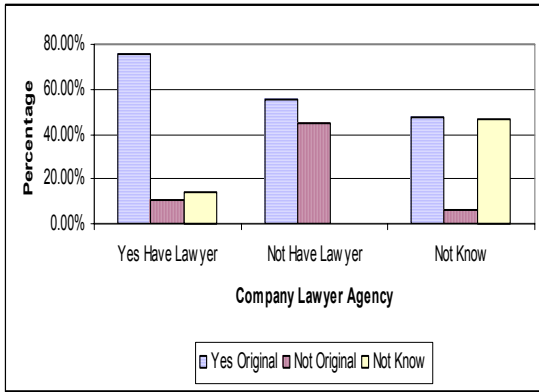


Figure 4.42.5 Percentage of Companies Using Original Software by Whether they Have Lawyer Agency

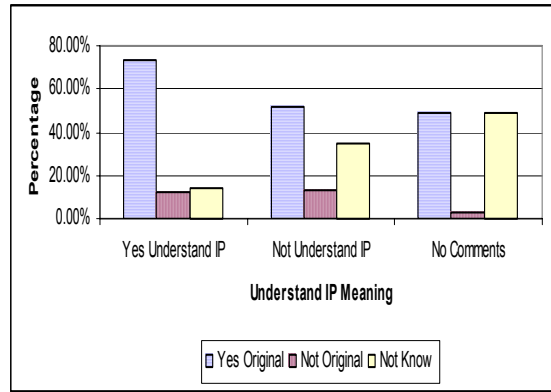


Figure 4.42.6 Percentage of Companies Using Original Software by Whether Respondents Understand the Meaning of IP

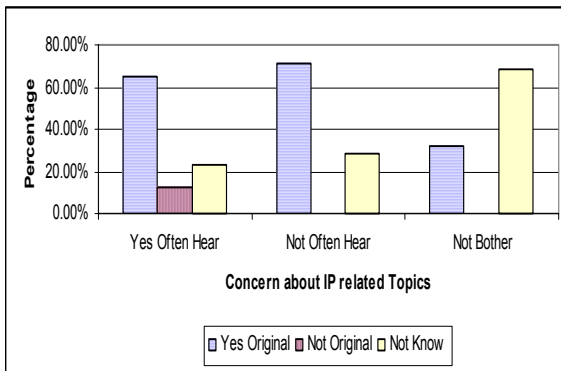


Figure 4.42.7 Percentage of Companies Using Original Software by Whether Respondents Concern about IP Related Topic

As we can see from Figure 4.42.1 to Figure 4.42.7, for most of the categories that the respondents were in, the percentage of companies using original software was higher than not using. Since the results are statistically significant supported by chi-square test in the cross-tabulations, some prominent categories that result in company to use original software include the respondents in 21-30 or 31-40 age group, the respondents have Phd, college, university or postgraduate education level, the respondents understand the meaning of intellectual property, the company has intellectual property related department, the company has encountered some form of IPRs infringements and resulted revenue loss in business, and the company knows how to handle violation of IPRs or has specific lawyer agency to consult. Among these relationships, some can even be reasonable to reflect reverse effect. For instance, the fact that whether a company uses original software will also have influence on whether the company has intellectual property related department, or whether it has encountered intellectual property violation related revenue loss, or whether it is able to handle intellectual

property violation, or the respondents' level of understanding the meaning of intellectual property, or the respondents' degree of concern about intellectual property related topics.

The phenomenon that so many companies are currently using original software is heartening in promoting and implementing intellectual property protection in China. Owing to the reform of Chinese legal framework upon China's entry into the WTO, most companies are starting to build the awareness of using original software in their business operation. And it seems that these companies are the main force in supporting Chinese government's activities of introducing and enforcing intellectual property laws in China. Nevertheless, it is still quite ironic to find out that people are using original software during work, but buying pirated CDs for their personal use.

The respondents were from different industries and various types of companies, when being asked whether the companies they worked in had intellectual property related department, 35.5% of the respondents specified that their companies had such department, 26.3% of the respondents specified "Not Have", and 38.2% of the respondents specified "Not Know". Between "Have" and "Not Have" intellectual property related department categories, the majority of the companies had specific departments to handle intellectual property related issues. Such findings are encouraging. However, there was a higher percentage category of respondents who did not even know whether their companies had such department or not. From this point, the poor awareness of intellectual property can also be reflected among this proportion of respondents. Besides, there is still likelihood that companies of this category may not have intellectual property related department.

As to the common characteristics of respondents which differentiate the result of whether the company has intellectual property related department, the positive results of chi-square test in cross-tabulations assist in finding out the significant relationships between the dependent variable and independent variables. Particularly, the result of whether a company the respondent works in has intellectual property related department is significantly related to whether the business of the company involves intellectual property related issues, whether the company has encountered intellectual property violation and resulted in revenue loss, whether the company uses original

software, whether the company knows how to handle intellectual property related issue or has specific lawyer agency to consult, whether the respondent understands the meaning of intellectual property, and whether he is concerned about intellectual property related topics. The following figures present the relationships between corresponding variables which have positive results in the cross-tabulation tests.

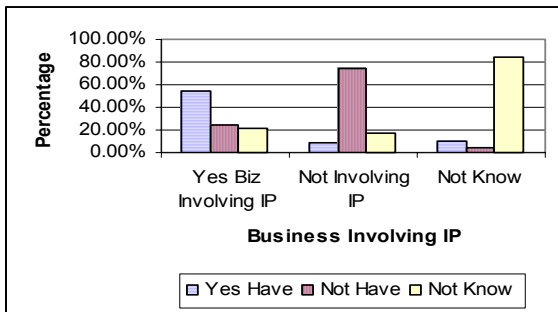


Figure 4.42.8 Percentage of Companies Having IP Department by Whether the Business Involves IP

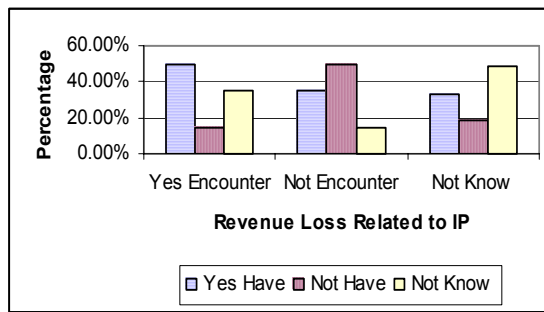


Figure 4.42.9 Percentage of Companies Having IP Department by Whether they Have Encountered Revenue Loss Due to IPRs Infringements

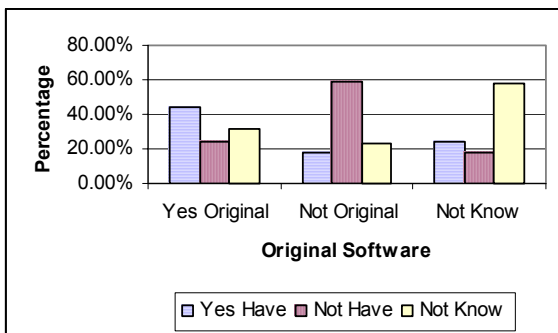


Figure 4.42.10 Percentage of Companies Having IP Department by Whether they Use Original Software

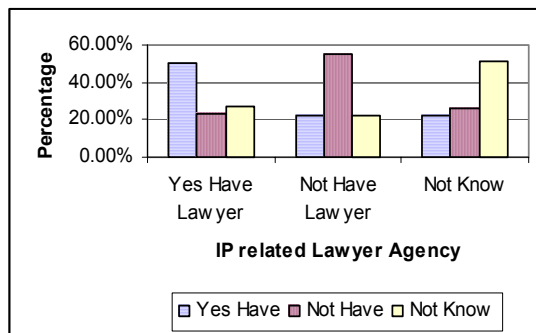


Figure 4.42.11 Percentage of Companies Have IP Department by Whether they Have IP Related Lawyer Agency

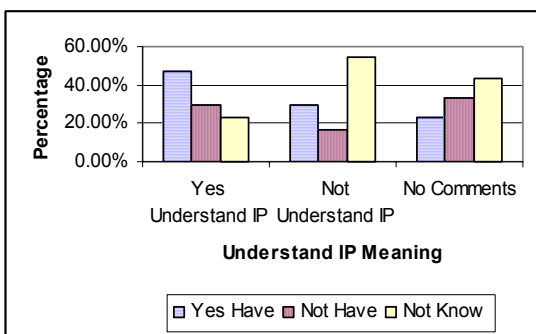


Figure 4.42.12 Percentage of Companies Having IP Department by Whether Respondents Understand the Meaning of IP

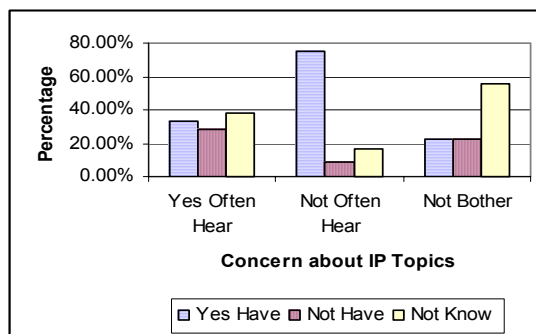


Figure 4.42.13 Percentage of Companies Having IP Department by Whether Respondents Concern about IP Related Topic

Such relationships as shown in Figure 4.42.8 to Figure 4.42.13 are somewhat reasonable. Specifically, if the business of a company involves intellectual property, or if the company has ever encountered IPRs infringements and resulted in the revenue

loss in business, or if the company uses original software, or if the company knows how to handle intellectual property violation or has specific lawyer agency to consult, or if the respondent understands the intellectual property meaning, the company normally has intellectual property related department. Among these relationships, some can also reflect reverse effect. For instance, the fact that whether a company has intellectual property related department will also affect whether it has encountered intellectual property violation related revenue loss, or whether it uses original software, or whether it is able to handle intellectual property violation related issues, or the respondents' level of understanding of intellectual property meaning and their concern about intellectual property related topics.

Though the percentage that the company has intellectual property related department is not the highest in the result, at least it still suggests that some companies in China do have the awareness of establishing such intellectual property related department which might contribute to the avoidance of any IPRs infringements or related revenue loss during their business operation.

When being asked whether the companies had ever encountered any form of intellectual property rights infringements and resulted in the revenue loss in their business, there was a large proportion of respondents did not know about such issue. Only 12.8% of the respondents knew exactly that their companies had encountered such revenue loss, 27.9% of them knew that their companies had not encountered, and 59.3% of them did not know about it. Although the percentage of not having encountered such situation was higher than having encountered, the result that the majority of respondents were not clear about this issue couldn't be overlooked. On one hand, it reflects the poor awareness or concern about intellectual property protection in China, on the other hand, there is still possibility that those companies have ever encountered such IPRs infringements and resulted in related revenue loss. Excluding this proportion of result, the findings that there are less cases of companies' having encountered such IPRs infringements and related revenue loss are still positive signals of intellectual property protection in China nowadays at the company level.

As to the personal and organization profile of the respondents that lead to different results of the question about whether the company has encountered IPRs infringements

and resulted revenue loss, there are a few variables that show significant relationships with the dependent variable (the result of that question). In particular, the result of whether a company the respondent works in has encountered such situation is significantly related to the respondent's job functionality, the employee number of the company, whether the business of the company involves intellectual property, whether the company uses original software, and whether the company has intellectual property related department. The following figures illustrate the relationships between corresponding variables which have positive results in the cross-tabulation tests.

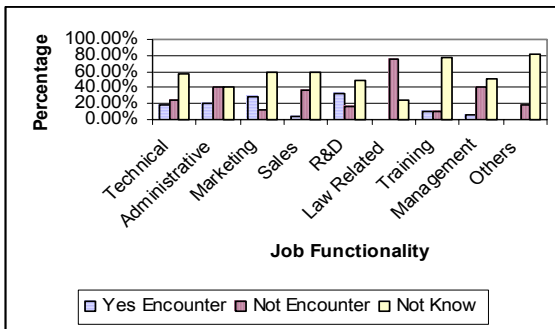


Figure 4.42.14 Percentage of Companies Having Encountered Revenue Loss by Respondents' Job Functionality

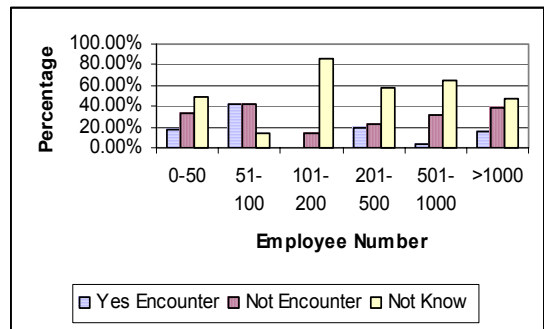


Figure 4.42.15 Percentage of Companies Having Encountered Revenue Loss by their Employee Numbers

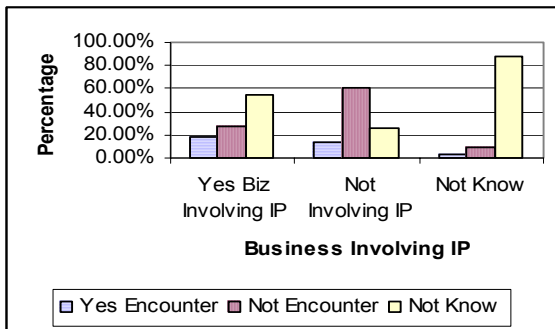


Figure 4.42.16 Percentage of Companies Having Encountered Revenue Loss by whether the Business Involves IP

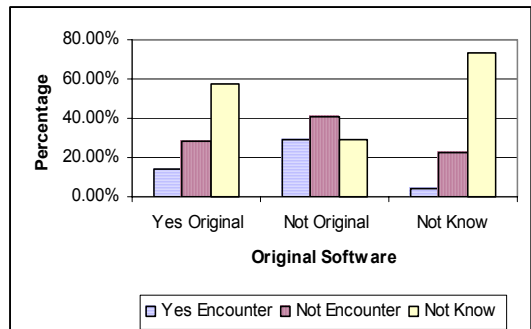


Figure 4.42.17 Percentage of Companies Having Encountered Revenue Loss by Whether they Use Original Software

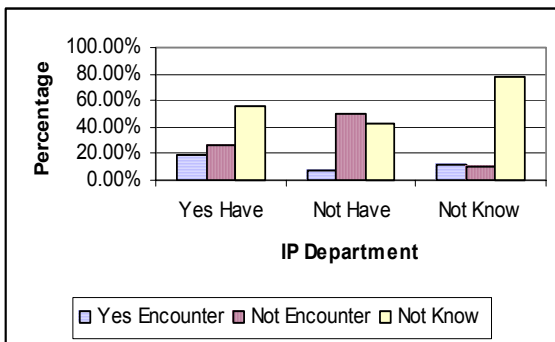


Figure 4.42.18 Percentage of Companies Having Encountered Revenue Loss by Whether they Have IP Department

From Figure 4.42.14 to Figure 4.42.18, it can be deduced that the majority of respondents are not aware whether their company has encountered IPRs infringements and resulted revenue loss. Except for this major proportion of respondents, if the respondent works as marketing or R&D job functionality, or the company has 51 to 100 employees, or the company's business involves intellectual property, or the company does not use original software, or the company has intellectual property related department, the company is more likely to encounter such IPRs infringements and revenue loss due to it. There is an instance that even a company has intellectual property related department, it still encounters a high percentage of occurrence of IPRs infringements and related revenue loss. This might help to suggest that the actual functionalities of the intellectual property related department in the company have not been maximized to play its most essential roles. Among these relationships, some can also be used to reflect reverse effects. For instance, the fact that whether a company has encountered such IPRs infringements or any related revenue loss will affect whether it uses original software, or whether it has intellectual property related department.

Finally, the result of the question about whether the company is able to handle intellectual property rights violation by others or has its own specific lawyer agency to consult shows that 45.6% of the respondents indicated that their company had such ability to handle IPRs violation or specific lawyer agency to consult, 5.3% of them indicated that their company did not have, and 49.1% of them did not know about it. The high percentage of not knowing about this issue implies not only the poor awareness of such intellectual property related topics, but also presents the potential likelihood for the company of not having such ability to handle IPRs infringements or any lawyer agency to consult when being faced with IPRs violation. However, except for this proportion of results, most companies in China nowadays are starting to be able to handle violation of IPRs internally or be aware to see for external resources to consult such as specific lawyer agency. Consequently, the possible bad business performance caused by company's lack of knowledge of IPRs protection can be minimized or even avoided.

Looking into the personal and organization profile of the respondent, there are a few variables that show significant relationships with whether the company he works in is

able to handle IPRs infringements or has specific lawyer agency to consult. Specifically, the result of whether the company the respondent works in is able to handle such issue is significantly related to his gender, job functionality, whether he understands the meaning of intellectual property, whether he is concerned about intellectual property related topics, whether the company uses original software, and whether the company has intellectual property related department. The following figures present the relationships between corresponding variables which have positive results in the cross-tabulation tests.

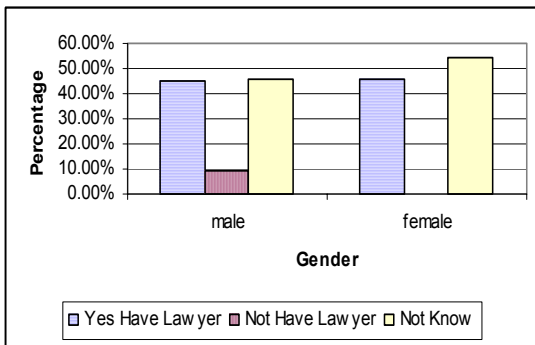


Figure 4.42.19 Percentage of Companies Having Lawyer Agency by Respondents' Gender

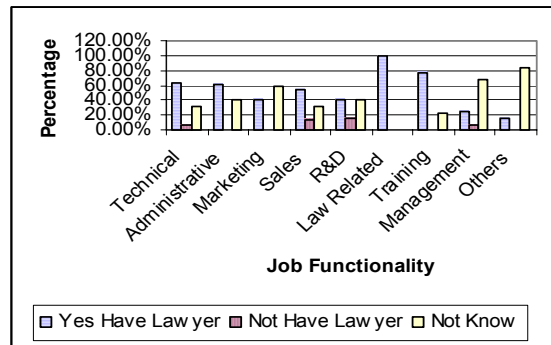


Figure 4.42.20 Percentage of Companies Having Lawyer Agency by Respondents' Job Functionality

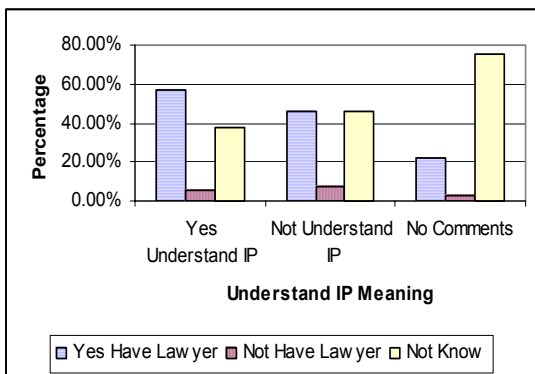


Figure 4.42.21 Percentage of Companies Having Lawyer Agency by Whether Respondents Understand the Meaning of IP

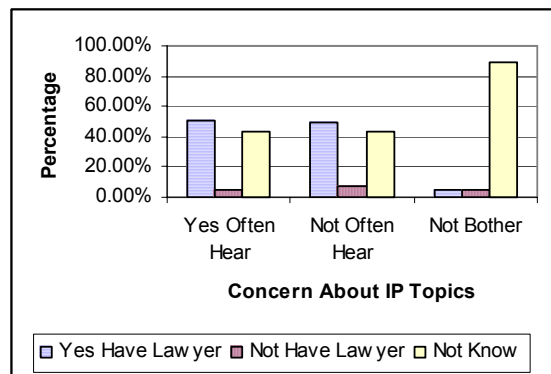


Figure 4.42.22 Percentage of Companies Having Lawyer Agency by Whether Respondents Concern about IP Related Topics

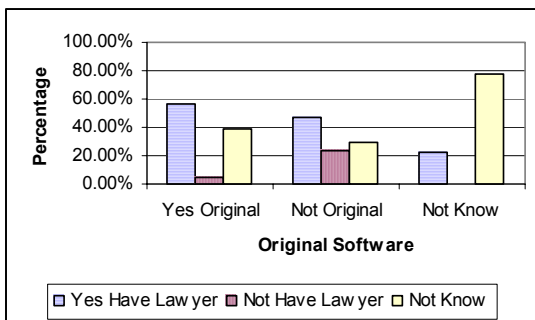


Figure 4.42.23 Percentage of Companies Having Lawyer Agency by Whether they Use Original Software

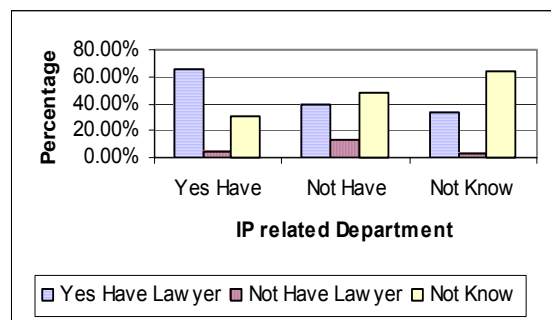


Figure 4.42.24 Percentage of Companies Having Lawyer Agency by Whether they Have IP Related Department

Figure 4.42.19 to Figure 4.42.24 show that there are a certain proportion of respondents who are not clear about whether their company is able to handle IPRs infringements or has lawyer agency to consult. Except for that, the figures show that if respondent is female, or respondent works as law related or training functionality, or he understands the meaning of intellectual property, or he is concerned about intellectual property related topics, or the company he works in uses original software, or the company has intellectual property related department, the company is prone to be able to handle IPRs infringements or has external lawyer agency to consult. Reversely, the fact that whether a company is able to handle such situation will influence whether the respondent understands the meaning of intellectual property, or whether he is concerned about such topics, or whether the company uses original software, or whether the company has intellectual property related department.

On the whole, from the results of the questions about whether the companies in China are using original software, whether they have intellectual property related department, whether they have ever encountered intellectual property infringements and resulted in revenue loss, whether they are able to handle intellectual property violation issues or seek for external assistance, we can perceive that the current intellectual property protection in China at the company level can be evaluated to be effective in contrary to the result at the individual level. Though the intellectual property protection in China started much later than developed countries, it is catching up quickly at least from efforts made by most companies. Most companies are taking constructive actions to support the introduction and implementation of intellectual property protection in China. Subsequently, their positive activities do contribute to the improvement of the investment climate for a few industries in recent years.

#### **4.5 Critical Opinions on the Statements by Respondents of the Survey**

The next step in this survey was to approach to respondents' critical opinions on some statements based on a 4-points scale where neutral opinions were not expected. By approaching to respondents' response to these statements, the awareness of intellectual property protection can be assessed from an indirect aspect though respondents have been asked whether they think themselves are aware of it, the opinions of respondents on the influence of intellectual property protection in conducting their business can be



gathered, the current status of intellectual property protection in China up to its entry into WTO can be evaluated from the viewpoint of the respondents, the problems of intellectual property protection in China can be identified within a limited scope, and the possible measures for intellectual property protection can also be suggested. Although these statements won't be as comprehensive as desired, they intellectual property are helpful in solving my research problems as stated in section 1.4 to certain extent. However, these findings are not statistically supported, that is, they are the pure summary of the total valid questionnaire results which can only present the responses to these statements by respondents of the survey.

#### 4.51 Awareness of Intellectual Property Protection in China

The responses to the statements with the objective to assess respondents' awareness of intellectual property protection from an indirect aspect rather than their personal assertion are summarized in Table 4.51.1.

Table 4.51.1 Percentage of Responses to Statements about Awareness of IP Protection

No.	Statements	Percentage out of Valid Response			
		Strongly Disagree	Disagree	Agree	Strongly Agree
17.	Intellectual Property protection is important in modern society either for individual or for company.	5.2%	4.6%	33.5%	56.6%
18.	The vital contribution made by Intellectual Property protection is that it respects creativity and innovation.	2.3%	2.9%	43.4%	51.4%
20.	Buying pirated CDs, copying other people's work without permission, etc is a kind of infringement of Intellectual Property.	2.3%	13.3%	51.4%	32.9%

The statements in Table 4.51.1 are about some basic understanding of intellectual property, and they are actually all correct statements. That is, the responses to them should ideally be either "Agree" or "Strongly Agree" which can represent a good level of understanding of intellectual property protection. As we can see from the result, encouragingly a very high percentage of them fall into the desired categories. The majority of respondents agreed with the importance of intellectual property protection in the modern society either for individual or for company, they could recognize the vital contribution made by intellectual property protection which is to show respect for human creativity and innovation, and they were aware that buying pirated CDs or copying other people's work without permission is a kind of infringement of

intellectual property. People with such responses to these statements are generally considered to have the basic awareness of intellectual property protection.

Such result is also consistent with what we get in section 4.31 and 4.32 from where it can be demonstrated that nowadays people in China have had a fundamental awareness of intellectual property protection already. With the development of the society and the open policy, people in China are more exposed to the concept of intellectual property and start to appreciate the importance of intellectual property protection for not only individual life but also the business.

#### 4.52 The Influence of Intellectual Property Protection in Conducting Business

The responses to the statements with the purpose to gather the opinions of respondents on the influence of intellectual property protection in conducting their business are summarized in Table 4.52.1.

Table 4.52.1 Percentage of Responses to Statements about the Influence of IP Protection in Conducting Their Business

No.	Statements	Percentage out of Valid Response			
		Strongly Disagree	Disagree	Agree	Strongly Disagree
19.	Having products with own Intellectual Property Right helps sharpen one's competitiveness for a trader or a country.	1.2%	7.7%	36.7%	54.4%
21.	The infringements of Intellectual Property Right infringements will have bad influence on a company and may result in the revenue loss in business.	1.8%	10.1%	56.2%	32.0%
24.	If China were lack of proper Intellectual Property Rights (IPRs) protection, it would have an impact on foreign IPRs holders and the willingness of foreign investors to invest in China.	5.2%	13.4%	57.6%	23.8%
35.	If your company has some product or technology which is not available in the market, you should register patent for it immediately both locally and internationally.	1.2%	6.4%	43.9%	48.5%
36.	In your company, for the concern of being imitated of own products, the protection of Intellectual Property Rights has to be included in the company competent strategies.	1.2%	11.1%	53.8%	33.9%
37.	In your opinion, a company should have a sort of policy to enforce the protection of Intellectual property Rights of its own.	1.2%	3.5%	54.1%	41.2%
39.	Not concerning the overall environment, but just about your company, currently the protection of Intellectual Property Rights can be evaluated as adequate from the view of conducting your business.	0.6%	26.9%	52.0%	20.5%

The statements in Table 4.52.1 are about how certain activities related to intellectual property protection will influence the conducting of the business and how the respondents will evaluate their companies' status of intellectual property protection. In other words, they are employed to assess to what extent the respondents might consider the importance of intellectual property protection in China from the viewpoint of conducting their business. Statement 39 requires respondents to assess the level of the intellectual property protection in their company during the common business operation. As far as they are concerned, the opinions on whether they agree with the statement that their companies' current intellectual property protection status is adequate can be gathered. There were 52.0% of the respondents who agreed with the statement and 20.5% of them strongly agreed with it. Taken as a whole, the majority of the respondents of this survey assessed the current level of intellectual property protection in their companies to be sufficient from their perspective of conduction business.

The other statements in this section are actually some commonly accepted ones. That is, the responses to them should also ideally be either "Agree" or "Strongly Agree" which can stand for the recognition of the significance of intellectual property protection for a company even to be included in the company competent strategies. Once again, there were more than 50% of the respondents either agreed or strongly agreed with each statement as preferred. They generally agreed to take necessary activities to protect their product or technology or to have some policy to enforce IPRs protection of their own. From this perspective, people in China are found to be able to appreciate the constructive influence of intellectual property protection in conducting their business which might be one of their strengths to sharpen their competitiveness in the market, to ensure foreign IPRs holders' benefits to be protected, to attract more foreign investment, and to avoid bad effect and any possible revenue loss due to IPRs infringements.

#### **4.53 Current Status of Intellectual Property Protection in China and the Change of Intellectual Property Protection up to China's Entry into the WTO**

The responses to the statements with the objective to evaluate the current status of intellectual property protection in China and the change of intellectual property protection up to its entry to WTO are summarized in Table 4.53.1.

Table 4.53.1 Percentage of Responses to Statements about the Current Status of IP Protection in China and the Change of IP Protection up to China's Entry into the WTO

No.	Statements	Percentage out of Valid Response			
		Strongly Disagree	Disagree	Agree	Strongly Disagree
22.	China has very high software piracy rate and therefore, it's a major barrier to develop China's software industry, meanwhile, other countries also suffer huge software revenue loss in China.	9.4%	24.7%	44.1%	21.8%
23.	Many foreign Intellectual Property Rights (IPRs) holders and government have often decried IPRs infringements in China.	9.4%	32.9%	38.8%	18.8%
25.	China has well-established Intellectual Property protection legal infrastructure and efficient Intellectual Property enforcement authorities.	12.9%	45.0%	31.6%	10.5%
26.	China has made great effort in revising and upgrading its Intellectual Property related legislations to meet up with the requirement of becoming a member of WTO.	3.5%	12.9%	54.1%	29.4%
28.	There has been big improvement in protecting Intellectual Property up to and after China's entry to WTO.	2.4%	28.4%	50.9%	18.3%
29.	The current efforts made by China of protecting and enforcing Intellectual Property is adequate, effective and compatible with the developed countries.	11.1%	49.1%	32.2%	7.6%
30.	In China, Intellectual Property protection awareness is still low, and most people think it has nothing to do with their own.	2.9%	18.0%	55.2%	23.8%
40.	Although Intellectual Property Rights laws are being improved to align with the WTO Agreement, it will still be a highly difficult task of enforcing Intellectual Property protection in China.	0.0%	6.4%	51.2%	42.4%

The statements in Table 4.53.1 are approaching to respondents' evaluation on the status of intellectual property protection up to China's accession to the WTO. There are no desired response to each of them but attempting to gather opinions on these statements from the respondents. The result shows that there were 44.1% of the respondents agreed and 21.8% of them strongly agreed that China had a very high software piracy rate and it was a major barrier to develop China's software industry and other countries also suffered huge software revenue loss in China. This result is consistent with the fact pointed out by BSA Annual Report (BSA, 2002) that China stands for the second top among the offenders with a very high piracy rate. And 79.0% of the respondents who agreed or strongly agreed that the IPRs awareness in China was still low and most people thought it had nothing to do with their own. It helps to

reveal that most people are actually aware of such IPRs infringements activities in China.

There were 57.6% of the respondents admitted that many foreign IPRs holders and government had often decried such infringements in China with “Agree” or “Strongly Agree” responses. As to the statement declaring China has well-established intellectual property protection legal infrastructure and efficient intellectual property enforcement authorities, 57.9% of the respondents held the negative responses to it with “Disagree” or “Strongly Disagree” replies. And 60.2% of the respondents did not evaluate the current efforts made by China of protecting and enforcing intellectual property to be adequate, effective and compatible with developed countries with “Disagree” or “Strongly Disagree” responses. Such result reflects that most of people in China are not so satisfied with the current status intellectual property protection, and there should be better intellectual property protection legal infrastructure, more efficient intellectual property enforcement authorities, and more efforts should be made by China to protect and enforce intellectual property effectively and to be compatible with the intellectual property protection in developed countries.

However, when being asked about the opinions on the efforts made by China in revising and upgrading its intellectual property related legislations to meet up with the requirements of becoming a member of the WTO, there were 83.5% of the respondents agreed or strongly agreed that China had made great effort on this issue. And 69.2% of the respondents evaluated that there had been big improvement in protecting intellectual property up to and after China’s entry into the WTO with “Agree” or “Strongly Agree” responses. Obviously, the efforts made by China on its legal framework reform on all fronts for intellectual property protection such as the amendments and revisions of the Trademark Law, Copyright Law and Patent Law in order to meet the requirements of being a member of the WTO had been perceived and appraised by the general public. Although these IPRs related laws have been improved to align with the WTO agreement, there were 93.6% of the respondents did believe that it would still be a highly difficult task to enforce intellectual property protection in China with “Agree” or “Strongly Agree” responses. The existing intellectual property laws which are still under up-to-date revision in China can be evaluated to be satisfactory up to its entry into the WTO, whereas ineffective, non-intensive and non-

extensive enforcement might lead them to be useless which is the major challenge that China has to be faced with.

#### 4.54 Problems and Possible Measures of Intellectual Property Protection in China

The responses to the statements with the purpose to identify the problems and to suggest possible measures for intellectual property protection in China within a limited scope are summarized in Table 4.54.1.

Table 4.54.1 Percentage of Responses to Statements about the Problems and Possible Measures of IP Protection in China

No.	Statements	Percentage out of Valid Response			
		Strongly Disagree	Disagree	Agree	Strongly Disagree
27.	Externally, foreign pressure serves as an effective tool to persuade and propel China to upgrade its Intellectual Property laws.	4.0%	20.2%	58.4%	17.3%
31.	The problem of Intellectual Property Rights infringements in China is rooted in its own economic self-justification, and compounded by immature industrial self-policing.	7.1%	21.8%	53.5%	17.6%
32.	The reason why numerous small and medium-sized software firms in China produce and sell pirated software is mainly because of the simple technology, low risks and high returns involved.	3.5%	16.9%	45.9%	33.7%
33.	The reason for Intellectual Property Rights infringements in China is also a maturing piracy market.	3.5%	27.1%	42.9%	26.5%
34.	Apart from the easy use of high-tech by counterfeiters, pirated products are most probably quite cheap which cultivate a culture of making consumption of these products popular and acceptable by more and more Chinese consumers.	3.5%	15.7%	48.8%	32.0%
38.	The awareness of Intellectual Property Rights protection is also crucial for its enforcement, therefore, within a company or in a social context, legal publications and education on IPRs protection should be carried out broadly in China.	1.7%	6.4%	53.5%	38.4%
41.	Local officials and courts should be granted more power to investigate cases of Intellectual Property Rights infringements, and more compensation should be offered for infringement activities.	2.3%	11.6%	50.3%	35.8%

The statements in Table 4.54.1 are attempting to identify the problems and to suggest possible measures for intellectual property protection in China. There were 71.1% of the respondents agreed or strongly agreed that the problems of IPRs infringements in China is rooted in its own economic self-justification and compounded by immature

industrial self-policing, 69.4% of them agreed or strongly agreed that another problem is the maturing piracy market in China. The possible reason acknowledged by 80.8% of the respondents who agreed or strongly agreed with why China has such a market lies in that pirated products are most probably quite cheap which cultivated the culture of making consumption of these products popular and acceptable by more and more Chinese consumers. From the aspect of manufacturers who produce these pirated products, 79.6% of the respondents agreed or strongly agreed that the reason why numerous small and medium-sized software firms in China produce and sell pirated software is driven by the simple technology, low risks and high returns involved. As what have been presented here, the percentage of respondents who support these statements are fairly high. Although these statements won't cover all the problems, they are helpful to imply that in fact people in China are aware of the existence of such problems which might haunt the effective, intensive and extensive implementation and enforcement of intellectual property protection in China.

Regarding the suggested possible measures to be taken to enhance the implementation and enforcement of intellectual property protection in China, astonishingly 91.9% of the respondents acknowledged with "Agree" or "Strongly Agree" responses that the awareness of IPRs protection was crucial for its enforcement, and within a company or social context, legal publications and education on IPRs protection should be carried broadly in China. Besides, 86.1% of the respondents agreed or strongly agreed that local official and courts should be granted more power to investigate cases of IPRs infringements and more compensation should be offered for infringement activities. These are the respondents' opinion on these statements which might help to improve the implementation and enforcement of intellectual property protection as internal measurements. External measurements such as there should be foreign pressure serving as a tool to persuade and propel China to upgrade and enforce its intellectual property related laws were agreed or strongly agreed by 75.7% of the respondents. All these possible measures are theoretically supported by the Chinese government, however, how they can and will they be implemented and enforced effectively to improve the level of intellectual property protection in China to catch up with what most developed countries have are still potential problems to be figured out during the actual implementation and enforcement of intellectual property protection in China.

## **CHAPTER 5**

### **DISCUSSION AND CONCLUSION**

#### **5.1 Awareness, Current Status of Intellectual Property Protection in China**

The study to assess the awareness of intellectual property protection in China demonstrates that nowadays people in China have had a fundamental awareness of intellectual property protection as declared by the respondents about themselves. With the development of the society and the open policy, people in China are more exposed to the concept of intellectual property and start to appreciate the importance of intellectual property protection for not only individual life but also the business. Consequently, based on the result of this survey that the majority of people either understand the meaning of intellectual property or are concerned about intellectual property protection related topics, the publicity and promotion of the awareness of intellectual property protection among citizens can be evaluated as adequate. However, it doesn't imply that the extensive education and propagation of intellectual property protection is enough and not necessary in China even after its accession to the WTO because there are still a certain proportion of people who do not understand the meaning of intellectual property as discussed in section 4.31.

Since the level of awareness of intellectual property protection is significantly related to respondents' age group, years of working, whether their companies' business involving intellectual property, whether the companies have intellectual property related department, whether the companies use original software, and whether the companies are able to handle violation of intellectual property or have specific lawyer agency to consult, in order to escalate the awareness of intellectual property protection, for example, by promoting the education of intellectual property protection, the Chinese government might consider to target educating individuals at different age groups with different emphasis to ensure that all the members of the nation are actually aware of this concept. Though the later study shows that at the company level, the current intellectual property protection is effective as discussed in section 4.42, to strengthen the intellectual property protection education within the company context



will also be beneficial to raise the level of intellectual property protection awareness of the whole nation in addition to the intellectual property protection education activities at individual aspect.

Although most of the respondents in this study agreed that buying pirated CDs, copying other people's work without permission is a kind of infringement of IPRs, ironically, this study also reveals a severe problem in the current status of intellectual property protection at individual level in China that no matter people from which age group, or possess what kind of education level, or have how many years of working, or the companies they work in have how many employees, or whether they understand the intellectual property meaning, a large percentage of them have ever bought pirated CDs. It is found that the current intellectual property protection in China is obviously not sufficient at individual level, that is, the individuals of the nation are not playing their roles as supposed to be in promoting and implementing intellectual property protection in China. Such result can account partially for the fact that, according to the Seventh Annual BSA Global Software Piracy Study report (BSA, 2002), China stands for the second top among the offenders with a software piracy rate of 92% in year 2001 (and 94% in year 2000). And another 2003 Special 301 Report of People's Republic of China by International Intellectual Property Alliance also shows that in year 2002, the estimated trade losses due to piracy of motion pictures, sound recordings/musical compositions, business software applications, entertainment software and books are about US\$1849.3 millions (US\$1932.5 millions in year 2001) (International Intellectual Property Alliance [IIPA], 2003). With such piracy losses at a staggering \$ 1.85 billion in 2002, and piracy rates continuing at over 90% across all copyright industries, IIPA critics that there is no significant movement to enforce the criminal law against piracy as required by TRIPs in China for year 2002.

The study to investigate the current status of intellectual property protection in China at the company level reveals a contradictory phenomenon that many people claim that their companies are currently using original software which can't explain the severe piracy problem specified by BSA and IIPA. On the whole, from the results of the questions about whether the companies in China are using original software, whether they have intellectual property related department, whether they have ever encountered IPRs infringements and resulted in revenue loss, whether they are able to handle

intellectual property violation issues or seek for external assistance, we can perceive that the current intellectual property protection in China at the company level can be evaluated to be effective in contrary to the result at the individual level. And most people evaluate that the current level of intellectual property protection in their companies to be sufficient from their perspective of conducting business. From this study, we can see that most companies are taking constructive actions to support the introduction and implementation of intellectual property protection in China. Subsequently, their positive activities do contribute to the improvement of the investment climate for a few industries in recent years.

Such result is heartening in promoting and implementing intellectual property protection in China. It might be justified by the recent reform of Chinese legal framework upon China's accession to the WTO, and most companies might start to build the awareness of using original software in their business operation. Or we can say that these companies are the main force in supporting Chinese government's activities of introducing and enforcing intellectual property laws in China. However, a vital issue that the result of this study is based on the subjective response of the sample respondents but not facts supported, therefore, objectively, the result of current status of intellectual property protection in China at the company level can't be accepted as entirely true if taking the problems presented by BSA and IIPA's reports on intellectual property protection situation in China into consideration, though there might be certain constructive efforts made by the companies to support and improve the intellectual property protection to certain extent.

As agreed by most respondents in the study, lack of proper intellectual property protection not only has an impact on foreign IPRs holders and willingness of foreign investors to invest in China, but also affects the development of some domestic industries. Take China's high-tech industry for example, with the rapid progress of it, the development of the high-tech techniques urges for the protection of intellectual property. But the fact is that about a quarter of software companies in China regard piracy as a major barrier to the development of the country's software industry (Wong & Wong, 2002). Comparing with the conventional industry, the works concerning with high-tech techniques are quite unique and there are still some problems in this field's intellectual property protection. For instance, some enterprises' protecting measures

are not at their best. They haven't established the corresponding intellectual property protection regulation, they are not aware of applying for the present techniques in time which may result in the flowing away of their techniques, and the system of technological contract is not mature yet. Some of the persons in charge of those enterprises think that the situation of high-tech intellectual property is different from others, therefore, they decide to wait and see how is everything going on, they sometimes don't know what specific implementation should be taken to protect their own IPRs.

Comparing with some international high-tech enterprises, China's are still in its infancy. Those companies in United States treat the issues of protecting IPRs and make integrated use of IPRs as primary event of their development which can be described as their lifeline. Take Microsoft in United States for example, every year they spend more than millions of US dollars on their IPRs including registration and protection. IBM even has the special department of intellectual property, laying adequate stress on patents protection is one of their major strategies of success. So far, IBM owns more than one thousand independence IPRs (Fitzsimmons & Jones, 2002).

Though many people agree that intellectual property protection is important to sharpen a company's competitiveness and certain actions should be taken to secure its business operation, the fact is that if those high-tech enterprises still do not grasp intellectual property management as one of their strategies, they will always be left backwards of the world, what's worse, they will have to face the danger of being infringed or suited. And many foreign IPRs holders and government have often decried IPRs infringements in China. All these show that it's a stringent to enforce China's intellectual property protection of high-tech industry, especially to constitute some convenient measures which will be helpful in promoting the development of this industry.

## **5.2 Change of Intellectual Property Protection up to China's Accession to the WTO**

As to the changes of intellectual property protection in China up to its entry into the WTO, as agreed by most respondents in the study that China has made great effort in

revising and upgrading its intellectual property related legislations to meet up with the requirement of becoming a member of the WTO and there have been big improvement in protecting intellectual property. China has been preparing for the entry for a long time by complying fully with the conditions required by the WTO, and to its credit the government continues to work feverishly on its legal framework on all fronts for intellectual property protection. Legalese is being tightened, and work continues apace on amending current laws. Amendments and revisions to the Trademark Law, Copyright Law and Patent Law are at various stages of completion. Although some related laws and regulations may not implemented yet, all of them which have been revised in order to be conformed to the TRIPs Agreement had laid a solid foundation and contributed to China's entry into the WTO in the aspect of protecting the intellectual property. These historic developments were accompanied by other actions during the year 2002 designed to better implement and enforce intellectual property protection throughout the nation. All these were very positive developments –indeed, IIPA members believe that China is now fully aware at the highest levels that intellectual property protection must become a part of the national tapestry of economic growth (IIPA, 2002).

Even though IPRs related laws have been improved to align them with the WTO agreement, as agreed by most people in this study, enforcing intellectual property protection in China is still a highly difficult task. The gradually established comprehensive IPRs regime in China is enriched by its accession to the WTO by examining and revising related IPRs laws. However, the low standard of IPRs laws and the inefficiency of law enforcement bodies will still aggravate the intellectual property protection in China. Although given more teeth for enforcement, including specifying detailed procedures for litigation, granting more power to local officials to investigate cases of infringement, and offering more compensation for infringement, the actual implementation and enforcement of intellectual property protection after China's accession to the WTO are still not so satisfactory. For instance, there were \$ 1.85 billion piracy losses in 2002 and piracy rates continue at over 90% across all copyright industries in IIPA's 2003 Special 301 Report (IIPA, 2003). Therefore, the IIPA critics that there is no significant movement to enforce the criminal law against piracy as required by TRIPs in China for year 2002 which is just one year after its accession to the WTO.

### **5.3 Problems and Possible Measures of Intellectual Property Protection in China**

In the environment of international and domestic intellectual property protection and under the pressure of economic sanction of some developed countries, China has committed manpower, materials and financial resources in terms of intellectual property protection, mobilized various institutions to carry out acts of cracking down the counterfeit and burglary copyright etc. It has achieved some undeniable results, however, the IPRs infringing activities have got steadily worse in fairly much regions and fields. One of the important reasons is unable to ideologically have a multi-dimensions, all-round, macro and deep understanding on intellectual property protection. The Chinese have portrayed their desire of attracting foreign capital and technology into China as the major justification for their introduction of intellectual property laws in rapid successions and for the constant alterations they have made as soon as grievances were heard or likely to emerge from the United States and other countries against elements of the adopted forms (Endeshaw, 1996).

Though most people declare themselves to understand the meaning of intellectual property, when being asked to judge the overall intellectual property protection awareness in China, the majority of them agreed that the intellectual property protection awareness in China is still low, and as evidenced in fewer patent applications in China as compared to the developed countries (Kong, 2002). Such saying may be contradictory to the result of the study as discussed in section 5.1, however, demonstrated with the actual intellectual property protection situation such as the piracy problem in China, the overall low intellectual property protection awareness has to be identified as one of the major problems intellectual property protection enforcement in China.

Besides, many people agree that the prevailing problem of IPRs infringements in China is deeply rooted in its own economic self-justification, and compounded by immature industrial self-policing. There are numerous small and medium-sized software firms in China produce and sell pirated software regardless of the various comprehensive IPRs protection laws and legislations. And the driven force of such piracy activities is the simple technology, low risks and high returns involved. As a result, the price of pirated products is most probably much cheaper than the original

ones. And with the latest technology, pirated products are generally of the similar quality though the after-sale services are not guaranteed. Together with the indisputable low purchasing power of Chinese consumers, a maturing piracy market has been cultivating along the route of the development and opening of China. As a result, more and more Chinese consumers accept the culture of consuming pirated products and participate actively in such activities.

Being a system engineering, the intellectual property protection includes the legislation protection, administrative protection, juridical protection, protection of collective managerial organization of intellectual property, technical protection, self-relief of intellectual property owner etc., and the protection in the above 5 aspects is inter-penetrated and inter-worked, forming a stereoscopic line of defense of social comprehensive harnessing. Only by this way, can the effective protection on intellectual property be carried out, the right infringing acts be stopped and punished timely, the protection oil for intellectual property be added into the fire of human wisdom, and the strategic task to ensure scientific and technological innovation be realized. Due to the culture influence and complicated operation procedure, the primary weakness of enforcement lies in the enforcement agencies. Some of the agencies are relatively slow in making decisions, under financed and under staffed, at times affected by the influence of local protectionism, staff's low salaries and lack of adequate training. Take local protectionism for example, The difficulty of enforcement is compounded by the practices of regional protectionism and parochialism in many localities where lack of enforcement of final court judgments is common (Endeshaw, 1996). Apart from these factors, the major obstacles to the effective, intensive and extensive implementation of intellectual property protection are the large population of China and un-even distribution of the development of the country.

As to the implication of legal protection of intellectual property, there are few arguments, and they focus on law enforcement, summing generally up the China's two-way system of juridical protection of intellectual property (Asia Law & Practice, 1995). However, with the elapse of time, people are increasingly aware of that the legal protection of intellectual property or the called intellectual property protection is only annotated as law enforcement, investigation and treatment or trail etc. is

incomplete, and even such a positioning in terms of concept would bring about the practice the very great blindness.

China's modern legal system of intellectual property has been established just over a dozen years. This time was a period in which the great shift, reform and change of the country's working stress, economic system and policy of opening to the outside world took place, and also the course of our country's accession to the World Trade Organization, to continue to be involved into the global economic, scientific and technological integration. China's civil and commercial laws, intellectual property legal system and their theory are, as a whole, in a course of establishment, improvement and development. There are much more difficult and complicated problems in practice of law enforcement of intellectual property, and acts of tort such as burglary copyright, counterfeit etc. of neglecting and even trampling on the intellectual property exist seriously. Although on the basis of our outstanding efforts and we have "entered the hall" in the drive of tide to enter into the WTO, however facing the situation of challenge of knowledge economy and for the entry into WTO to commit to undertaking TRIPs treaty, the legislation and law enforcement of intellectual property are urgent in improvement and enhancement. Moreover the practice of legislation and law enforcement needs the mature theoretic guide of intellectual property.

The current Chinese intellectual property law is complex and confusing. Different agencies and government bureaucracies have control over different industries, intellectual property rights are governed by a separate legal regime and foreign business are treated differently from local business. The laws are also constantly changing, leaving many foreign investors frustrated over the lack of clear up-to-date practical intellectual property information (Asia Law & Practice, 1996). WIPO is carrying out an active assistance for developing countries which helps them revising existing laws which are inadequate for the country's economic needs and priorities (WIPO, 1997). With such external support, the existing China's intellectual property related laws are expected to be revised accordingly to keep abreast of the development of china's economy and technology. Another type of external support might be the foreign pressure serving as an effective tool to persuade and propel China to upgrade its intellectual property related laws. The most famous case involved the use of its own

domestic law (Section 301) by the United States to force China to improve the IPRs regime and act against piracy perpetrators in the country (Kong, 2002). China was eventually forced to shut down seven out of the twenty-nine factories producing counterfeit movie and CDs, destroy more than two million tapes and CDs, and confiscate 30,000 computer discs.

Apart from the intellectual property protection framework, it is also suggested that judicial sectors across the country implement laws of patent, trademark, copyright and website domain name protection in line with TRIPs. And to some degree, intellectual property violations are very much a social problem to which education may be the correct solution. Since most people agree that the awareness of intellectual property protection is also crucial for its enforcement, therefore, within a company or social context, legal publications and education on intellectual property protection should also be carried out broadly in China. It is also recommended that public education efforts on intellectual property protection should be coupled with meaningful penalties in the rigorous and sustained enforcement (Kong, 2002).

Moreover, China needs many thousands more capable judges and professionals of educating and dispensing wisdom to the current and future generation on the relatively new and unfamiliar issue of intellectual property (in both administrative and judicial enforcement authorities). Although currently they are still thin on the ground in China, thus invaluable. With China's accession to the WTO, the demand for legal workers is expected to increase sharply. It is estimated that by 2010, China should have 200,000 high-quality practicing lawyers in the country (Zou, 2002). Among these qualified lawyers, there is definitely certain proportion of them will be specialized in intellectual property protection to meet the growing demands of professionals in this field. The minimum educational requirements for the judges and professionals should at least include a degree in law. And it's advisable for them to receive their remuneration from the judiciary not only from the local government. The Ministry of Justice in China has required practicing lawyers and notaries who do not have a bachelor's degree to obtain such a degree within five years from 2002 (Zou, 2002). All these should help to strengthen the administrative and judicial authorities that enforce the intellectual property laws in China.



There is a development cooperation program organized by the WIPO with the main objectives to assist developing countries in the establishment or modernization of intellectual property systems suited to their development goals through developing human resources and main aim to make a special contribution to the development process within the developing countries in the field of intellectual property, thereby calling for a whole range of multiple activities (WIPO, 1997). Under its training activities which occupy a preeminent place within this program, there is various regular general and specialized courses organized each year to train the official and other personnel from developing countries to acquire knowledge and practice in the various aspects of intellectual property so that they may effectively organize and administer the intellectual property system of their own countries. This would really help developing countries' development in intellectual property protection.

Besides, China and European Union are conducting a judge-training program, to help Chinese judges gain advanced experience of law enforcement on intellectual property rights (Court, 2002). So far, 200 judges from Intermediate People's or Higher People's Courts in all provinces, municipalities and autonomous regions have received such training. The straining program will target more judges in a bid to spur regional courts to tighten intellectual property related law enforcement.

There are also more frequent and extensive judges' meeting held to promote exchanges of intellectual property protection between Chinese judicial departments and their foreign counterparts in the long run. This will provide China with the most up-to-date, successful and practical experience of the implementation of intellectual property protection.

#### **5.4 Conclusion**

The recent rapid development of Chinese economy relates closely to the reform of legislation and civilization of the society. Being the accelerator of the Chinese economy development, intellectual property protection related laws are undoubtedly among one of the most significant compositions in the symphony of the new legislations in China. The growing internal needs for more social, economic and technological information sharply boost the demands for protection of creative works

in China. Consequently, the Chinese government has established and implemented quite a few intellectual property related laws to encourage more active inventions of creative works, what's more, to ensure a better investment for both domestic and foreign investors. The results from the study help to demonstrate that the whole nation has realized the position of intellectual property in the economy growth in order to catch up with the developed countries.

After the assessment of the awareness of intellectual property protection and the investigation of the current intellectual property protection status in China, we can observe that China has made enormous progress in legislation of trademark, patent and copyright. And those existing intellectual property laws which are still under up-to-date revision can be evaluated as sufficient. But the best law would be useless without effective, intensive and extensive enforcement. While a sound understanding of the relevant legal infrastructure is essential to the formulation of any strategy for the protection of intellectual property protection in China, that in itself will be insufficient to guarantee the effective enforcement. Those charged with responsibility for intellectual property protection in China should concentrate on determining what it is possible to achieve in practice (Asia Law & Practice, 1995). It's just like a Chinese saying that "Flashy but without substance". What China is lack of now is specifically the crucial practical part.

With 20% of the world's population in one country, the major difficulty is one of scale-even with maximum use of all the available resources and maximum support from overseas intellectual property owners, it would take several years of concerted effort to reduce counterfeiting (Asia Law & Practice, 1995). That's an undeniable fact in China nowadays. It ought to say, China has set up a better legal system of protection intellectual property than before and China is trying to improve the level of the protection. The internationalization of IPRs infringement should be paid attention to especially after China's accession to the WTO, there will be more chances along with challenges pouring into China.

From what have been discussed in this study, we can obviously perceive China's great efforts in building the intellectual property protection framework and the rapidly developing intellectual property rights enforcement. But there are still gap in catching

up with the effective enforcement of intellectual property. The Chinese government has stated its commitment to the protection of intellectual property and hopefully that commitment will be translated into a more effective enforcement regime as the economy expands and more resources become available (Asia Law & Practice, 1995). With the purpose of protecting fair market competition, safeguarding market economic freedom and order, and promoting economic and cultural development, which all urge China to do more to promote effective enforcement based on the existing intellectual property protection and enforcement framework. And the judicial intellectual property protection is the very important part of the intellectual property protection system, therefore, the focus should be put on that. Kong pointed out that despite the increasing competence of the courts in dealing with IPRs cases in recent years, judicial practices have still turned out to retard rather than enhance the courts' ability to give full play to the protection of IPRs (2002).

Besides, people's awareness of intellectual property protection is also crucial, therefore, the carrying out of intellectual property protection education nationwide are also highly encouraged. Chinese judges hold the position of full scope intellectual property protection, China needs to cultivate adequate intellectual property protection professionals. And legislative, judicial, administrative and social effort should be cooperated with that of IPRs owner in realizing the full scope intellectual property protection and enforcement. As the economy expands and more resources become available, resources must be devoted not only to the physical aspects of enforcement but also to further education and training of the judiciary and administrative agencies in the importance for development of effective protection of intellectual property (Asia Law & Practice, 1995).

There are a few areas to be improved for this study wherever have been missed out due to various constrains. Regarding the survey, due to the cost and time constraints, a generally required sample size of 1000 by most social science was not possible. Finally the sample size was only as small as 173 with a precision of  $\pm 7.5\%$  as discussed in Chapter 3. Therefore, strictly speaking, the results of this study could not be completely representative. And while applying statistical or other types of techniques to these questionnaire data, it was pretty difficult to find out pattern or discover knowledge from the viewpoint of data mining.

As to the sample selection, the non-probability sample selection in this study was not as ideal as a probability sample. Since there was no sampling frame, the probability of each element being selected could not be calculated. Consequently, it was not possible to determine how representative the sample was of the population and the used techniques of statistical inference or other types were not so appropriate (even though the procedure was still acceptable as long as the bias was small). The data collection method used in this study was the questionnaire. If only time, cost and conditions allowed, interviews could be advantageous if probing questions were involved.

For the questionnaire itself, the statements section might consisted of some criticized as leading questions which would sometimes lead respondents to the desired answers. As to the format of the questions, almost all of them were close-ended producing structured and standardized answers which would be suitable for further data analysis. However, it unavoidably restricted the width and depth of the survey implying that some other related questions might be missed out by the author. Besides, there was no pretest of the questionnaire with a protest sample which theoretically should have the same characteristics as the actual sample. Lastly, from the perspective of the respondents, this research topic might be quite unfamiliar and vague for some of them, hence, they might interpret the questions from a different aspect as the author and produce inaccurate responses.

Except for the limitations mentioned above, ideally, this study might benefit those readers who have interest to know more about intellectual property protection especially in the context of China. They can use the information and findings to understand the topic better and gain the up-to-date insight into China's intellectual property protection especially with its accession to the WTO in Dec 2001. From a research perspective, expectantly, this work will be of some value to be used as a pilot study for future research about intellectual property protection in China.

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## APPENDIX 1

### Intellectual Property – Some Basic Definitions

*Source: (WIPO, 2002)*

**Patent:** A patent is an exclusive right granted for an invention, which is a product or a process that provides a new way of doing something, or offers a new technical solution to a problem. A patent provides protection for the invention to the owner of the patent for a limited period, generally 20 years.

**Trademark:** A trademark or brand-name is a distinctive sign which identifies certain goods or services as those produced or provided by a specific person or enterprise. The period of protection for a trademark varies, but can generally be renewed indefinitely.

**Industrial Design:** An industrial design – or simply a design – is the ornamental or aesthetic aspect of an article produced by industry or handicraft; registration and renewals provide protection for, in most cases, up to 15 years.

**Copyright and Related Rights:** Copyright is a legal term describing rights given to creators for their literary and artistic works (including computer software). Related rights are granted to performing artists, producers of sound recordings and broadcasting organizations in their radio and television programmes.

**Geographical Indication:** A geographical indication is a sign used on goods that have a specific geographical origin and often possess qualities or a reputation that are due to that place of origin. (For a more thorough description of each of these elements of intellectual property see <http://www.wipo.int/about-ip/en/> and relevant WIPO leaflets)

**Trade Secrets/Undisclosed Information** is protected information which is not generally known among, or readily accessible to, persons that normally deal with the kind of information in question, has commercial value because it is secret, and has been subject to reasonable steps to keep it secret by the person lawfully in control of the information.



## APPENDIX 2

### Evolution of Intellectual Property – A Timeline

**Table A2.1 Evolution of Intellectual Property – A Timeline**

Source: (Fitzsimmons & Jones, 2002)

Year	Patents	Copyright	Trade Marks/Design Rights (UK)
1421	First patent – Italy		
1449	First patent – UK		
1590	Elizabeth 1 grants 50 patents		
1624	Statute of monopolies (UK)		
1641	First patent in US (UK granted)		
1662		First Licensing Act UK)	
1709		Statute of Anne (UK)	
1785	Arkwright's patent rejected		
1787			Design and Prints of Linen Act (UK)
1790	First US Patent Act	First US Copyright Act	
1796	Watt's patent for steam engine		
1836	Second US Patent Act		
1839		Copyright and Design Act (UK)	Copyright and Design Act (UK)
1842			Design Act (UK)
1851	Great Exhibition – London		
1852	Patent Law Amendment Act (UK)		
1853		Translation – <i>Uncle Tom's Cabin</i>	
1870			Trademark Act (US)
1875			Trade Marks Registration Act (UK)
1883	Paris Convention		

1884		Photographs covered by copyright (US)	
1885	First Patent Act (Japan)		
1886		Berne Convention	
1902	Patent Act (UK)		
1907			Design incorporated in Patents (UK)
1908		Berlin Act – 50-year life for copyright	
1909		Copyright Act (US)	
1911		Copyright Act (UK)	
1928		Rome Act	
1930	Plant Patent Act (US)		
1946			Lanham Act (US)
1949			Registered Design Act (UK)
1956		Copyright Act (UK)	
1964	Plants covered by patent (UK)		
1970	WIPO/PCT comes into being		
1971		Musical recordings covered (US)	
1976		Copyright Act (US)	
1977	Patents Act (UK)		
1980	Genes and GM foods covered		
1981	Software patentable (US)	Computer software covered	
1988			Copyright, Designs and Patents Act (UK)
1990		Circulation of software (US)	
1990		Architectural works (US)	
1991		Telephone directory covered	
1993		<i>Playboy</i> – Internet images	
1994		Rap music allowed to sample	Trade Mark Act (UK)
1995		US amendments	
1996		Databases covered/TRIPS	

1998	Dolly the sheep – cloning patent		
1998	Business methods patentable (US)		
2000		Napster and MP3 prosecuted by RIAA	

## APPENDIX 3

### A Brief Chronology of IPRs Protection in China

**Table A3.1 Brief Chronology of IPRs Protection in China**

*Source: (Kong, 2002)*

April 1963	China promulgated the Trademark Control Act
July 1979	China and the US reached the Agreement on Trade Relations
June 1980	China joined the World Intellectual Property Organization
August 1982	China promulgated the Trademark Law of the People's Republic of China
March 1984	China promulgated the Patent Law of the People's Republic of China
March 1985	China acceded to the Paris Convention for the Protection of Industrial Property
May 1989	China and the US reached the Memorandum of Understanding on Enactment and scope of PRC Copyright Law
May 1989	China signed the Treaty on Intellectual Property in Respect of Integrated Circuits
October 1989	China accede to the Madrid Agreement Concerning the International Registration of Marks
June 1991	China promulgated the Copyright Law of the People's Republic of China
June 1991	China promulgated the Regulations on Computer Software Protection
January 1992	China and the US reached the Memorandum of Understanding on Intellectual Property Rights
September 1992	China promulgated the Regulations for the Implementation of International Copyright Treaty Provisions
October 1992	China became a member of the Berne Convention for the Protection of Literary and Artistic Works
October 1992	China acceded to the Universal Copyright Convention
February 1993	China promulgated the Supplementary Provisions Concerning the Punishment of Crimes of Counterfeiting Registered Trademarks
June 1993	China acceded to the Convention for the Protection of Producers of Phonograms Against Unauthorized Duplication of Their Phonograms (Geneva Convention)
December 1993	China promulgated the Unfair Competition Law of the People's Republic of China
January 1994	China acceded to the Patent Cooperation Treaty
July 1994	China promulgated the Regulations on the Implementation of the Copyright Law
August 1994	China acceded to the Nice Agreement Concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks
February 1995	China-US Memorandum of Understanding on Intellectual Property Rights

July 1995	China acceded to the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure
December 1995	China acceded to the Protocol Related to the Madrid Agreement Concerning the International Registration of Marks
September 1996	China acceded to the Locarno Agreement on Establishing an International Classification for Industrial Designs
June 1997	China acceded to the Strasbourg Agreement Concerning the International Patent Classification
October 1997	China promulgated the Regulations on the Protection of New Varieties of Plants
November 1999	China and the US reached the Agreement on China's Accession to the WTO
October 2001	China promulgated the Regulations on the Implementation of the Integrated Circuit Layout Design
December 2001	China became a member of the World Trade Organization

## APPENDIX 4

### Current Intellectual Property Related Laws and Regulations in China

#### 1. Patent Laws & Regulations

- Patent Law of the People's Republic of China  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/zlflfg\\_e/200203270002.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/zlflfg_e/200203270002.htm)
- Implementing Regulations of the Patent Law of the People's Republic of China  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/zlflfg\\_e/200203270001.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/zlflfg_e/200203270001.htm)
- Regulations on the Protection of Layout-Designs of Integrated Circuits  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/zlflfg\\_e/200204020002.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/zlflfg_e/200204020002.htm)
- Regulations on Patent Commissioning  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/zlflfg\\_e/200204160008.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/zlflfg_e/200204160008.htm)

#### 2. SIPO's Regulations

- Notice Concerning Handling of Deposited Micro-Organisms by the Chinese Patent Office  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/bmgz\\_e/200204040007.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/bmgz_e/200204040007.htm)
- Rules of Notice Concerning Handling of Deposited Micro-organisms by the Chinese Patent Office  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/bmgz\\_e/200204040005.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/bmgz_e/200204040005.htm)
- Provisional Provisions Concerning Entry Quarantine for Micro-Organisms(Viruses) and Culture Used for Patent Procedures  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/bmgz\\_e/200204040004.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/bmgz_e/200204040004.htm)

#### 3. Related Laws & Regulations

- Trademark Law of the People's Republic of China  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/xgfg\\_e/200204160013.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/xgfg_e/200204160013.htm)
- Copyright Law of the People's Republic of China  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/xgfg\\_e/200204160012.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/xgfg_e/200204160012.htm)
- Law Against Unfair Competition of the People's Republic of China  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/xgfg\\_e/200204200015.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/xgfg_e/200204200015.htm)
- Contract Law of the People's Republic of China  
[http://www.sipo.gov.cn/sipo\\_English/flfg\\_e/xgfg\\_e/200204200016.htm](http://www.sipo.gov.cn/sipo_English/flfg_e/xgfg_e/200204200016.htm)

## APPENDIX 5

### Intellectual Property Protection in China Survey

#### Dear participants

I am currently conducting an assessment on the awareness on Intellectual Property protection in China and an investigation on the current Intellectual Property protection status (especially up to China's entry into the WTO) as well as problems from the view of conducting your business.

The questionnaire will be only used for my study of "Intellectual Property protection in China" in Nanyang Technological University, Singapore. And your contributions to the survey will provide valuable data to the assessment and investigation of Intellectual Property protection in China especially after its entering the WTO in December, 2001. I seek your honest opinion about how you feel in response to the question below, and the data will be kept confidentially and won't be released to any third party. The survey should take about 5-10 minutes of your time.

**Thank you for your participation!**

#### Wang Lina

MSc of Information Studies, School of Communication and Information  
Nanyang Technological University, Singapore

#### Personal Profile

This section is needed for the purpose of **CLASSIFICATION** only and **RESPONSES WILL BE GROUPED**. It is assured that **INDIVIDUALS WILL NOT BE IDENTIFIED**. Please tick in the respective column provided according to your own information. For "Others", please write down respective information if it is not provided here.

<b>1. Gender</b>	<input type="checkbox"/> Male	<input type="checkbox"/> Female			
<b>2. Age Group</b>	<input type="checkbox"/> <= 20	<input type="checkbox"/> 21 – 30	<input type="checkbox"/> 31 – 40	<input type="checkbox"/> 41 – 50	<input type="checkbox"/> >= 51
<b>3. Education</b>	<input type="checkbox"/> High School	<input type="checkbox"/> College	<input type="checkbox"/> University	<input type="checkbox"/> Postgraduate	
		<input type="checkbox"/> Phd	<input type="checkbox"/> Others _____		
<b>4. Job Functionality</b>	<input type="checkbox"/> Technical	<input type="checkbox"/> Administrative	<input type="checkbox"/> Marketing	<input type="checkbox"/> Sales	
	<input type="checkbox"/> Training	<input type="checkbox"/> R&D	<input type="checkbox"/> Law Related	<input type="checkbox"/> Management	
		<input type="checkbox"/> Others _____			
<b>5. Years of Working</b>	<input type="checkbox"/> <= 5	<input type="checkbox"/> 6-10	<input type="checkbox"/> 11-15	<input type="checkbox"/> 16-20	<input type="checkbox"/> >= 21

#### Organization Profile

<b>6. Organization Type</b>	<input type="checkbox"/> MNC	<input type="checkbox"/> Local Enterprise	<input type="checkbox"/> Joint Venture
	<input type="checkbox"/> SME	<input type="checkbox"/> Government/Statutory board	<input type="checkbox"/> Others _____
<b>7. Employees Number</b>	<input type="checkbox"/> 0-50	<input type="checkbox"/> 51-100	<input type="checkbox"/> 101-200
	<input type="checkbox"/> 201-500	<input type="checkbox"/> 501-1000	<input type="checkbox"/> >1000

<b>8. Main Business Activity</b>	<input type="checkbox"/> Government	<input type="checkbox"/> Manufacturing	<input type="checkbox"/> Information Service
	<input type="checkbox"/> Commerce	<input type="checkbox"/> Consultancy	<input type="checkbox"/> Computer Related
	<input type="checkbox"/> Telecommunication	<input type="checkbox"/> Advertising	<input type="checkbox"/> Others _____

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<b>9. Business Involving IP</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Do not know
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<b>10. IP Related Department</b>	<input type="checkbox"/> Have	<input type="checkbox"/> Do not have	<input type="checkbox"/> Do not know
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**Intellectual Property**

- 11.** Do you understand what exactly is meant by Intellectual Property?  
 Yes                                       No                                       No comments
- 12.** Do you often hear people talking about Intellectual Property, for example, through media?  
 Yes                                       No                                       Do not bother
- 13.** Have you ever bought any pirated CDs, copied other people’s work without permission?  
 Yes                                       No                                       No comments
- 14.** Has your company ever encountered any form of Intellectual Property Right infringements and resulted in the revenue loss in business?  
 Yes                                       No                                       Do not know
- 15.** Does your company use original operation system, application, database software such as Microsoft Windows, Word, Excel, Powerpoint, Access, etc ?  
 Yes                                       No                                       Do not know
- 16.** Is your company able to deal with violation of your company’s copyright or patent by others, or have specific lawyer agency to consult?  
 Yes                                       No                                       Do not know

Please rate the following statements below on a scale from 1 to 4 where **1 means Strongly Disagree** and **4 means Strongly Agree**. Please circle or tick the appropriate number in the column provided next to the statement depending on your opinion.

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>17.</b>	Intellectual Property protection is important in modern society either for individual or for company.			
	1	2	3	4
<b>18.</b>	The vital contribution made by Intellectual Property protection is that it respects creativity and innovation.			
	1	2	3	4
<b>19.</b>	Having products with own Intellectual Property Right helps sharpen one’s competitiveness for a trader or a country.			
	1	2	3	4



<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>		
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>		
20.	Buying pirated CDs, copying other people's work without permission, etc is a kind of infringement of Intellectual Property.	1	2	3	4
21.	The infringements of Intellectual Property Right infringements will have bad influence on a company and may result in the revenue loss in business.	1	2	3	4
22.	China has very high software piracy rate and therefore, it's a major barrier to develop China's software industry, meanwhile, other countries also suffer huge software revenue loss in China.	1	2	3	4
23.	Many foreign Intellectual Property Rights (IPRs) holders and government have often decried IPR infringements in China.	1	2	3	4
24.	If China were lack of proper Intellectual Property Rights (IPRs) protection, it would have an impact on foreign IPR holders and the willingness of foreign investors to invest in China.	1	2	3	4
25.	China has well-established Intellectual Property protection legal infrastructure and efficient Intellectual Property enforcement authorities.	1	2	3	4
26.	China has made great effort in revising and upgrading its Intellectual Property related legislations to meet up with the requirement of becoming a member of WTO.	1	2	3	4
27.	Externally, foreign pressure serves as an effective tool to persuade and propel China to upgrade and enforce its Intellectual Property laws.	1	2	3	4
28.	There has been big improvement in protecting Intellectual Property up to and after China's entry to WTO.	1	2	3	4
29.	The current efforts made by China of protecting and enforcing Intellectual Property is adequate, effective and compatible with the developed countries.	1	2	3	4
30.	In China, Intellectual Property protection awareness is still low, and most people think it has nothing to do with their own.	1	2	3	4
31.	The problem of Intellectual Property Rights infringements in China is rooted in its own economic self-justification, and compounded by immature industrial self-policing.	1	2	3	4
32.	The reason why numerous small and medium-sized software firms in China produce and sell pirated software is mainly because of the simple technology, low risks and high returns involved.	1	2	3	4

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>33.</b>	The reason for Intellectual Property Rights infringements in China is also a maturing piracy market.			1 2 3 4
<b>34.</b>	Apart from the easy use of high-tech by counterfeiters, pirated products are most probably quite cheap which cultivate a culture of making consumption of these products popular and acceptable by more and more Chinese consumers.			1 2 3 4
<b>35.</b>	If your company has some product or technology which is not available in the market, you should register patent for it immediately both locally and internationally.			1 2 3 4
<b>36.</b>	In your company, for the concern of being imitated of own products, the protection of Intellectual Property Rights has to be included in the company competent strategies.			1 2 3 4
<b>37.</b>	In your opinion, a company should have a sort of policy to enforce the protection of Intellectual Property Rights of its own.			1 2 3 4
<b>38.</b>	The awareness of Intellectual Property Rights protection is also crucial for its enforcement, therefore, within a company or in a social context, legal publications and education on IPRs protection should be carried out broadly in China.			1 2 3 4
<b>39.</b>	Not concerning the overall environment, but just about your company, currently the protection of Intellectual Property Rights can be evaluated as adequate from the view of conducting your business.			1 2 3 4
<b>40.</b>	Although Intellectual Property Rights laws are being improved to align with the WTO Agreement, it will still be a highly difficult task of enforcing Intellectual Property protection in China.			1 2 3 4
<b>41.</b>	Local officials and courts should be granted more power to investigate cases of Intellectual Property Rights infringements, and more compensation should be offered for infringement activities.			1 2 3 4

*Apart from what have been probed into above, do you have any comments or suggestion on the protection of Intellectual Property in China?*

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**Thank you for your time and effort ! ☺**