

# Intellectual Property Protection and China

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## Introduction

Since the start of 1980s economic reforms opening China's doors to foreign investors, China has been plagued with patent infringement problems. Issues ranging from the sales of cheap pirated software to much more dangerous areas involving illegal and potentially dangerous pirated pharmaceuticals are becoming more prevalent as China's production capabilities grow exponentially. Unfortunately, China's intellectual property law and enforcement system has not been able to keep up with its rapid growth. As China becomes a more dominant force in the global market, these issues will affect every global company that want to tap into the large Chinese market, as most businesses are concerned with the protection of their ideas. In this paper we address many of the intellectual property rights and patent infringement issues affecting China today. We start with an overview of how to improve the litigation procedure in infringement cases and then analyze the inadequacies of the current intellectual property protection system with regards to software piracy, pharmaceuticals and internet sales of pirated goods. Finally, we will discuss patent issues relating to the Trade-Related Intellectual Property Rights Agreement. In each of these areas, we propose solutions we believe China should adopt when determining how to reform their IPR protection system. We also strongly emphasize the necessity for the United States to become involved in the development of a valid and effective IP and patent protection system.

Elizabeth  
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Section

The method with which the Chinese handle their patent litigation has improved greatly since its conception twenty years ago. However, foreign companies are still hesitant to participate in China's litigation system. This section of the report examines ways of improving Chinese patent litigation. Our emphasis is on making the system more trustworthy to foreign nations and more accessible and efficient for the people within China.

To encourage individual patentees to file suit when their inventions are being infringed upon, China should offer patent litigation insurance. Litigation insurance allows small companies and individuals, who lack the funds to file suit, gain an edge on the larger companies. In the United States, patent litigation insurance companies offer to pay the court fees. According to professor Rines, a typical patent law case costs at least a quarter million dollars. Even if an individual were to take out loans or appropriate the money by some other means, it would be too great a risk and possibly throw them too far into debt. Chinese inventors already pay annual fees on their patents. Extra fees to ensure that infringement can be contested and stopped without risk would most likely be a welcome option.

Another method to encourage small companies and individuals to file suit would be to include attorney fees in the damages awarded. The individual should not need to lose 10 to 15% of his or her winnings to an attorney. The money collected from the infringer is money that was wrongfully lost and ideally, the inventor is entitled to get 100% of it returned. The patent system should protect the inventor and encourage him to

share his ideas for the benefit of the nation. It is not very encouraging if money can be lost even if the case against the infringer is won.

To improve the efficiency of the system, China should decrease time between the end of a trial and the delivery of the judge's verdict. Currently, judges take one to two months to reveal their decision for patent cases. Some cases involving complex technology can take up to two or three months. The trial itself, however, only takes a matter of hours. Even the most complex patent law trials only take two days. It is highly unlikely that the judge will spend large portions of the interim time, between the closing of a case and its judgment, deliberating the facts he has been presented. More likely, the judge will forget the specific details of the case and allow his impressions of the two sides color his opinion. In this way he is more likely to award in favor of whichever lawyer presented himself better, rather than whoever argued the case more effectively. Even if the judge can remember the details of the case months later, there is no reason to delay his response more than one day for reflection.

One of the biggest delay factors in Chinese patent litigation is caused by a commonly practiced tactic where the infringer reverses the charges and attacks the patentee. In China alleged infringers generally counterattack their accuser by challenging the validity of the patent. 90% of accusations of invalidation are tied to court cases involving infringement [1]. Since validity and infringement hearings are held separately, the judge will decide which case to suspend. If the challenge concerns a utility model or design rather than an invention, the judge has no choice but to suspend the infringement case. If the validity and infringement trials are held separately they are unfair to the parties involved. In the case where the infringement trial is held first, the alleged infringer

is disadvantaged. He or she may be found in violation of a patent that is not even valid. The decision of the court would not change even after the patent was declared invalid. The alleged infringer would be forced to either appeal or pay damages that he or she was not responsible for. On the other hand, in the case where the validity trial is held first the patentee is at a disadvantage. The alleged infringer will be allowed to continue his or her activities all throughout the validity trial. In this way they can effectively delay the accusation of their infringement and possibly avoid it altogether if the patent is found invalid. In the meantime the patentee will continue incurring losses. The only solution is to have the two trials occur at the same time, or within a period close enough that the patentee will not sustain excessive loss from the extra infringement activities.

In conclusion, Chinese patent litigation would be improved if the overall time between proceedings were reduced and more money was made available for small companies and individuals to file suit. If the litigation were expedited and the cost of the trial reduced foreign companies would be more willing to get involved in the system. People trust systems that are efficient and cheap because they know their time and money are not being wasted on unnecessary bureaucratic procedures.

Sources:

[1] Zheng, Zhongjun. Suggestions to Improve the Chinese Appeal Examination System. Nov 20, 1998.

[http://www.jpo.go.jp/shiryu\\_e/toushin\\_e/kenkyukai\\_e/presentation/cp-p2.htm](http://www.jpo.go.jp/shiryu_e/toushin_e/kenkyukai_e/presentation/cp-p2.htm)

[2] Sun, Cat. Patent Litigation Takes a Dramatic Step Forward. January 2003.

[http://www.deacons.com.hk/eng/knowledge/knowledge\\_152.htm](http://www.deacons.com.hk/eng/knowledge/knowledge_152.htm)

Qian Wang

# China's Software Piracy Problem

China's 92 percent software piracy rate is the second worst piracy rate in the world. This high percentage has been fueled by China's underdeveloped intellectual property rights (IPR) protection and enforcement system. However, despite these issues, the Chinese government is hopeful about China's software industry and has put out a Five Year Plan to shift China's investments from hardware to software. The government demands a 30 percent annual growth rate in China's IT sector and the China Software Industry, itself hopes to control 3 percent of the global software market by 2005. (Williams) These lofty goals are within reach, but not before Chinese views towards IPR change and some substantial reforms occur within the Chinese IPR protection system.

In recent years, China has tried to reform its IP rights protection system to adhere to international standards and appease complaints from foreign investors. However, though the government has developed an extensive body of laws regarding IP issues, China still lacks much of the political and social infrastructure to properly enforce these laws. Nonetheless, there are many viable steps that can be taken to improve IP enforcement. The US and China will need to work closely together to develop an effective IPR protection system.

## **Changes Within China**

### **Government**

First, a Chinese government organization needs to take the lead in the fight against IP infringers. Currently it is unclear which government organization is in charge of making

sure that IP laws are properly enforced and that reforms take place effectively. Either the state needs to call upon an agency to do so or an agency, itself, must step up. In regards to grassroots voting at the village level, the Chinese Ministry of Civil Affairs has taken the lead in pushing for democratic reforms in China and has been, to an extent, very successful in making elections happen. With one government department focused on dealing with IPR issues, IPR polices can be implemented and enforced in a much more effective and efficient manner. In addition, more resources need to be allocated into IP enforcement organizations. Recently, there have been numerous cutbacks in many enforcement bodies, including the State Copyright Administration. Without the proper funding and staffing, there is no way for these agencies to properly monitor and apprehend infringers.

The Chinese government also needs to set an example for its companies and citizens to follow. One of the main IPR enforcement problems has been the fact the Chinese government is rather decentralized and local officials set the rules and regulations their regions are to follow. Thus, claims are often made that certain officials do not have jurisdiction in certain areas and thus, laws can differ from region to region. This facilitates local protectionism and forces IP owners to deal with officials in various manners wherever they want safeguards against infringers. However, though the central government lacks full reach across the entire country, it can at least make an example of higher officials in cities like Beijing and Shanghai to use only copyrighted software. When high officials are caught distributing pirated material within their departments, they should be properly punished so local officials will be less tempted to do the same. Moreover, the government should demand its departments to allocate resources for software needs and make their software budgets transparent.

Apart from setting a good example, government officials also need to make IPR violation fines more substantial and place criminal punishment on repeat offenders. In 1998, the average fine was the equivalent of \$701. This amount is a huge burden on the average citizen, but not effective against advanced IP infringers who have connections to piracy factories and possess large volumes of goods they can sell to make up for the losses. Moreover, the fines that were imposed were rarely collected and almost no offenders were imprisoned. (Clark) The government needs to increase all IPR violation fines and be adamant about collecting them. It also should collect revenues earned from the pirating activities, as well as confiscate pirating equipment. This way, the government will be creating more resources for itself that it can devote to better enforcing these p-punishments.

Finally, currently in China, IP cases can go through either the administrative or court system. Thus, there needs to be more standardized guidelines for individuals in both systems to follow in regards to ruling on these cases. More effort needs to be invested in the cooperation and coordination between administrative and criminal enforcement authorities. IP lawyers will finally be able to obtain an adequate sense of what to expect when trying to protect IP owners' interests no matter what system they are dealing with.

### **Domestic software companies**

Domestic companies should realize their futures lie in the effectiveness of China's IP protection system. Large companies, like Haier, have already been pushing for improvements in the way China deals with IP issues. Thus, it is the domestic companies' duty to press for real enforcement of IP laws. Many Chinese officials have personal interests invested into various companies, as China has blurred the lines between stated

owned and private enterprises. Thus, when companies are pushing for IPR reforms, officials will be more inclined to listen, even if it is for their personal interests.

Finally, companies should seek to create a work environment where its employees fully understand the importance of IPR. Employees should value IPR not simply because IP infringers cost businesses to lose consumers, but because IPR create the foundation of an innovative society.

### **United States Involvement**

The United States can play a large role in aiding the development of China's IPR protection system. US cannot expect to force China to comply with certain rules by threatening sanctions anymore. China has become a powerful world force in the past decade and can impose counter sanctions and will not stand to be told what to do. China is also too big of a market for US investors to lose. Thus, many software companies, including Microsoft, have developed a less rigid approach in dealing with piracy (Williams.) Instead, they view it as simply a cost that needs to be accounted for when doing business in China. However, this attitude will not hold water in the future and companies must invest in developing China's IP protection system if they want the Chinese economy to continue to thrive.

### **Foreign companies**

It is necessary to convince both central, as well as local government officials why IPR protection is important to China. China has come from a long history of foreign abuse, thus many leaders, especially those in less developed areas believe that IPR laws are concepts Westerns are trying to push onto China. This perception of Western aggression is

deeply ingrained into Chinese culture and efforts must be made to eliminate negative beliefs towards IPR laws. Thus, US companies must build bridges between themselves and the Chinese government to teach officials the importance of IP rights. Reasons such as IP rights provide incentives for domestic inventors to share their ideas within China and not bring them to another country with a better IPR protection system, can be listed to show government officials the vast benefits of enforcing IPR.

Foreign companies should also form joint ventures with local companies so there is more incentive for local officials to promote IPR protection. Moreover, companies should invest back into the community to create resources such as schools and hospitals. Doing so will show the Chinese people in the community that protecting IPR benefits the community itself and IPR protection is not some unfair Western idea. (Yu)

Moreover, instead of investing money in litigating against IP infringers, companies should concentrate on allocating resources to build IPR protection communities. Many Chinese officials truly want better IPR enforcement, but lack the resources to enforce these laws. Education programs to teach Chinese officials at all levels about how to enforce laws effectively are crucial to reach into the Chinese decentralized government system. Moreover, China is in extreme shortage of qualified IP lawyers and judges. Thus, training programs to educate lawyers and court officials will be crucial to IPR enforcement successes.

Finally, companies should look into ways to educate the general Chinese populace. Currently, little money has been invested into making the public more aware of the importance of IP laws and regulations. It is hard for a worker in a city not as developed as Beijing or Shanghai, to understand why he should spend half of his monthly salary to purchase software he can easily obtain for a few *ren min bi* from a vendor on the street.

Thus, companies should try to develop programs specifically tailored to the Chinese school of thought. They should cater explanations of the importance of IPR to quell Chinese's fears of foreign bullying and increase their awareness that a society that does not protect IPR cannot truly modernize and will fall behind the rest of the world.

## **Conclusions**

Although the Chinese government lacks a lot of the needed infrastructure to enforce laws, it is very possible for laws to be enforced when so desired. Right before China entered the WTO, there was a well publicized anti piracy crackdown: massive amounts of pirated goods were confiscated and offenders were imprisoned. Thus, the government is capable of enforcing IP laws. However, cracking down every once in a while on IP infringers for international public relations is not enough. The current ineffective IPR protection system must reform in order for the Chinese economy to further prosper. If the Chinese domestic software industry is to grow to become a substantial world competitor, IP laws must be enforced and IP owners' rights must be protected.

Inside China, the government must set good examples and punish even high officials who violate IP laws. The government needs to become more serious about enforcing fines and punishments on IP infringers. It needs to come out full force to show the Chinese people the importance of IPR by stating IP infringers will not be easily tolerated and will have to deal with consequences. Finally in order to achieve these goals, the government needs to become better organized and realize the necessity of devoting more funds to IPR enforcement. The future of China's software industry and eventually, even its entire economy will rely on the ability of China to enforce IP laws and promote innovation.

US companies cannot stand by idly hoping the IPR protection system will reform. They must do all that they can to help develop China's system. They need to build ties with the Chinese government to convince officials from all levels the importance of IPR, look into ways to train officials, lawyers and judges about IP issues and finally educate the general Chinese populace about IPR. Most importantly, the US has to recognize China is a vastly different country from itself. It is home to over one billion people who have belief systems vastly different from the American people, but who all believe strongly in China's future. Signs of strong Chinese nationalism have been increasingly prominent in recent years. Thus, we must recognize that to reach the Chinese people we cannot force ideas down, and must instead find ways to bridge the culture gap and show that IPR is linked closely with China's future prosperity.

## **Chinese Patents & Policy Toward Pharmaceuticals**

The enforcement of intellectual property rights in China has been an issue facing global corporations for many years now. Yet despite recent efforts to change Chinese patent policy, foreign companies continue to lose billions of dollars each year due to piracy. It is estimated that piracy within China costs American companies alone \$20-24 billion dollars in damages each year. Together, European and Japanese companies are believed to lose an additional \$25 billion annually (Lanfranco 1). While many different industries have been feeling these effects, pharmaceutical companies in particular have found it difficult to turn a profit in the country. Historically, this has been because of restrictive patent policy singling out the drug-makers.

### **A Brief History**

Initially, pharmaceuticals were not allowed to be patented in China because it was deemed to be in the public interest not to do so. However, as a result of outside political pressure, this stipulation was amended on January 1<sup>st</sup>, 1993. Since that date, pharmaceutical products and substances obtained by means of chemical process have become patentable ([CPA Archives.com](http://CPA Archives.com)). Foreign pharmaceutical companies expected the new legislation to make the Chinese market more profitable, but the increased importation of patented drugs only led to an increasing number of Chinese counterfeits. Over the next eight years this legislation had no effect in decreasing piracy within China. In 2001, China ascended to the WTO, and this ascension was hailed by some as the answer to all of China's piracy issues. In the three years since, however, it has been seen that this, too, has done little to curtail the problem.

## **Why China Has Piracy**

The main reason that China has so many pirated drugs is that making counterfeit pharmaceuticals is a very lucrative business. Law enforcement officials believe that a \$1000 investment in counterfeit pharmaceuticals will typically yield a \$500,000 profit, as compared to a mere \$50,000 return on the same investment in heroin trafficking (Lash 1). Naturally, any enterprising Chinese citizen would want to get into such a profitable industry, and, not surprisingly, there are currently around 6300 pharmaceutical manufacturers in the country. Yet most of these companies remain “small, scattered, disordered, and of poor quality” (Zhang 1). In order for these companies to compete with their well-established foreign counterparts, the Chinese government must promote domestic growth in any way that it can, namely by providing a competitive advantage. As a result, enforcement of foreign drug companies’ patents has been very weak, with minimal fines and little or no jail time.

A good example of China’s weak enforcement is illustrated by the recent revocation of Pfizer’s Chinese patent on Viagra. A group of Chinese drug companies petitioned China’s State Intellectual Property Office to overturn the patent based on Viagra’s main ingredient, sildenafil citrate. The companies argued that the ingredient failed to meet the novelty requirement of China’s Patent Law, and the patent was subsequently overturned (Forbes.com). In siding with its domestic companies, even over such questionable grounds, China is sacrificing doing what’s right (honoring the foreign companies’ patents) in favor of promoting national economic growth. Not only are these actions of arguable fairness, but they also put a strain on trade relations with the rest of the world. Clearly the problem lies in the government’s conflict between aiding the development of domestic companies and doing what is “right” by honoring patents. But these two necessary actions do not have to

conflict: China can actually use its patent system to spur development of its pharmaceutical industry.

### **Resolving the Conflict**

There are two main ways in which the Chinese government can resolve the conflict it currently faces – either by nationalizing the pharmaceutical industry or instituting aggressive new programs rewarding those companies who innovate. While these solutions are very different in approach, they both revolve around the same primary focus: that is, in order to succeed in a global economy, Chinese drug producers must be able to constantly invent new medicines. But which approach is best? Certainly both proposals have a number of strengths as well as certain weaknesses. To determine which might be the best option, it is necessary to analyze each solution in detail.

### **The State-Run Solution**

The concept of nationalizing China's pharmaceutical industry is not as unnatural as it might first seem. Being a communist state with a national health care program already in place, it may be the next logical step to nationalize drug making as well. Having a single, state-run pharmaceutical company in China could provide a number of benefits over the current Chinese drug industry – the first being cost. With so many small companies in the Chinese market, very few have the available resources to conduct any substantial research and development. In fact, the total R&D expenditure for Chinese-owned pharmaceutical businesses per year is less than that spent by even one of the major Western pharmaceutical groups (Zhang 2). Since the Chinese companies cannot afford to innovate new drugs, they must resort to copying from foreign companies just to stay afloat. By nationalizing the pharmaceutical industry, one single entity (the government) would have access to all the cash reserves that would otherwise be split over several thousand companies. In addition to

the profits currently available to the industry, the state-run company would also have access to the vast cash reserves of the rest of the government. Put simply, if the nationalized company needed more cash for R&D, the money would simply need to be appropriated there through the proper legislative channels.

Secondly, China's current health care system is already nationalized. Adding a drug-making branch to the system could actually make it more efficient. State hospitals, currently the predominant seller of pharmaceuticals to end-users, could track the demand for various drugs so that the pharmaceutical branch tailors production accordingly. Additionally, implementing a state-run pharmaceutical industry can lower costs. Instead of purchasing drugs from private companies, state hospitals would receive their supplies through a government distribution network at little or no markup from the drug manufacturing branch. This, in turn, results in a lower markup in prices charged by the hospitals, reducing the final cost to the consumer.

Thirdly, nationalizing China's pharmaceutical industry could greatly benefit foreign drug companies in two ways. First, it would be much easier to enforce and protect foreign patents under a state-run system. The government would be able to honor the patents simply by not producing the protected drugs. As a part of the WTO, and under the GATT treaty, China can negotiate over prices with these foreign companies, many of whom may be willing to offer greater discounts because of guaranteed patent protection through this more stable system. The second way that a state-run pharmaceutical industry would benefit foreign companies is through China's medical insurance system. Right now, most foreign companies' drugs are not eligible for reimbursement under the national medical insurance plan (Jones, Davis, et. Al). This lack of coverage greatly reduces the number of foreign drugs purchased by Chinese patients. If the government can purchase those foreign drugs

at deeply discounted prices, they can then pass on those savings to more patients, reducing the amount of necessary reimbursements and saving China's government large sums of money. Additionally, cheaper prices would allow more patients to purchase foreign drugs, increasing the profitability of those companies in the Chinese market. This increase in profitability would likewise improve trade relations between China and other WTO countries.

Finally, by instituting a nationalized system, drug piracy in China would be all but eliminated. Since it is private companies that make the counterfeit drugs, and implementing a state-run pharmaceutical industry would eliminate the private companies, then a state-run system would, in turn, eliminate the fake drugs.

Thus it is seen that nationalizing China's drug industry could eliminate piracy, reduce drug costs for Chinese patients, and save the government money as well. In having the state as the only Chinese drug producer, all of the profits available to the industry would be aggregated into one reserve, allowing the government to properly fund the R&D necessary to create new drugs and bring the national pharmaceutical industry to power. Yet despite all of the potential benefits mentioned here, there are, undoubtedly, certain drawbacks to a state-run pharmaceutical system. One of the major arguments that could be made against such a system is that it would eliminate competition, commonly considered a necessary ingredient for innovation. On that note, then, a nationalized system (certainly a plausible solution) may not actually be the best solution. The issue, then, is to resolve the piracy problem while still maintaining a competitive Chinese pharmaceutical industry.

### **Promoting Innovation**

The second solution being proposed here is for China's government to institute aggressive new programs rewarding companies who innovate. Chinese companies copy

because it is the most profitable way for them to make drugs. It costs Western companies an average of \$250 million and 10-15 years to develop a new medicine. Compare this to the mere \$60-120 thousand and 3-5 years needed to copy a drug, and the choice is obvious (Zhang 2). But simply copying drugs cannot ever truly bring Chinese pharmaceutical companies to global power in a world with so many well-established Western companies. In order to prove themselves as legitimate competitors, Chinese companies *must* create new drugs. As a means to this end, China needs to provide economic incentives for its companies to innovate. There are several major ways it can do this.

First, the government must subsidize domestic drug makers with money specifically tagged as R&D funds. One way to ensure that the money is used in this way is to actually establish government research centers. The government could fund the construction of such centers and allow certain companies to use the lab space. Determination of which companies get to use the space and how much of that space each one is allowed could be done by requiring each company to submit proposals of their intended research. The government could then deny support to those companies that do not show adequate intents toward innovation, helping to eliminate the fledgling companies from the market. Eliminating those companies, then, would make the market more efficient and provide even greater benefit to the stronger domestic drug makers. But simply providing economic support would do little by itself. In conjunction with such aid, China would have to increase its enforcement of pharmaceutical patents.

The second way to promote innovation, then, is for the Chinese government to provide patent protection to domestic companies in addition to monetary support. Those drug makers who do create new inventions would be further served by receiving patent protection. Since Chinese drug makers currently do not create new medicines, the

government has little reason to enforce drug patents. But once those companies are creating new products, they can then receive patents and would be on a more level playing field with foreign drug makers. Thus China could enforce all patents equally without damaging domestic companies' profits.

Finally, to provide the necessary incentives for innovation, China's government must institute aggressive new programs which combine these features of economic support and patent protection. One way to do this would be to hold a competition among domestic drug manufacturers to create a treatment or cure for a certain disease. The government could then provide a huge monetary reward along with broad patent protection for the first company to produce a successful product. Competitions similar to this have often been used in the past to promote innovation, especially in the U.S. Most recently, the X-Prize was a competition promoting development of vehicles for commercially viable space travel. A number of groups competed for the large financial award, and the winning entry has since been greeted with public accolades and a fat contract for commercialization of the design by Virgin executives. As a result of the competition, widespread commercial space travel is now a significant step closer. In a similar manner, contests could be held by the Chinese government to promote drug development and bring domestic drug companies to the level of even the largest Western firms.

Overall then, the issue of piracy can be reduced to one major cause – that being the conflict of promoting Chinese interests versus doing what is “right” and honoring foreign patents. In order to eliminate that conflict, it has been shown that China must promote domestic drug innovation and crack down on the enforcement of patents. To crack down it would hold infringers accountable – levy fines and even jail time for stubborn offenders. If domestic innovation is successfully initiated, the number of infringers will be significantly

reduced, and the government can enforce all patents equally. As proposed here, there are at least two major ways to achieve this; either through a nationalized system or through heavy government subsidization and promotion. While nationalization would easily eliminate infringers, at the same time, it eliminates free competition and might impede innovation. Therefore, it is a program of heavy government subsidization, combined with competitions promoting innovation, that seems to be the best solution to the current piracy problem.

Spencer Cross

## **‘Research Materials’ and drug patent infringement**

The internet has spawned a new problem with patent piracy involving China, especially with regards to pharmaceutical drugs. Currently, there are numerous supplement stores that buy the active ingredient in patented drugs from China and then resell these drugs as ‘research materials’ to US consumers. Often times these products are sold as either a raw powder or a powder suspended in a liquid. An example of such a product would be the active ingredient in Cialis, tadalafil. Companies will buy raw tadalafil powder from China and then either sell the powder by the gram to US consumers or put a couple grams of powder in a solution and sell the solution. US companies do not market this drug as Cialis, rather just buy the active ingredient and say that the product is not for human consumption.

There are numerous problems that arise from this type of patent infringement. One is that it takes away revenue from patent owners, which in turn can reduce motivation to develop new drugs. Further, since these companies violate patents on a smaller scale – usually orders can be as small as 1 kilogram, it is harder to detect violations as opposed to more normal patent infringements where large amounts of drugs might be counterfeit. The small scale involved in these transactions also ensures that high quality testing is less likely to occur – putting the users of these drugs at risk. Finally, since these transactions involve multiple countries and are sold discreetly, enforcing the patents is going to be a challenging issue.

### **United States’ role**

To stop the trade of internet 'research materials', both China and the United States will need to work together to crack down on patent violators. On the United States front, the government will need to get better at detecting internet sites that are violating the patents. This is a challenging issue because it is easy for sites to change URL's and avoid detection. Further, because the transactions are so small, it is easy for people to fund the purchase of a small amount of the drug and setup shop.

In order to stop the illegal trade, the United States government needs to do two things. First, it needs to discourage people from trying to sell patented drugs as research materials in the first place. This can be done by imposing stiff penalties for first time offenses. Because the amount of profits to be made off of 'research materials' are so small due to low sales, stiff penalties can make the risk/reward ratio low enough to discourage people from selling. Discouraging sellers before they start to sell is important because of the low fixed costs associated with this business make it easy for someone to start an illegal operation.

The second thing that US companies need to do is find out which Chinese companies are producing the raw powders. Once the US finds out violators, they can then inform the Chinese authorities of the violators and have them punish the companies internally. This, of course, would depend on China's willingness to enforce such a law. As of now, such a system does not exist but we can discuss what China could do if such a system were developed.

## **China's Role**

This problem is important for China to solve because it wants to maintain a good faith standing with the international community. A good standing with US and international

firms will help increase funding to Chinese companies so that they can develop and produce future drugs. The amount of revenue being drawn from producing raw generic powders is relatively small to the overall production in China and is therefore not worth fighting for. By helping international companies in this fight, China will improve its name and relations without much sacrifice in terms of domestic production. Further, China can help subsidize current violators by having them help develop modern drugs that China itself can patent. This will encourage companies to stop patent infringement while at the same time increase boost China's research sector.

To stop illegal patented goods trades, China will need to play a major role. First, as we have talked about in other parts of this paper, China needs to improve its patent system so that it can legally punish violators. This is important because since the amounts of drugs being dealt with are so small, major labs are not the main culprit and will not be hurt by a general boycott by international firms. Further, since smaller labs can be the producer of these powders, it is not very costly to either start an operation or close a lab that has been caught.

A hard and probably ineffective way to try to control this illegal trade would be to attempt to stop it via import/export inspections. If companies were exporting raw powders in large amounts, then it would be easier to target which packages are suspicious and inspect them for illegal goods. Yet, the small amount of materials that are being shipped, combined with the secretive nature of the companies involved, make detection of shipment harder. Even if a package is intercepted, however, it is hard to make convictions of patent infringement, because of current patent laws. If the package has a fake return address, then the producer of the drugs will be safe from detection and will be able to produce more powders in the future. Also, if the receiver can deny knowledge of the contents of the

package then the buyer will also be protected from further investigation. In this case the only option left is to destroy the package and not convict anybody. Such tactics will make illegal operations more costly, but this is not a strong enough deterrent to stop the illegal trade.

### **What companies can do**

To help facilitate cooperation from both the United State and China, international companies can work with Chinese suppliers to make sure they can survive even if they stop all illegal trades. A simple concession for drug companies is to agree to diversify the number of suppliers that they buy raw powder from. While they will not get a bulk rate discount that they may currently receive, such acts can help reduce the number of companies that are willing to violate patent law. Further, by making concessions that will help increase domestic output, the Chinese government is likeier to work with companies to protect their patents. Also, if a company diversifies their suppliers to include various Chinese companies, it will give international companies a stronger footing in case it needs to expand output sometime in the future.

### **Broader implications**

While the market of 'research materials' show how the internet can play a large part in patent infringement involving China, it is not a universal example. Because of the small size of sales along with the high markups, drugs are an especially profitable source to be infringed upon with the help of the internet. Yet, not all patented items can be as easily infringed in China and then sold overseas for a large profit. For example, with large machinery, it is very expensive to ship overseas and it is easier to be caught be customs.

Further, it is easy to resell drugs on the open market – there are many buyers who are not worried about brand name. Finally, it is not terribly expensive to setup a lab to produce the raw goods making it easy for companies to enter the market.

In general, the best types of patents that can be infringed and sold illegally are those that are easy to transport, cheap to produce and easy to convince consumers are equivalent to the real product. As mentioned here and in the paper, drugs and software are two such examples and this explains why they are infringed upon so often. If China is serious about stopping such crimes, it will need to take an active role in the fight.

# Bibliography

1. Williams, Sam. "Profits From Piracy." *Salon Magazine Online*. [www.salon.com](http://www.salon.com). Sept. 26, 2002.
2. Clark, Douglas. "IP rights protection will improve in China – Eventually." *China Business Review*. May-June 2000: 21-22.
3. Yu, Peter. "From Pirates to Partners: Protecting Intellectual Property in China in the Twenty-First Century." *American University Law Review* Vol. 50: 4 – 72.
4. Weeks, Anne. "IPR Protection and Enforcement: A Guide." *China Business Review*. Nov-Dec 2000: 28-32.
5. CPA archives.com [www.cpahkld.com](http://www.cpahkld.com). (Accessed 2 December 2004).
6. Forbes.com [www.forbes.com/feeds/ap/2004/07/07/ap1446413.html](http://www.forbes.com/feeds/ap/2004/07/07/ap1446413.html). Update 2: Pfizer: China Overturns Viagra Patent. (Accessed 3 December 2004).
7. Jones, Day, Reavis & Pogue. "Market Access Report: Pharmaceuticals." *China Law & Practice*. (April 2002).
8. Lanfranco, Edward. "Lash Slams China IPR Enforcement." *Washingtontimes.com*. <http://washingtontimes.com/upi-breaking/20040812-104346-9022r.htm> (12 August 2004).
9. Zhang, Allan. "The Future of China's Pharmaceutical Industry." *PriceWaterhouseCoopers.com*. <http://www.pwc.com/extweb/newcolth.nsf/docid/4CE903FAD5FB1DF985256A31007820CB>.

# Moral Ethical Values in Science and Technology

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## INTRODUCTION AND PROBLEM

Over the past couple of years, there has been a significant increase in the number of patent applications in China.<sup>1</sup> Intellectual Property Rights protection has improved tremendously. Nevertheless, there are still problems that remain. The area in which there are many issues is with social, ethical moral application in processing patents.

For example, China has been having problems with the Agreement on Trade-Related Intellectual Property Rights (TRIPS).<sup>3</sup> Trade-Related Intellectual Property Rights (TRIPS) are rights that encourage creativity and inventions and prevent misconduct by others. This is done by giving the inventor a certain amount of time to complete the project in which a full patent is finally rewarded. The World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property oversees and establishes intellectual property protection worldwide in areas of patents, copyright, trademarks, geographical indication, industrial design, and undisclosed information, also including computer programming and pharmaceuticals.<sup>2</sup> Because of some discrepancies in laws of intellectual property, it declared its commitment to shape its patent laws more in accordance to the WTO.

Even with the protection from the world-wide patenting agreement and local laws in China, it has not prohibited violations and misappropriations in regards to the primary inventor. Valuable technologies in China have been lost from many foreign companies according to Larta Institute, a managing company that helps companies innovate and grow in the marketplace. This is a result of employee theft in China, a widespread problem with foreign technology companies. Because China has no law directly addressing the issue with employees, problems involving this situation are inconsequential to the Chinese government. Some officials recognize the issue; others automatically credit China without foreign perspectives. A judge presiding over a patent trial in Beijing believes “Chinese intellectual property laws exist to protect Chinese intellectual property.”<sup>3</sup> China has major western companies in its country. A lot of previous research has been done on other countries by non-Chinese citizens, therefore if residing in China, the law should allow for patenting not only in China, but also at the inventor’s original country. Although there are many other technicalities involved in this issue, the root is in the moral ethical view of Chinese professionals, who are involved and who are influencing the general public of China. Unfortunately for many inventors, financial incentives eclipse the “right” motivation of the actual process of science in innovation and creativity, resulting in competition, keeping information secretive, and as surveys have shown according to Larta, employees stealing technology ideas, leading to patents approved to the wrong people. In order to reduce strain among the scientific community, there is only one solution. That is implementing a moral agenda for the company, universities, their employees, and the government,

in turn eventually influencing the country as a whole using traditional ideologies and implications in the professional scene.

## **SOLUTIONS**

There are four ways in which moral ethics can be spread the quickest. That is through education, governmental impact and regulations, mass media, and global awareness. Proper relations must be maintained within these sectors in order to succeed in achieving order and harmony and encouraging people to “do the right thing.” As a result, people will take science and technology to serve the welfare of human beings through equality, justness and fairness in human society through negotiation and respect.<sup>4</sup>

As science and technology have evolved and changed human life, traditional concepts have also changed on the existing technological community. Not only is China advancing in the industry, it is losing its own culture and traditions as it tries to westernize in pursuit to achieve financial status of the United States, for example. What happened to the core values of Chinese culture such as Confucian thoughts, which puts a great deal of emphasis on moral value?

One of the main points in finding a solution to reduce tension between parties in the scientific community is to implement Confucius ideology. This is where education comes in the spectrum of different sectors needing to collaborate on the overall efforts to peace. The core of Confucian ethics is based on “benevolence,” which means “to love the people.” This ideology is based off of achieving a harmonious society that could be formed and maintained. “Universal

love” is also another Confucian principle of treating people equally. Along with other traditional values of Taoism and Buddhism of “doing good,” the education of these ideologies will incline people to conform to these values and practice them, which everyone in society can benefit from helping one another.

Education of moral ethical values is integrated in the employment contracts of universities, companies, and government. Through learning, citizens of China can learn the social obligations to society and respecting one another, which is currently an issue, considering the recent problems involving stealing technology. When later faced with the pressures of the enhancement of social prestige, enticement of interests and honors, immoral behaviors might be the first thought in mind, but having the knowledge of moral ethical values might alter one to stray away from the wrong “path.”

The power of the government can implement new rules or laws of having mandatory classes on moral values as obligation to society. Learning about moral truth is not only about knowing the facts of it, but to completely immerse in the meditation of peace in pursuit to prepare oneself for right actions in difficult situations. Through the government, mass media and public marketing can be carried out regarding this new educational reform. Everyone needs to learn how to live up to their responsibility and balance judgments when in a situation of moral dilemma. Education of moral ethics is about the sense of learning and reflection, and guidance by authorities to avoid conflicts and fulfill happiness.

Awareness of the education on moral values within China can quickly spread. With current technical advancements, through email, webcamera, instant messenger, and phone, starting from a local Chinese area, education can be

spread quickly and efficiently. Starting at the major companies of China and implementing educational programs, the government can enforce the involvement of mass media to reach out to the public and eventually globally, so that people are aware of the social standards of society.

Moral character of scientists, engineer and inventors are an integral aspect of society. This motivation is to train, not only the scientific community of China, but globally so that patents can be processed without violations within countries.

## REFERENCES

1. "The Agreement on Trade Related Aspects of Intellectual Property (TRIPs) - Globalisation and the Impact on Health - A Third World View - Issue Papers," <http://www.phmovement.org/pubs/issuepapers/hong15.html>. 2000. Accessed December 8, 2004.
2. "Life Science and Biotechnology in China," <http://us.tom.com/english/1379.htm>. 2002. Accessed December 8, 2004.
3. "Larta Institute," [www.larta.org](http://www.larta.org). 2004. Accessed December 8, 2004.
4. "Scientific Ethics and Morals Education," <http://english.cas.ac.cn/eng2003/page/S&T/SEME.htm>. 2000. Accessed December 8, 2004.