Intellectual Property Theft in the Automotive Industry

Scope, Trends, and Mitigating Strategies

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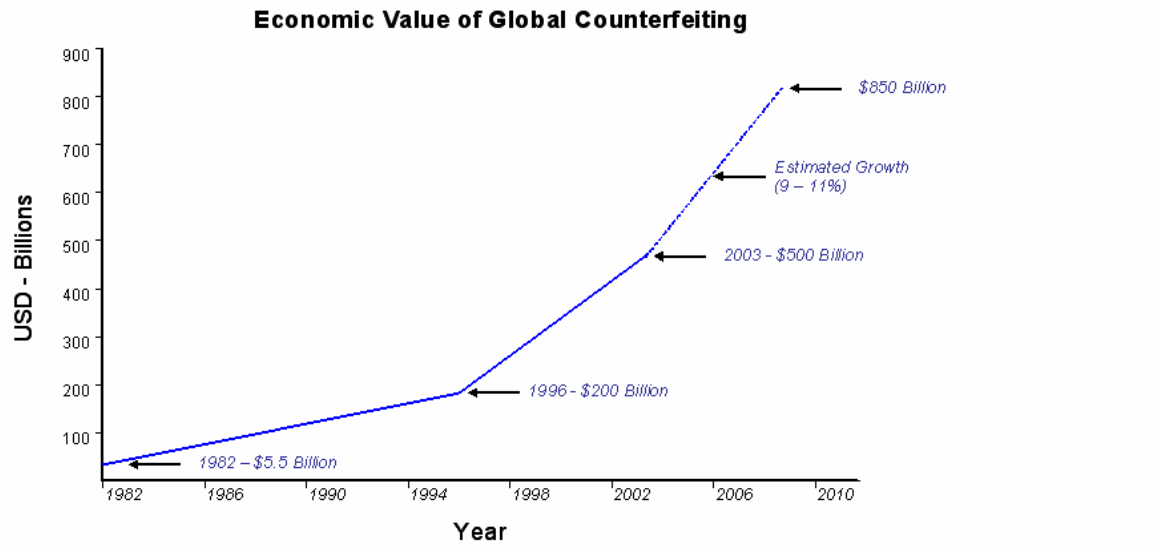
Introduction

Intellectual Property protection in the manufactured goods sector is not a new idea. Laws prohibiting manufactured goods counterfeiting and piracy activities existed as far back as the Middle Ages when bakers, artisans, and craftsmen used distinctive marks to distinguish their products and work from would-be counterfeiters. The general problems associated with modern day counterfeiting and intellectual property piracy have long been recognized, yet today's high-tech economy has magnified the problem of intellectual property theft, allowing counterfeiting and piracy activities to flourish.[1] A rapid increase in intellectual property rights violations throughout the world in the past twenty years has caused immense economic harm to legitimate goods manufacturers, as well as amplified health and safety concerns. In order to mitigate the risks associated with increased levels of intellectual property theft, manufacturers must assess their intellectual property strategy and adopt more sophisticated methods of protection to keep pace with today's more refined counterfeiting operations.

Scope of Intellectual Property Theft

The illicit business of copying other's products and designs and selling them as cheaper, usually substandard look-a-likes is an underground industry worth billions. In a written statement before the Senate Committee on the Judiciary, Thomas J. Donohue, President and CEO of the U.S. Chamber of Commerce stated, "Growth in the trade of illegitimate goods over the past 20 years is astounding, intellectual property crime is one of the fastest growing criminal enterprises worldwide." In 1982, it was estimated that the trade in illegitimate goods drained 5.5 billion dollars from the global economy. In 1996, this figure jumped to as much as an estimated $200 billion. The economic value of global counterfeiting in 2003 is estimated at $500 billion. Various organizations, including Interpol, estimate that the trade in counterfeit goods ranges between 6-9% of all current world trade with volume sharply rising.[2] The Federal Bureau of Investigation has called counterfeiting "the crime of the 21st century" as the technology needed to operate sophisticated counterfeit operations has become easily accessible.

"Intellectual property crime is one of the fastest growing criminal enterprises worldwide"



Intellectual Property Theft and China

For decades, piracy and counterfeiting activities have followed a predictable pattern, flourishing in developing economies and gradually diminishing with higher levels of prosperity and global integration. The U.S. textile industry of the early 1800's prospered when pirated British manufacturing techniques were introduced. In the 1950's, Japan was considered a piracy hotspot before its own manufacturing methods surpassed those of its predecessors. Korea, Taiwan, and Hong Kong followed similar paths in the 1960's. Today industrial piracy runs rampant throughout emerging markets such as China.

While following a foreseeable path, today's piracy hotspots offer some unique challenges to multi-national companies concerned with intellectual property protection as they rapidly expand into these emerging markets. China, for example, possesses several distinctive characteristics that set it apart from other piracy hot spots.

China's immense size and growing integration with the global supply chain means China's intellectual property (IP) protection problem is indeed the world's problem. Vast socioeconomic disparities between regions within China will slow the progress toward a middle income point at which the levels of piracy and counterfeiting activities typically begin to subside in developing nations, fostering an environment in which intellectual property crimes will flourish for some time to come. In addition, China's commercial legal tradition has been particularly feeble compared to many of its Asian neighbors creating a deep seeded acceptance of industrial piracy, stimulating the growth of such activity in the region.[3]

Today, China is clearly the world's worst offender of intellectual property theft and industrial piracy, responsible for the exportation of 80 percent of the counterfeit goods seized at the U.S. borders.[4] China's Central Government does recognize the problem and is taking steps to remedy the situation. In recent

years, China has updated IP laws to align with international standards, yet local officials, many of whom benefit directly or indirectly from the illegal activity, have largely failed to enforce the new laws.

Intellectual Property Theft in the Automotive Industry

The harmful effects of piracy in the music and software industries are well documented. In China alone, the music and software industries suffer from piracy rates of 90%. Microsoft estimates that only 5% of their software packages installed in China are legal copies.[5] While these numbers are startling, possibly more alarming is the rate at which intellectual property theft is occurring in the automotive industry as multi-national companies expand their presence into emerging markets to capitalize on cheap labor and new sales outlets. Unlike the music and software industries, the proliferation of substandard, pirated goods in the automotive industry not only causes vast economic harm to the automotive companies but also jeopardizes the health and safety of consumers.

Counterfeit and Gray Market automotive components account for 3.2% of global counterfeit trade, amounting to losses of $16 billion for the automotive industry every year. Research conducted by Frost and Sullivan suggests that number is growing at a rate of 9 to 11 percent annually.[6] The European Union estimates that 5-10 percent of all replacement automobile parts in circulation are counterfeit.[7] A recent study by the *Commercial Times* found that 56% of vehicle users in China, the nations 3rd largest automotive market, have found counterfeit parts on their vehicles.

The Subtle Pick-Off

Counterfeit automobile parts cause significant harm to the automotive industry and its consumers, but perhaps the greatest danger to automotive OEM's is a piracy technique termed the 'subtle pick-off'. This form of intellectual property theft occurs at the high end of counterfeit sophistication and poses a significant risk to established manufacturers. In the subtle pick-off, valuable design elements resulting from millions of dollars of R&D investment are usurped and utilized under a competing brand name.[8]

In 2004, General Motors (GM) filed a lawsuit against China's Chery Automobile Co. for alleged piracy of a mini car developed by GM's South Korean affiliate Daewoo. GM's investigation showed that the two vehicles share almost identical body structure, exterior design, interior design and key components. At the time the suit was filed, sales of GM's Spark in China significantly trailed sales of Chery's QQ, largely due to a later launch date and higher prices.[9] It is believed that early in the Spark's development, sensitive design data was compromised and 'acquired' by Chery. Chery then used this information to build an almost identical vehicle without investing the recourses, time and money, typically

required to develop such a vehicle. Consequently, Chery is able to offer their vehicle to the Chinese market at a fraction of cost of GM's.

GM is not the only auto manufacturer fighting this type industrial piracy. Honda Motors has filed suit against China's Shuanghuan Automobile claiming Shuanghuan's Laibao SRV bears striking similarities to Honda's CR-V sport utility vehicle. Honda sought compensation of 100 million Yuan (US$12.1 Million).[10]

Spark

QQ

The QQ , a product of the Chinese auto manufacturer Chery Automobile Co., bears a striking resemblance to GM's Spark.

Piracy and China's Global Emergence

Occurrences of Intellectual property theft can be expected to increase as China's auto market continues to grow at an astonishing pace. Foreign multi-nationals remain committed to their strategic positions in China, with GM, Volkswagen AG, Ford Motor Co., and Toyota planning to invest more than $12 billion over the next 5 years.

As Automotive OEM's increasingly enter the Chinese market to take advantage of inexpensive labor and a rapidly growing sales outlet, components suppliers will surely follow. Roughly 800 foreign auto parts suppliers currently operate in China, including most of the top 50 multinationals.[11]The movement of the automotive supply chain to China means intellectual property piracy is not only a risk facing automotive OEM's but also their supply base.

Consequences of IP Theft

The economic impact of intellectual property theft can be crippling to legitimate goods manufacturers, significantly eroding sales and profits. In the struggling U.S. automotive industry, where bankruptcies and corporate restructuring have become commonplace, counterfeit parts drain $3 billion from sales revenue annually.[12] In 1995, the U.S. Department of Commerce estimated the U.S. automotive industry alone could have hired an additional 210,000 workers if the trade in counterfeit goods was ended.[13] In addition to lost sales of directly attributable to the sourcing of counterfeit goods, victims of piracy and counterfeiting experience additional pain in the form of reduced economies of scale and the erosion of brand equity. Counterfeiters often market their substandard goods bearing the recognizable brands of their legitimate counterparts and the deception is often transparent to the consumer.

The sale of counterfeit and pirated goods also has adverse effects at the macroeconomic level. In mature economies, intellectual property is increasingly recognized as the key resource of the future. Intellectual property rights violations drain these nations of tens of millions of dollars in tax revenue, threatening to undermine the economic security of developed nations.[14]

Liability issues are also becoming a major concern for goods manufactures. In a recent case, the Swiss biotech firm, Serono, was successfully sued by two Americans who ingested a counterfeit version of the company's dietary supplement, Serostim. The U.S. court ruled that the company should have taken more effective anti-piracy measures, establishing a precedent of serious concern to manufacturers.[14]

Mitigating Strategies

> "The art of war teaches us to rely not on the likelihood of the enemy's not coming, but on our own readiness to receive him; not on the chance of his not attacking, but rather on the fact that we have made our position unassailable"
>
> - Sun Tzu

A study by Roland Berger Strategy Consultants found that most multinational corporations rely primarily on legal recourse to fight the intellectual property rights battle.[15] However, in a market with relatively toothless intellectual property rights enforcement, such as China, this strategy is largely ineffective. In the GM and Honda cases mentioned above, legal action proved to be fruitless. Therefore, it's imperative that corporations looking to do business

in China and other emerging economies take proactive measures to protect their intellectual property from theft. Roland Berger Strategy Consultants recommends a multifaceted and ongoing protection process to avoid serious and sizable losses due to piracy. Legal recourse should be part of an intellectual property protection strategy, but only as a complementary piece.

The Autoweb Intellectual Property Exchange

Protecting and managing intellectual property while at the same time competing in a global environment has become a top priority for manufacturers and suppliers. Engineering and design responsibilities are increasingly being shared amongst OEM's and their supply base making it necessary to share sensitive design information across organizational boundaries early in a products development cycle. Finding a secure means to transport engineering data that can support the immense size of these files can be a challenge. Compounding the problem are interoperability issues and disparate global data transfer standards. Developing a solution to address all these concerns can be an incredibly resource consuming initiative. As supply chains continue to expand globally and suppliers become more integrated with their customer's product development projects, the need for secure data exchange and collaboration tools will increase.

Autoweb's Intellectual Property Exchange addresses many of the logistical and security concerns relevant to data exchange and management, and as an on-demand hosted solution it is extremely cost effective to implement and maintain. The Intellectual Property Exchange is a scalable tool providing an efficient data exchange solution for large and small companies seeking varying degrees of functionality.

Employing multiple layers of encryption, including a 128 bit SSL encrypted tunnel, 256 bit AES data encryption, and 1024 bit private key encryption, Autoweb's Intellectual Property Exchange ensures that only authorized personnel can receive and view protected documents. Furthermore, Autoweb's patent pending Extensible Security technology allows users to assign digital rights to files shared using the Intellectual Property Exchange. The sender of a file can track a file beyond the receiver to verify that only those authorized to view a file are doing so. Extensible Security also allows the sender of a file to assign read-only rights, printing rights, and sharing rights. However, the Intellectual Property Exchange is much more than a security blanket. Depending on organizational requirements, Autoweb's Intellectual Property Exchange can be deployed with multiple feature sets that condense and streamline supplier communications and data management processes.

Fusion-DX

As supply chains continue to expand globally, disparate regional file transfer protocols and home grown solutions complicate the data exchange process. Currently a vast majority of OEMs and suppliers are forced to support multiple data exchange formats like OFTP, FTP, email, the Autoweb Intellectual Property Exchange and various home grown solutions to meet global requirements. Due to a lack of integration across these systems, current solutions offer limited security and traceability while requiring significant manual effort to import, export and transport data across multiple data exchange solutions. Fusion-DX provides secure data exchange across all data, transport and telecommunications protocols from a single desktop interface providing a central point from which to enforce corporate policy and monitor data exchange activity throughout the extended enterprise. Fusion-DX can be integrated to common desktop applications such as PDM, ERP, and CAD systems as well as translators and viewers to automate and streamline data exchange activities while ensuring data security. Fusion-DX utilizes a trading partner profile database to ensure all trading partners receive their data in the right place, in the right format, and with the appropriate security measures in place.

GlobalSource

Sending out bid packages for engineered products can be an expensive and trying experience. Utilizing the same core functionality as the Autoweb Intellectual Property Exchange, GlobalSource allows users to aggregate and distribute engineering data and related documents to both sourced and non-sourced suppliers in a secure and traceable format. GlobalSource reduces lead times and expenses associated with bidding activities while providing increased security and bandwidth over traditional distribution means such as email and physical media. Users experience cost savings in the form of reduced media costs, currier costs, and reduced manual effort to aggregate and distribute bid packages.

Data Integration Services

Product data management is a very important but often costly business requirement. To help ease the data management burden at the originator's end, Autoweb offers a service called Data Integration Services. Extending the Intellectual Property Exchange upstream, Data Integration Services allow suppliers without direct connections into their customer's PDM system(s) to check data in and out without making a large capital investment. Product data remains within the secure confines of the Autoweb Intellectual Property Exchange until it is safely returned to the originator's PDM system inside the firewall.

Integrated Translations

Interoperability issues in the data exchange realm inherently add unwanted manual effort to the process while reducing the security of intellectual property. Business partners often work in disparate CAD authoring tools making it difficult to view and work with each

other's data without first performing a data translation. Traditionally, data is sent to a 3rd party data translator via non-secure means such as CD, DVD, or flash drive to be translated. The translated data is returned to the originator in a similar fashion. In addition to adding complexity and cost to the data exchange process, this strategy creates multiple copies of the data that are untraceable. Autoweb's Intellectual Property Exchange provides the capability to translate data upon upload or download eliminating multiple steps and excess lead time. Most importantly, product data remains completely secure and traceable throughout the entire data exchange process.

Autoweb Company Overview

Autoweb is a leading global provider of engineering data management and exchange services. With more than 20,000 users from over 2,800 companies in 48 countries, Autoweb connects the global manufacturing community. Thousands of companies trust Autoweb with their intellectual property including:

- BAE Systems
- Daewoo
- DaimlerChrysler
- Delphi
- Faurecia
- Ford
- General Motors
- Honeywell Aerospace
- Mercedes-Benz
- Mitsubishi
- Nissan
- Pratt & Whitney

Additional information about Autoweb's full suite of data management and data exchange solutions is available at:

www.autoweb.net

Bibliography

1 *The Negative Consequences of International Intellectual Property Theft: Economic Harm, Threats to the Public Health and Safety, and Links to Organized Crime and Terrorist Organizations,* International AntiCounterfeiting Coalition, January 05.

2 Thomas J. Donohue, *Counterfeiting and Theft of Tangible Intellectual Property:* Challenges and Solutions, March 23, 2004

3 *Intellectual Property Protection in China*, study, Roland Berger Strategy Consultants; Dr. Eugen von Keller, Jian Wei, Hubertus Drinktuth

4 *Counterfeiting, Crime of the 21st Century*, MEMA

5 *Intellectual Property Protection in China*, study, Roland Berger Strategy Consultants; Dr. Eugen von Keller, Jian Wei, Hubertus Drinktuth

6 ABRN, *U.S. Seeing M ore Counterfeiting Within Its Borders*, May 6, 2005 http://www.abrn.com/abrn/article/articleDetail.jsp?id=160148

7 Auto-ID Labs, report, *Special Interest Group Anti-Counterfeiting, www.autoidlabs.ch/sigac.com*

8 *Intellectual Property Protection in China*, study, Roland Berger Strategy Consultants; Dr. Eugen von Keller, Jian Wei, Hubertus Drinktuth

9 *GM charges Chery for alleged mini car piracy,* CHINAdaily, http://www.chinadaily.com.cn/english/doc/2004-12/18/content_401235.htm

10 *GM charges Chery for alleged mini car piracy,* CHINAdaily, http://www.chinadaily.com.cn/english/doc/2004-12/18/content_401235.htm

11 *Under the Hood: Auto Component Suppliers in China Ride a Fast but rough Road*, James A.c. Sinclair

12 Thomas J. Donohue, *Counterfeiting and Theft of Tangible Intellectual Property: Challenges and Solutions*, March 23, 2004

13 *Counterfeiting, Crime of the 21st Century,* MEMA

14 *Intellectual Property Protection in China*, study, Roland Berger Strategy Consultants; Dr. Eugen von Keller, Jian Wei, Hubertus Drinktuth

15 *Intellectual Property Protection in China*, study, Roland Berger Strategy Consultants; Dr. Eugen von Keller, Jian Wei, Hubertus Drinktuth