International Technology Transfer between the U.S. and China

Introduction

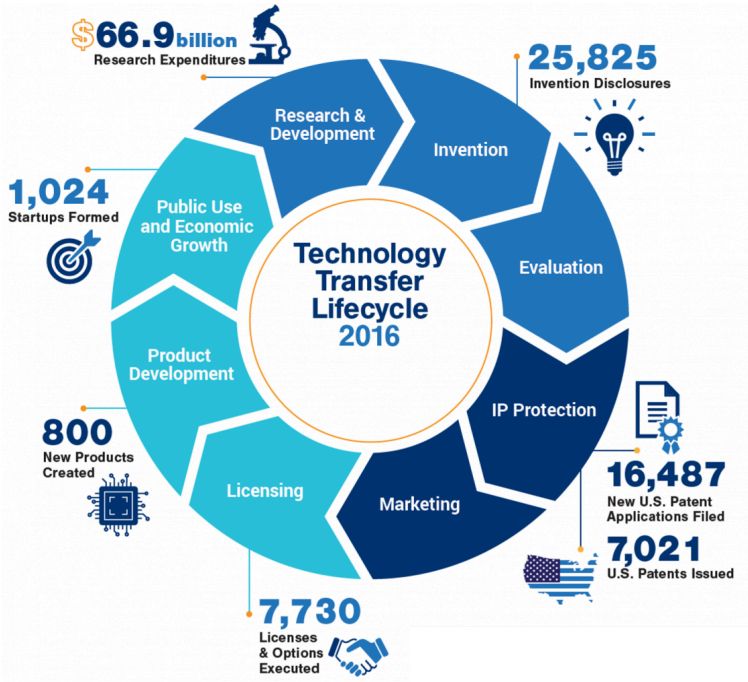
The trade war between the United States and China has propelled economic, political, and legally prominent communities across the globe into a frenzy. The root of the chaos lies within technology transfers between the two countries. China's thirst for technological advancement paired with its vast factories mass-producing foreign technology serves as prime hunting grounds for U.S. trade secrets and intellectual property (IP). However, U.S. companies are subject to the laws of the country in which they are manufacturing, including government trade policies, risk of losing IP, and influence in industries. The technological intersections of trade, intellectual property law, and international politics, are battled via negotiations of the free trade agreement between Beijing and Silicon Valley.

Background

When addressing the technology transfer and intellectual property issues that have surfaced, one must understand the history and trade dynamics of China and the United States. The two countries' complex relationship and mutual strive to dominate has caused altercations in technology transfer. Both countries are heavily reliant on one another in terms of trade as China is the largest goods trading partner in the United States. The GDP of 2019 shows that the United States has the world's largest economy; China has the second-largest economy and one of the largest GDPs. The States United States Trade Representative reported that "the countries traded $659.8 billion in total (two way) goods trade during 2018. Goods exports totaled $120.3 billion; goods imports totaled $539.5 billion. The U.S. goods trade deficit with China was $419.2 billion

in 2018." The two competing economies essentially rely on one another for growth, stability, and survival.

The technology transfer between China and the U.S. is extremely competitive and aggressive. Tech transfer refers to the process in which research, knowledge, technology, and intellectual property are transferred from a public entity to a corporate environment where it can be developed into a profitable product or service. International technology transfer consists of international transfers, prevalently seen throughout the U.S. and China. There are many benefits to tech transfers, however, all factors should be taken into consideration when engaging in this form of business. Companies engaging in technology transfers overseas must comply with domestic jurisdiction.



Issues regarding China's intellectual property law coincide with international technology transfer. China's intellectual property law states that there are three main types of intellectual

property rights: patent, trademark, and copyright. China abides by its own copyright laws, yet is known to be active in the infringement of other countries' copyright. The Oxford Library states that "China's economy has been growing at an exponential rate, the issue of intellectual property rights has become an increasingly important one as violations of IP law have increased." This theory is valid, however, in terms of international technology transfers, China clearly states that they have the right to the IP of all products being manufactured in their country. The argument is legitimate, however suspicious activity has been recorded regarding the government's possession and distribution of international intellectual property.

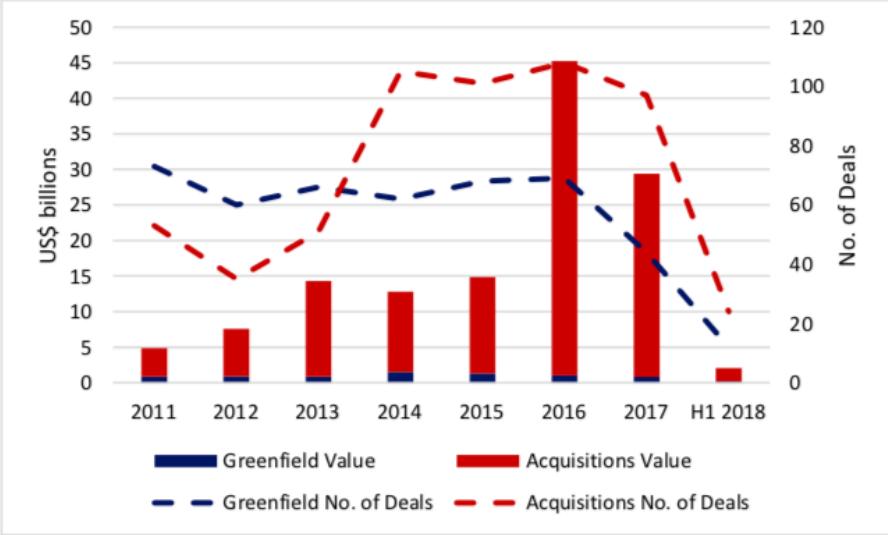
There are speculations that Chinese telecommunications equipment company, Huawei, has interfered with U.S. technology-based intellectual property to further develop and improve their products, which brings into question what is China doing with U.S. intellectual property? The intersections of intellectual property law and international technology transfers are paramount in navigating U.S. trade relationships with China and are predictors of both the country's economic and technological wealth.

Position of the United States; China is manipulating IP within international tech transfer

Chinese companies are utilizing different methods to attain U.S. intellectual property through international technology transfer. A portion of the IP is obtained legally, in accordance with Chinese governmental regulations and U.S. corporations. However, a large amount of U.S. intellectual property is obtained through furtive practices. The Chinese government exercises control over U.S. intellectual property as long as it is being produced on Chinese territory. United States IP is attained through conventional means including manufacturing goods, foreign direct investments, venture capital investments, joint ventures and the acquisition of foreign talent. (3,

O'Conner) China also acquires U.S. intel through electronic manipulation, cyber theft, and espionage. This creates a turbulent disconnect within the international tech transfer.

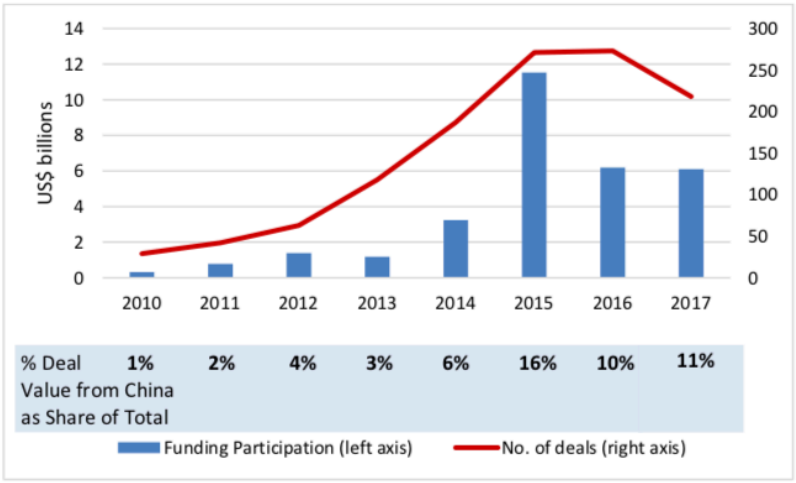
Figure 1: Chinese FDI in the United States, 2011–H1 2018



Source: Rhodium Group, "China Investment Monitor." *http://rhg.com/interactive/china-investment-monitor*.

China has drastically increased its involvement with U.S. entrepreneurs. Chinese investors and VC's are being incentives to engage in business with U.S. companies. Illustrated above, one can determine that VC's are paying extremely high rates to acquire the companies, even if the greenfield values are significantly lower in comparison. There are also suspicious trends with the number of deals in comparison to acquisition and greenfield value. This data is imperative in understanding financial manipulation to get access to IP, as China has the right to acquire the IP of companies they have invested in.

Figure 2: Chinese VC Investments in the United States, 2010–2017



Note: Data through October 2017. Percent of total deal value refers to Chinese VC in the United States as a share of total equity investments each year.
Source: Michael Brown and Pavneet Singh, "China's Technology Transfer Strategy: How Chinese Investments in Emerging Technology Enable a Strategic Competitor to Access the Crown Jewels of U.S. Innovation," *Defense Innovation Unit*, January 2018, 6.

China's interest in U.S. IP has reached extraordinary highs over the past three years. The graphs provided show China's involvement with foreign joint ventures and entrepreneurs, and money invested. Chinese companies facilitate technology transfer from the United States through venture capital investments and through joint ventures. Venture capital investment firms in China have recently started targeting U.S. technology startups, so Chinese firms will be granted access to U.S. technology and IP. (3, O'Conner) In order for a foreign firm to operate or invest in China, they must enter into a joint venture, which is most often the "source of Chinese companies' most technologically advanced and innovative procedures and products, acquired through technology transfer from their foreign JV partner." (3, O'Conner)

If China were to legally obtain intellectual property they would not be subject to such strong public scrutiny. However, the country is gaining foreign IP through deceitful measures to cause harm and foster an anti-competitive market with U.S. brands. "The broad prohibition provisions in current Chinese IP abuse and technology transfer laws would arguably serve as an

effective avenue for public users, consumers, small-medium enterprises for defending their rights, and being successful in legal actions against IP giants." (364, Tian) Huawei, the world's largest maker of telecommunications equipment is a prime example of how U.S. trade secrets have been stolen.

Huawei was found liable for misappropriating robotic technology being used to test smartphones from T-Mobile's Bellevue, Washington, and was also accused of working with the Chinese government to reverse engineer Apple products including the Macbook Pro, iPhone, and iWatch. Using cyber theft, China was able to see U.S. IP designs rather than invest in the research and development of their own products. The IP Commission Report states that *"*cyber theft is a cheap way to avoid costly and time-intensive R&D that may simply be beyond the thieves' capacity. Foreign firms benefiting from the cyber theft of American IP are thus able to sell goods and services developed using stolen IP at a much cheaper price than firms investing in R&D organically." Reverse engineering products is a consequence of the tech transfer China's government uses foreign-ownership restrictions to pressure technology transfer when they could be spending money on how to better improve their products for their varied market.

Chinese officials gain unauthorized access to profitable information in regard to U.S. business and IP. The access includes "trade secrets, technical data, negotiating positions, and sensitive and proprietary internal communications—which are then provided to and utilized by select Chinese firms." (4, O'Conner) The IP reaped illegally from the U.S. costs money, as the Center for Strategic & International Studies states that "over the past two decades Chinese cyber-espionage has likely cost the U.S. economy between $20 billion and $30 billion annually."

The U.S. will lose $20-$30 billion annually, they will also have heightened trade tensions if they were to confront China.

The government provides compelling incentives to encourage Chinese companies to facilitate technology transfers of U.S. products and IP. The aim of the facilitation is to gather foreign IP with the hopes of surpassing the United States as the biggest global superpower, however, one cannot succeed merely by stealing.

China is using the international technology transfer to illegally obtain United States IP. This is proven in investments, manufacturing, international relations, and cybertheft. It is unfair and illegal for China to use U.S. IP to their advantage, especially when obtained illegally.

Position of China; China has the right to foreign IP within international tech transfer

China is a mutual participant in the technology transfer with the U.S. The United States utilizes an abundance of Chinese resources for the production of its technology. China has the ability to exercise their rights to know what is being produced in its facilities. The government has a strict copyright policy and holds intellectual property to the highest regard. Chinese factories have terms and agreements drafted that include that all companies, regardless of country, who manufacture there have to give their intellectual property to the government and officials to better protect the country.

China is not breaking laws in regards to international intellectual property law. The U.S. claims have not been prosecuted or proven in an international court. International IP treaties are set in place to prevent it from the “abuse of Intellectual Property Rights’ and enhancing international technology transfer.” (Tian, 353) China is cooperative in the treaty and is an active

member of the World Trade Organization and is cooperative in the transfer of intellectual property and copyright.

China has a strong relationship within the WTO and is in support of the Trade-Related Aspects of Intellectual Property (TRIPS) agreement, which many consider to "have been the most significant; it is often deemed a compromise between developing and developed nations in an international trade negotiation. Developing nations promise to provide strong IP protection to foreign IP products. In return, developed nations promise to provide concessions to developing nations in labor-intensive industries, such as agriculture and textiles." (353, Tian) China is protected by this, and has adopted appropriate measures to secure IP within its own country, as the agreement suggests, "member states may adopt any appropriate measures to prevent the abuse of intellectual property and any conduct that unreasonably restrains trade or the transfer of technology internationally." (Tian, 353) "China is an important member of the WTO with nearly one-quarter of the world's population. It has become one of the fastest-growing economies in the world. China's GDP rose to $7.8 trillion in 2008, and its economy has become the 'second-largest economy in the world after the U.S." (Tian, 362) The IP was mutually distributed to China when a U.S. company elected to do business there, as the country is a leading component in terms of economics, therefore they have a responsibility to be proactive in terms of trade, securing U.S. IP for the safety of everyone.

In regards to the international controversy over Huawei, there is no evidence to show that the Chinese government gave specific U.S. trade secrets to Huawei to improve their production. The country stands in support of Huawei, acknowledging that it is a commercial company and that the use of its products is a choice for consumers based on popularity, and should have no

connection to politics. It is not appropriate to use political means to disrupt an industry. Ren Zhengfei, founder and president of Huawei Technologies Co. Ltd stated that "as long as the U.S. government allows U.S. companies to export the components, Huawei will continue to buy while sticking to its own research and development." (*Xinhua*) Huawei has an abundance of U.S. suppliers and has worked with companies like Google in regards to research and development. The Chairman of Huawei said he was willing to sign a 'no-spy' deal with the United States.

China may be framed as a suspicious counterpart in international controversies, however, the country is direct and clear in terms of trade when it comes to IP. China is constantly trying to improve as a country, economy, and global superpower, and is using technology transfers to their advantage, however, all actions are committed legally.

Analysis and Conclusion

After a thorough amount of research and investigation, I am advocating my support in favor of the United States, and believe that China is using the tech transfer to gain an unfair advantage. They have an abundance of resources and are desperately craving to become the top leader in technology and artificial intelligence.

In July of 2017, China released a new *Generation of Artificial Intelligence Development Plan*, which stated that China would focus on the "development of artificial intelligence will profoundly change human social life and the world. To seize the major strategic opportunities for the development of artificial intelligence, build China's first-mover advantage in artificial intelligence development, accelerate the construction of innovative countries and the world's science and technology power." China is extremely tech-hungry and has been caught by the FBI for trying to impose and hack into U.S. intellectual property. Chinese efforts to develop and

acquire technology from the United States will continue to persist, therefore it is necessary for the United States to take more cautious measures when negotiating and laying out the terms of trade within the context of the technology transfer. The U.S. plays an extremely active role in technological development and artificial intelligence, therefore it is important that they take their own preventative measures to secure data, trade secrets, patents, copyrights, and all other IP that may be relevant to Chinese developments.

The United States should be better regulating business between the U.S. and Chinese VC investments with high tech industries. The Chinese benefit from cyber espionage allows them to replicate foreign IP, creating anti-competitive markets globally. This issue should be addressed on an international level, as this tech transfer is not just. As stated previously, the U.S. intel has seen this occur through companies like Huawei. The reverse engineering of IP is dangerous in that it threatens to undermine U.S. developments and capabilities and puts a halt to the global business environments when products are too similar and not fitting the needs of the country.

I conclude that rather than making trade threats, China and the U.S. should participate in a free trade agreement negotiation in regard to IP theft. There is power in discourse in FTA negotiations, as the "negotiations serve a leading state's private purposes… and to protect states' political and economic interests construct institutional hegemony." (International Law and Practice) The tech transfer between both countries has provided new outlets and opportunities for progress and development and for theft and dishonesty; with establishing IP regulations the U.S. can defend itself from IP theft and continue trading with China as competitors, not enemies.

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