The Wealth of Nations and Intellectual Property in the 21st Century

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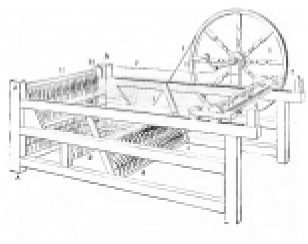
The Industrial Revolution and the Globalization of Intellectual Property

It is common to trace the onset of the Industrial Revolution back to the patent issued to John Kay in 1733 for the flying shuttle, which allowed fabric to be rapidly woven relative to the shuttle operated by hand, thereby saving labor. The flying shuttle was capable of taking in a great deal of yarn, and to meet this demand James Hargreaves invented the industrial spinning device known as the spinning jenny in 1764, which he then patented in 1770. The combination of these two machines was catastrophic for traditional specialists who were unable to compete with the price and efficiency of the water-powered and later steam-powered production. Workers consequently found themselves forced away from their pleasant life working at home to spending long hours next to machines in factories. Residential buildings were conveniently built near factories to accommodate the many workers and their families, and, like mushrooms after rain, new, industrial-based cities sprung up.

The improved spinning jenny that was used:



The English, who understood the economic potential and relative advantage the new technology afforded them, endeavored to safeguard the knowhow and prevent it from leaking outside their borders. To this end, for instance, textile machinery specialists were prohibited from emigrating from England, and it was forbidden to transfer knowhow related to the construction of these machines. Be that as it may, and as one would expect, this policy ultimately failed. In 1789 an Englishman named Samuel Slater immigrated to the United States and in 1791 set up a spinning jenny in Rhode Island. Other English followed suit and passed along these machine secrets outside of Britain. Only in 1830 were the laws prohibiting the export of machinery abolished in England. This legislative act led to the creation of a new manufacturing industry in Britain for textile machinery, which European investors bought for the textile factories they opened in many cities.

This acknowledgment of a country's inability to keep information within its borders was one of the factors that eventually led to the signing of the Paris Convention for the Protection of Industrial Property in 1883, which recognized the right of inventors in member countries to receive monopolistic rights for a limited period in other countries, subject to procedural conditions set forth in the treaty. The Paris Convention was initially signed by only ten countries (France, Switzerland, Spain, Belgium, the Netherlands, Serbia, Portugal, Brazil, El Salvador and Guatemala) but was later joined by many others (Great Britain, the United States and Japan became members in 1900).

The Wealth of Nations through the lens of Intellectual Property

In the wake of the Industrial Revolution, the famous British economist, Adam Smith, laid out his economic theory in The Wealth of Nations (1776). The book presented a liberal approach that advocated for non-intervention of governments in market mechanisms (laissez faire) and emphasized strict observance of individual liberty as a necessary condition for growth. Adam Smith challenged the mercantilist view that a nation's wealth was a function of its gold and silver reserves. Smith held that a nation's wealth is not expressed in reserves, but rather in the stream of locally produced or imported goods (in exchange for domestic products) a country consumes each year. As for increase in labor productivity, Smith wrote in the second chapter of his book that this depends on the quantity of machines, their quality, and the proper division of labor task allocation in the industrial process. Smith also pointed to the relationship between a nation's wealth and the extent to which specialization characterizes its labor force. For Smith, the whole purpose of economic activity is to bring about an increase in per capita income, and he suggested that labor productivity (today, gross national product) could only be increased through technological improvements and investment of capital.

From Adam Smith's viewpoint, three variables determine the price of a product: the cost of wages, the profit on capital (which, among other things, must yield a return on investment in machinery) and the payment of rent for the land, which is an essential means of production.

Despite the time that has passed since Adam Smith's influential theory first surfaced, this theory remains a fundamental work for modern economics as well, which is much more complex than what he had depicted.

One of the most striking changes in modern economic life compared to the economy during Smith's time is the economic importance of patents and other intellectual property rights in determining the price of products. In particular, whereas Smith held that a nation's wealth is determined by the annual flow of products, which issues from the economy's ability to produce, we are now witnessing a situation where the wealth of a nation is not necessarily determined by ownership of physical means of production but by ownership of the intellectual property related to products.

In Adam Smith terms, the premium paid for the intellectual property can be defined as a capital gain for means of production or as 'rent'. Either way, payment for a license to information or to use a brand can be a key component of the product's price, and a major one of the profit. At the end of the twentieth century, we witnessed the phenomenon of industrial production sites being transferred from Europe to East Asia. As a result, the flow of products manufactured in East Asia has increased, but the profits remain in the West, which continues to hold most of the world's intellectual property.

The Wealth of Nations – East & West

Although the West is seemingly perpetuating an economic advantage over developing countries by utilizing intellectual property, this is, in fact, not necessarily the case. This is because intellectual property is essentially limited in time, and with the expiry of patents, knowhow becomes public domain, and then developing countries can adopt the technologies, with the means of production and the knowhow of their production already in their hands, having become producer nations. This is especially visible in pharmaceuticals, where manufacturers of generic drugs in India, for example, use information that had been protected by now-expired patents and are competing in international markets. That is, the premium drawn by Western companies is not unlimited in duration and can be justified by it being an appropriate consideration for the contribution that these companies have made to human progress. To maintain its advantage, the West must continue developing new technologies, and upon this current drawing to a close, the East and West should have equal division of income, possibly even tilting in favor of producer nations.

Moreover, yesterday's developing countries are slowly becoming their own intellectual property makers, with the aim of increasing their wealth. The best evidence of this is the policy of the Chinese government, which seems to have set itself the goal of being the world's largest holder of patents. To illustrate, in January 1994, China joined the International Patent Cooperation Treaty (PCT) the purpose of which is to facilitate the simultaneous filing of patent applications in many countries for the same invention. OECD figures show that the number of international patent applications originating in China rose from 128 in 1994 to 1,558 in 2000 and 20,213 in 2013, surpassing Germany and South Korea. In 2017 Chinese-based patent applicants filed 48,882 applications, bringing China to second place in the world in international patent applications, behind the United States with 56,624 applications and followed by Japan with 48,208 applications. The world's largest holders in 2017 were two Chinese companies from Shenzhen—Huawei Technologies and ZTE.

It is apt here to quote the words of Francis Gurry, Director General of the World Intellectual Property Organization (WIPO), who said:

"This rapid rise in Chinese use of the international patent system shows that innovators there are increasingly looking outward, seeking to spread their original ideas into new markets as the Chinese economy continues its rapid transformation."

The practical conclusion following from the above is that the economy of the future lies in intellectual property, and companies should take this into account when drawing up their IP policy.

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