

## Fostering Innovation By Way Of Protecting Inventions The Inventive Loop

By Roberto Dini

### Abstract

Market globalization has transformed the business models of many players. The success of low-cost producers is forcing established businesses to rethink their strategies, leading to the conclusion that a company's real value lies with their existing and future intellectual property assets. Patents, trademarks, copyright and other IP rights have indeed become the key driver of corporate growth and must be protected and maximized in value to foster new innovation.

### Intellectual Property: the Engine of the Knowledge Economy

Over the past 50 years, intangible assets and intellectual property have become increasingly more valuable, economically and strategically. See Figure 1.

If in the '70s, intangible assets represented about 20 percent of a company's assets, today that ratio in developed countries has been reversed. Intangible assets such as brands, patent portfolios, copyrights, but also the reputation of management, employee know-how and partnerships with customers and suppliers, account for more than 80 percent of the market value of a company. Factories and industrial machinery only account for the remaining 20 percent.

The growing success of low-cost producers from the Far East has forced many businesses to rethink their strategies, leading to the conclusion that companies must foster innovation and protect their results with valuable intellectual property rights in order to survive. Patents, trademarks, copyright and design have indeed become the key driver of corporate growth and finance.

1. The analysis is made by Ocean Tomo, Intellectual Capital Merchant Bank, on the market value of the Standard & Poor's 500 (S&P 500), a stock market index based on the market capitalizations of 500 leading companies publicly traded in the U.S. stock market.

### Growing Trends in Patent Filings Across the World

A significant portion of companies' intangible value is represented by patented technology.

The long-term trend shows an almost continuous growth in patent filings. Worldwide patent applications tripled from approximately 1.05 million in 1995 to more than 3 million in 2016 (up 8.3 percent from 2015). See Figure 2.

Driving such strong growth was China. The State Intellectual Property Office of the

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Figure 1: Tangible vs. Intangible Assets<sup>1</sup>

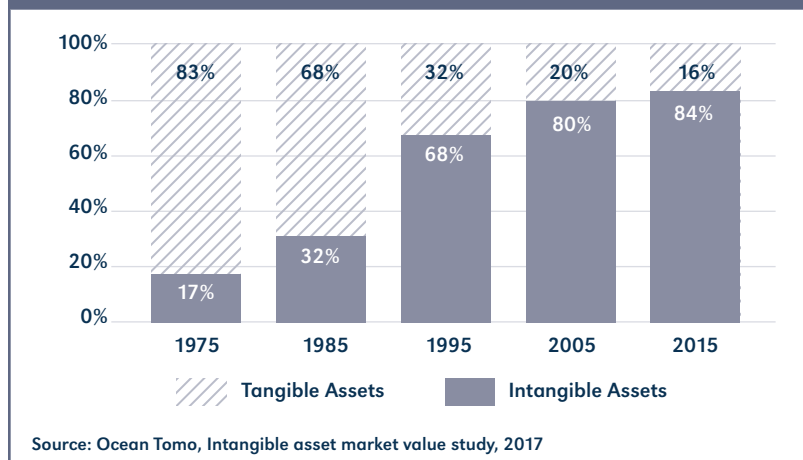
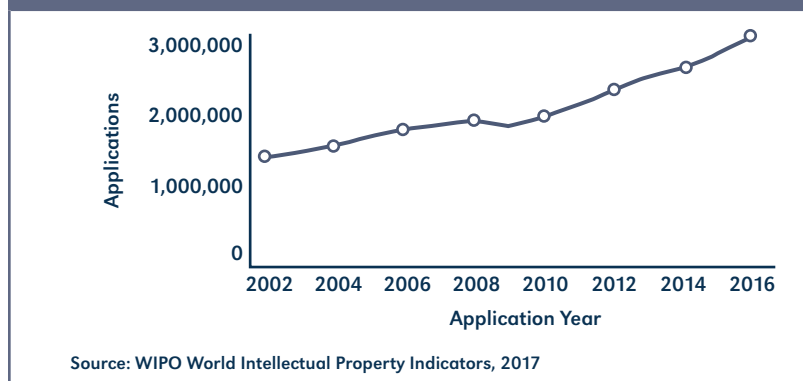


Figure 2: Trend In Patent Application Worldwide



People’s Republic of China (SIPO) received 1.3 million patent applications in 2016—more than the combined total for the U.S. and Japanese Office together. If these applications are excluded, applications filed in the rest of the world grew by only 0.2 percent in 2016. See Table 1.

The growing performance in patent filing signals that despite the economic crisis companies continue to invest in R&D, even if a shift in the geography of innovation has occurred and the world of patents has evolved into something that the great inventors of the past would have difficulties to recognize.

### Patents: Past and Present

In the past, many inventions were made by famous inventors such as Thomas Alva Edison, who invented the electric light bulb; George Eastman, founder of Kodak or Alessandro Volta, who invented the voltaic pile, the forerunner of the electric battery. All these great minds used to work alone and alone succeeded in making inventions that revolutionized our standards of living. Today, the situation is very different. Patented inventions continue to be the result of human creativeness, but they are realized in the R&D centers of small and large companies or universities.

Over the years the reasons for patenting inventions has also changed. In the past, inventors protected their

invention by way of a patent, mainly to create a monopoly or a competitive barrier on the market. This is the case of Polaroid and Xerox, two famous examples of monopolies. The monopolies they created were so strong that these two companies managed even to associate the name of their invention (brand) with the specific product; still today “Polaroid” is synonymous with an instant camera and “Xerox” with a particular type of photocopy. Not so lucky was Antonio Meucci, inventor of the first telephone prototype. Due to serious financial problems, he could not find enough money to patent his invention, which was registered a few years later by Alexander Graham Bell and upon which he created a business empire: Bell Industries.

With the decline of the integrated company and the outsourcing of activities such as production and sales, intellectual property management and licensing have become increasingly important. In modern industrial systems it is unthinkable that a company owns all the technical expertise and knowledge necessary to finalize its R&D activities. Consequently, if there are new technologies available on the market, suitable to be integrated, a company could ask for a license (licensing IN), limiting the risks associated with in-house research (risk of negative results) and achieving faster levels of competitiveness (about 20B€ a year is the cost of duplicate research in Europe estimated by the EPO). At the same time, a company can decide to license OUT its “core” or “non-core” technologies with the aim of obtaining an additional income. See Figure 3.

### Patent Pool: How to Support New Technology Development by Avoiding Royalty Stacking

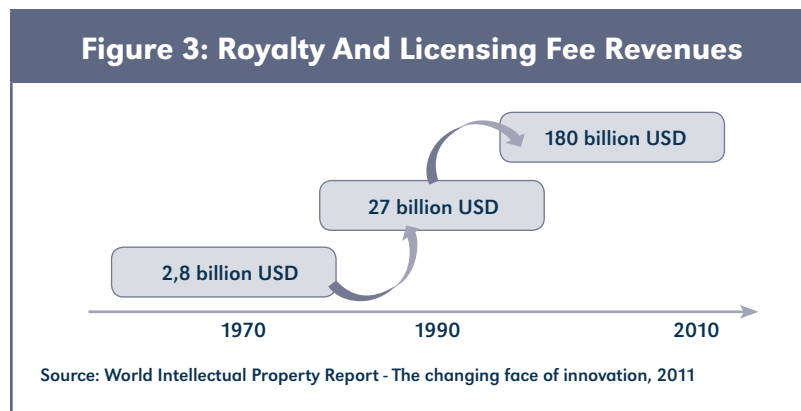
With technology becoming more complex and sophisticated every day, implementers often rely on broad-based standards to ensure that their products will be interoperable in the global marketplace.

In this environment, it is not uncommon for patents belonging to different owners to be present within a single standardized technology; at the same time, no one is keen on having to obtain multiple licenses from multiple sources covering the same technology.

For example, we can expect a mobile phone will contain thousands of patents because of its various features (today mobile phones are no longer just for making calls; you can listen to music, take photos, download data, surf on the internet and much more). If every patent owner were to individually ask for a royalty fee for its patents in the phone, then the price would quickly escalate. Additionally, the requirement to negotiate with each patent owner would be time consuming and expensive.

IP Office	Patent Applications 2016	Growth compared to 2015 (%)
SIPO	1,3 million	+ 21.50%
USPTO	605,571	+2.7%
JPO	318,381	- 0.1%
KPO	208,830	-2.3%
EPO	159.358	-0.4%

Source: WIPO Statistics Database, October 2016



This has resulted in a growing interest in the formation of patent pools. While in the past the word “pool” has had negative antitrust connotations and has been seen as an attempt to control the market, this is not the case for today’s “patent pools.”

A patent pool facilitates technology licensing by creating a “one-stop shop”, which means that a single license agreement grants the right to use a portfolio of patents essential for implementing a certain standardized technology, but owned by multiple holders. There is growing recognition that patent pools encourage free competition and economic-technological development. First of all, they decrease the price compared with the cost that would be realized if multiple licenses had to be negotiated individually. In addition, they reduce transaction and administrative costs, provide certainty and predictability to the market on the level of royalty rates, and ensure uniform and non-discriminatory licensing terms of essential patents through an independent, professional administrator.

A successful patent pool must appeal to both large and small licensors and offer all licensees a competitive licensing solution. To attract licensors, the pool should endorse a transparent and inclusive process to build consensus and encourage participation in the pool. Meanwhile, to achieve wide acceptance among licensees, a patent pool should offer a value-based license, include administrative tools that enhance efficiency, and make the reporting and payment process straightforward. It should also take into consideration enforcement and compliance mechanisms to give licensees confidence that all companies using the technology are licensed and paying the same royalties.

## Patent Infringement and Litigation

Receiving a patent right does not protect automatically against infringement. Patent rights need to be proactively monitored and, when a patent is threatened, patent holders must take legal actions to protect their invention.

Infringement occurs when another party makes, uses, or sells a patented technology without the permission of the patent holder. There are different ways another party may infringe on a patent. The most common type is the literal infringement when an embodiment has the same features and means claimed in the patent. But even if an invention does not literally infringe the patent, it may still infringe under the doctrine of equivalents. The doctrine of equivalents applies to each individual element of a claim, not to the invention as a whole and it arises if an accused product or process performs elements identical or equivalent to the claimed element of a patented invention to obtain the same result.

When a patent is infringed, the patent owner, in or-

der to stop the fraudulent activities and receive compensation for the unauthorized use of their patent has few alternatives other than litigation, which may usually be lengthy, expensive and risky. The alleged infringer, for instance could typically counter the patent holder’s suit by alleging that the patent is not valid because it did not meet the requirements of novelty and non-obviousness required for patent protection.

Enforcement is a useful tool to avoid market distortions. In fact, it is not only in the best interest of patent owners, but also in the interest of all licensees to ensure that others (free riders) do not gain an unfair advantage in the marketplace, because they do not respect patent rights.

An interesting tool to stop infringing activities could be the use of so called ADR (Alternative Dispute Resolution) consisting of a process of mediation and/or arbitration made before specialized authorities, like Chambers of Commerce or other arbitration centers. One of the most acknowledged organizations for administering ADR in patent matters is the World Intellectual Property Organization (WIPO) Arbitration and Mediation Center created and managed by WIPO. One of the advantages of using the ADR system to stop infringement and promote the granting of licenses to implementors is the confidentiality of the awards issued by these organizations.

## The Inventive Loop: How to Finance New Innovation

Intellectual property is proven to be fundamental for corporate growth and competitiveness.

A key differentiating factor of different business models in the last decades is the growing importance of intellectual property rights. If, in the past, patents were mainly considered a legal tool to obtain a competitive barrier or monopoly, in today’s market they increasingly represent an important asset for corporate financing.

As R&D activities are becoming more and more complex and expensive, very few companies can finance new innovation exclusively through sales. It has indeed become extremely important to exploit patents and other IP rights to fund new business development.

Through licensing, revenues from royalties for the use of a patent can be reinvested in a company. This creates a self-sustaining cycle in which the fruits of previous innovation can fund new research, generating an “Inventive Loop” in which the intangible assets acquire a real economic value. See Figure 4.

Qualcomm is an exemplary case, where the revenues collected through the licensing activities are able to sustain all the cost of R&D efforts, but this business model could be applied equally by large and small companies, and also by public and private ones, to ensure a continuous flow of capital to support corporate develop-

ment and growth through licensing fees. See Figure 5.

For this reason, companies must place the same measure of attention on their patent portfolio as with any other tangible investments. For a patent portfolio to be truly successful, effective, and winning, a company must be able to strategically manage it to return profits and direct market trends. Developing patent portfolios strategically can help a company to unlock value from its IP, while failing to have a plan for portfolio development can also result in misallocated resources.

## Conclusion

Today's global market is becoming more and more competitive and three factors are growing in importance: the creation of new ideas, the protection of inventions through patents and litigation (when necessary), and the subsequent economic exploitation of such IP rights through appropriate business models.

Continuous R&D investments are essential for Western companies to remain competitive in the marketplace. In fact, their competitive advantage can no more be related to the low cost of materials and human resources, but should be based on innovation and creativity, which has become a key driver for success. If companies stop investing in innovation and protecting their inventions through patents, they can easily be overtaken, technologically speaking, by developing countries, such as China, which are constantly increasing the number of patent applications filed.

In summary, good ideas, well protected and economically exploited are the best way to generate revenues and foster innovation and corporate growth. ■

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