# Why is hard to patent an invention?

D. Bein [1], W. Bein [2], M. P. Brut [3] and A. M. Cazacu [4]

[1]University of Texas in Dallas, USA, siona@utdallas.edu
[2]University of Nevada Las Vegas,USA, bein@cs.unlv.edu
[3]Al. I. Cuza University, Iasi, Romania, mihaela@infoiasi.ro
[4] S. Barsanescu School, Iasi, Romania, amcazacu@yahoo.com

Abstract

When employed by a company, in almost all the cases a new employee has to sign an agreement giving the company exclusive rights to any intellectual property developed as part of their work assignments. This agreement could extend beyond a change of jobs and cause conflict of interests in new employment situations.

A *patent* is a government-granted monopoly given to an inventor as both a reward for the intellectual and financial investment, and a stimulus to innovate. As a monopoly, the patent has legal power to exclude others from exploiting the invention in any way for a period of 20 years from the time the patent application has been filed. A *trademark* provides instant recognition of a product or company; a *service mark* provides instant recognition of a service. They both have unlimited lifetime. But the owner must renew or confirm continuous use at the end of five years, and every 10 years thereafter. A *trade secret* is information keep secret by the owner to give him advantage over competitors. Since it is secret, a trade secret protection has unlimited lifetime.

## I. INTRODUCTION

The forms of intellectual property of interest for a corporation include patents, trademarks, service marks, trade secrets and copyrights. The first known intellectual property law occurred around 500 BC, in Sybaris (a Greek colony) and protected the rights of an individual regarding his/her cooking invention: No one but the owner of the delicious recipe was allowed to cook it for the duration of a year (while the owner was entitled to all the profits) [1]. The modern concept of patents dates to 1421, Florence, Italy, when the city-state granted the first recorded patent to Filippo Brunelleschi, for the design and use of a ship, the Badalone ("seagoing monster") [2]. For a brief history of intellectual property see [3,4].

The Patent Commission of the U.S. was created in 1790. US Patent and Trademark Office (USPTO, http://www.uspto.gov) is an agency of the US Department of Commerce. It provides online access and also online applications for patents, trademarks, copyrights. The protection of these forms of intellectual property that have been filled and approved by USPTO (patents, trademarks, service marks and copyrights) covers only US territory.

The Romanian State Office for Inventions and Trademarks employs a total of 14 centers in the major cities, the main office being in Bucharest. They are called Regional Centres for Promoting the Industrial Property Protection (CRPPPI).

The most comprehensive international agreement on intellectual property to date, the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) is a treaty administered by the World Trade Organization (WTO), founded in 1995, which sets minimum standards for many forms of intellectual property (IP) regulation. Among others, it includes copyright rights, patents, trademarks and undisclosed or confidential information, enforcement procedures, remedies, and dispute resolution procedures.

## II. HISTORY OF PATENTS

The history of almost 6.5 million patents issued by the Patent Office of US started with Samuel Hopkins that received Patent No. 1 on July 31, 1790 [5]. On May 5, 1809 Mary Dixon Kies became the first woman to be awarded a US [6]. USPTO can issue patents to individual or corporate entity. After issue, the patent provides the receiver a period of exclusive use of 20 years, timed from the date of the patent application. The filing fee at the USPTO is between 395-790 USD, depending on whether the applicant is an individual, a small business, or a large corporation. When a patent is issued, it is protected only within the United States. It cannot be reproduced without the owner's permission within US, and it cannot be produced outside US and brought in US. To obtain additional patent coverage, the owner must apply to foreign patent offices (in most cases, each country of interest). Thus such protection can become very expensive. As an alternative, a ``provisional patent'' requires a less formal application on a possible patentable subject. USPTO offers a fixed 12-month window for the owner to investigate on whether to continue with a formal application. The cost of a provisional patent is a fraction of the issue cost of a patent. If the owner continues, the formal application is dated back to the date of the provisional application.

As far as patents for corporations, International Business Machines (IBM) has the most active patents (40000), with an average of 3000 patents per year (3415 patents only in 2003 alone). Microsoft has only 5568 (given the USPTO statistics of September, 28, 2006).

Patent laws differ from country to country to the extension that, for example, United Kingdom has granted a perpetual copyright for “Peter Pan” to the Great Ormond Street Hospital [1].

A utility patent (most common) protects what something does. In 1980, US Supreme Court has ruled that ``anything under the sun made or done'' could be a utility patent (U.S. Supreme court, Diamond, commissioner of patents and trademarks, v. Chakrabarty, 1980). A design patent protects the way something looks, and prevents others for producing objects that look similarly. A Nike shoe is a design patent (but not shoes in general). A plant patent protects an invented or discovered and asexually reproduced a distinct and new variety of plant, other than a tuber propagated plant or a plant found in an uncultivated state.

Prior to 1980, software programs were considered non-patentable subjects, since the algorithms were not protected by patent laws. After 1980, US courts start recognizing software inventions as patentable. In July 23, 1998, the US Court of Appeals for the Federal Circuit upheld the software and the business methods as patentable subjects (Federal Circuit, State Street Bank & Trust Company v. Signature Financial Group, Inc.).

In most of the cases, a to-be-patented subject has to have a detailed documentation. Each patent ends in a set of claims that are statements that summarizes the invention and defines what the patent covers. Anything described in such a claim is protected. Anything described outside the claim is not protected. A patent attorney is responsible for making sure that all significant matters are covered in the claims, provided that he/she has enough knowledge (background, subject documentation, etc.) of the subject to be patented.

Unless they have an agreement, each owner has a right to exploit the invention without sharing the procedures with the other co-owners. Owners can sell or transfer their rights of a patent or patent application at any time.

*Patent trolling* refers to “those who acquire patents with no intention to use them other than to extract huge settlements out of companies who might infringe on the patents” [7]. In 1998, the University of California has granted an exclusive license to Professor Michael Doyle, cellular biologist, for a method to display browser plug-ins. The company he started in 1994, Eolas Technologies Inc. has sued Microsoft on the grounds that the way Internet Explorer handled some applets was similar to the patented method. In August 2003, a jury found that Microsoft had infringed on the patented method held by Eolas Technologies Inc., forced Microsoft to modify its Internet Explorer by removing the infringing code from the complex code of the browser, and awarded Eolas 520 million USD [8,9], figure obtained by imposing a 1.47 USD royalty for every copy of Windows 95 sold plus an additional 45 million USD in prejudgment interest.

Another case of patent trolling is Research In Motion (RIM) and NTP Incorporated [10]. NTP applied for and received multiple patents in the mid 1990s for a technology they called "Electronic mail system with RF (radio) communications to mobile processors." without producing any electronic device to have the technology incorporated. RIM independently developed the Blackberry line of two-way email devices. In November 2002, a federal jury decided that RIM violated five NTP patents and ordered RIM to pay 53.7 milion USD in damages, interest, and attorneys' fees. Later on September 28, 2005, USPTO rejected the last of eight patents issued to NTP, five of which were the foundation for the patent infringement rulings in NTP's favor against RIM. The rejection was based on some prior work done by another company, Telenor [10,11].

Another still unresolved case is MercExchange vs. Ebay. MercExchange, an online action company that started in 1995 and closed in 2000, received two patents, one for online auctions and another for direct-buy software that allowed buyers to log on to a site and purchase items at a fixed price [7]. The second patent is similar to eBay's feature "Buy It Now".

## III. TRADEMARKS

A trademark provides instant recognition of a product or company. The identifier (word, image, etc.) that has been trademarked needs to have the trademark symbol ® as least once on each document, public appearance (TV, Internet, etc.), with the appropriate footnote ``<the trademark> is a registered trademark of <owner name>, <owner address>". If the trademark is claimed (if officially has been requested but still pending, or if it has not been officially requested) then ™ symbol must be used instead. A service mark registration requires the same type of paperwork. The symbol that precedes a pending application is ™.

A trade secret cannot be legally protected since is secret. The most famous trade secret is the formula for Coca-Cola. Once it becomes public knowledge, there is no protection provided. However, for a company, former employees, vendors, consultants, reverse engineering are primary disclosure risks. Thus confidentiality and/or non-disclosure agreements with high penalties attached are generally required before a new employment.

## IV. INTELLECTUAL PROPERTY LAWS IN ROMANIA

The most comprehensive laws in Romania for intellectual property are Romanian Patent Law 64/1991, the Romanian Law on Copyright and Neighboring Rights

8/1996, of March 14, 1996, and Romanian Law on Marks and Geographical Indications 84/1998 (Trademark Law).

A patent is protected by law for 20 years since the date of application. The registration fee is almost $40 USD (90 RON), to which other fees of $60-$400 USD (150-900 RON) applies for examination, publication, printing and granting the patent [12]. A list of non-patentable items include: ideas, scientific theories, mathematical methods, computer programs, learning or educational, physical phenomena, cooking recipes.

The Trademark Law 84/1998 accepts as a trademark any registered mark or a mark filed for registration with the Romanian State Office for Inventions and Trademarks [13] and included in the National Trademark Register [23]. If the application for trademark was done for the first time in another country that is member of the Paris Union (countries to which the Paris Convention of March 20, 1883, applies constitute the Union for the Protection of Industrial Property) or member of the World Trade Organization, the "applicant may claim the date of the first filing by means of an application for registration of the same mark in Romania, on condition that the latter application be filed with the State Office for Inventions and Trademarks within six months of the date of the first filing" [23]. For a trademark, the fee is between $30-500 USD [14].

Some modifications were made to the copyright law 8/1996 by Law 285/2004, Emergency Ordinance 123/2005 and Law 329/2006 [15]. In essence, the economic rights last for the author's lifetime plus 70 years, regardless of the date on which the work was legally disclosed to the public. After the copyright protection has expired, if a person or organization legally discloses a previously unpublished work to the public, he/she/it will have the same protection as the one of the author's economic rights, but for only 25 years, starting at the time of the first legal disclosure to the public [15].

Public attorneys are accepted to help in filing applications. The Ordinance number 66/2000, of August 17, 2000, published in: the Official Gazette number 1019 of December 21, 2006, details the "organization and exercise of the profession of industrial property attorney" [16,17]. A list of industrial property attorneys is available in [16].

## V. CONCLUSION

Given the high costs and long time to obtain it, the number of software and business methods patents issued is on the rise. But their values are not. Over 95% of the patents are unlicensed, and 97% generate no royalties. One reason can be that the domination of giant corporations has hampered individual inventors to license and/or promote their patents. On the other side, patents are being granted on ideas so

obvious that their re-invention would be inevitable and on ideas so vague they could apply to many other future products. In case of software patents, individuals or corporations have now to pay extra attention when writing complex programs that may incorporate something that was previously patented.

References


[1] R. E. Filman, ``Patent Pending", IEEE Internet Computing, 9(3), 2005, pp. 4-7.
[2] Patent Hawk LLC., http://www.patenthawk.com/
[3] I. Mgbeoji, ``The Juridical Origins of the International Patent System: Towards a Historiography of the Role of Patents in Industrialization", Journal of the History of International Law, Brill Academic Publishers, 5(2), 2003.
[4] L. H. Campbell, ``The patent system of the United States so far as it relates to the granting of patents", Washington D.C., Press of McGill and Wallace, 1891.
[5] K. W. Dobyns, ``The Patent Office Pony; A History of the Early Patent Office', Sergeant Kirkland's Press, 1994
[6] www.answers.com/topic/mary-dixon-kies
[7] F. Fortunato, “eBay vs. MercExchange before the Supreme Court”, www.ecommerce-guide.com/news/trends/article.php/3598586, April 12, 2006,
[8] E. Bangeman , “Eolas, Microsoft, and the patent process”, Arstechnica, November 3, 2003, arstechnica.com/news/posts/1067879232.html
[9] M. Broersma, “Eolas Wins Round vs. MS in Browser Patent Fight”, Eweek, September 29, 2005, www.eweek.com/article2/0,1895,1865104,00.asp
[10] D. Kerton and R. R. Kerton, “Patents For The People?”, August 2003, http://www.kerton.com/papers/20030831.html
[11] T. Smith , “US Patent Office rejects remaining NTP vs RIM patent“, www.theregister.co.uk/2005/12/05/uspto_rejects_ntp_patent/, December 5, 2005,
[12] OSIM, Public Relation Office, "How to file a patent application", http://www.osim.ro/index3_files/patents/ghid.pdf
[13] B. Manolea, “Romanian Law on Marks and Geographical Indications Number 84/1998”, www.legi-internet.ro/index.php/Trademark_Law_Romania/234/0/?&L=2
[14] Romanian State Office for Inventions and Trademarks, www.osim.ro/index3.html
[15] B. Manolea, Romanian Law on Copyright and Neighboring Rights, www.legi-internet.ro/index.php/Romanian_Law_on_Copyright_and/66/0/?&L=2
[16] OSIM, http://www.osim.ro/index3_files/cons/og66_repeng.pdf
[17] OSIM, "Patent Attorneys", http://www.osim.ro/index3_files/cons/cons.htm