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**PATENT LAW AND PRIVACY CONCERNS IN THE ERA
OF THE INTERNET: THE MORALITY EXCEPTION IN PERSONAL
DATA MINING AND ANALYSIS**

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Artículo de reflexión

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Abstract

This work explores the possibility of using the mechanisms established in the International Intellectual Property System to protect the privacy of users in the Internet. It is concerned with the need of privacy for growth and situation improvement in developing countries. It looks to open a dialogue to contemplate said possibility.

Keywords: Intellectual Property (IP), privacy, patents system, developing countries, Internet.

Derecho de patentes y preocupaciones por la privacidad en la era del internet: la excepción moral en el análisis y la extracción de datos personales

Resumen

Este trabajo explora la posibilidad de utilizar el sistema de protección de la Propiedad Intelectual para proteger la privacidad de los usuarios en Internet. Se preocupa por la necesidad de la privacidad para el crecimiento y el mejoramiento de las situaciones en países en vías de desarrollo. Busca abrir un diálogo para contemplar esta posibilidad.

Palabras clave: Propiedad Intelectual (PI), privacidad, sistema de patentes, países en vías de desarrollo, internet.

Patent law and privacy concerns in the era of the internet: the morality exception in personal data mining and analysis*

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1. Introduction

The Internet has been one of the most disruptive technologies that have appeared in the last decades. The changes produced by this innovation are several. The increase in access to digital contents of different fields of knowledge and entertainment has been considerable. At the same time, the exchange of information was facilitated and the access to information increased considerably. This was especially important in a world experimenting a phenomenon of globalization. Cultures are interacting and some are even imposing over others (Castells, 2004). For example, people in Ecuador could know the latest hits of the summer in the United States and even discover the last trends of fashion in the most exclusive store in New York or Paris. Now it is even possible not only to know about all this, but also to obtain it through the Internet, and a drone will send it. The changes are considerable and the challenges are new.

One of the products of all this interaction is the enormous cumulous of data that is being obtained and produced by the Internet. Then technology and computer experts have concentrated their efforts in defining the necessary instruments to process all this information. One of the first goals was specially to obtain some commercial and productive technology with the manipulation of information. This was itself a revolution for the economy of many countries and especially in the business sector. Before this, technology was an instrument to facilitate the work that in-

dustries were developing and to become more productive. Now technology has turned to be central to structure a business, it shapes the way a product and service is delivered and is by itself an industry. Then the most important necessity of corporations became access to data and information, which could be processed and analyzed in order to determine the strategic management of a corporation (Samuel, 2015).

In a context of interconnected markets this generates important challenges and problematic cases. A French company may be interested in the Ecuatorian market. In that order it would be a good idea to explore the preferences of Ecuatorian consumers and so the Internet and the obtained information is essential to make investment decisions. This is an economical attractive model because the French company would not have to send an entire team to the South American country to explore the market. Accurate information can be examined to make financially effective decisions just by analyzing the interaction of the Ecuatorian consumers with the website of the product or similar ones. This scenario generates important challenges and doubts. One of them is the control over this international data recollection and the existent control from countries over their citizens' data that is abroad and recollected in the Internet (Furrer and Sudharshan, 2001, p. 123-129).

Different technologies have appeared to generate more data analysis, even in big quantities of information, such as big data, among many other tools for data analysis (Vahn, 2014). Usually, patents are associated

with these technologies and IP lawyers have looked for patent protection due to the advantages provided by this model and because of the industrial use of these products (Nicholson Price II, 2015, p. 19-32). At the same time, the TRIPS agreement makes patents more attractive because in its article 27.1 this treaty established that this Intellectual Property Right (IPR) must be granted to all “inventions, whether products or processes, in all fields of technology” (WTO).

Some of these technologies have been questioned due to the possible threats they pose to the handling of personal data and in that case to people’s privacy. For several decades, developing countries have established important legislation and courts decisions looking for the protection of citizens’ privacy. As it is known, privacy has become a fundamental right for many developing countries and it is even considered a mechanism to secure democracy, freedom and participative markets, something that has not been always present in these countries (UNACTD, 2013). Nonetheless, as it has been seen, the Internet makes of this a worldwide problem because the recollection of data is not exclusively made by national corporations and individuals, but can be made by individuals located in distant countries. Then, a solution for the use of data in the Internet must count with an international solution or come from an international perspective (“Snowden Launches”, 2015).

In this scenario, data recollection generates a problematic issue: how to protect individu-

als’ privacy from individuals located in other countries whose practices can endanger the respect towards this right and that even seek patent protection for the questionable technology that makes this possible. A conceivable mechanism is to interrupt the operation of the web pages that use this technology to recollect data, but this is widely criticized due to the limitations to free speech and the Internet neutrality recognized in the international arena (Fisher, 2001, p. 175-195). Some international individuals even considered that national data protection agencies have no jurisdiction over them because they are established in different countries and users are submitted to that jurisdiction (Reidenberg, 2005, p. 1951). At the same time, this is a discussion of costs. Privacy generates important costs for individuals and in that case if some use their location to avoid them, make of this a difficult and in some point unfair competition (Romanosky and Acquisti, 2009, p. 1065-1069).

Solutions have been proposed and new mechanisms have been developed with this purpose and most of them have been limited, especially because of the lack of the existence of an international treatise and existent cooperation in privacy concerns. This work will enter this discussion and propose a new approach, not by developing an entirely new system but by adopting the elements provided by the Intellectual Property system, something that has not been widely explored, but that can prove to be beneficial and essential for developing countries that want to maintain privacy and protect its citizens as global consumers. In a more spe-

cific remark, patent protection under the actual IP system can be studied in order to understand how privacy concerns can have entered into the analysis of patentability technologies, protected by this figure and used in data mining and related activities. However, privacy has its own particularities that must be understood in order to identify the context that surround the use of technologies for data analytics.

1.1. The Paradox of Privacy Law

Privacy results to be a fundamental need for developing countries in order to maintain freedom of the citizens living in these territories. Evidence of this is that privacy has turned to be fundamental and this is shown because it has been included as a fundamental right in several Latin-American countries (Remolina Angarita, 2003, p. 43-50). Nonetheless privacy is a concern, the most popular Internet communications services and social networks in these countries, happen to be the ones that count with low personal data protection standards and with some practices that have been globally condemned. An example of this, situation, even though it did not occur in a developing country, is the Google case in Spain, where the national data protection agency sanctioned the corporation (Squieres, 2014, p. 463 - 471). These cases have turned to be paradigmatic in the privacy regulation around the world. Still, Google is one of the most popular services available in the internet and the number of users continues to increase, making of this one of the most pow-

erful companies of the world (Google Chrome, 2011).

Then the doubt that seems to rise is the following: Is privacy no longer a concern for citizens? Have people voluntarily given up to their privacy to have access to new technologies and applications? What different studies have shown is that privacy has been and still is a concern for people. Access to their information storage in their mobile devices and other digital platforms is something people do not desire to be shared or at least to be freely available (Rainie and Duggan, 2016).

Then the problem appears to be a different one. The issue is that mechanisms created to guarantee this protection do not seem to be efficient and conscious of the realities produced in the digital world. The main mechanism of protection is a person's consent. If someone agrees with the privacy terms of an application or the privacy policies of a website, then it is understood that the recollection and use of the data is lawful. The problem is that the policies result to be overwhelming, extensive, detailed and, in the case of foreigners that do not peak the language in which they are presented, is almost impossible to understand and read them (Solove, 2013, p. 1880). This shows that the emphasis of regulators on consent has proven to not be effective. Consequently, it is possible to affirm that each nation's government and agencies should adopt a more active role in data protection, because it continues to be a concern for their citizens (national constitutions (Remolina Angarita, 2013, p. 49-50), new

statutes (White and Case LLP), and studies (Google Chrome, 2011) demonstrate this) and policies should be oriented towards this purpose.

In order to explore how IP law results to be essential for privacy it is necessary to analyze the way this technology has been protected in the United States (the country where almost all this technology has been developed) and the IPRs related with the innovation that recollect and use personal data.

1.2. Patents and Personal Data

First of all, it is necessary to understand the development of these technologies and how they have been protected under the scope of Patent law. Some have considered that data analysis programs and recollection processes could be presented as software. Software has had different kinds of IPR as means of protection.

In a moment, they were protected under copyright law as a copyrightable material. Although copyrights had been usually associated with works representing artistic and scientific ideas, changes started to take place in this point. The high costs for software development and the period of use this technology could have, make policy makers consider that the long period of protection that copyrights granted, and the characteristics of this figure, seem to be more attractive. Additionally, software relied on algorithms that were considered by courts to not be patentable material. In that order, the Na-

tional Commission on New Technological Uses of Copyrighted Works (CONTU) in the United States promoted the protection of software through copyrights in the country (Graham and Mowery, 2003, p. 224). Even cases like *Apple Computer, Inc. v. Franklin Computer Corp*, demonstrated that courts supported this approach and provided the necessary protection (Graham and Mowery, 2003, p. 225. Nussbaum, 1984, 281-308). The reception of copyrights in software protection had an impact in the international arena. International organizations led the use of copyrights for the development of this technology, especially in the 1970's. In this time, the discussions that took place in WIPO led to the conclusion that copyrights where the most acceptable mechanism to protect software (WIPO). This approach was recommended and adopted by different countries around the world.

However, the protection granted by copyrights in the United States did not last as long as expected. In the 1990's cases like *Lotus Development Corp. v. Borland Int'l Inc* made courts consider copyrights less attractive. In this case, second users were authorized to employ elements of protected software to develop their own work. The court reiterated the principle by which some ideas and methods are under the domain of the entire population and cannot be adopted by one single person through a copyright (Graham and Mowery, 2003, p. 225. Whong and Lee, 1996, p. 207-216).

The crisis of copyrights then makes IP experts look into other possible figures in the United

States system and patents are seen as a possible mechanism. *Diamond v. Bradley* start granting protection to software and to the algorithms related to them, changing the initial considerations towards patents (Graham and Mowery, 2003, p. 226).

Software patents have been considered since then as one of the most important mechanisms to protect this technology. Nonetheless, few months ago some important decisions of the Supreme Court have challenged the role of patent law in this respect. In the year 2014, in the case “Alice v. CLS Bank CLS BANK”, the U.S. Supreme Court considered that for a patent to be granted it was necessary to count with an *inventive concept* that improved the functions of the machine where it was used (Samuelson, 2015, p. 28).

Under this panorama is that we find that data analysis and even big data mechanisms have been protected under software patents. In the case of big data and after the Alice case, some legal experts considered that these technologies would overcome the new analysis generated by the Supreme Court. Legal practitioners and advisors such as Andrea Gothing and Angela M. Muñoz-Kaphing, consider that there is a chance that big data software can still count with patent protection taking into account that “complex solutions that analyze, manipulate, or store big data may be less vulnerable to the attack that cost Alice its patent” (2014).

However, tech-companies have moved a step further in this concern and have taken data re-

lated technologies into a broader concept, not only relating it with software. Taking into account the complexity of the data analysis, companies have decided to patent personal data mining and data analytics systems. An example of this is the patent number US 7930197 B2, granted in 2011 by the United States Patent Office and also referenced as *Personal data mining*. The description of this patent is the following.

Personal data mining mechanisms and methods are employed to identify relevant information that otherwise would likely remain undiscovered. Users supply personal data that can be analysed in conjunction with data associated with a plurality of other users to provide useful information that can improve business operations and/or quality of life. Personal data can be mined alone or in conjunction with third party data to identify correlations amongst the data and associated users. Applications or services can interact with such data and present it to users in a myriad of manners, for instance as notifications of opportunities (“Google Patents”, 2011).

It is remarkable the emphasis in the improvements in people’s life quality that was made by the petitioners in this case. Taking into account the quantity of personal data involved, it was almost necessary to describe the positive results obtained with the patented technology and that justified this recollection of data. The patent was granted to Microsoft Corporation, which as many other patents, dealt with personal data analysis procedures not

exclusively related to a software. Other examples of patents related to personal data and not related to a software are patent US 20120047219 A1, *Systems and Methods for Social Media Data Mining* granted to AT&T Intellectual Property I, L.P (Google Patents); and patent US 20100318976, *Method and system for constructing a customized web analytics application*, granted to Webtrends, Inc. (Google Patents, 2015). In all these cases what has been patented is a complex system of digital technologies that interact to perform personal data analysis.

As it can be seen, data analysis and recollection have been protected through patents in the United States, a country where the majority of these inventions took place. It is at this point where the analysis must be centered in order to understand the implications of this approach and the opportunities granted to analyze the privacy concerns expressed. Knowing that Patents have been the preferable mechanism to protect this technology in the United States, it is essential to review the mechanisms to obtain patent protection in the international scenario and the most important treaties design in this regard.

1.3. The International Patent Law System

Patents have been designed, as a mean to generate rights over inventions and to obtain profit from the use other people would like to give them. Some consider that this legal figure was born as a way to incentivize people to cre-

ate and develop new technology. This approach is more than questionable and it is relevant to consider how patents are also mechanisms to facilitate commercialization of inventions (Dreyfuss and Frankel, 2015, p. 557-602). One of the elements that was important in the origins of the international patents system is the principle of territoriality. According to it, patents were just granted by each country according to the previous analysis of the corresponding national authority (Doi, 2003, p. 377-395). In that order, patent decisions were considered to be in the hands of national authorities and courts. In this case the principles of sovereignty and autonomy of nations appear to have relevance in the way the system was primarily designed. Even today different institutions and scholars have reiterated this principle (Max Plank Institute for Innovation and Competition, 2014). These would be moderated in future agreements.

Under this panorama it is possible to observe the most important treaties that conform the international protection of patents:

- (i) Paris Convention for the Protection of Industrial Property (Paris Convention) (1883):
As it has been mentioned, this is the first multilateral treaty that was enacted to protect industrial property. The treatise was negotiated under a newly industrialized world in which technological advancements were transforming national industries and markets. The lack of trust between countries for the appropriation of each other's inventions led to this first treaty at the same time that

there was a desire for sharing without fear for future misappropriations. Remarkable is the case in 1880 of the Austrian Emperor that wanted to hold the Great Exhibition, but the main difficulty was to protect the inventions that would be presented (Reichman, 2015, p. 99). As it has been mentioned, the three most important elements present in this treatise are: i) territoriality: patents would be protected in each country where their protection has been granted and not in any other; ii) national treatment: countries would grant the same protection to foreign applicants and patent owners than the one they grant to their own citizens; and iii) right of priority: in order for a person to have protection in a country he would have to apply in each country he would want protection and different dates of application would appear, making it vulnerable for people to take advantage of this. Therefore, the treaty established that people would have one year to take their patents all around the world and the countries that signed the treaty would recognize the date of the first application even if it took place in other country (WIPO, "Summary of the Paris Convention").

(ii) Patent Cooperation Treaty (PCT) (1970)

The main objective of this treaty was to facilitate the protection of patents all around the world, taking into account the difficulties and costs that the national registration generated. Then under the treatise a person could apply in a national patent office for an international patent that would be rec-

ognized in other countries. In this order, the treaty established a special procedure and an international survey that the national office should undergo in order to grant the protection (Abbott et al., 2015, p. 280-290).

(iii) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) (1994)

After some decades and more than a century since the Paris convention was signed, countries decided to take IP negotiations to other scenario, in this case international trade. More specifically, negotiations were now held in the WTO. The reasons for this were several. The lack of mechanisms to make countries comply with the international obligations they have acquired was a pivotal concern that wanted to be overcome through TRIPS. WTO had been successful with power it had to impose trade sanctions as a mechanism of enforcement more than effective (McRae, 2008, p. 1-20). In that case, TRIPS was the opportunity to make Patent treaties, especially the Paris Convention part of the international legal system of trade. At the same time, these negotiations would include new actors that were not taken into account in the past such as developing countries (Narilkar, 2006, p. 1005-1029).

In that order, the Paris Convention began to make part of trade regulation and some adhesions were made. In the case of patents, four interesting elements are between those introduced:

1. First of all, the exceptions for an invention to be patented are made clear: if the element to be patented is against public order or morality; the diagnostic, therapeutic and surgical methods for the treatment of humans or animals; and plants and animals other than micro-organisms and essentially biological processes. In this case, authorities that faced an invention that could be patented but conflicted with one of the elements mentioned were able to refuse the patent application.
2. Limitations to the exclusive rights that are obtained once a patent is granted can just stand if they do not affect the normal exploitation the patent would have and are not against the reasonable legitimate interest of the person obtaining the patent.
3. TRIPS make clear the necessity of full disclosure and set the minimum standard of 20 years of protection.
4. States can still obtain compulsory licenses, but only if a previous procedure to negotiate a reasonable license was not fructiferous (WTO, 2015).

As it has already been exposed, the International Patent system has two basic moments: patentability depended on the analysis each national jurisdiction undergoes, and then, specially in the last years, moves to the harmonization and to the creation of minimum international standards that must be implemented by each country limiting the scope of each nation in this field.

2. POSSIBILITIES FOR PRIVACY CONCERNS TO BE CONSIDERED WITHIN THE INTERNATIONAL PATENT SYSTEM

Within the elements analyzed it is feasible to study the possibility of approaches that allow the IP system, in this case in Patents, to have a more important role in privacy considerations for developing countries. Therefore, the idea, and in some extent the proposal, that must be analyzed is if the technologies that make use of personal data through the internet and other mechanisms, may not be granted a patent alleging privacy concerns. The object of this proposal is to generate importance in the privacy characteristics of the website and technologies introduced in certain countries and where the control has not been as successful. Although this position can be negotiated and moderated, it is recommended to start with this consideration in order to understand the way it can be proposed in the international scenario, the scope it should maintain and those things that can be reformed as product of the negotiation.

To contemplate bold measures is not disproportionate or bellicose, if we take into account that even the European Union interrupted data flows with the United States. After Snowden revelations, the European Court of Justice considered that the sharing of information of European citizens between important websites located in the United States and the National Security Agency was not considered to be lawful (Pfeile, 2015). It is clear that a measure involving Intellectual Property would not be contemplated by Europeans because of the importance this had

for their industries and the possibility of generating pressure through these measures. Developing countries with industries that depend on foreign inventions and that have not developed important research can contemplate this scenario. At the same time, in the case of developing countries the exchange of information with those regions where data is processed, may not be as significant as making of some countries territories where data technologies have the potential to be in the public domain.

Then, it is necessary to analyse more specifically the way this approach can be contemplated and the elements that must be taken into account. A starting point would be the exceptions conceived for patents in the international legislation and in this particular case the moral concept established in TRIPS.

2.1. Moral in the TRIPS System

Taking into account the considerations articulated above, it is necessary to explore the possibility of the *ordre public* and moral (established in article 27.2 of TRIPS) as an exception related with the privacy concern described. In this case, more specifically the concept of morality will be analyzed. As it is known, this is quite a complex concept, not developed by many countries and even exclusively defined by national courts. Although it is present in an international instrument, there is no explanation of the scope of this concept. Nevertheless, the debates around biotechnology, scientific cloning, and the use of human embryos have

helped to the development of this context in different sources of international law.

In regard to academic opinions, professor Gerard Porter in the international law treatise *The Law and Policy of the World Trade Organization* defined in his work four approaches that establish requirements to determine that a product has been considered as immoral in a country: i) if steps have been taken to prohibit the commercialization of the invention; ii) legislation and norms establishing a patentable invention as immoral, without it being necessary to prohibit its commercialization; iii) the morality jurisprudence' developed within the European Patent Office (EPO) that defined that immorality is present when "an invention would be so abhorrent for the public that is patenting would be inconceivable" (Correa, 2000, p. 64), making of this a case by case analysis; and iv) the necessity test established in the WTO Appellate body that allows to define the scope of the exceptions present in TRIPS (Porter, 2009, p. 345).

As it has been seen, the doubt in regard to morality is not answered by the international legislation, and exclusively each country may define these matters. However, the relevant discussions is if there is some kind of special requirement for a country to follow when some invention is be considered immoral, in order to generate confidence and avoid this as a mechanism of arbitrary use by the countries. The idea in this point, considering WTO mandates, is to avoid morals to be used as an impediment for trade since that is the spirit of the entire legislation.

In that order, it is not possible to agree with professor Van den Bossche and professor Porter, who establish that the immorality of an invention, to be considered as an exception under the TRIPS agreements, must ban the commercialization of the product in order to be accepted. According to them, if the product has not been banned in the country, then to consider it immoral without taking this action would have no grounds. Different elements make of this a problematic and not persuasive interpretation of this exception. In first place and as professor Porter recognizes, there are decisions for example in the United States that considered some biotechnology discoveries as immoral, but have not decided to ban the presence in commerce of such a product¹ (Porter, 2009, p. 360). Although Porter considers this precedent not to be relevant because it is just the internal consideration of a single country, in the situation that is being studied in this work, the policy and approach of the United States is central, due to the relevance it has in the development of personal data analysis technology and many other products.

Additionally, Porter considers that the necessity-analysis introduced in article 27.2 of the TRIPS agreement is related to the measure taken against commerce because of the patent that has not been granted. For him, the analysis of necessity elaborated to define if a patent should be granted does not seem to be

relevant in this context and it should be taken into account that in almost all the countries in the world a patent office does not have the possibility to stop trade and commerce of a product, that is at the end what is relevant (Porter, 2009, p. 362-363).

The argument presented does not seem to be convincing. The commercialization of an invention in a country where no measures have been taken against it, does not make it necessarily moral, because that country can consider that the proper measure for such innovation can be not to count with any protection in case of it being copied, misappropriated and misused. Professor's Porter opinion, supported by some other scholars, considered that there is just one possible measure against immoral inventions, without considering measures that indirectly can obtain the same result. To contemplate something different would be like considering that just because a product has been introduced in a country, that country has lost any possibility to evaluate its patentability under moral elements because this would be a discriminatory measure. This can explain why the United States has not granted patents to inventions that continue to be commercialized, because it has considered that the incentives to continue with such innovations would not exist and consequently more research and development in this area would not occur, making of this product more difficult to be found.

1. Professor Porter mentions the case of the case of Stuart Newman and Jeremy Rifkin, in which the USPTO decided not to grant a patent for biotechnology involving human embryos, even if the product could continue being commercialized.

In that order, the risk is taken by the person that wants to sell an invention in certain country and that should recognize the possible negative consequences and losses of creating a demand for a product that may not be protected in the future and that the competitors can use without inconvenience, due to its immorality.

In this point what seems to be controversial is what a country would consider to be immoral or not. Then the reasonability of the moral judgment made by a Patent office may be evaluated not under the necessity standards used to evaluate measures against commerce, but from a different perspective. Under this perspective the necessity of excluding the invention of patentability to protect morals and public order is the one that must be analyzed, taking into account the particularities of patent law and of the decision taken. This necessity analysis is the one neglected by professor Porter and that cannot be shared, because he just considers that the necessity to be evaluated is for a measure against commerce and not for the patent itself, what at the end seems to be the intention of the article 27.2 of TRIPS. This was even the approach taken in US-Gambling case in WTO, where both the Panel and the Appellate Body consider that it was required to analyze the necessity of the United States measure to protect morals in its territory, without taking into account in this analysis the necessity to restrict commerce (WTO, 2005).

As it will be seen, this point would be relevant when analyzing the case of patents related with personal data use and mining, and the pos-

sibility of those patents not being recognized even if the products are already being used in a country. Although it is possible for people to consider that there is a low chance that a product is sold or offered in a country where a patent has not been granted, internet and digital media has changed this reasoning and people from different countries have access to foreign products that had not been necessarily patented in their countries.

2.2. Moral Under the TRIPS Agreement and Privacy Concerns

One of the interesting aspects of the way the morality and public order approach to this innovation is that some national authorities have discussed the threats to privacy that are raised and contemplated in this scenario, specially with biotechnology. Professor Townend, exposed precisely in his work *Synbio and Human Health: A Challenge to the Current IP Framework?* the existent tensions and the consequences this have for IP regulation:

Synthetic biology poses interesting of familiar legal and ethical questions raised in modern biotechnology. These are particularly interesting in relation to patents, privacy and property. These questions ask us whether there are inconsistencies in our approach to safeguarding individuals and, at the same time, encouraging innovation (2014, p. 87).

Additionally, it is possible to see in the United States some complaints in regard to patents

involving DNA and people's privacy. Some experts and commentators have considered that decisions like the one established by the Supreme Court of Justice of accepting DNA patents, would need to take into account the privacy gap that has is still present and the moral considerations that may arise (Kolata, 2013).

Interesting observations can be made of this situation. First of all, it is possible to affirm that new technologies, specially related with human biology, have raised doubts in regard to privacy and this as an element to take into account in a patentability analysis. Jointly, this approach blurs a methodological and structural line some legal practitioners have traced in this field. According to this position, IP and privacy are complete and independent concepts each with its own developments and elements² (Samuelson, 2000, p. 1129). In this case and taking into account these new conceptions introduced by new technologies, it is necessary to understand the relativity of this division and conceptualization and the mutability that would characterize them and at the end would relate them. Patents and privacy relation is just the example of concepts that can interact.

Under this theoretical frame, it is possible to affirm that the question we can raise is the following: If technologies allow the use and collection of human personal data in internet is it possible for States to refuse to grant patents under the moral and public order concern, just

as it has been contemplated for biotechnology? This idea will be explored taking into account the legal regime and considerations already exposed.

2.3. Personal Data Access in Developing Countries: Immoral Data Technologies?

As it has been seen, TRIPS agreement allows an invention to be declared as immoral even after it has been commercialized in a country. Taking into account the way privacy has been analyzed in Intellectual Property matters, it is necessary to establish if online privacy can be protected from immoral or against the public order uses that are possible through new data mining and analysis methods. Therefore, it is necessary to understand how privacy has been contemplated in developing countries and the internet, and the challenges this produces.

Privacy has turned into a concern for different countries. Specially in the last years, countries have adopted what is considered to be an omnibus approach enacting general laws for data protection. This concern has been generated by the relevance of internet and the access of corporations to high quantities of data. Technology, such as big data, has made governments think about the limits to this kind of innovation (Fhom, 2015). However, the importance online privacy regulation has adopted contrasts with its possible effectiveness, specially if we

2. Professor Samuelson considered that the differences between IP and privacy are important in order to relate both concepts. The differentiation made neglects some of the further relations that would take place in internet in future years.

observe that the expansion of websites and digital platform with controversial privacy policies continue to expand specially in developing countries, even if profits are not as important as in other markets (Stone and Helft, 2009). One of the reasons that may explain this problematic situation is that these countries have followed a consent approach to privacy protection. This means that if a person agrees with certain conditions for the use of his personal data corporations can lawfully use the information for the purposes the person agrees with. Then an under this conditions, privacy has become a matter of negotiation in which the parts almost determine how much access and data would be provided (Rainie and Duggan, 2016).

Then a patent office that receives an application for protection for an invention in the field of data mining or big data, can not determine a priori if this technology would go against a person's privacy. Even if the technology that is being analyzed can be potentially be use for an undesirable invasion of privacy, if a person agrees with this invasion, then it would not be possible to deny this private agreement.

To consider a private agreement made according to the law as immoral and against the public order, would be almost like considering every single contract immoral and against public order. Then, the structural problem of granting privacy protection trough the IP regime is that privacy law has enabled a system in which authorities can not do anything about technologies that are threat to privacy, just protect them if there are patents that allow this to happen.

As it was established in the introduction, a new approach to privacy in which the state has more possibilities to intervene and protect people's privacy, especially in developing countries where people interaction with Internet results to be different than in many other societies. Some of these conditions have been considered to be paternalistic, but this is something that has to be moderated. It is clear that some paternalism can be seen in this approach, but evidently this is necessary when the actual conditions of use and policies that Internet pages shared. The lack of comprehension and difficulties the consent approach has, make it reasonable and in some point desirable (Rainie and Duggan, 2016).

In that case what developing countries need to do is to develop what behavioral economics considered a soft-paternalism towards privacy. This would demand elements to generate an easy access to information for people to decide how much privacy they want to give. As Alessandro Acquisiti mentions:

[a] soft paternalistic approach might, instead, provide context to aid the user's decision—such as visually representing how many other users (or types of users) might be able to access that information or what they can do with it; or, it might alter the system's default settings so that, even when provided, birth dates aren't visible unless individuals explicitly set them that way (2009, p. 84).

What countries can make in this point is to intervene by generating national laws establish-

ing that it would be against morals any technology that has the potential of committing abuses against citizen's privacy, and in that case any agreement authorizing this use would consider to be voided. In a first moment this would have effects in privacy law but at the same time in the IP regime. One of the elements that would be analyzed is the necessity of the measure and the lack of other possible mechanisms to obtain this protection to moral. In this case, it would be necessary to understand the crisis of the consent approach and the necessity of more active actions from the government. The debate is then served.

Additionally, a new debatable point that is raised is to determine whether what is considered as immoral is the purpose for which the data is recollected or the technology *per se*. Just as in the case of biotechnology, there is not a unique answer to this doubt and it would depend of each countries policy to determine this issue. National courts and case-by-case law would be essential in this point.

Nonetheless, these possible changes and conceptions introduced in IP and privacy must be analyzed in a new scenario, which is the particularities that surround the Internet. In this scenario not only the IP international treaties have an important influence, but the functioning of the World Wide Web is also determined by what has been denominated the Internet governance. A plan to follow like the one proposed might raise challenges to the way Internet governance has conceived patents for this kind of technology and the importance they have in the

actual functioning of the Internet. Depending on the way privacy and IP are considered this would have necessary effects in the Internet architecture. Then it is indispensable to move forward towards this concept and its implications in the possible design of cyberspace.

3. WHAT IS INTERNET GOVERNANCE AND WHY DOES IT MATTER?

This term does not count with a single definition and in some way it may be considered problematic. As it is known, Internet pioneers, academics and activists consider that the Internet is a free digital space of interaction, in which no rules and no boundaries should exist. No institution or State should determine the structure, order and content of the Internet (Zittrain, 2008, p. 7-9). Nevertheless, the existence of trends and common habits and behaviours followed by developers, digital experts and programmers demonstrated that the web was directed to follow some existent protocols and some powers and forces were influential in this process. Additionally, the existent violation to rights and criminal activity that took place generate concerns towards the freedom that was initially conceived. In that order, some control and structure was being determined for the Internet use and some subjects had influence in this process. In 2005 the UN, more specifically the Working Group on Internet Governance, decided to materialize this phenomenon by naming it Internet Governance and by defining it in the following terms:

The development and application by governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programs that shape the evolution and use of the Internet (Bossey, 2005).

Nowadays, it is almost a sterile debate to discuss if the Internet is a completely free space, when it is clear that the governance exists and it has been necessary to recognize its characteristics, its influence and specially its legitimacy, taking into account how this model assures participation of the communities involved in this space.

The international organizations are in some way deciding how this governance would be administered and one of the most involved in these debates has been the United Nations. In that order they organized the Internet Governance Forum (IGF) where different issues are discussed such as the international protocols for Internet access, the neutrality of the network and many other issues proper of the digital technologies (IGF). It is clear now that any possible proposal for changing the actual functioning of the Internet would be considered to have effects in its governance and in that order it is necessary to understand the interaction of this power distribution and the changes that can be proposed by developing countries and that been previously analyzed.

3.1. Internet governance and IP

Internet was by itself a revolution for IP. One of the revolutionary elements of this technology

is the access to information, entertaining content or literary, scientific and academic works that before were of very difficult access. Now a girl in Morocco has the possibility of checking all the requirements to apply to an Ivy League college, without the need of visiting these institutions or asking for someone that by an important cost would send her or bring that information. Therefore, the life of this girl has changed radically. As in her case, many more lives are changed in different aspects, and more people have access to things that, before the Internet, were exclusively available for people that had the resources to afford the costs generated even for the recognition of IP of this material, which in some occasions became completely free. The access to knowledge and information that internet allowed in its beginning, became then a challenge for IP industry that started to contemplate how music, videos and even patentable inventions, like software, were freely available. Then it was time to moderate the Internet's absolute freedom and generate limits for industries that had to handle the distortion generated by this technology (WIPO, 2002).

As it has been seen, IP has been central in the design of the Internet, to change the way it had been recognized or to generate the necessary elements in the cyberspace for these rights not to be completely lost. In its report the Internet Society has exposed in a complete way some of the points that are now debated around IP and Internet Governance:

- *Intellectual Property and Multistakeholder Governance*
- *Intellectual Property and Transparency*

- *Intellectual Property and the Rule of Law*
- *Intellectual Property and Internet Architecture*
- *Innovation without permission* (Internet Society).

As it can be appreciated, the Internet, at least in its first moments, developed a different culture and a different way to interact with inventions and elements protected by the intellectual property regime. Then organizations like the Internet society have considered that the governance of Internet must balance the interest of IPR holders and the new cultural trends of cooperation and collaboration that have been created (Benkler and Nissenbaum, 2006, p. 394-419). This is reflected in the *multistakeholder* diversity that is proposed. Under the logic of treaties like Paris, stakeholders are reduced to the states, its inventors and the industries where this research is taking place. Now the model argues that citizens and consumers must also be part of these discussions, and not only the citizens who developed the invention. At the same time, the creative work and interaction that has taken place in the Internet must not be stopped by IP regime, but it should also be enhanced. In that respect the innovation then should take elements found in the Internet without having the authorization or permission of the developer of the work to be an obstacle and even designing mechanisms for creators to share their information. This is why it is not rare to find that the Internet motivated the development of new figures like the creative commons, in order to allow users have confidence that the author has made his work

publicly available (Wong et al., 2010, p. 312-313).

The importance of taking a look to this proposal is to recognize the elements that are being debated in the architecture of the Internet governance and that involved IP and patent discussions. At the same time, it is interesting to see the expectations of citizens represented by these groups and the elements that they hope are maintained. In the case of patents for example, it is interesting to see if the development will continue to be the same or will change, taking into account that the conditions of the society of the Internet continue to be different to the ones present when the Paris Convention was established. At least a part of society considers that some points should be negotiated in the access to cyberspace.

3.2. Internet governance and Privacy

The developments in the field of privacy have generated important questions in this topic. The surveillance of State agencies to citizens all around the world has raised concerns in this regard in the last years. Paradigmatic in this point, was the invalidation of the Safe Harbor agreement with the United States by the European Court of Justice (ECJ) in 2015 (ECJ, 2015). All this demonstrates that in the future, Internet governance privacy will be an essential topic and the debates between important actors would appeared. The IGF then is the space for this kind of negotiations to take place. In their work, professors Epstein, Roth and Bau-

mer have summarized the state of negotiations in privacy matters in the IGF according to a research that involved an analysis of the deliberations and debates that haven taken place in this space:

In our analysis we were able to observe how privacy discourse within the IGF has been dominated by privacy vs. security frame, which implies particular power relations and a set array of venues to deal with the policy challenge. The introduction of discourse focused on the rights frame at a later stage further strengthens the notion of strategic framing of privacy within the IGF. The elephant in the metaphorical IGF room is the question of the legitimacy and authority of non-state actors to participate in the traditionally state-dominated domain of information policymaking (2014, p. 166).

As it is possible to establish, the IGF still lacks the necessary elements to generate definitive measures in this regard, of which security is constantly related, although differentiations had to be made. Then it is possible to affirm that this forum has still various obstacles to overcome, but it is important to consider the diversity of subjects involved. Jointly, two important conclusions can be made from this state of things: first of all, privacy is an increasing concern and it is constantly seen in its relation with important and relevant elements of internet architecture, making it pivotal in the cyberspace design; and in second place the recognition of different stakeholders, specially the civil society. Both elements are shared

by IP development in the internet governance phenomenon and in that order the interaction between elements is not only central for internet but for the conception of both elements outside of this space.

4. AN INTEGRAL PROPOSAL IN THE ERA OF INTERNET GOVERNANCE

As it has been exposed, Internet governance in the architecture of this technology would transform our understanding of IP and privacy, making of them even more interconnected concepts. Under this theoretical framework is that an innovative proposal must integrate all the necessary elements for it to become a new stage of IP negotiation for developing countries. As it is known this proposal tends to take privacy concerns as a morality issue, and as an element to review the data mining and big data technologies that are patented and the effect they would have in developing counties' society.

One of the first elements that can be remarked from this proposal is that the leading international actors should be, developing countries that have interest in access to technologies and that have developed a more active role in privacy protection of the citizens. Nonetheless, it would be a mistake to present this as a quest of just developing countries, as it has been in many other occasions, taking into account the activisms of organizations and citizens in developed countries in regard to the changes that must be taken. Citizens' rep-

representative groups must exert pressure within their countries towards the positions taken by developing countries and that can be applied in their countries.

Then, a reasonable doubt is to define those norms that may be modified in order for the change to take place. Extreme reforms are not necessary, because in this case the exceptions contemplated in the TRIPS agreement give enough scope to work with and to propose material changes in patent law. At the same time, this is the legislation that concerns these countries the most, not only because it is here where exceptions are contemplated, but also it is the place where trade sanctions can take place. What has been seen is that there would be no need for a radical change, but national courts and legislations can adopt a position taking into account moral. Technologies that use important numbers of personal data without consideration and necessity may not be desirable. As it has been said, in this case it is necessary to remark the importance that the data protection agencies will have under this new scope in order to determine and analyze patentable technologies and their role in data recollection and use. Some may propose the existence of a specific exception to patent technologies that generate threats to people confidence in the use of this technologies and Internet access. This can be a possible scenario but negotiations for additions into the TRIPS agreement in the WTO, that is the place where this has been contemplated, are expensive and demanding. Additionally, changes must be proposed now, before time passes and the evolving rhythm of the Internet and of infor-

mation technologies make of this an nonnegotiable element and this scenario ceases to be the space for deliberation. Measures must be taken and the effects of them must be demonstrated in order to have more effective negotiations, afterwards to find a definitive solution to these positions.

The scenarios where these negotiations should take place may be several. Taking into account that TRIPS agreements would be in debate, WTO may one of the centers of this discussion, as it was mentioned above. Nonetheless, there would not only be space for deliberation, but even cases and claims of different countries complaining over these measures is something that is foreseeable. In that case, necessary measures must be taken in order to deal with these complaints and the results of the different panels and appellate panels would be important to count with more international precedents in regard to the respect of IP rights over technologies used to generate invade people's privacy. Developing countries may face an adverse decision, but it is necessary to take the chances and at the same time to use this scenario to make this a topic of future deliberation and negotiation.

At the same time, WIPO must discuss this topic in the patent law reforms and the way Paris conventions deals with respect to fundamental rights in the digital age and if it is necessary to think a new paradigm. Jointly, the IGF is an important place for these negotiations to continue, especially due to its affiliation to the UN. Although it has been exposed that the lack of legitimacy of this group has made of it not to be

considered as important as other committees and international organizations, it is a matter of time for this to change. The experience this forum is recollecting in the debate of the Internet regulation and the protocols to follow in the cyberspace would make of it a relevant scenario, that can be characterized as an innovative approach to topics making necessary interactions as the one proposed. In that order, it is interesting to take now this debate to this forum in order to leave doubts that could be retake in the future relevant discussions that would take place.

5. CONCLUSION

One century ago, a German physicist and patent officer in the IP office of Berne, Switzerland, Albert Einstein, proposed the idea of a theory that would transform our conceptions of time and space. Both concepts had been considered as unalterable and fixed, but Einstein proposed to think of them as mutable, transforming our understanding of the universe. The only evidence to support his standings was that the explosions produced by the clash of black holes in the outer space would produce gravitational waves with capacity of making all this possible (MIT). Some months ago, scientists could prove that colliding black holes proved Einstein's theory right, and that with the transformation of time and space it was possible for them to be relative concepts (Overbye, 2016).

These recent discoveries must be an inspiration for all of us in different fields of knowl-

edge, including IP lawyers, in countries where this system has not been as beneficial as expected. Patent system and the IP system in general, may be transformed, they are as relative as the space and time in which they were created, but in order to do this it is necessary to understand that the IP system must not be planned as a closed shell in which any others field can not disturb. Technology like the Internet demonstrated in its first years the transformations that can take place and even today they are still taking place. In this kind of spaces to impose the model of Paris Convention, even developed prior to Einstein theories, does not seem to be the unique possible path. As it has been seen many technologies protected under patent law and different regulations generate opportunities and many other are just used to invade people privacy and to recollect data, in some moments without clear purposes. What is paradoxical of this situation is that those technologies are being protected now by the authorities of different countries, following the international obligations and without thinking for a different way to proceed in this regard.

One of the elements of the transformations that can take place in a new scenario like the one we live in, is the change in the conceptualization and theoretical boundaries created. This must be expanded. IP cannot continue to be an independent legal system different from many other that benefit or are endangered by the decisions and concepts developed in this field. In that regard, it is necessary to understand that Internet and digital technologies transform a series of concepts and make them interact be-

ing one of them privacy. As it has been established, surveillance and data use is one of the main practices that can transform our reality and in that we face a new scenario in which all the fields of law related with technology like IP are more than involved.

In this work we present the importance IP may have for the data industry and the possibilities it grants for developing countries, not only as a mean to protect people's privacy, but at the same time as a tool to transform IP, especially patent law in software and other technologies for data analysis. As it has been seen, transformations are mutual, but this is only possible if the conceptual boundaries created are transformed taking into account that the reality were they apply is also changing.

The selected concept of morality has not been widely explored and this is the reason why it is necessary to understand the scope of the exceptions contemplated in the TRIPS agreement that has been one of the most demanding in the IP field. WTO needs to demonstrate in this scenario, how open it is to change and transformation and if this is the scenario to continue discussing almost exclusively IP especially in regard to the future digital technologies present on the Internet.

It is important to take into account that this is just an initial point to start a debate. It is necessary to generate new scenarios to debate the foundations that the intellectual property legal system has followed, and that economic model and a political economic theory do not

necessarily result useful for all the countries that adopt it. Innovation has not necessarily been increased in many countries and the cost of access to new technologies has been such that this has become an additional element of inequality (Adams, 2008, p. 725-735). Therefore, it is necessary to re-evaluate patent law in the Internet, and the privacy concerns related in this work are just elements to generate a new debate and visualize the paradox of protecting elements that are a thread in some cases and in other actually violate fundamental rights. These debates must be initiated in different scenarios as the one proposed above, in order to generate new answers to the actual needs that the patent system created. Radical changes cannot be expected but at least to open the discussion is a step forward toward this objective.

Additionally, this measure does not want to limit or become an obstacle for the generation of new technologies and the advances produced by digital innovations, many of them introduced by the Internet. The benefits provided by many of these technologies are valuable. What is being debated in this point are the technologies that are being produced, the potential benefits and problems they create. It is essential to define that this is something that exclusively concerns each country to consciously decide and negotiate with others and should not have one single answer. One country's paradigm and boundaries towards technology and the way to protect must not be imposed to other, especially if some consider for example, that people's privacy is essential for the development of their society. Each country should have the option of de-

deciding how much personal data its citizens want to share and to generate its own limits and possibilities for digital technologies, according to their values, cosmogony and vision of the world.

Jointly, it must be considered that in this case tech-corporations are not necessarily seen as enemies of progress and developing countries and that is why they should not be granted patents. What has to be seen is that these corporations, some with very positive intentions, are also victims of enormous pressures of governments all around the world that want them to share the data that has been collected by their technology for different purposes (Apuzzo et al., 2015). Information of political dissidents, human rights lawyers, activists and many other important individuals, must be protected taking into account the value this people have for the future and development of many countries, but are contradictory at the same time. This scenario is the one that generates precautions.

Patent law is not vulnerable to be transformed, as one patent officer even demonstrated years ago the most fixed elements of our life could be relative. It is time for IP lawyers to learn from the new scientific paradigms that changes can take place and that their possibilities are more than the ones initially established. Taking into account that IP can be one of the most important tools in the protection of privacy in the digital world, it may be just the beginning of the architecture of the Internet but at the same time of our world. We hope that a best one, especially for developing countries that have been struggling for this for centuries.

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