GOVERNMENTAL POLICIES TO ENCOURAGE ATENTING: A Literature Review

POLÍTICAS GOVERNAMENTAIS DE INCENTIVO AO PATENTEAMENTO: Uma Revisão da Literatura

POLÍTICAS GUBERNAMENTALES DE INCENTIVO AL PATENTAMIENTO: Una Revisión de la Literatura

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ABSTRACT

The amount of patent applications filed each year in the world’s leading patent offices has increased significantly over the past few decades. One of the factors identified as motivating this increase is the government’s policies to encourage patenting. This paper aims to review some incentive policies adopted around the world and, mainly, review the history of these policies in Brazil. In this context, the article addressed the Bayh-Dole Act of 1980 in the United States; the reform of Intellectual Property (IP) rights in German Universities in 2002; the financial incentives policy to the national depositor initiated in the 90's by the Chinese government; and the 2004 Innovation Law in Brazil.

Keywords: Intellectual Property, Invention Patent, Growth of Patenting, Policies to Encourage Patenting.
The amount of patent applications filed each year in the world’s leading patent offices has increased significantly over the past few decades (Figure 1). According to data from the World Intellectual Property Organization (WIPO), in 2016 about 233,000 Patent Cooperation Treaty (PCT) patent applications worldwide were requested, an average increase of 7.3% year on year. More than 3.23 million international applications have been solicited through the PCT system since it began in 1978. Records grew every year except in 2009 when the global financial crisis caused a slowdown (OECD, 2004; TORRISI et al., 2016; WIPO, 2016, 2017).

Figure 1 – The growth of patent applications via PCT. Source: (WIPO, 2017).

The increase in activities related to the patent system is an indication that users in a variety of companies as well as universities and public entities attach greater importance to patents and are willing to incur higher costs to apply for them, acquire and defend them. (NATIONAL RESEARCH COUNCIL, 2004)

One of the motivating factors in the increase of the patent applications number worldwide is the government’s policies to encourage patenting, since several countries around the world have instituted actions or policies to encourage patenting by their national institutions. As examples may be cited Bayh-Dole Act of 1980 in the United States; the reform of IP rights in German Universities in 2002; the policy of financial incentives to the national depositor initiated in the 90’s by the Chinese government; and the 2004 Innovation Law in Brazil (MARQUES, 2016; NATIONAL RESEARCH COUNCIL, 2004; SNEDDON, 2015)

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Considering the aforementioned, the patent system has been increasingly used. In addition to the factors such as the onset and rapid growth of Research and Development (R&D) of new technological fields, the emergence of complex technologies that often require independent patent pools to be legally protected, the patent view growth as a commercial tool and active, can also be highlighted as causes of this increase government policies to encourage patenting. For instance, countries such as the United States, Brazil, Germany, and China have implemented policies to encourage patenting for the national depositor (AUTM, 2017; MARQUES, 2016; NATIONAL RESEARCH COUNCIL, 2004; OECD, 2004; SNEDDON, 2015).

World policies

According to Van Norman and Eisenkot (2017), until the second half of the 20th century, the United States government had few policies to encourage the public use of the diversity of patented inventions accumulated. There was no overall policy or method established to transfer ownership of inventions or ideas from government inventors to private or commercial institutions that had a better structure to develop some useful purpose or product of the research. Furthermore, there was not a consistent method for licensing inventions or government patents to private companies for development.

The 1980 Bayh-Dole American Patent and Trademark Act Amendment (P.L. 96-517) made it a general rule that universities, other non-profit institutions, and small companies could acquire exclusive rights to inventions developed with federal support. The Stevenson-Wydler Act of the same year gave federal research agencies and their researchers an additional incentive to patent and license results of internal studies. In part, as a result, the number of university-owned patents has increased (NATIONAL RESEARCH COUNCIL, 2004). The main provisions of the Bayh-Dole Act include:

i. Non-profit organizations, including universities and small companies, may choose to maintain the title of innovations developed under federally funded research programs;

ii. Universities are encouraged to promote, for commercial purposes, the use of inventions resulting from federal funding;

iii. Universities are expected to apply for patent applications on their inventions;

iv. Universities are expected to offer licensing preference to small businesses;

v. The government will prevent a non-exclusive license to use the patent;

vi. The government retains "march-in" rights (AUTM, 2017).

The adoption of the Bayh-Dole Act has inspired many countries, mainly Organization for Economic Co-operation and Development (OECD) members, to replicate policies similar to this law, with the aim of fostering academic research with practical purposes of producing financial results. According to a survey performed by the Association of University Technology Managers (AUTM), other countries that have legislation similar to the Bayh-Dole Act are Brazil, China, Denmark, Finland, Germany, Italy, Japan, Malaysia, Norway, Philippines, Russia, Singapore, South Africa, South Korea, and the United Kingdom (AUTM, 2017; MUELLER; PERUCCHI, 2014).

China has been leading the world in the number of patent applications for a number of years, surpassing the United States, Europe, and Japan (WIPO, 2017).

Lei, Sun and Wright (2013) highlight two theories that debate the causes behind this boom in Chinese patents. The first is that this result is an indicator of China's breakthroughs in innovative capacity resulting from the focus of its development plan (Medium to Long Term Plan for the Development of Science and Technology of 2006) to migrate its economy from the "made in China" to "invented/designed in China". The second, however, refers this growth to the various patent grant policies offered by the government. For example, the Chinese government promotes financial incentives for national institutions to file patents in the Chinese Patent Office, such as occurred on April 14th, 2012, when the Chinese Ministry of Finance issued new measures for the administration of special funds for subsidies to the application for patents abroad. In order to be qualified for the subsidy, applicants must be small and medium-sized enterprises, public institutions or Chinese scientific research institutions. According to these measures, the subsidies involve financial aid for official charges of deposit process, examination or other services paid to the patent offices abroad (CHINA IPR, 2012; LEI; SUN; WRIGHT, 2013; SNEDDON, 2015; WIPO, 2017).

In Germany, property rights for university inventions were subject to legal change about a decade ago. In February 2002, the German Government amended clause 42 of the employer invention law, known as the teacher privilege (Hochschullehrerprivileg in German). Established on the basis of Article 5 of the German Constitution, which protects the freedom of science and research, this clause granted university professors/researchers the privi-

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1 Os direitos de march-in permitem que o governo federal, em circunstâncias específicas, exija que o proprietário da patente conceda uma licença não exclusiva, parcialmente exclusiva ou exclusiva a um requerente. Se o proprietário da patente se recusar a fazê-lo, o governo pode conceder a licença em si. Os termos da licença devem ser razoáveis. (THOMAS, 2016).
le of maintaining the property rights of their inventions. The 2002 amendment transferred the property rights of the inventor’s university inventions to the University with the intention of increasing the exploitation of university inventions for commercial purposes (CZARNITZKI et al., 2014; DORNBUSCH; NEUHÄUSLER, 2015).

Brazilian policies

Since the beginning of 2000, the Brazilian government has been making efforts to strengthen the innovation process in Brazil, especially for Brazilian education and research institutions, through public policies and the enactment of laws (PINHEIRO-MACHADO; FREITAS, 2016).

In order to regulate and, at the same time, create mechanisms for the promotion of innovation, scientific research and protection of intellectual property, the Brazilian State sanctioned Law No. 10,973 (Innovation Law) on December 2nd, 2004, and regulated it on October 11th, 2005, in Decree No. 5,5631. Inspired by the French Innovation Law2 and the American Bayh-Dole Act, Law No. 10,773/2004 represents the legal benchmark for innovation in Brazil. Structured in seven chapters, four of which are aimed at stimulating innovation activity in different spheres3, the Innovation Law can be defined as a juridical-institutional framework aimed at strengthening the areas of research and knowledge production in Brazil, in particular, the promotion of cooperative environments for scientific, technological and innovation production in the country (JÚNIOR et al., 2016; RAUEN, 2016).

The Innovation Law seeks to stimulate innovation activity within the Instituições Científica, Tecnológica e de Inovação (ICT)4 [Scientific, Technological and Innovation Institutions], as well as in the business sector. Among the topics covered by the Innovation Law, great importance is given to the establishment of incentive mechanisms for ICT - company interaction and the strengthening of intermediary agents of this relationship, such as support institutions and Núcleos de Inovação Tecnológica (NIT) [Technological Innovation Centers]. Some highlights of the law are summarized below. (BRASIL, 2004, 2005; REPICT; REDETEC, 2006).

i. Strategic alliances and cooperative projects;
ii. Sharing of scientific and technological laboratories;
iii. Waiver of bidding for the licensing or technology transfer process;
iv. The researcher’s remuneration may occur in three ways: a research fellowship to stimulate innovation, participation in the remuneration of those service activities and economic gains resulting from exploitation of creation protected by intellectual property rights;
v. The researcher’s license with regard to the incorporation of companies;
vi. The law regulates the role of the Support Foundation by allocating a percentage of the total amount of financial resources for the execution of R&D projects, aiming to cover operational and administrative expenses incurred in the execution of agreements, covenants and contracts;
vii. It makes mandatory the Núcleo de Inovação Tecnológica (NIT) [Technological Innovation Center], structure instituted by one or more ICT, with the purpose of institutional innovation policy management of the institution. The NIT has responsibility for the results of economic exploitation resulting from intellectual property used, the use of public resources or infrastructure financed by public resources;
viii. The granting of tax incentives establishes the public subsidy of up to 50% of the expenses of companies with the remuneration of researchers, masters, and doctors and stimulates the companies to contract and to use the partnerships of small companies, institutions, and independent researcher.

The result of national policies to encourage innovation is more evident when the evolution of patent applications at Instituto Nacional da Propriedade Industrial (INPI) [National Institute of Industrial Property] is observed (Figure 2). As the discussion of the Innovation Law began in 1999 and it came into force in December 2004, it is believed that this legislation played a role in highlighting the IP theme and thereby boosting access to the patent system by reflecting in the progressive growth of patent applications as shown in the graph from 2005 (MARQUES, 2016).

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1 Law No. 10,973 of December 2, 2004 provides incentives for innovation, scientific and technological research in the productive environment, and provides other measures. (BRASIL, 2005)
2 Loi no 82-610 du 15 juillet 1982 d’orientation et de programmation pour la recherche et le développement technologique de la France.
3 Chapter II – from the encouragement to the construction of specialized and cooperative innovation environments; Chapter III – from the encouragement to the participation of ICTs in the innovation process; Chapter IV – from the encouragement to the innovation in companies; Chapter V - Encouraging the Independent Inventor. (BRASIL, 2004)
4 Organ or entity of the direct or indirect public administration or legal entity governed by private non-profit organization legally incorporated under the Brazilian laws, with headquarters and forum in the Country, that includes in its institutional mission or its social or statutory goal the basic or applied research of a scientific or technological nature or the development of new products, services or processes. (BRASIL, 2016)
Although Law 10,974/2004 brought advances in innovation processes in Brazil, after more than a decade of its effectiveness, it was evident that some reformulations were necessary with the purpose of reducing legal and bureaucratic obstacles and give greater flexibility to institutions active in this system. After a process of about five years of discussions between players of the national innovation system, within the ambit of the Science and Technology Commissions from the Chamber of Deputies and the Senate Chamber, whose starting point was recognition and the need to change points in the Innovation Law and in nine other laws related to the theme, the new legal mark for innovation, known as the Science, Technology and Innovation (ST&I) Code, Law No. 13,243/2016, was approved on January 11th, 2016 (RAUEN, 2016).

The new legal benchmark of ST&I was created by prioritizing the development of three main axes: the integration of private companies into the public research system; the simplification of administrative, personnel and financial processes in public research institutions; and the fostering decentralization of ST&I sectors development of in States and Municipalities (JÚNIOR et al., 2016). The new law advances in several points, among which stand out:

i. Formalization of national private Instituições de Ciência e Tecnologia (ICT) [National Science and Technology Institution] (non-profit private entities) as an object of the law. The new legal benchmark has changed the concept of ICT, also integrating "the non-profit private legal entity and including in its institutional mission or its social or statutory objective the basic or applied research of a scientific or technological nature or the development of new products, services or processes" (BRASIL, 2016; RAUEN, 2016);

ii. Expand the role of NITs, including the possibility that support foundations may be NITs of ICT (RAUEN, 2016);

iii. Decrease in some of the barriers to importing R&D inputs (RAUEN, 2016);

iv. Formalization of incentive fellowship to the innovation activity (RAUEN, 2016).

Pinheiro-Machado e Freitas (2016) presents a summary (Table 1) of other national public policies that were instruments for the promotion of technological development in the country. All of these policies bring the issue of intellectual protection into the picture, making clear the importance of the strategic use of IP as a necessary condition for obtaining intellectual property rights.

It is also important to highlight the activities that INPI has been taking to facilitate access to the IP system. For example, the Institute applies discounts of up to 60% on the values of services provided by the Institute for natural people; micro-enterprises, small businesses and cooperatives; research and non-profit institutions (INPI, 2017).

Another example is the pilot project “MPE Patents”, launched on February 17, 2016, which will allow the application of prioritization of the examination of patent applications filed by micro-enterprises and Brazilian small companies. The INPI establishes phase II of the Project through INPI Resolution PR No. 181, on February 21st, 2017, published in RPI 2408, dated on March 1st, 2017. The resolution prepared for this phase of the MPE Patent Pilot Project brings some modifications, where the following can be underlined: application exclusively by electronic form; exclusion of patent applications examined by technical divisions with a high number of priority examination requirements in relation to their decisions, in particular, Mechanical Engineering; participation of up to 150 patent applications (INPI, 2016b).

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8 The new Legal Framework of ST&I amends the Law No. 10,973 (12/2/2004), Law No. 6,815 (08/19/1980), Law No. 8,666 (06/21/1993), Law No. 12,462 (08/4/2011), Law No. 8,745 (12/09/1993), Law No. 8,958 (12/20/1994), Law No. 8,010 (03/29/1990), Law No. 8,032 (04/12/1990), and Law No. 12,772 (12/28/2012), under Constitutional Amendment No. 85 (02/26/2015). (BRASIL, 2016)

9 Brazil’s natural and physical person that hold no corporate interest in the company that belong to the item being registered or deposited in INPI. (INPI, 2017)
CONCLUSIONS

The patent is a property title that allows the temporary exclusivity of exploitation and commercialization. By taking into consideration the growth of patent application number in the world, the patent system has been given increasing importance over the years. One of the factors identified as motivating this increase is the government’s policies to encourage patenting.

The article analysis of government policies and programs to encourage patenting indicates that there was a worldwide effort for actions that mainly attracted national science and technology institutions to use the system of intellectual protection by patents, especially with commercial purposes.

For instance, one of the main provisions of the United States Patent and Trademark Amendment Act Bayh-Dole encourages universities to promote, for commercial purposes, the use of inventions arising from federal funding.

In Germany, the employer invention law has been amended in order to assign property rights of university inventions to the University with the intention of increasing commercial exploitation of the patent.

In Brazil, the Innovation Law of 2004 has a whole chapter dedicated to encouraging the ICTs participation in the innovation process. In addition, one of the highlights of the Law involves the waiver of bidding for the licensing or technology transfer process.

Hence, it is clear that some of these incentive policies and actions had as their main objective to encourage national depositors to interact with companies and exploit the commercial value of the patent.

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Table 1 - Public policies for the purpose of technological development in Brazil.

| Year | Instrument | Goal |
|------|------------|------|
| 2004 | Política Industrial, Tecnológica e de Comércio Exterior (PICTCE) [Industrial, Technological and Foreign Trade Policy] | Long-term policy directed toward the future based on an articulated set of measures to strengthen and expand the industrial base by improving innovative capacity, to increase economic efficiency, development, and diffusion of competitive technologies. This policy was the boost to reinsat the INP in the national scenario, emphasizing its importance in the innovation and technological development scenario. |
| 2004 | Technological Innovation Law No. 10,973, regulated by Decree No. 5563/05 | It established mechanisms of interaction between public and private with a view to technological development and technology transfer for companies, besides establishing in ICT the NTI to ensure institutional policy to encouraging protection of creations and technology transfer. |
| 2005 | Law of Good No. 11,196 | It consolidated the tax incentives for legal person automatically, provided it conducts R&D activity and makes income declaration through the real profit regime, among other aspects. |
| 2007-2010 | Plano de Aceleração do Crescimento da Ciência, Tecnologia e Inovação (PACTI) [Growth Acceleration Plan for Science, Technology and Innovation] | Plan coordinated by the Ministry of Science, Technology, and Innovation (MSTI) with the objective of continuing the development progress and articulating policies and programs for the consolidation of the country’s technological development. |
| 2008-2011 | Política de Desenvolvimento Productivo (PDP) [Productive Development Policy] | It expanded the scope of PICTCE with the objective of giving sustainability to economic growth and increasing R&D investments, to expand supply capacity in the country, preserve the balance of payments, increase innovation capacity and strengthen micro and small enterprises. |
| 2011-2014 | Plano Brasil Motor (PBM) [Greater Brazil Plan] | The objective was to increase the competitiveness of national industry by encouraging innovation and adding value through a set of measures to stimulate investment and innovation, support for foreign trade, defense of domestic industry and the internal market. |
| 2012-2015 | Estratégia Nacional para Ciência, Tecnologia e Inovação (ENCTI) [National Strategy for Science, Technology and Innovation] | It highlighted the importance of ST&I as a structuring axis of development, continuing the advances obtained in the PACTI, and ratifying the role of innovation for sustainable development, with emphasis on the generation and appropriation of scientific and technological knowledge. |
| 2016 | New Legal Benchmark of ST&I Law No. 13,243 | It stimulates the scientific development, research, scientific-technological training and innovation, changing the following Laws: 10,973/2004 (Innovation Law), 6,815/1980 (Foreigner Statute), 8,666/1993 (Bidding Law), 12,462/2011 (Differiented Regime of Contracting), 8,745/1993 (Temporary Signings), 8,958/1994 (Law on Foundations of Support), 8,010/1990 (Import Law), 8,032/1990 (Import Tax Reduction Law) and 12,772/2012 (Pou of Careers and Positions of Federal Magistrature), under the terms of Constitutional Amendment No. 55/2015. |
| 2016-2019 | Estratégia Nacional para Ciência, Tecnologia e Inovação (ENCTI) [National Strategy for Science, Technology and Innovation] | It establishes as main axes: promotion of scientific and technological research; modernization and expansion of the ST&I infrastructure with increased funding for the sector; training, attraction and human resource allocation; and promotion of technological innovation in companies. The objective is to improve institutional conditions to raise productivity through innovation; reducing regional asymmetries; developing innovative solutions; and strengthen the bases for promoting sustainable development. |

Source: Pinto-Neto Machado e Freitas, 2016
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REFERENCES

AUTM. Bayh-DoleAct. Disponível em: <https://www.autm.net/advocacy-topics/government-issues/bayh-dole-act/>. Acesso em: 30 set. 2017.

BRASIL. LEI N°.279. Regula direitos e obrigações relativos à propriedade industrial. 14 maio 1996.

BRASIL. 10973. Lei nº 10.973, de 2 de Dezembro de 2004. 2 dez. 2004.

BRASIL. DECRETO Nº 5.563, DE 11 DE OUTUBRO DE 2005. 2005.

BRASIL. LEI N° 13.243, DE 11 DE JANEIRO DE 2016. 2016.

CHINA IPR. China toProvide Financial Incentives For Filing PatentApplicationsAbroadChina IPR - IntellectualPropertyDevelopments in China. 12 jun. 2012. Disponível em: <https://chinaipr.com/2012/06/12/china-to-provide-financial-incentives-for-filing-patent-applications-abroad/>. Acesso em: 30 set. 2017

CZARNITZKI, D. et al. The influenceofpatentownershiprightsonacademicinvention: Evidencefrom a natural experiment. 2014.

DORNBUSCH, F.; NEUHÄUSLER, P. AcademicPatents in Germany. [s.l.] FraunhoferInstitute, 2015. Disponível em: <http://www.e-fi.de/fileadmin/Innovationsstudien_2015/StuDIS_06_2015.pdf>. Acesso em: 30 set. 2017.

INPI. Diretrizes de Exame de Pedidos de Patente - Bloco I. [s.l.] INSTITUTO NACIONAL DA PROPRIEDADE INDUSTRIAL, MINISTÉRIO DO DESENVOLVIMENTO, INDÚSTRIA E COMÉRCIO EXTERIOR, 2013. Disponível em: <http://www.inpi.gov.br/menu-servicos/patente/consultas-publicas/arquivos/diretriz_de_exame_de_patente_retificado_original_1.pdf>. Acesso em: 8 set. 2017.

INPI. Anuário Estatístico de Propriedade Industrial: 2000-2012. Disponível em: <http://www.inpi.gov.br/sobre/estatisticas/anuario-estatistico-de-propriedade-industrial-2000-2012-patente1>. Acesso em: 3 out. 2017.

INPI. Micro e pequenas empresas podem pedir exame prioritário de patente. Disponível em: <http://www.inpi.gov.br/noticias/micro-e-pequenas-empresas-podem-pedir-exame-prioritario-de-patente>. Acesso em: 2 out. 2017b.

INPI. Tabela de retribuições de serviços de patentes. Disponível em: <http://www.inpi.gov.br/menu-servicos/patente/arquivos/tabela-de-retribuicao-de-servicos-de-patentes-inpi-20170606.pdf>. Acesso em: 13 ago. 2017.

JÚNIOR, S. S. G. et al. PANORAMA DA TRANSFERÊNCIA DE TECNOLOGIA NO BRASIL. VII InternationalSymposium of Technology Innovation. Anais... In: INTERNATIONAL SYMPOSIUM OF TECHNOLOGY INNOVATION (ISTI). Sergipe: 2016.Disponível em: <http://www.api.org.br/conferences/index.php/ISTI2016/ISTI2016/paper/viewFile/62/40>. Acesso em: 14 set. 2017

LEI, Z.; SUN, Z.; WRIGHT, B. Patentsubsidyandpatentfiling in China. FungInstitute, p. 37, 2013.

LIMA, N. et al. A revisão da Lei de patentes : inovação em prol da competitividade nacional. Brasília - DF: Câmara dos Deputados, Centro de Estudos e Debates Estratégicos, 2013.

MARQUES, F. Protagonismo incomum. Revista Pesquisa Fapesp, n. 249, 2016.

MUELLER, S. P. M.; PERUCCHI, V. Universidades e a produção de patentes: tópicos de interesse para o estudioso da informação tecnológica. Perspectivas em Ciência da Informação, v. 19, n. 2, p. 15–36, 25 jun. 2014.

NATIONAL RESEARCH COUNCIL. A Patent System for the 21st Century. Washington, D.C.: National Academies Press, 2004.

OECD. Patents, Innovation and Economic Performance: OECD ConferenceProceedings. [s.l.] OECD Publishing, 2004.

PINHEIRO-MACHADO, R.; FREITAS, K. 20 anos da Lei de Propriedade Industrial do Brasil: ações do INPI para mudança de cenárioRevista Inovação, 23 set. 2016. Disponível em: <http://www.inovacao.unicamp.br/artigo/20-anos-da-lei-de-propriedade-industrial-do-brasil-acoes-do-inpi-para-mudanca-de-cenario/>. Acesso em: 8 set. 2017

RAUEN, C. V. O Novo marco legal da inovação no Brasil: o que muda na relação ICT-empresa? http://www.ipea.gov.br/artigo/20-anos-da-lei-de-propriedade-industrial-do-brasil-acao-do-inpi-para-mudanca-de-cenario.pdf. Acesso em: 2 out. 2017b.

REPICT; REDETEC. Lei de Inovação na prática. Rio de Janeiro: Rede Temática de Propriedade Intelectual, Cooperação, Negociação e Comercialização de Tecnologia (REPICT) / Rede de Tecnologia do Rio de Janeiro.
GOVERNMENTAL POLICIES TO ENCOURAGE...

COEHLLO KM, BOSCHIVER S, COUTO MAPG. (REDETEC), 2006. Disponível em: <http://www.redetec.org.br/wp-content/uploads/2015/02/doc_executivo_workshop_lei_inovacao_pratica.doc>. Acesso em: 1 out. 2017.

SNEDDON, M. A Look At The Huge Upswing In China Patent Filings Intellectual Property Watch, 22 abr. 2015. Disponível em: <https://www.ip-watch.org/2015/04/22/a-look-at-the-huge-upswing-in-china-patent-filings/>. Acesso em: 14 set. 2017.

THOMAS, J. R. March-In Rights Under the Bayh-Dole Act. [s.l.] Congressional Research Service, 2016. Disponível em: <https://fas.org/sgp/crs/misc/R44597.pdf>. Acesso em: 30 set. 2017.

TORRISI, S. et al. Used, blocking and sleeping patents: Empirical evidence from a large-scale inventor survey. Research Policy, v. 45, n. 7, p. 1374–1385, 1 set. 2016.

VAN NORMAN, G. A.; EISENKOT, R. Technology Transfer: From the Research Bench to Commercialization. JACC: Basic to Translational Science, v. 2, n. 1, p. 85–97, fev. 2017.

WIPO. Global Patent Applications Rose to 2.9 Million in 2015 on Strong Growth From China; Demand Also Increased for Other Intellectual Property Rights. Disponível em: <https://pressroom/en/articles/2016/article_0017.html>. Acesso em: 18 jul. 2017.

WIPO. Patent Cooperation Treaty Yearly Review - 2017. [s.l: s.n.]. Disponível em: <https://publications/en/details.jsp>. Acesso em: 14 set. 2017.