

ISO56005 in the Brazilian patent office: modeling

ISO56005 no escritório patentário Brasileiro: modelação

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ABSTRACT: This study relates the chronology of INPI-BR services as an International Research Authority with the deadlines for delivering ISA forms to WIPO, proposing the complementation of ISO9001 through ISO56005 as an alternative to increase the quality of its services. Thus, exploratory case studies of revisions of ISA requests are carried out, considering the INPI-BR implementation phases and the response time that it met the quality needs imposed by WIPO, such as the maximum period of 3 months for the delivery of the international research report, as INPI-BR has not been able to meet 100% of this deadline for all PCT requests. In practice, this article is part of the project already started to increase the quality of INPI-BR's ISA/IPEA services using ISO9001, adding the tools of ISO56005, focusing on full compliance with the deadline. The analyzes carried out point to the ISA authority in Chile as a possible collaborator of INPI-BR activities as an ISA/IPEA office, due to its current partnership with Brazil and because it is already meeting the requirements of WIPO.

Keywords: International Searching Authority. Quality Management System. Innovation.

RESUMO: Este trabalho relaciona a cronologia dos serviços do INPI-BR como Autoridade de Pesquisa Internacional com os prazos de entrega dos formulários ISA à OMPI, propondo a complementação da ISO9001 através da ISO56005 como alternativa para o aumento da qualidade de seus serviços. Assim, são realizados estudos de caso exploratórios das revisões dos pedidos ISA considerando as fases de implementações do INPI-BR e o tempo de resposta que este atendeu às necessidades de qualidade impostas pela OMPI, tais como o prazo máximo de 3 meses para a entrega do relatório de pesquisa internacional, já que o INPI-BR não tem conseguido atender a 100% deste prazo para todos os pedidos PCT. Na prática, este artigo parte do projeto já iniciado para o aumento da qualidade dos serviços ISA/IPEA do INPI-BR através da utilização da ISO9001, adicionando as ferramentas da ISO56005, com foco no atendimento integral referido do prazo. As análises realizadas apontam para a autoridade ISA do Chile como possível colaborador das atividades do INPI-BR como escritório ISA/IPEA, devido a sua atual parceria com o Brasil e por já estar atendendo às exigências da OMPI.

Palavras-chave: Autoridade de Pesquisa Internacional. Sistema de Gestão da Qualidade. Inovação.

INTRODUCTION

The ISO56000 is a family of technical standards focused on the management of innovation-related activities, which can have a significant impact on a company's innovative potential. This standardization allows the delivery of tools, techniques and approaches that promote innovation and increase organizational capabilities, leading to competitive advantages in various sectors and sizes of companies (SILVA, 2020, p.1). Quality management systems have been used around the world for many years to develop technological innovation, including in managing the protection of inventions by the World Intellectual Property Organization since 2007 regarding the Patent Cooperation Treaty (WIPO, 2022e).

There are two ways to request the protection of inventions abroad and the PCT is the one that deserves to be highlighted in view of the numerous advantages that this system offers in relation to the CUP (Paris Union Convention). According to WIPO, the PCT is an international treaty that enables patent protection for an invention simultaneously and optionally in many countries whose patent protection may occur through a single filing instead of filing several national or regional patent applications separately (WIPO, 2022a).

The advantages of the PCT System are not limited to the facility of international patent registration, but also include the possibility of correcting errors and improving the application before it is published, thus increasing the chances of effective protection of intellectual property rights.

The PCT System therefore has several operational phases, each of which is developed by an "International Authority" qualified to play a certain role within the PCT system. Nevertheless, according to WIPO (2022b), the Authority responsible for the international search and for the first assessment of the patentability of a patent application is called the ISA (International Searching Authority) and the Authority in international preliminary examination, which comes to be the second patentability assessment, it is called IPEA (International Preliminary Examining Authorities). For those applicants for patent applications who wish to choose the INPI of Brazil (INPI-BR) as the ISA/IPEA when filing the said application, the Agency is thus responsible for researching their application, preparing, and forwarding the Research Report and Written Opinion to the applicant. The INPI-BR has in its organizational chart a specific sector responsible for reviewing the examinations of the ISA and IPEA phases within the INPI.

According to the PCT reception section (2021), the INPI-BR has received PCT applications as a receiving office since 1978, and therefore, the INPI-BR has been acting as ISA/IPEA officially since 2009. This was only possible when the PCT system began to accept Portuguese as a deposit language, which only occurred in 2007 (SRPCT, 2021).

According to the activity report in 2018 published by the Instituto Nacional da Propriedade Industrial (2019), 2018 was mainly dedicated to the organization and establishment of the bases for the implementation of the Quality Management System (QMS) of the INPI-BR. Thus, the INPI-BR has been working on the development of standardization of PCT forms through work instructions based on ISO9001 that, despite not yet having the aforementioned certification, have the potential to streamline the processes of receiving, searching and examining patent applications filed via PCT, both in the Brazilian receiving office and in the ISA and IPEA phases, improving, in theory, the quality of the entire procedure (BRASIL, 2018).

Based on empirical evidence and some theoretical arguments, certain questions that are not easily solved are appropriate. For example, would all the effort undertaken by the INPI-BR to meet ISO9001 be generating effective results, or will such procedures generate results only in the medium and long term? Is ISO56000, and one or the other of the members of the ISO family, a solution that could increase the speed of the quality management system in ISA/IPEA exams?

Thus, the object chosen as a case study presents a structure based on ISO9001 certification, which qualifies the INPI-BR for this type of analysis. The viability of the international sector of the PCT at the INPI-BR is justified since the organization presents transparency in its specific information about the quality practices adopted by the Institution, in addition to being ready to support this work. Notwithstanding the choices as quality management made by the INPI-BR, it is necessary a referential support that can serve as a performance comparison with another industrial property (IP) office and that serves as a reference for the decisions taken by the Autarchy to improve its practices regarding the PCT system.

The previous justifications are strengthened by the fact that, in general, the patterns have a positive impact on society. However, because there are innumerable topics and types of patterns, it is difficult to measure their respective impacts. According to the survey of some works published by the international non-governmental and independent organization for standardization (ISO, 2021), in general, standards contribute to the economic growth of a country. In this same work, the correction of the GDP of some countries with the number of standards adopted by them is presented, however, without presenting the correlation between such countries and the increase in the quality of the services provided by the respective regional offices in an eventual expansion of their patent bases, nor do they present any study on any country in South America.

This paper seeks evidence that attests to the possibility of increasing the performance of the services provided to users of the IP system in Brazil through the combination of two ISO standards: ISO9001, which deals with the requirements for the quality management system of an organization; and ISO56005, which deals with the foundation of concepts and implementation of the principles of innovation management in a company, with the premise that the latter would reinforce the quality of the work of the PCT in the INPI-BR. This performance is compared to another newly created office in South America such as ISA, in this case, Chile. It should be noted that the choice of ISO56005 is embodied in the fact that for a company to seek the management of innovation it must necessarily be conditioned to a quality system which, as previously evidenced, the INPI-BR is already qualifying.

After an introduction, this article is divided into five sections. The second section addresses the methodology applied in this work. Section 3 presents the review of the state of the art in Quality Management System. Section 4 describes the development of case studies and the approach of ISO56005 as support for the current system and, finally, in the last section is developed the analysis and discussion of the results found.

In short, this paper proposes to present the evolutions of the review system of the international sector of the PCT at the INPI-BR relating the chronology of the activities inherent to the quality of the services of the INPI-BR with the deadlines for delivery of the ISA forms to WIPO, in addition to invoking ISO56005 as an alternative to increase the performance of the activities of the international sector of the PCT in the INPI-BR. Thus, exploratory case studies of the reviews of ISA applications are carried out considering the

phases of implementations of the INPI-BR and the response time that the INPI-BR as ISA met the needs imposed by WIPO.

Before the continuation of the analyses and discussions at the heart of this work, a review of the literature around quality and its importance to the PCT system will be carried out in order to justify the methodology and the arguments in sequence.

LITERATURE REVIEW

The Quality Management System and the ISO Standards

According to Mello (2012), a quality management system refers to everything an organization does to manage its processes or activities. Depending on the size of a given organization, there may be documented procedures, instructions, forms, or records that contribute to ensuring that anyone within that organization performs their work with a minimum of order and in the way the organization conducts its business. By acting in this way, the organization itself tries to ensure that time, money, and other resources are utilized efficiently.

Also, according to Mello (2012), there are two standards of the International Organization for Standardization (ISO¹), an organization that develops and publishes international standards, known as generic standards of management systems: ISO9000 and ISO14000. More specifically, ISO9000 is a set of international standards and guidelines for quality management systems, and since its first publication in 1987, it has become the basis for the establishment of quality management systems for all large organizations, in addition to smaller ones.

Like ISO9000, ISO14000 is also widely discussed in the environmental management literature. Some established authors who discuss ISO14000 in their works are: Elkington e Potoski (1997), Freeman et al. (2010) e Prakash (2000), among others. His works continue to be influential and relevant to professionals in the field of environmental management to this day. However, as this work is not related to the theme of environmental management, something that can and should be discussed in future work, it will be centered on ISO9000.

Since the beginning of the creation of the concept of quality per se, numerous authors have presented increasingly complex structural concepts on this topic, such as Juran, Gryna e Bingham (1974) and Juran, Godfrey e Blanton (1999). Considered one of the fathers of quality management, Juran discussed the importance of quality management in his books, as well as defending the importance of ISO9000 certification as a tool to improve quality.

Another established author and pioneer on the topic of quality management, as well as author of influential books, is Crosby, P. B. He defended the idea that quality is the responsibility of everyone in the organization and supported ISO9000 certification as a means of improving quality (CROSBY, 1980; CROSBY, 1986).

Nowadays the ISO9000 family of standards is widely used by companies to ensure the quality of their products and services and minimize the environmental impact of their activities (CHERNIKOVA et al., 2020; RODRIGUEZ-ARNALDO; MARTINEZ-LORENTE, 2020). However, intellectual property also plays a key role in the competitiveness and sustainability of companies. In this context, discussing the application of the ISO9000

¹ ISO: <https://www.iso.org/home.html>, accessed 11/19/2022

standard in the context of intellectual property can bring important reflections on how companies can protect and value their intangible assets.

IP is a complex field involving various types of goods, such as patents, trademarks, and industrial designs. To effectively manage these assets, the application of the ISO9000 family of standards can be an efficient tool. ISO9001 can be adapted for the management of intellectual property, defining policies and procedures for the protection of confidential information and the management of risks related to intellectual property. In addition, the application of ISO standards can contribute to obtaining certifications that attest to compliance with international quality and sustainability standards, which can increase the credibility and competitiveness of companies in the market.

Few of the aforesaid authors have managed to bridge the gap between Intellectual Property and the ISO9000 standard. A relevant author in ISO9000 who addresses the issue of the importance of IP is David Hoyle. In his book (HOYLE, 2018) the importance of the protection of industrial and intellectual property as an integral part of the quality management system is addressed. Interestingly, it is possible to find examples of the application of ISO standards in patent filings and other registrations related to IP rights (IPR), as can be seen in the work developed by Başaran (2016), who attests to the effects of the use of various ISO standards in IPRs in the Turkish office between 2007 and 2013. In his conclusion, Başaran states that the adoption of quality system standards would be directly related to the national innovation of that country.

Management Standards for Public Sector Innovation

For Osborne and Brown (2011), the 1980s were the milestone of innovation in discussions about the public sector, since the experts of the time articulated Porter's (1985) model of "competitive advantage" as a central role in improving the delivery of public services.

More recently, according to the Oslo Manual, innovation is a key issue for improving the living standards of society (OECD, 2018). According to the work developed by ENAP, there are numerous definitions coined by different authors for the term innovation, however, the most recent, is precisely a translation of a text of the Oslo Manual:²

An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or used by the unit (process) (SANO, 2020, p.13).

A family of ISO standards recently created and that since 2013 has been elaborated by professionals from more than sixty countries to create a set of international standards in innovation management systems and their processes, is the family of ISO 56000 Standards (GOMES, 2021).

According to ISO (2020a), the ISO 56000 family of standards is applicable: (a) all types of organizations, regardless of their size, sector or type; (b) all types of innovation, e.g. product, service, process, models, methods of both radical and incremental innovation;

² ENAP: Escola Nacional de Administração Pública. Available at: <https://www.enap.gov.br/pt/>. Accessed on: 11/19/2022.

and (c) all kinds of ways to innovate, for example, internal or open, technology-driven, for the market or even for the user.

Gomes (2021) also gathered in a single table the status at the time for each member of the family of ISO 56000 standards of which, as follows, a new updated picture of this situation is being presented.

Table 1 previously presented has two clearly distinct areas: the one whose standards are still in the development phase (currently the ISO/AWI 56001 standards; ISO/AWI 56007; ISO/AWI 56008; and the ISO/WD TS 56010) and the darkest area containing the standards already published: ISO 56000:2020; ISO 56002:2019; ISO 56003:2019; ISO/TR 56004:2019; ISO/FDIS 56005; and ISO/DIS 56006. Of the latter, the only one that deals with the management of intellectual property is the ISO/FDIS 56005 standard.

Table 1. ISO 56000 family of standards

Norm	Status
ISO 56000:2020 — Innovation management — Fundamentals and vocabulary	Published on 02/2020.
ISO 56002:2019 — Innovation management — Innovation management system — Guidance	Published on 07/2019.
ISO 56003:2019 — Innovation management — Tools and methods for innovation partnership — Guidance	Published on 02/2019.
ISO/TR 56004:2019 — Innovation Management Assessment — Guidance	Published on 02/2019.
ISO/FDIS 56005 — Innovation management — Tools and methods for intellectual property management — Guidance	Published 11/2020.
ISO/DIS 56006 — Innovation management — Tools and methods for strategic intelligence management — Guidance	Published 11/2021.
ISO/AWI 56001 — Innovation management — Innovation management system — Requirements	In preparation.
ISO/AWI 56007 — Innovation management - Idea management	In preparation.
ISO/AWI 56008 — Innovation management — tools and methods for innovation operation measurements — Guidance	In preparation.
ISO/WD TS 56010 — Innovation management - Illustrative examples of ISO 56000	In preparation.

Source: own elaboration based on Table 2.3 of Gomes (2021)

The ISO/FDIS 56005 (or simply ISO56005) standard concerns one of the 5 (five) standards of the ISO 56000 family that was specifically designed to serve as a tool and/or method for the user of the intellectual property system (the others are the standards: ISO 56003:2019; ISO/DIS 56006; ISO/AWI 56007; and ISO/AWI 56008). According to the standard itself, each organization involved with innovation initiatives approaches intellectual property in one way or another, because intellectual property is intrinsically linked to innovation (ISO, 2020a).

The INPI-BR, as a public agency, seeks to adapt to a quality standard in the provision of its services, establishing a commitment to its customers, through its own quality policy (INPI, 2022), whose principles listed were: Offer services efficiently, in an appropriate time and in accordance with the standards established by current legislation and agreements and treaties International; Provide systems that allow you to maintain a

continuous and efficient contact with its users, analyzing their expectations, evaluating their level of perception and dealing with any complaints received to ensure maximum satisfaction; among others.

In the next section of this work is presented an evaluation of the PCT system of the INPI-BR within the context applied by ISO9001, comparing it to the development of the industrial property office in Chile since its recent origin. Next, it will be proposed the application of the guidelines of ISO56005 as an alternative to increase the performance of these systems.

PROCEDURES

This research is a qualitative and quantitative case study of a descriptive nature that illustrates the operational capabilities that support the implementation and maintenance of ISO56005. Its development takes place through the analysis of the results found of the PCTs applications in the ISA phases since 2009, when the Agency began to act as ISA/IPEA office, and the impact of the same according to the implementation of the quality system in the INPI-BR, from 2018.

The case study adopted in this work has an exploratory nature that, according to Yin (2003), is a usual research strategy that contributes to the understanding of individual, organizational, social and political phenomena, usually complex, which allows an investigation to preserve the holistic and significant characteristics of real-life events. In particular, the choice of the INPI-BR as the center of this study assumes that there are significant advances in the application of the standardization of its activities, especially in the PCT system, which became the first sector of the Patent Directorate of the INPI-BR chosen to use the application of an ISO standard to increase the quality of its services. For this, WIPO reports were analyzed as a source of evidence for documentary research in institutional material, as well as unstructured interviews with those responsible for the implementation of the INPI-BR Quality Management System.

Thus, the data are presented for comparison between the activities carried out as ISA/IPEA before and after 2019, considering this the date of effective maturation of the use of the ISO9001 standard in the work of the PCT by the INPI-BR. In possession of these data, conjectures are made about the possibility of using the ISO56005 standard to enable a constant innovation around PCT. In practice, exploratory case studies of the reviews of ISA applications are carried out, considering the phases of implementations of the INPI and the response time that the INPI, as ISA, met the deadline given by WIPO. These results are compared with the performance of the IP office in Chile seeking evidence that attests to the advantageousness of combining ISO56005 with ISO9001.

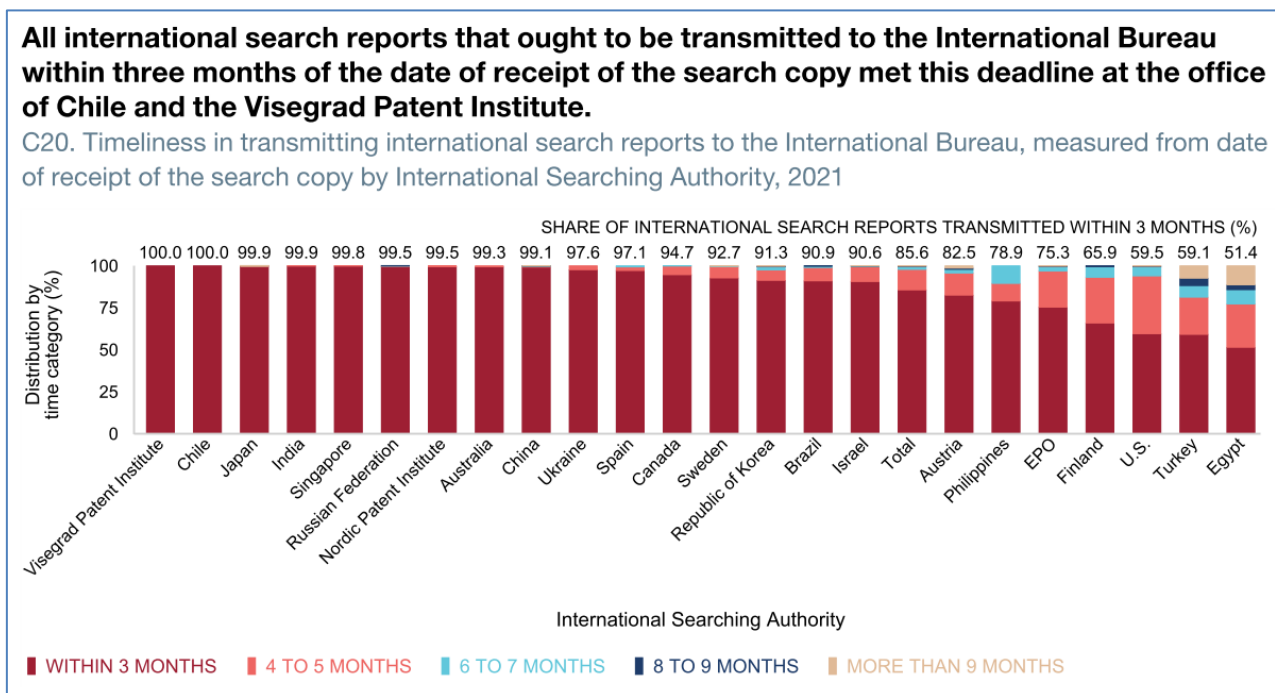
RESULTS AND DISCUSSION

In this section, theoretical/practical case studies were developed where it is necessary, initially, to define the problem in question. Thus, in subsection 4.1 the questions/problems addressed in this section were raised and how the INPI-BR has advanced with its quality management system. In the following subsection, proposals are being presented to add to this context some of the guidelines of ISO56005 in order to corroborate with the increase in the quality of the services of the Autarchy.

Case study 1: ISA INPI-BR with ISO9001 compared to ISA of Chile

According to Chapter 21 of Quality of the PCT Research and Preliminary Review Guide published by WIPO, ISA/IPEA offices make annual reports on the quality management systems they have implemented for their work as International Authorities, which are published annually by the IB (*International Bureau*) on the WIPO website (WIPO, 2022c), with graphs and tables that make it possible to compare the activity data of the ISA/IPEA offices, as shown in **Figure 1**.

Figure 1. Deadlines of the first 20 international search authorities who delivered their search reports to the IB in 2021



Source: WIPO, 2022c.

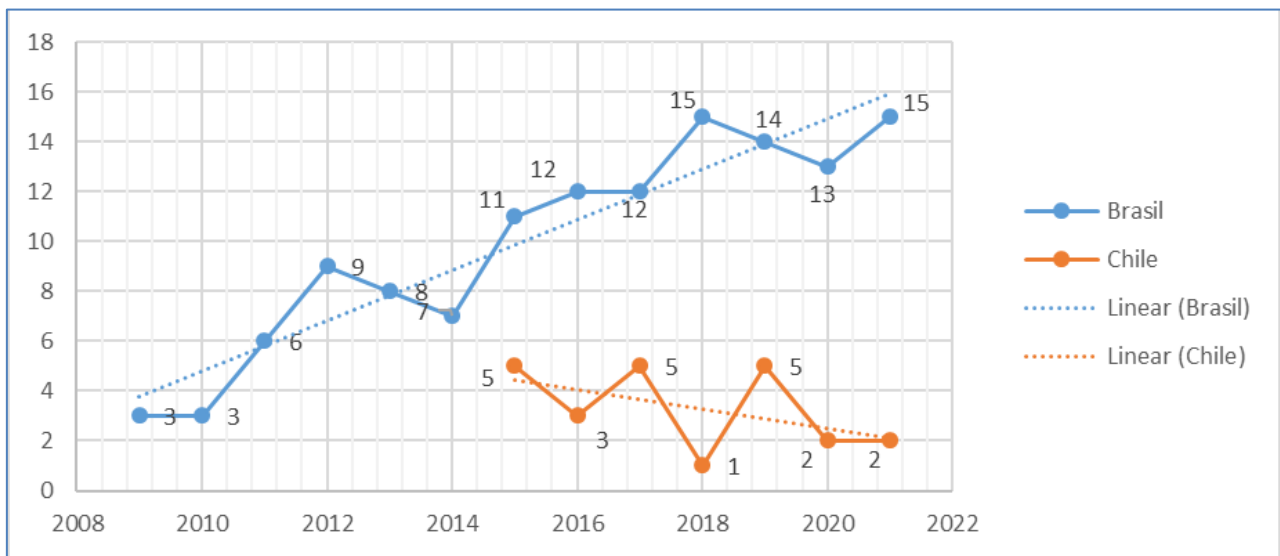
In the graph shown in **Figure 1**, where the maximum period of 3 months for the delivery of the *International Search Report* (ISR) is being considered, it is possible to verify a ranking of ISA offices considering as a premise 100% of attendance to the applicant within the stipulated period. Thus, the graph reveals the punctuality in the establishment of the ISR starting from the premise that the applicable period, according to Rule 42 of the PCT, is three months from the receipt of the research copy. For, according to the PCT Implementing Regulations, the ISA must prepare the international search report (ISR) within three months of receipt of a copy of the application, or nine months from the priority date (in some cases from the date of international filing), whichever expires later (WIPO, 2022g).

This criterion falls within the guidelines of Chapter 21 of Quality of the PCT Research and Preliminary Examination Guide mentioned above, more specifically, Article 21.17, of item 5 (*Quality Assurance*), which directs that each Authority has procedures related to the untimely issuance for its search and examination reports with the highest possible quality.

However, as shown by the aforesaid graph in **Figure 1**, it appears that only the Chile

office and the Visegrad Patent Office were able to deliver all their research reports within 3 months, with Brazil being the 15th place in the same ranking, only in 2021. The graph in **Figure 2** below historically depicts the two countries.

Figure 2. Ranking of punctuality in the transmission of ISRs to the IB measured from the date of receipt of the research copy of the ISAs in Chile and Brazil



Source: Authors, based on WIPO, 2010 to 2022c.

As can be seen in the graph in **Figure 2**, historically the INPI-BR has always been among the top 20 countries in the same ranking, as well as the ISA office in Chile. However, there is a trend of progressive increase of position in the WIPO ranking of the Brazilian authority, while Chile presents an opposite trend.

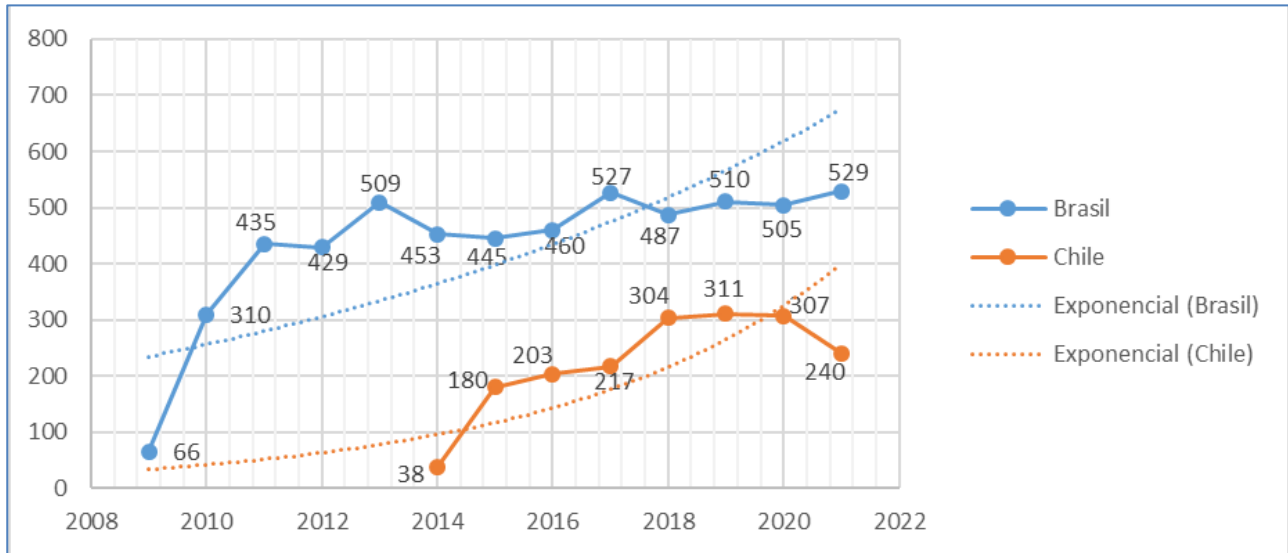
It is quite true that the graph in **Figure 2** does not show all the variables necessary to guide the logical reasoning that justifies the behavior of one authority or the other. Thus, it is necessary, for example, information such as: the number of requests that enter each office per year, the number of examiners trained in the PCT that each country has, among others. The graph in **Figure 3** below shows at least one of these variables.

The graph in **Figure 3** shows the number of ISRs delivered in each year by each ISA authority, in this case, from Brazil and Chile, since the formation of each. Comparing the number of each ISR delivered by each country, it is clear that Brazil stands out in proportions always higher than Chile. For example, the year 2021, being the year in which the two countries delivered the largest amount of ISRs to IB in the same year, Brazil issued more than 50% of ISRs (529 ISRs) than Chile (240 ISRs). Even when comparing the beginning of each country, Brazil still issued more than 40% of ISRs (66 ISRs in 2009) to IB than Chile (38 ISRs in 2014), configuring a Brazilian history always superior to ISR emissions compared to the Chilean authority.

Still, such information may be insufficient to characterize the quality of SRI production, since an even more in-depth study is necessary. However, when comparing each country individually, Brazil maintains an ever-increasing relationship regarding the deadline for transmission of ISRs forms, as shown in **Figure 2**. Which, strictly speaking, could be justified by the ever-increasing number of ISRs delivered, as shown in **Figure 3**. On the other hand,

the Chilean authority has an opposite behavior, because when the same logic of comparison between the two graphs is applied for Chile, while the number of ISRs grows annually, its position in the WIPO ranking has a downward trend, which can be confirmed by the exponential trend line that is found dotting for Chile in the graph in **Figure 2**. Such results may indicate, at least, a space for improvement in the behavior of the Brazilian authority.

Figure 3. Number of ISRs delivered annually by each ISA



Source: Authors, based on WIPO, 2010 to 2022c.

Case study 2: ISA INPI-BR with ISO9001 and ISO56005

According to the observations made in Section 3 and, considering all the effort that the INPI-BR has already made to improve the quality of its activities as an International Research Authority, as well as the need for greater efforts in the quality of services pointed out in subsection 4.1, a theoretical analysis on the possibility of using ISO56005 as a quality tool in the actions of INPI-BR as ISA follows.

From the point of view of a competition between the international authorities of the PCT, here being considered as "competition" only the comparison made according to the graphs of **Figures 2** and **3**, it may be interesting to question what would be the best strategy to be adopted by such authorities that meet the WIPO performance criteria. According to Nirgudka (2002, apud Porter, M. E. 1996), to realize a competitive strategy, it may be necessary to choose a different set of activities to deliver a unique combination of value. Thus, it is to be expected the combination of one or more group of technical standards when it comes to increasing the efficiency of services provided to the population in general.

The ISO56000 family of standards is being developed considering both the ISO9000 family and other families of standards, coming to complement the latter. Its structure, strategically created to be applied to any type of organization, regardless of its size or attribution, aims to increase the quality of organizations. It should be noted that each organization involved with innovation initiatives approaches intellectual property in one way or another, because intellectual property is intrinsically linked to innovation, as already mentioned earlier. When it comes to ISA authorities, nothing fairer than bringing innovation

to the house of innovation, because these authorities deal with this issue in their daily lives.

According to the ISO56005 standard, an organization can leverage Intellectual Property to achieve its business objectives and implement innovative initiatives for a range of purposes, including increasing its competitive advantage as well as enabling collaboration. This is because effective management of Intellectual Property allows an organization to optimize its Intellectual Property assets to achieve a wide range of objectives, which allows it to maximize the benefits associated with innovation, while managing uncertainty and minimizing related risks and costs. Intellectual Property management can enable collaboration with partners, competitors, and customers, which can generate improved innovation results. In short, the efficient management of Intellectual Property is fundamental to support the innovation process, is essential for the growth and protection of organizations and is their engine for competitiveness (ISO, 2022b).

In search of the strategies of ISO56005 that can guide the improvement of the management of the Intellectual Property assets of the INPI-BR, this work focused on the guidelines indicated by the referred standard that can support the role of Intellectual Property in the management of the innovation of the assets of the INPI-BR which, according to the standard itself, must be at strategic and operational levels, i.e. (ISO, 2022b): the creation of an Intellectual Property strategy to support innovation in an organization; the establishment of a systematic management of Intellectual Property in innovation processes; a the consistent application of Intellectual Property tools and methods to support the efficient management of IP.

To systematically establish the aforesaid precepts, ISO56005 explains that the organization should consider a global structure according to the following topics:

- An Intellectual Property management structure that allows the implementation of the activities of this type of management (Section 4 of ISO56005);
- An Intellectual Property strategy as an integral part of the organization's business and innovation strategies (Section 5 of ISO56005);
- A set of Intellectual Property management activities adapted to the innovation process, considering the change of context in different stages of innovation (Section 6 of ISO56005/ABNT NBR ISO56002);
- A set of Intellectual Property tools used to support IP management activities as Appendix A to Annex F of ISO 56005.

The various topics mentioned in the text are structured in different phases or stages. In this work the focus was on the macro-processes of "PI STRATEGY" and "PI MANAGEMENT IN THE INNOVATION PROCESS", as well as the consideration of Table A.2 of ISO56005, as will be presented later. Thus, considering all the points raised previously, a table was established with the two macro-processes mentioned above (Section 5 and 6 of ISO56005), and indications of the way in which each of the listed steps may or may not contribute to the INPI-BR.

Considering **Table 2** previously presented, the following comments are appropriate:

- **Critically analyze the Intellectual Property of third parties to assess risks and opportunities:** this is a step that can and should be considered by the INPI-BR, considering ISA authorities that are in better conditions. According to the first case study, the Chile office would be one such opportunity;

- **Identify potential partners or licensees and evaluate risks and opportunities:** similarly to the previous item, the Chile office also fits this condition, since it already has partnerships with the INPI-BR;
- **Negotiate with potential employees and licensors:** as in the previous item, the Chile office would fall under this condition as a collaborator;
- **Retain and maintain the documented information:** this is a step that is already underway by the INPI-BR, thanks to the advances in quality of services provided by the Agency with ISO9000, according to subsection 4.1 previously presented, as well as the guidelines of the PCT Examination Guide (§ 21.31 and § 21.32).
- **Critically analyze records of Intellectual Property, direction of technical innovation:** this is a step that can and should be considered as an option to guide the future actions of INPI-BR. In this case, as a "direction of technical innovation" are being considered the advances achieved by the INPI-BR with the QMS already implemented, as well as with the guidelines that are drawn up with ISO56005.

Complementing the guidelines, the example contained in Table A.2 (*Table A.2 — Example of record*) present in ISO56005 was also identified as a potential tool for recording activities that could add quality to the actions of the INPI-BR, in this case, collaboration and exchange of information with the International Research Authority of Chile. Thus, here is a suggested tool to assist in the recording of collaborative actions between such offices.

Table 2. Macro-processes of Sections 5 and 6 of ISO56005 and steps chosen

PI STRATEGY (Section 5 of ISO56005)	SITUATION OF THE INPI-BR	IMPLEMENTATION CAPABILITY
Critically analyze the Intellectual Property of third parties to assess risks and opportunities	Unidentified	Exists
Identify potential partners or licensees and assess risks and opportunities	Unidentified	Exists
Retain and maintain documented information	Situation in progress according to ISO9000	
PI MANAGEMENT IN THE INNOVATION PROCESS (Section 6 of ISO56005)	SITUATION FOR THE INPI-BR	IMPLEMENTATION POSSIBILITY
Negotiate with potential collaborators and licensors	Unidentified	Exists
PI MANAGEMENT IN THE INNOVATION PROCESS (Section 6 of ISO56005)	SITUATION FOR THE INPI-BR	IMPLEMENTATION POSSIBILITY
Critically analyze Intellectual Property records, technical innovation direction, etc., to identify innovation opportunities	Unidentified	Exists

Source: Authors, according to ISO 56005.

Table 3 presented is just one example of a tool that can serve as a parameter for recording actions between ISA offices. Logically, the identification of collaborative actions between ISA offices does not need to have a rigid format and can have the identification lines according to the need of each project. In addition, with the data in Table 2 a direct correlation can be drawn between ISO9001 and ISO56005, highlighting: a risk analysis; process management; the standardization of processes; document management; customer-

focused supplier management; as well as training and development.

Table 3. Identification of collaborative actions between ISA offices

IDENTIFICATION OF COLLABORATIVE ACTION	RECORDS
Background	ISA office name, telephone number(s), email address(es), date of action (meeting, or technical visit, etc.), physical address of the authority
Title	Project title (pilot or not)
Introduction	Brief introduction to purpose
Idealized procedures	Brief outline of the steps to be followed
Focal point(s) / project manager(s)	Name(s) of the person involved, telephone number(s), email address(es)
Observations	Record of observations and qualitative results

Source: own elaboration based on Table A.2 (*Table A.2 — Example of record*) present in ISO56005

CONCLUSIONS

All the analyses previously carried out for Chart 2 point to the ISA authority of Chile as a possible collaborator/partner in the advances in which the INPI-BR needs to have to at least decrease, or even eliminate, the trend of its progressive increase in position in the WIPO ranking cited with the discussion in Figure 2. Both because the INPI-BR maintains a good relationship with this authority, and because it is in a situation opposite to that of the INPI-BR, according to the discussions held in the previous section.

It should be noted that the stage of "Retaining and maintaining documented information" discussed earlier, which also has the corroboration of the guidelines of the PCT Examination Guide (paragraphs 21.31 and 21.32), it should be evaluated the possibility that, since the Chilean authority also has records of its actions in the same way as the INPI-BR (WIPO, 2022d), that the INPI-BR use such information so that it can draw a parallel between the two authorities and thus try to obtain more information about Chile's advances.

The work idealized here also suggests that each collaborative action be duly recorded, as shown in Table 3 of subsection 4.2, so that each authority continuously evolves in its respective Quality Management Systems. However, as it is up to each Authority to take the actions it deems necessary, it is suggested that all these procedures be properly standardized for all ISAs, within what ISO9000 standardizes.

It should also be noted that, according to the research carried out in the "Results and Discussions" Section, it is evident that the ISA/IPEA offices are always looking for excellence. Even recently, INAPI (Chile's office) bid to be certified in ISO9001³. However, Tables 2 and 3 presented here seek to contribute to the parameterization of certain operational actions carried out by the national office and serve as an example for other ISAs, directly reflecting on the quality of services provided by the PCT System.

This article proposes actions to speed up the process of patent applications in the PCT system, giving applicants more time to make informed decisions about their next steps. The article also highlights the limitations of the previous investigation and how they can explain the behavior of the authorities in Brazil and Chile in the treatment of patent

³ <https://www.todolicitaciones.cl/licitacion/519302-2-L121>. Accessed 3/15/2023.

applications. It is emphasized that while there is no indication that one office functions better than the other, both must comply with the requirements imposed by WIPO. The study concludes that more research is needed to fully understand these limitations and their potential impact on outcomes, but that this authority is on the right track.

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