ARTIFICIAL INTELLIGENCE AND THE JUDICIARY. CHILE AND ITS PENDING CHALLENGES.

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PREFACE

Assessment of the readiness of the judiciary to incorporate AI: general introduction to national cases

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The development of Artificial Intelligence (AI), particularly in its forms related to machine learning, has become one of the most relevant challenges facing contemporary societies. Its impact in different sectors is being evaluated in a context of skepticism, dystopia and optimistic narratives, which may even distort the possibilities and limitations of this technology.

In the judicial sphere, these advances in AI in different fields of activity have promoted in recent years an incipient, although growing, discussion. This sector has some characteristics that make it particularly attractive for the application of AI. In particular, the large volume of information and data generated in the administration of justice makes it a relevant space to implement AI techniques that allow systematizing, inferring, generating patterns and predictions in less time and with greater resource efficiency. The use of AI in this sector can influence the internal organization of these systems, as well as the delivery of justice for citizens of these countries, making it more affordable, accessible, transparent and agile. It could contribute to improving accountability, efficiency and reducing the workload.

At the same time, the introduction and implementation of AI and its advanced machine learning-based expressions pose broad challenges to judicial systems in any jurisdiction. To begin with, there are risks associated with the misuse of these systems based on both ignorance of their operation and irresponsibility of decision-makers, while there are inherent problems in the design and operation of these systems revolving around accountability, fairness, access, transparency and interpretability, many of which have been considered in practice and in recent literature as ethical problems. These issues transcend the use of AI systems in judicial settings and are more general to their application in different sectors. However, the criticality of a judicial system in democratic systems and for the full exercise of human rights merits even more careful consideration of the inclusion factor of AI systems in justice.

In turn, there are distinctive features of the functioning of judiciaries, their normative and cultural environments that must be understood in the context of an increasingly generalized discourse regarding the inclusion of machine learning techniques in the different judicial systems in Latin America. First, and at the most basic level, technology is helping

to inform, support and advise those involved in the justice system in the form of assistive technology. "substitution technologies". Lastly, at a third level, technology may change the way judges work and provide very different forms of justice, acting here as a disruptive technology, especially when processes change significantly and the predictive analysis may reshape the allocation function. As Tania Sourdin points out, it is at the second and third level where the main questions, related to the impact of technology on judges' roles and functions, regarding the allocation function, arise (Sourdin, 2018).

However, there is no single approach to AI as a tool for providing a solution(s) to the challenges facing the judiciary in different countries in the region, nor is there evidence of any problematization of its use in this sector, and there is no universal judicial model. At the same time, there is a marked shortage of analytical tools dedicated to analyzing artificial intelligence capabilities in state agencies, and a complete lack of analytical tools designed to investigate institutional preferences on the subject.

Given the current context of uncertainty, skepticism, magnified expectations and economic interests of suppliers and flourishing industry, this study aims to fill the knowledge gap related to the impact of AI and its significance in the judicial experience in Latin America. It aims to understand the direction of discussion and the practices, policies and norms, many of them incipient, surrounding the implementation of AI systems in judiciaries in the region. It seeks both to complement international discussions and to fill existing gaps in the region with empirical evidence on the state of the art of AI systems in judicial systems, contemplating the political, institutional and adoption design.

To do this, we start from an original exploratory analytical framework, designed to analyze the degree of preparation of the judicial branches of five countries to incorporate AI. Consisting of more than 50 indicators, the framework makes it possible to map the national approach to this issue by considering the international macro level and the national ecosystem; the meso level, adjusted to the dynamics of the judicial apparatus as organizations; and the micro-level, which is linked to specific actors and institutional entrepreneurs in this area. Six dimensions are considered that take into account international benchmarks; the regulations and strategy related to AI; the governance of judicial modernization processes; the diagnosis and capacities for the adoption of AI; the existing conditions for the deployment of AI in the judicial sphere; and the sense of opportunity that AI entails for the judicial sector in each country.

The framework was applied in five Latin American countries, based on a situated analysis conducted by researchers from various research centers: Argentina (Centro de Estudios en Tecnología y Sociedad-UDESA), Chile (Pontificia Universidad Católica de Chile), Colombia (Universidad Externado), Mexico (CIDE) and Uruguay (Universidad Católica del Uruguay Dámaso Antonio Larrañaga).

It should be noted, however, that this project has been far from proposing a comparative study. On the contrary, the emphasis was on analyzing each case on the basis of its institutional and socio-historical singularities. Nevertheless, starting

from the same analytical framework allowed us to identify some aspects in common and certain contrasts that are worth mentioning in order to map the state of the discussion, of the preparation in terms of ideas and imaginaries, prejudices, policies and legal regulations in this area.

The first thing to note is that in all cases there is a sort of two-speed process of digital transformation of public agencies, where the dynamism that is registered at the governmental level is not verified in the judiciary. This is due to various factors that each national report addresses in different ways, but in general, they coincide in pointing to the opacity of judicial practice, less citizen control and resistance to change on the part of magistrates.

As for evidence of existing initiatives on the use of AI, this is only found in the cases of Argentina and Colombia. In the case of Argentina, these are initiatives promoted by judicial bodies at the subnational level, while in Colombia, initiatives are identified in top-level bodies at the national level. A key similarity, however, is the fact that the initiatives in both countries have been made possible by the convergence or alliance between various actors. In other words, multisectoral alliances appear as a vector that favors the digital transformation of justice based on the use of AI. This has translated into initiatives for the effective use of AI in both Argentina and Colombia, but it can also be verified that the two most interesting initiatives regarding the potential use of AI in the Chilean and Uruguayan justice systems are related to agreements with universities.

Also in institutional terms, which must necessarily be manifested in the governance of AI in the judicial sphere, it should be noted that the two countries with federal regimes (Mexico and Argentina) present a unique complexity, given the co-existence of local and federal courts. However, while the Mexican report focuses on the federal level, the Argentine study is obliged to investigate the subnational dynamics, since it is that level where the greatest dynamism in this area is registered. In the other three countries we find unitary regimes, which favor the homogenization of standards and processes, although, of course, this does not imply a preference in favor of incorporating AI.

On the other hand, none of the countries analyzed has specific regulations on AI or national strategies on AI for the judicial field. The most generalized practice is the existence of national digital strategies, although restricted to the governmental sphere (they can be found in the five countries analyzed). The only country that incorporated a specific digital strategy for the judicial field it's Colombia, in 2020, based on the challenges generated by the pandemic. However, although there are documents in the form of national strategies on AI in Argentina, Mexico and Colombia, none specifically addresses aspects related to the judicial sphere.

Another common point in some papers is the idea that the use of AI in the judicial field is an opportunity (and not just a risk) because of the expectation that the automation of some tasks and areas (other than those where AI is not applicable) could allow to direct human talent to the critical points of the judicial system. Likewise, there is some consensus that more complex tasks, such as those involving the interpretation of a context or the approach to a case for which there is no clear regulation, should not be automated. Finally, there is agreement that

the responsibility for the decision must always rest with human beings, and therefore, the studies suggest that magistrates will see their roles transformed, but not replaced.

At the same time, a key similarity is that all the reports recognize in the COVID-19 pandemic a contextual opportunity, since it has generated a sense of urgency among policy makers. Indeed, although different trajectories are perceived, all the reports agree that the processes of judicial digitization have accelerated since the emergence of the pandemic.

By way of conclusion, it is relevant to point out that it is in those areas where work is carried out in dialogue with other sectors and actors where the most relevant advances in the discussion are found, as well as the objectives and purposes on the implementation of this technology in the judicial sphere. In other words, more relevant than the level of digitization achieved by a country, or State, is the capacity to integrate levels of discussion that contemplate the macro, meso and micro levels as a fundamental characteristic to articulate the objectives of this "automation", as well as the various associated perspectives.

The judiciary has to approach the inclusion of advanced AI technologies within its systems by considering and integrating the broader narratives that are taking place around the use of AI in other sectors, in other regions and with other actors. The values it must protect are essential safeguards for democratic societies. We hope that this task, complex as it is, will become at least a little easier and at the same time more urgent from the experience of this research.

This is a summarized version of the document "**AI, Justice and Digital Transformation Policies in the Latin American Public Domain**" that can be found at https://cetys.lat/en/readiness-of-the-judicial-sector-for-artificial-intelligence-in-latin-america/

INTRO DUTION

Chile is a country that has taken significant steps toward the digitalization of its legal proceedings. However, the introduction of automation technologies has not been part of the process thus far.

As of 2016, civil cases in general have been completely digitalized, which has made it possible to handle civil cases during the COVID-19 crisis with negligible impact due to the sanitary situation. Nevertheless, the country faces important challenges when automating its procedures. The advantages related to automation may be significant, among them their streamlining, their lower costs and a potential greater direct participation of the parties of the process. However, there are risks along the way, such as the possible emergence of bias in the administration of justice, the poor legal standard to protect the personal data submitted in the process and the role of these technologies as they relate to the decision in the case when there is a contradiction between the recommendations made by the system and the judge.

This report attempts to present the status of the implementation of automation and digitalization technologies in the country's Judiciary in order to contribute to a common vision of Latin American in this respect. The report will explore (1) the levels of preparedness and reference indices, (2) the regulatory framework and the most important players to that end, (3) governance of the modernization processes in Justice, (4) a diagnosis of the capacities for the adoption of AI, (5) the conditions for the deployment of AI in the judiciary setting, and (6) AI as an opportunity and a risk in the administration of justice.

1. General level of preparedness and reference indices.

Introduction. In this section, we will try to explore the level of preparedness in Chile for the adoption of judicial automation technologies, especially through the observation of the most relevant international indices that measure the implementation of information technologies. Unfortunately, the absence of a specific index about the Judicial Branch and the implementation of automation technologies for that field is obvious. However, we will use the material available to establish a general overview.

- Indices are insufficient for an assessment
- No specific index in the subject matter

International Indices. On a general level, we can argue that international indices position Chile as a country that is well prepared for the introduction of automation technologies in its judicial process. Those indices tend to show the country among regional leaders, and it is well positioned, in general.

In fact, el 2019 Oxford Readiness Index[1], which does not consider the current development of an Artificial Intelligence policy[2], positions the country in the fourth place in the region, only behind Mexico, Brazil and Uruguay. This index measures how prepared a government and an administration are to carry out the automation process in order to make the most of artificial intelligence technologies. In this respect, this instrument gauges different dimensions with a wide range of metrics to be established. However, the catalogue does not have a specific dimension aimed at The Judiciary, which downplays its importance in the matter.

1/ Refer to:https://www.oxfordinsights.com/ai-readiness2019 Checked on May 10th, 2021

2/ Refer to:https://www.gob.cl/noticias/ministerio-de-ciencia-abre-consulta-publica-para-la-politica-nacional-de-inteligencia-artificial/Checked on May 10th, 2021

That said, it is possible to argue that a general setting of greater digitalization and automation in the public structure provides an overall favorable mood for the implementation of new technologies in The Judiciary. In fact, for some time now the country has invested in policies for the digitalization of the public structure and tools of digital government. Indeed, according to the United Nations E-Government Survey, the countries of the Southern Cone (Argentina, Chile and Uruguay) and Brazil show a very high level of e-government[3] introduction, where Chile ranks second regionally, only behind Brazil. This index, compiled since 2001, is focused on "e-government effectiveness in the delivery of public services and identifies patterns in e-government development and performance, as well as countries and areas where the potential of Information and Communications Technologies (ICT) and e-government has not been fully exploited yet, and where capacity development support might be helpful." The idea is to determine how effective digital tools are to deliver public services. Unfortunately, it does not have a specific dimension regarding The Judiciary, so its value is, again, general and contextual, albeit not specific regarding the subject matter discussed here.

In the area of public data governance, the country is also well-qualified in some international indices, such as the Global Open Data Index[4], in the 22nd place globally. The index measures the transparency of the information that the government and the state administration, in general, give citizens. In this regard, it is important in order to determine the level of digital broadcasting and transparency a State makes use of. In this sense, it should be pointed out that, in spite of the optimism stemming from the index, there are very important challenges related to the index that the country has not addressed properly yet, such as the protection of personal data and the digitalization of the notary systems, to name a few. In any case, the catalogue, although it is important, again fails to consider specific sections or metrics directly related to The Judiciary, so its significance is once again general and relative.

As for the Network Readiness Index 2020[5], of the World Economic Forum, this instrument measures the preparedness of different governments in terms of the implementation of information technologies. This index measures four dimensions: technology, population, governance and impact, using different metrics. Here, Chile ranks 50th globally and second regionally, only behind Uruguay. Nevertheless, and in spite of the positive results, it again lacks a specific focus regarding The Judiciary, so it only has contextual value.

3/ Refer to: https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Full%20Report).pdf Checked on May 10th, 2021

4/ Refer to: https://index.okfn.org/ Checked on May 10th, 2021

5/ Refer to: https://networkreadinessindex.org/wp-content/uploads/2020/10/NRI-2020-Final-Report-October2020.pdf Checked on May 10th, 2021

One last relevant index to prepare this report is the ITC Development Index, published by the International Telecommunications Union, whose goal is to enable the comparison among countries in terms of the availability and use of communication technologies. In its 2017 edition, Chile occupied the third position, behind Uruguay and Argentina[6].

Based on all this, even though these international indices tend to provide a rather positive image of the country, it is worth playing down such indicators as none of them deals specifically with the situation of The Judiciary, although they point to different dimensions of digital governance. In this sense, there is a shortage of initiatives similar to EU Justice Scoreboard[7], which makes a granular analysis of the administration of justice in the European Union. Perhaps this general study provides the basis to build such an index.

6/ Refer to: https://www.itu.int/net4/ITU-D/idi/2017/index.html Checked on May 10th, 2021

7/ Refer to: https://ec.europa.eu/info/sites/info/files/justice_scoreboard_2019_en.pdf Checked on May 10th, 2021

2. Regulation and public players in digital governance, with emphasis on AI

At a regulatory level, it is vital to make a general analysis of the regulations applicable to the Judiciary and the reception of related automation technologies. In order to develop this objective, we will try to establish the applicable national regulation, the existence of a related national strategy and, finally, the adjustment of our regulations to international standards.

- The national regulation is insufficient
- The governance of the process rests mainly in the Supreme Court
- The other players have been secondary

2.1 National regulation.

Existence of a unifying regulation. At a regulatory level, nowadays the country does not have a specific and complete regulatory framework governing artificial intelligence, although at present there are discussions taking place inside the Senate's Future Commission to make up working teams for the topic. Initially, there is an attempt to regulate five specific areas:

1. Access, including infrastructure, technology and enabling skills.
2. Data governance, including safety.
3. AI rights, including the regulation of the internet of things and the fields for its implementation at a public and private level.
4. Impact of Digital Media in the Exercise of Individual Autonomy and Social Interaction (at a legislative level).
5. Impact of digital technologies on vulnerable groups.

However, the work is in an initial stage, where working groups are under formation, and they include over fifty experts in the topic from the civil society and, especially, the academic sector.

That said, in terms of the specific implementation of digitalization and automation in judicial processes, there is a far-reaching and relevant legislation, in particular, the Electronic Procedure Act (20,886) from 2016, which established the digitalization of legal proceedings, including interoperability standards for The Judiciary, through the Virtual Judicial Office. The legislation has a direct impact on that process, as it completely digitalized legal proceedings in Chile and provided the basis for its automation.

Finally, we should highlight the fact that, nowadays, a new Civil Procedure Code is being discussed, which integrates important aspects related to digitalization and automation. The Ministry of Justice presented its project for the new Civil Procedure Code in April 2021 and it is under consideration by the Congress. Among the most important aspects of the project in terms of automation, there is a new model of civil execution, completely digital and with electronic auctions. In any case, this initiative deepens the current procedures digitalization in Chile, which is already fully electronic.

Partial Implementation Regulations. The different regulatory agencies have scattered regulations applied to the subject matter. The most relevant one is related to the protection of personal data, which has constitutional level in Chile (article 19 No. 4 of the PCR) and, specifically, in the Private Life Protection Act (19,628) and the ordinance on public data bank (Executive Order 779, dated November 11th, 2000). Even though the constitutionalization of personal data protection is an important initiative, the current legislation has become obsolete. The legislation, which dates back to 1999, is outdated in spite of its different modifications (seven, from 2000 to 2020), and there

are projects in the pipeline that intend to replace it with a legislation that gets close to the General Data Protection Regulation of the European Union[8].

The Consumer Rights Protection Act (19,496) is also relevant when regulating legal relationships between professional suppliers and consumers in terms of Artificial Intelligence, although its reach is limited to issues between professionals and consumers, so its importance is relative in terms of administration of justice.

Regarding data governance, it is worth mentioning the Digital Transformation of the State Act (21,180, from 2019), which aims at incorporating digitalization in the government in different thematic areas, such as electronic documents, digital transformation, electronic administrative proceedings, electronic document management and the digital document system of the National Archives. This regulation is relevant, especially because it brings order to the digitalization of all the administrative procedures, which will have to be dealt with electronically through digital documents, including electronic notifications. Additionally, interoperability is established as a principle of the electronic media used by the State. These elements have a direct relevance for the automation of the actions of the State, and they have an indirect impact on the administration of justice, so they play a very important role as regulatory background.

Another regulation that has relative importance is the one about neurorights, that is to say, intended to establish and protect privacy and self-determination rights regarding invasive technologies that process neuronal information. There are two projects for that. On the one hand, a constitutional reform in the pipeline and, on the other hand, a draft bill that regulates this matter. Both of them are under discussion; if passed, they will rule topics linked with emerging technologies and not directly related to the administration of justice, so, in the medium term, they do not seem to have an influence on the topic considered.

Relevant regulatory players. The Ministry of Science and Technologies, the Undersecretary of Telecommunications and the Undersecretary of International Economic Relations also take part as regulatory agencies that are relevant in terms of Artificial Intelligence, where the first one is in the final stage of the design of a National Artificial intelligence Policy, the second one regulates the implementation of 5G networks, and the third one is in charge of implementing the DEPA (Digital Economy Partnership Agreement with New Zealand and Singapore), with implications in the digitalization of the economy.

Another relevant player has been the Future Commission of the Senate, which has taken the lead in different topics related to technological development; it has created a commission that drafted a document about the need for a national Artificial Intelligence strategy, and it is currently working on several projects about this topic.

8/ For information about the project sent by the Executive, see: https://www.camara.cl/legislacion/ProyectosDeLey/tramitacion.aspx?prmID=11661&prmBoletin=11144-07
Checked on May 10th, 2021

Another regulatory player that is clearly relevant in this area is the Ministry of Justice, which has submitted its project for a new Civil Proceedings Code and is obviously committed with the digitalization and automation of legal proceedings in Chile.

Finally, the Supreme Court is another relevant regulatory player which may, through its administration capacities of The Judiciary, issue orders, that is to say, internal regulations that rule the proceedings effective in all The Judiciary. Through them, it has implemented the first initiatives about the digitalization of judicial proceedings in family cases; it established an electronic file to deal with such cases through the Memorandum 91 as soon as 2007.

To sum up, at a regulatory level there is no global regulation of the subject matter yet, but there is genuine progress in that direction.

Constitutional Status of Human Rights Treaties. Finally, in terms of Human Rights, article 5, section 2 of the Constitution granted constitutional status to international treaties signed by Chile in 1989, which sets a limit to sovereignty. That legislation is old and there is well-established jurisprudence about it.

In any case, Chile is drafting a new constitution and the foreseeable results of that process point in the same direction. In fact, article 135 of the current Constitution, which rules the activity of the Constitutional Convention, states that the new text of the constitution should: "respect the status of Republic of the State of Chile, its democratic regime, the final and executed court judgments and the international treaties ratified by Chile which are in place".

2.2. National Strategy.

National Agenda 2020. In 2013, the Chilean government published its Digital Agenda 2020, with a horizon of seven years and the objective to set the national strategy for development in Information Technologies[9]. That agenda, still in place, determines a roadmap in the implementation of digital technologies along the country, linking its objectives to 63 concrete fulfillment indicators, so its success could be measurable and comparable. It was built from the collaboration between the ministries of Economy, Promotion and Tourism, Transport and Telecommunication, and the General Secretariat of the Presidency, which created working groups with representatives from public and private institutions, the world of academics and the civil society, in eight working groups with more than one hundred people.

The agenda focuses on five working dimensions: Rights, Connectivity, Government, Economy and Competencies. Each of them has specific objectives and related results indicators. Nowadays, and once the Digital Agenda 2020 cycle has finished, we see that most of the objectives show impor-

9/ See: http://www.observatoriodigital.gob.cl/tags-documentos/agenda-digital.html Checked on May 10th, 2021

tant progress and that, by and large, the strategy seems to have been successful[10]. Work seems to have been deeper in the dimensions of Government and Connectivity, where there are important fulfillment landmarks, although it should be acknowledged that there are many topics where efforts have been insufficient. At present, the government is working on a new Digital Agenda that projects objectives and progress indicators for the future.

That said, and if we are to be specific in terms of the subject matter of the present report, we should stress that in the Digital Agenda 2020 there is no dimension directly related to the digitalization of The Judiciary, nor to the automation of the process. This is mainly due to the fact that The Judiciary is an independent branch and has its own priorities for this topic. In fact, when it comes to digitalization, The Judiciary is well ahead of the government and has already completed that process, so all the cases in the country are being handled digitally.

National AI Strategy. Up to this moment, Chile does not have an official strategy for Artificial Intelligence. As soon as September 2019, the Future Commission of the Senate submitted a document warning about the need to design such a strategy[11]. Thus, the problem was discussed and the government quickly formed a commission made up with experts coming from the civil society and the world of academics in order to create a set of policies to that end. The initiative was taken on by the Ministry of Science, Technology and Innovation, which prepared a public consultation for a National Strategy of Artificial Intelligence in December 2020. In this context, several relevant players criticized and commented on the document, which is in its final stage of preparation. This instrument introduces a general Artificial Intelligence policy for the next decade, with pillars, objectives and primary actions for its achievement. The main pillars of the policy are:

- Enabling factors
- Development and adoption
- Ethics, regulatory aspects, and social and economic effects

Among the primary actions suggested by the document within the pillar of Enabling Factors are the creation and consolidation of an appropriate data governance in the State, which has direct impact on the possibility to automate the adminis-

10/ See the fulfillment level of each indicator on: http://www.agendadigital.gob.cl/#/seguimiento Checked on May 10th, 2021

11/ Future Commission, Artificial Intelligence for Chile. The urgency for the development of a strategy. Available on: https://inria.cl/sites/default/files/2020-04/Propuesta%20Estrategia%20IA%20Chile_1.pdf Checked on May 10th, 2021

tration of justice, since, with a better data governance, we can create positive energies that lead to a smoother administration of justice, and it is possible to consider automation aspects.

With that idea in mind, one proposal is to develop a data strategy for the State, which develops common and standardized codings that make it possible to exchange data among the different state agencies.

In spite of that, the document does not include concrete policies about The Judiciary and the implementation of automation technologies at that level. In that sense, we can point out that the national Artificial Intelligence strategy proposed by the Ministry would have a rather fragmentary impact inside the general scheme for the adoption of automation technologies by The Judiciary.

2.3 International Alignments

Lastly, it is convenient to study whether Chile is currently embedded in the international regulatory context related to artificial intelligence. This way, we will see the exact level of adoption of the few international instruments that the country presents, which will help us determine its general preparedness in the face of the adoption of automation technologies.

Endorsement of Convention 108+. The first instrument to be analyzed is the Convention for the Protection of People regarding the Automated Treatment of Personal Data (Convention 108) and its Additional Protocol regarding the Control Authorities and the Data Transborder Flow which were endorsed in Strasbourg, France, on January 28th, 1981 and November 8th, 2001, respectively. In October 2018, its new updated version was launched, known as Convention 108+. That instrument is the most important document intended to establish an international regime regarding data protection, built by the European Council, although it is open to endorsement by third states.

At a Latin American level, only Argentina, Mexico and Uruguay have endorsed it, while Chile has not yet, and it is one of the country's important duties in terms of data protection still pending.

Adequacy to GDPR. The General Data Protection Regulation (GDPR) is the common regulation of the European Union for this matter. As such, it is one of the most detailed and efficient regulatory bodies that sets standards for data protection and it is a model regulation globally. Pursuant to article 45th of that regulation:

> *"A transfer of personal data to a third country or an international organization may take place where the Commission has decided that the third country, a territory or one or more specified sectors within that third country, or the international organization in question ensures an adequate level of protection. Such a transfer shall not require any specific authorization."*

In that sense, achieving local regulations that are sufficiently adequate entails an important support for innovation and entrepreneurship, as it allows the transfer of data from one territory of the Union, with no need of specific authorizations, so achieving that adequacy is a desirable general objective at an international level.

Unfortunately, the regulation about data protection in Chile is seriously outdated. However, the constitutional statute that reached the protection of personal data (article 19 No. 4 of the PCR), the Private Life Protection Act (19,628) and its rules (Executive Order 779, dated November 11th, 2000) belong to a time before the massive treatment of data. Even though the regulation has been modified many times (seven, from 2000 to 2020), it can barely be considered enough at present, and it is far from the General Data Protection Regulation of the European Union. To that effect, Chile needs extensive regulatory changes to reach those levels of protection for its citizens and, therefore, an acknowledgement of adequacy.

Endorsement of AI Principles of the OECD. The Organization for Economic Co-operation and Development has designed a series of principles regarding Artificial Intelligence intended to sustain a technological development of AI that is safe, trustworthy, and respectful of human rights and democratic values[12].

In the way they have been drafted, they are highly relevant to put into practice an automation strategy of the judicial function because they establish aspects that are greatly relevant for the development of AI, as are the Rule of Law, transparency and responsibility. Those principles should guide the responsible execution of Artificial Intelligence systems in the judicial context, as they affect key aspects of AI.

Chile, as a member of the OECD, endorses them, although their adoption and naturalization by third states are open, as has been the case of Argentina, Brazil, Costa Rica and Peru in Latin America.

12/ For the OECD principles, see: https://www.oecd.org/going-digital/ai/principles/ Checked on May 10th, 2021
Those principles are:
AI should benefit people and the planet by driving inclusive growth, sustainable development and well-being.
AI systems should be designed in a way that respects the rule of law, human rights, democratic values and diversity, and they should include appropriate safeguards – for example, enabling human intervention where necessary – to ensure a fair and just society.
There should be transparency and responsible disclosure around AI systems to ensure that people understand AI-based outcomes and can challenge them.
AI systems must function in a robust, secure and safe way throughout their life cycles and potential risks should be continually assessed and managed.
Organizations and individuals developing, deploying or operating AI systems should be held accountable for their proper functioning in line with the above principles.

3. Governance of the judicial modernization processes, with emphasis on Artificial Intelligence.

In this section we will address the issue of governance of the judicial modernization processes. Ultimately, we will try to determine the relevant players that may act in order to implement the automation procedure of legal processes, at executive and legislative levels and inside The Judiciary itself.

3.1. Governance of The Judiciary. Chile is a unitary country divided into 16 regions, so its Judiciary is organized hierarchically, with the Supreme Court at the top of its governance, while each of its regions has a Court of Appeals that acts as an appellate court, except for the Metropolitan Region of Santiago, which has two, given its dense population, totaling 17. Under its rule are the Courts of First Instance, that is to say, magistrate's courts, examining courts and oral trial courts; the last two deal with and try criminal matters. Additionally, there are courts with specialized jurisdiction, such as: Labor Courts, Wage Deductions and Social Security Payments Courts, Family Courts and Courts Martial in Peace-Time. Each of these courts answers hierarchically to their respective Courts of Appeals, based on the territory where they exercise jurisdiction. The organization of The Judiciary is established in Chapter 6 of the Constitution and the Organic Code of Courts.

Apart from the organization of The Judiciary, there are other special courts that are not part of that branch and act independently form it, all of them established by the Constitution itself: the Election Review Court, the Regional Election Courts and the Constitutional Court.

Likewise, outside The Judiciary are some special courts established by law for given and specific matters that they should know and try, although they are subject to supervision by the Supreme Court, which also acts as an appellate court in matters of its competition. They are: the Public Hiring Court, the Defense of Free Competition Court, Environmental Courts, the Industrial Property Court and Custom Courts. Also formally outside The Judiciary are the local police courts, which know and try small cases, neighbor problems and consumer issues. These courts are subject to supervision of the respective Court of Appeals.

3.2. Public Players Relevant for the Modernization Process. In accordance with the aforementioned, most of the country's courts are integrated to The Judiciary, whose hierarchical organization allows for an easy governance of its administrative processes. However, the different special courts, as they are separated from The Judiciary in administrative matters but are subject to its supervision –except for courts with a constitutional status–, have governance that is less clear and, therefore, they are autonomous in the implementation of digitalization strategies and the possible automation. This study will focus on The Judiciary.

The Administrative Corporation of The Judiciary is especially important in this matter; it is an institution that focuses on the administration and provision of services to The Judiciary and it is responsible for its human, economic and technological resources; it is led by the President of the Supreme Court and made up by four ministers of the court, elected for periods of two years. That institution is the one that has basically carried out the process of digitalization of The Judiciary, and it is currently leading the processes related to its automation. In that sense, and due to the autonomous nature of The Judiciary, it is the agency that is most closely related to the digital transformation of Chile's jurisdictional processes.

The Ministry of Justice is also relevant, although to a lesser extent. It drives regulatory changes that boost the digitalization of The Judiciary, as is the Electronic Processing Act (20,886) of 2016 and the present bill for a new Civil Proceedings Code.

4. Diagnosis and capacities for the adoption of AI

The Chilean judiciary, like in most of Latin America, has had a tentative approach to the implementation of automation. Up to now, the main additions of external elements to the process to improve efficiency or efficacy have been in the area of process management.

Thus, special jurisdictions, different from the civil one, have undergone reforms that have accelerated the times of processes, updated the procedural rules to modern principles protecting the parties, and brought justice closer to citizens.

However, the management of processes has a clear limit regarding efficiency. With outdated technology, efficiency is reduced. That is why it is vital not only to improve processes, but also invest in people and improve technologies.

- Identification of requirements by the parties
- Automation of responses to emergency measures
- Enhancement of sentences

4.1 Skills, training and education for AI.

The people at The Judiciary are the judges and all the assistants that support the jurisdictional work. The internal clients are state agencies that, somehow, are interconnected with the judicature, and the external clients are the litigants and the parties.

The training of the human element is part of the training of judges and the members of the justice administration hierarchy. Chile's Judicial Academy recognizes three training stages:

- Training Program: Qualification course to join the judicial career ladder.
- Upgrading Program: It comprises different continuous training courses that seek to update, develop and/or deepen basic knowledge and criteria necessary for the correct performance of officers' tasks. These courses are delivered mainly through third parties (Universities) whose postgraduate degrees related to the judicial training are validated.
- Qualification Program: It is a professional upgrading program that seeks to provide the qualifying knowledge and skills to perform the tasks of Justice Minister and Prosecutor in the Court of Appeals.

The courses are focused mainly on Law classes, both procedural and substantive. Even though there are non-legal training options in the areas of management and technology, they are optional and available only in the Upgrading Program through the recognition of courses delivered by universities.

The lack of mandatory qualification for judges in the areas of management and technology is an element that hinders the integration of new working methodologies and tools.

4.2 Digital Judicial Services.

The processes of The Judiciary are determined mainly by procedural regulations. However, there are management elements in the processing of cases by courts that allow for improvements. The outset of a long but constructive process in terms of management started with the issuance of Memorandum 91 in 2007 by the Supreme Court, which set the "Rules for Courts processing with electronic folders". With this document, drafted by the Ministers of the Supreme Court and judges of first instance, they started to think about ways of working, they incorporated concepts such as working plans and they set rules for the operation of web platforms as mandatory to unify criteria. The work was strongly influenced by the delays in the processing of cases in the different jurisdictions and, even though at first it met some resistance from Judiciary officials with a long time in the institution, it was finally implemented and added the first digitalization and technology elements in the proceedings at the judicial level.

After Memorandum 91 came other regulations that sought to improve the management of processes, among them the Proceeding 98 of 2009 that regulates the "management and administration of Family Courts", which imposes elements of management qualification on courts, with objectives of work load and self-determination in management goals, and later the Electronic Procedures Act 20,886 from 2016, which sets uniform standards for all the jurisdictions regarding the processing of judicial procedures through an online platform called Oficina Judicial Virtual (Virtual Judicial Office). Moreover, article 3 forces all judicial

officials to use and record all the resolutions and actions taking place in a trial in the IT system.

The development of the Oficina Judicial Virtual meant an important step in the digitalization of documents, promptness in the processing and modernization of the processing system for cases in court.

4.3. Material and Institutional Resources.

The technology of The Judiciary has been guided by the need to improve times and reduce judges' work load. We can classify the need for technology in two stages: technology implemented and technology under development.

Among the main developments already implemented in The Judiciary we can identify:

- Software "Dragon Naturally Speaking", a voice recognition system (voice to text) that makes it possible for judges to pass a sentence, turning the audio to text in real time. It also works with pre-recorded audio files.
- Creation of applications by The Judiciary, for example, an application for recipients that signals the most convenient route by GPS.
- Oficina Judicial Virtual (OJV) Platform, which makes it possible to enter law suits and writings electronically anywhere and anytime for all the jurisdictions of the country and for all jurisdiction levels; a cell phone application (APP) as well, which is also useful to obtain the certificate of a lawyer's degree, learn the location of nearby courts and save some cases in the "Favorite" section. It is worth mentioning that it is integrated to the Unique Code system of the State, which allows the identification and authentication of the digital identity to interact with the administration and private institutions.
- As a result of the Covid-19 crisis, the implementation of hearings through conference calls was expedited. Within days of the emergency executive order, on March 18th, the Supreme Court issued Memorandum 41-2020, the ruling regulating teleworking and the use of conference calls in The Judiciary. After a few months, this technology was implemented nationwide, so it was possible to follow the course of hearings and arguments, ensuring immediacy in the relationship between the judge and the parties. Likewise, the teleworking system was improved, and only one month after the health emergency, in April, it had reached an 82% penetration.[13] Later, different regulations were published to perfect the operation of courts, such as Memorandums 42, 43 and 53.

The Judiciary is working on the implementation of other technology systems, mainly to be able to anonymize, automate and make sentences available for the parties. The aim of anonymizing is to pro-

13/ Chaparro (2020) "El Poder Judicial Elabora Tutoriales con el "paso a paso" para alegar por videoconferencia" El Mercurio Legal. Available on: https://www.elmercurio.com/legal/movil/detalle.aspx?Id=908365&Path=/0D/DC/ Checked on May 10th, 2021

tect litigants' personal data, the aim of automation is to reduce the work load of Judiciary officials and, finally, to obtain a greater access to justice.

In 2019, The Judiciary acquired the license of Watson Explorer, from IBM, to start working on the generation of classifiers to enrich the different judicial processes. This purchase was complemented in 2020 with the acquisition of licenses for the cloud service Watson Knowledge Studio to extract data from web pages (web scraping) to train machine learning models.

The use of Watson is in a pilot stage and it is being implemented in three working areas:

- Identification of requirements by the parties to not innovate (precautionary measure) in remedies of protection related to the Isapres[14].
- Automation of replies to emergency precautionary measures in family matters.
- Enrichment of sentences to identify information elements that enable the analysis and work with those documents; on the way to be able to anonymize, analyze texts and classify sentences automatically.

14/ They are mandatory private health insurance administrators, whose adjustments have led to a great number of constitutional measures in the form of appeals for legal protection.

5. Conditions for the deployment of AI in the judicial setting.

As has been previously suggested, AI has become a transformation technology with huge potential to bring benefits in all aspects of life and the institutional development of our countries. The development of research and progress in the innovation of AI and its impact on society (R + D + i + S) will help significantly in the advancement of national priorities, among them the development of a healthy and efficient Judiciary. To that end, it is necessary to develop research on the implementation of AI in this specific area of institutional development of the country, which implies an empirical area

of work involving political willingness and a clear and lasting design of what we intend to do. This last aspect faces problems in political systems, in which the successive governments –especially if they are from opposing political orientations- see themselves as permanently called to innovate in the plans of their predecessors, changing the focus on a problem and the expected solutions. By and large, this variable goes against the development of a sound and reasonable AI institutional implementation plan.

In the perspective of The Judiciary, we can argue that the technology development has contributed to improving access to and the efficiency of justice in different places of the world through the use of AI tools. What is unique and specific about this type of mechanisms is that they make it possible to pursue significant transformations in the realm of process efficiency. Therefore, it is imperative to identify the opportunities and challenges of incorporating these new technologies in each country's justice system, taking into consideration their empirical and regulatory characteristics. However, this procedural efficiency should be accompanied by another type of efficiency: one that refers to the system of assurances that compromise the dignity of human beings participating in judicial operations. In other words: the procedural effectiveness that is reached or may be reached by means of the use of AI tools should not be considered in an abstract way or in autonomous terms regarding the fundamental assurances of all individuals. In our opinion, this should be the hermeneutic approach in the regulatory production regarding AI, specifically for the branches of the State.

The conclusions of our work may be structured around five questions, which amount to the criteria formulated in the exploratory analytical framework intended to evaluate the degree of preparedness of the Chilean judicial system (and of the rest of the countries included in the project) to adopt AI procedures. Let us review them separately.

- Control and supervise permanently the problem of bias in AI in the judicial context.
- Encourage the correct and appropriate use of precedents.

5.1. Diagnosis of the capacity for digital transformation in the Chilean judicial system, especially regarding its preparedness to introduce AI in information systems.

As can be seen in the explanation above, from the regulatory point of view, the Chilean judicial system, even though there has been some advancement, has not added bigger structures or procedures yet that make it possible to include AI

mechanisms in its performance. The production of an AI institutionalism should be made on the basis of previous empirical work which allows us to explain the way the different instances operate and, therefore, design mechanisms that entail a real alternative or regulatory and executive efficiency.

The country currently has an Electronic Processing Act (20,886, from December 14th, 2015). In this respect, the Minister of the Supreme Court, Mrs. Gloria Ana Chevesich, said in 2020 that "the Supreme Court took on the commitment to provide a service of justice that is high-quality, transparent and timely, and one of the challenges to achieve that goal is to incorporate technology in the processing of affairs that all the courts that are part of The Judiciary are familiar with, and the implementation of Act 20,886, Electronic Processing, is a great step forward taken through the joint work of the Administrative Corporation of The Judiciary and The Judiciary"[15]. However, Chile does not have a specific regulation that addresses AI.

Hence, there is political willingness, at least stated, to add AI instruments so The Judiciary can offer a "quality, transparent and timely" activity. In other words, the aim of implementing AI is to make sure (a) sentences are better (by having qualitative and quantitative better information); (b) the public and academic discourse can easily follow the elements that are part of the logical-formal sequence implied by the formulation of the consequences of the ruling, and (c) both sentences and the information about them are available with promptness that is appropriate for the nature of the conflict and the needs of the debate.

It is worth mentioning that, in 2019, the Commission Challenges of the Future, Science, Technology and Innovation of the Senate summoned a group of scholars for key AI areas (IT Sciences, Mathematics, Engineering and Neurosciences, to name a few) to work as a permanent team on a basic proposal oriented towards a national strategy for AI. Members of The Judiciary have already taken part in this Commission.

The institutionalization of these statements has not been materialized so far, except for the project mentioned next about access to information. The delay, together with the previous explanation, may also be related to the special political situation of the country in the last year and a half, which adds to the pandemic affecting the entire world. The current government seeks to present the country a Digital Transformation Agenda that follows up on the progress made by the Digital Agenda 2020, integrating new measures to accelerate the process of ownership and harnessing of digital technologies "in all the areas of the social and economic activity". However, this aims directly at the administration of the country, rather than at The Judiciary.

In the judicial sphere, the country has the resources and the installed capacity to face a process of digital transformation that includes AI, but it requires a well-planned program lasting long enough. Given the institutional context in Chile at present, a really effective plan may not get to be established

15/ See: https://www.adprensa.cl/cronica/poder-judicial-participa-en-cumbre-internacional-de-uso-de-inteligencia-artificial-en-el-instituto-tecnologico-de-massachusetts-de-boston/ Checked on May 10th, 2021

but after some time, regardless of well-meaning declarations from the country's different public (and private) operators.

The political authority should probably take into account actions like the ones below:

- Presenting the means to improve public and private investment in order to facilitate a growing innovation in AI matters.
- Assisting the creation of AI ecosystems, with the respective digital infrastructure, and the technologies necessary to share knowledge.
- Favor a responsible AI administration which allows for cooperation among the different branches of the state.

5.2 Assessment of the areas and functions that could be improved and those that would be challenged with the introduction of AI in the Chilean Judiciary.

We believe the following to be especially relevant:

- AI influence in access to justice. It is the implementation of online courts and their impact on access to justice. The development of this type of instances offers a great potential to boost access and fairness in the Chilean justice system. For that, it would be necessary to explore real cases of online civil courts; the main challenges for it implementation, the benefits and the elements that should be taken into account for its assessment, beyond the mere use of process indicators, to identify their true impact on the access to and fairness of the Chilean justice system.

In 2020, the Supreme Court and ten universities signed an agreement for the development of a project to update the jurisprudence database of the highest court. The platform will make it possible, through the use of AI, to access information about sentences of the Supreme Court easily and quickly. The search engine will give direct access to the jurisprudential doctrine of the sentence, as well as the traceability of each minister's vote in every given subject. The engine will enable searches not only by subject, regulations or terms, but also sentences related to specific geographic places, in topics such as water, environment, urbanism and expropriations.

- AI implementation for the analysis of potentially confidential documents.
- AI implementation to protect personal data of the parties in a trial, even though the substantive or material information about the issues discussed may be easy to access. This has already been criticized[16], and the assumption is that AI instruments could be an instance in which such data would be at a greater danger to be broadcast, so AI itself could preserve the privacy of that information.

16/ Cf. QUEZADA, Flavio, "La protección de datos personales en la Jurisprudencia del Tribunal Constitucional de Chile", in *Revista Chilena de Derecho y Tecnología*, vol. 1, n. 1 (2012), pp. 125-147.

5.3 Identifying common trends and emerging challenges that might have a significant, positive and negative, impact on accountability, fairness and fundamental ethical principles with the use of AI technologies in judicial systems in these countries.

In this sense, the following should be highlighted:

- Control and supervise permanently the problem of bias in AI in the judicial sphere to avoid unfair results. While bias in an absolute sense cannot be eliminated, controlling its effects would have a very positive outcome when implementing AI.
- Favoring the correct and appropriate use of precedents, avoiding their abuse. Through the use of AI, the software may be set to suggest given decisions, and do so according to the precedents established by the courts. On the contrary, if the knowledge on precedents is used correctly in AI, it could contribute to the coherence and unity in the decision-making of courts, leading to a better decision.

5.4. Suggestions for a framework that helps judicial operators in Chile assess their preparedness, their needs and challenges regarding AI technologies for this sector.

It is considered necessary to start a strategic plan that allows the development of The Judiciary's strengths to address the challenges of automation, improve efficiency and boost the quality and quantity of justice administration. The focus on AI lays in the cognitively complex functions executed to solve problems and make decisions; learn and adapt from experience, look for the best solutions from different alternatives. In this sense, a framework that helps judicial operators get ready for the use of AI should comprise:

- The guiding principle should be to help judges make decisions according to the law, swiftly and efficiently.
- AI should be an instrument that helps obtain the right information, at the right time, safeguarding the law and fundamental rights. We call this framework principle "responsible transparency".
- AI should be configured as a mechanism that contributes to the ductility of The Judiciary's structure, with a final objective: making the best decision.

- AI should ensure the traceability of decisions for its efficiency and transparency. This objective is in line with the agreement of May 22nd, 2019 of the OECD member states, in the sense of transparency and responsible broadcast around AI systems.
- The State should favor the development of specific AI applications for The Judiciary, safeguarding the respect for the law and the anthropological models coherent with the nature of human beings. For that, AI systems should enable human intervention whenever necessary in order to correct possible errors in the judicial operation that may result in concrete unfairness.
- Strengthen judicial procedures given the possibility of malicious use of AI applications in the judicial context. Lastly, it seems to be vital to make use of AI mechanisms to protect IT systems and make them resilient to possible cyber attacks that may affect their operation and, ultimately, undermine their perceived legitimacy, if they become frequent and affect the safety of the data stored and the reliability of the solutions reached.

6. AI as an opportunity and a risk in the administration of justice

Digitalization and automation technologies are an opportunity in the expansion of the context of lawfulness of conflicts in Chile, although, at the same time, they imply several risks that, if implemented incorrectly, may make those initiatives fail and depart from the objectives set. In this section, we want to explain the opportunities and risks that such implementation is subject to in order to project the concrete possibilities offered by those technologies. In that sense, we will start by trying to analyze the social need inherent to the implementation of Artificial Intelligence technologies in the process, their advantages and the possibilities it may open up, while in the second section we will discuss the risks present in that process.

- There are important opportunities related to the streamlining of the process and the reduction of its costs.
- There are risks related to biases.
- Safeguards should be provided before implementing automation technologies in the process.

6.1 Opportunities

Justice is an asset that is produced through human action, leading to harmony in the community[17]. It is an aspiration for human relations to keep a given proportion[18] that allows us to characterize certain facts or actions as appropriate. The generation of justice is an asset that may be procured through different means, ranging from our own hand to the organized actions of the judicial system. Now then, for a big-sized community, as is the case of a complex community, to be able to reach it, the most efficient means used by human communities is the Law, which is acting aiming at the distribution of equitable social assets by an impartial third party[19]. Law is based on the idea that we act according to a set of rules (objective law) that can be invoked by the parties (subjective law) and which are applied by an impartial third party (law as actions of a judge). The question about the implementation of technology solutions in justice is related to the possibility of automating this process, replacing functions usually developed by concrete human beings with artificial agents that might help the different communities produce results that we would consider fair.

The need to automate this function is closely related to the problems of costs and scope of today's solutions resulting from the implementation of traditional methods in the world of justice. In general, the world of justice has varied problems that lead to wide-ranging social needs being unmet. Indeed, access to the structure of Law is complex and expensive. It is with good reason that Neruda referred to the justice system with irony: "Rights for the big thief. Jail for the pickpocket" (Ley del Embudo, or double standards). The justice system entails the presence of different elements that render access for the weakest members of a society, in many cases, impossible.

In principle, the good part of the civil law institutions implies the presence of equity relatively important by those who make use of it. Thus, wills, keepers and hiring, in general, only make sense if the parties have a strong economic position and will hardly apply otherwise. In early 20th Century, except for situations of special significance, such as death, marriage or the purchase of some high-value asset, for example a house, in the case of the few families that could afford it, the civil Law was by and large absent from the lives of average people. Among the

17/ It is in this sense that Aristotle states that the purpose of justice is to keep harmony (eudaimonia) in the civic body. See. Arist. Eth. Nic. 1129b (5.1.18-20):
ὥστε ἕνα μὲν τρόπον δίκαια λέγομεν τὰ ποιητικὰ καὶ φυλακτικὰ εὐδ αιμονίας καὶ τῶν μορίων αὐτῆς τῇ πολιτικῇ κοινωνίᾳ.

18/ It is in this sense that Aristotle states:
ἐπεὶ δὲ τὸ ἴσον μέσον, τὸ δίκαιον μέσον τι ἂν εἴη.
Eth. Nic. 1131a (5.3.2).

19/ It is in this sense that Celso (D.1.1.1.1) defines law as ars boni et aequi, an art of the good and the equal, meaning actions measured by their own lex artis, destined to generate new situations that can be qualified as good and equitable.

poor, the criminal Law would rear its ugly head every so often[20] and, more generally, people had scarce contact with the Constitutional Law when they voted every some years, and with Labor Law, since its independence from the Civil Law during the 1920's. Life was little affected by the justice system, and would flow with a rare presence, usually ungrateful, of the Law. In this sense, the lawyer was a figure related to the wealthiest tiers of society, who required their services to safeguard their interests. Without a real middle-class, the rest of the population occasionally received legal counseling through free counseling services, such as the Judicial Assistance Corporation or the shift that lawyers had to complete, and little more.

The emergence of the middle class after World War II –and in Chile as late as the 1980's- disrupted that scenario. The general demand for legal services increased dramatically, as a segment of society had appeared, which required permanent professional attention, although their economic means could barely afford their cost. In the same period, university enrollment grew tremendously, which balanced the hiring costs of a professional legal operator. Basically, although the offer of lawyers grew by threefold,[21] lawyers' fees have remained steady, while the demand for legal services by this middle class keeps rising.

In spite of the aforementioned, since the last decade of the 20th Century, a series of areas that had typically been outside the world of justice, such as intrafamily relationships or intraschool educational relations, started to be observed by the State and, as a result, by the world of legal rules. In this sense, growing areas of private life are now potentially a subject matter of lawyers, so the scope of action of these professionals has increased. Accordingly, and in spite of the growing number of lawyers, there is an unmet or latent demand[22] for legal services in our society.

Nowadays, it is not just about the fragile middle classes that require legal assistance and cannot afford lawyers' presence in their operations as it is too costly, but also the productive framework of society, the huge number of small and medium- sized enterprises that occasionally have to allocate high percentages of their income to gain access to legal services[23]. For a good part of small debts, legal services are too costly to justify their collection, even when an outstanding debt is harmful. Thus, they become bad debts because the legal cost is higher than the benefit derived through. This entails

20/ *In this regard, we should remember the classic work of Menger, Antonio, El Derecho Civil y Los Pobres, translated by Adolfo Posada (Victoriano Suarez, 1898, Madrid).*

21/ *In fact, from having one lawyer every one thousand inhabitants, today there are 2.6, and that ratio grows year after year, as three thousand lawyers take their oath before the Supreme Court every year.*

22/ Susskind, Richard, and Susskind, Daniel, The Future of the Professions (Oxford, Oxford University Press-Kindle, 2015), p.113.

23/ Susskind explains the problem in the following terms:
This can be simply stated: most people and organizations cannot afford the services of first-rate professionals; and most economies are struggling to sustain most of their professional services, including schools, court systems, and health services... For some time, the harsh reality, broadly speaking, has been that only the rich or robustly insured can engage many top-flight professionals, such as doctors, lawyers, accountants, and management consultants. The expertise of a very few is being bestowed upon a few. Richard Susskind and Daniel Susskind, The Future of the Professions (Oxford, Oxford University Press-Kindle, 2015), p.33.

relatively high transaction costs in our economic system that seriously harms our society, as failing to respect agreements is cheap and enforcing them is expensive. This triggers an abundance of defaults and clear injustices, and it even reinforces citizens' perception that the society if full of abuses, as it is easy for operators with a strong economic position to disregard their obligations because the risk of judicialization is relatively low, considering that the general population will only turn to lawyers when the debt greatly exceeds the legal cost of its collection.

In general, the current justice system, with its costs and difficulties, encourages infringement, undermines good faith and promotes mistrust. As defaulting is simple and little risky, economic operators tend to mistrust the enforcement of agreements as it is simple for the different parties to breach them, with no significant legal consequences. This permanent tension creates a generalized mistrust that eventually leads to a credibility crisis in the different social actors. All this hinders the economic activity and provokes a kind of productive stagnation.

In this context, Artificial Intelligence –and other different techniques- has been seen as an alternative that allows us to carry out a deep restructuring of our current justice system, whether through automation or through innovation[24].

In this regard, it is useful to distinguish between both situations. We usually call "automation" to a change in the way some processes are executed that makes it possible to replace the human effort with the work of a machine. Thus, for example, before the invention of trains, people travelled from one place to another in carriages, on horseback or on foot. The invention of the steam train does not change the need to travel but the way such an activity is done, now more quickly and comfortably. When we talk about the automation of functions in the justice world, it is about activities that today are carried out by lawyers and which, by means of the development of new technologies, are executed through programs. On the other hand, innovation implies performing new functions to meet needs that were not previously taken into account. Thus, before the invention of the telephone, people could not communicate from a distance by voice. Telephony did not leave people unemployed, but it created a whole new area of work that did not exist before. In that sense, the effects of both are different, as one tends to replace workers while the other creates a new area of attention. When innovation and automation affect a given economic area deeply, it is said that it experiences a process of disruption, as the old ways to carry out economic activities in a given area stop being feasible and are replaced by new ones.

The question underlying the judicial activity is when it will be affected by the processes of innovation and automation that hover over it. In the long term, the root problem is whether the structure itself of what we understand by Law will be affected.

24/ "Americans need a simpler, cheaper alternative to giving to everyone a free lawyer... In particular, new technologies and approaches to dispute resolution offers us the opportunity to streamline and simplify to the benefit of everyone (except possibly lawyers). For many simple civil and even minor criminal cases, we could reform the process to let technology do the work, funneling parties through stepped, online dispute resolution starting at computerized mediation, passing through human, non-lawyer mediation, and proceeding into our current system only after making every effort to end the case cheaply and quickly... In short, the legal system needs to go on a diet, to make it slimmer, faster, cheaper, and thus fairer. And lawyers need to get out of the way and let cheaper alternatives flourish." Barton, Benjamin H., Bibas, Stephanos, Rebooting Justice. More technology, fewer lawyers, and the future of law (Encounter Books, 2017, London-New York), p.8.

In the meantime, a great latent demand for justice services is unmet, focused on two main aspects: those that cannot finance the provision of legal services, and those conflicts that are not legalizable in the current cost structure because their judicialization involves costs that are higher than the possible returns derived from litigation. Artificial Intelligence may help in both fronts.

6.2. From digitalization to automation.

Artificial Intelligence systems imply the digitalization of the process. There are automation instances that may take place without an appropriate digitalization, but they are always limited to certain issues and they depend on the operation of databases that, in any case, should have already been digitalized. There are important examples of automation at an international level that do not imply an extensive digitalization of judicial operations, some of them successful, such as Prometea, and some failed ones, such as the systems to determine the risks of recidivism and danger[25]. Nevertheless, these systems only tend to automate particular aspects of the administration of justice, and even though they may have a positive impact on the quality and swiftness of some proceedings, the times and costs of the overall process remain. A system that helps judges have relevant jurisprudence handy does not speed up the times of the process substantially, nor can it replace lawyers' work in simple cases, so the core social need will continue to be unmet.

The digitalization of the process is the stage that opens up new possibilities for automation. Times have already been reduced with digitalization alone, as there is no need for the physical presence of the parties to carry out legal proceedings, the notification times are shortened and the file is safe from possible accidental physical damage. Now then, the digitalization of the process also turns legal proceedings into data, and that paves the way for automation technologies that work from data training to assist human operators. In this sense, digitalization is what that paves the way for the global automation of the process in its different parts, so the advantages of this type of technologies become obvious.

In this regard, the digitalization of processes carried out in Chile since 2016 allows for the implementation of all kinds of new technologies while they may potentially reduce their times and costs. Thus, it is this technological change what opens up the door to a series of automation techniques and creates the real opportunity to implement Artificial Intelligence in the process.

25/ Important cases in this sense are COMPAS, about which there is extensive literature, and the recently banned SyRI (*System Risk Indication*), created by the Dutch government to determine the risk of fraud to the social security system, which was finally banned by a judicial sentence of the District Court of The Hague given the risk for the privacy of people and its tendency to bias. See the sentence on:
NJCM c.s./ De Staat der Nederlanden (SyRI) before the District Court of The Hague (case number C/09/550982/HA ZA 18/388.

The tools to implement automation processes are currently under development. The Watson technology is being applied to systematize and manage jurisprudence, so as to enrich the sentences of the courts, but also to automate the resolution of some critical instances whose process shows greater delay and whose massive and standardized nature allows for this type of resolutions. A textbook case is the appeals for protection against ISAPRES, which are private health insurance companies that receive the health quotes of their affiliated workers. Such agencies usually adjust the costs of their health insurance plans beyond what is legally permitted, and that is reflected in the great number of constitutional complaints (called "protection" in Chile) that are usually ruled in favor of affiliates. In order to see the dimension of the problem, in 2019 alone almost 120,000 complaints of this kind were issued against such agencies[26]. The idea is to determine the critical aspects in the resolution of such conflicts and offer the trial court –in this case, the Courts of Appeals- an analysis of the background of the case that allows them to decide on the granting of precautionary measures, that is to say, the rule not to innovate, which halts the price increase of the ISAPRE until the final ruling. Such process would shorten the resolution time significantly and would allow for the resolution of these conflicts in a swift and accurate manner.

26/ See the report: Altura Management, Judicialización Planes de Salud ISAPRES, 2020, available on: https://www.isapre.cl/images/estudios/Recursos_de_Proteccion_Isapres_1_semestre_2020.pdf Checked on May 10th, 2021

If the automation process is successful, the same tools may be applied in other critical, high-impact areas.

6.2. Risks and safeguards.

The risks of implementing Artificial Intelligence in processes are related basically to three aspects:

- Transparency
- The possibility of bias
- Human supervision

We will analyze each of these aspects separately.

6.2.1 Transparency. Automation technologies may be opaque. This is particularly predictable for those based on learning mechanisms through neuronal networks, in which the basis where the correlation between entry data and results is made is not easily traceable and, sometimes, impossible, depending on their size. Moreover, sometimes, in expert traditional systems, the user of these technologies may not be aware of the processes that took place inside the system as it is subject to intellectual property, as we all know was the case with COMPAS in State v. Loomis[27]. The main problem is that jurisdictional processes cannot be opaque, as they carry the responsibility of advertising all the proceedings of the State and, besides, judges should rule in accordance with the law rather than according to verdicts of obscure systems whose

27/ See State v. Loomis, 881 N.W.2d 749 (Wis. 2016) in Recent Cases, Harvard Law Review 130 (2017), pp.1530-1537

basis they do not understand. In this sense, the need for transparency is a vital requirement that has to be met in order to carry out any automation process of judicial proceedings.

We need to be careful when we implement automation technologies in The Judiciary, as transparency obligations in the system should prevail. Thus, transparent techniques should be used, at least in instances when fundamental rights may be affected, and opaque techniques should be left for transaction tasks where there is no such risk.

6.2.2. Bias. Linked to the issue of lack of transparency are the biases that may affect a system. An artificial agent may often have biased predictions because databases are insufficiently representative. Should that happen, the databases used for training ought to be audited as a safeguard of the implementation of an Artificial Intelligence system, and audits that look for biases in the system before its deployment in the real world should be conducted as well.

6.2.3 Human decisions. Finally, it is necessary for automated systems to help human beings make decisions, supporting the judicial work instead of replacing it. Not only is there a human being in the operation (human on the loop), but legal proceedings should be basically human deeds. The judge's role is not only to take responsibility for the decisions made by an algorithm, but to make those decisions themselves taking advantage of artificial agents to facilitate their work. In that sense, judicial decisions should not be based exclusively on automated mechanisms.

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