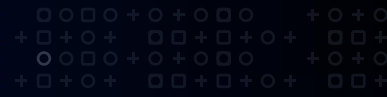




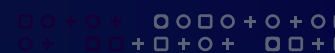
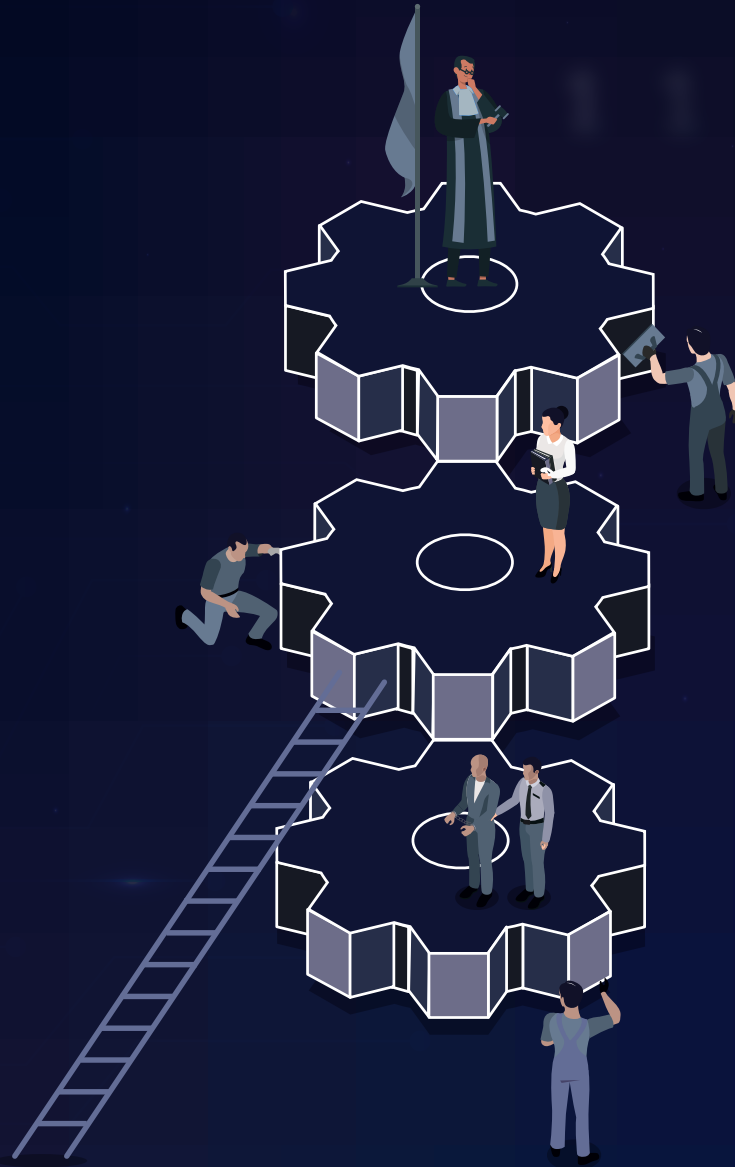
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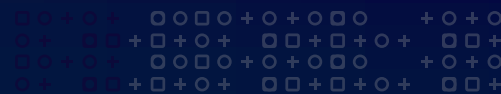


# GUIDELINES FOR TECHNOLOGICAL TRANSFORMATION

in the Administration of Justice



TRANSPARENCIA



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# Presentation

EDNA JAIME | GENERAL DIRECTOR OF MÉXICO EVALÚA

**T**he COVID-19 pandemic has had a severe impact on the administration of justice. In particular, the closure of courts and tribunals has led many judiciaries to imagine different technological solutions so as to resume their services, even if only partially.

This context has accelerated the implementation of technological tools, especially in judiciaries that did not have them. These changes have also forced court and tribunal operating personnel as well as litigants to adapt, since overnight they have had to learn to use technological tools to carry out their work activities and little by little they are recognizing their potential.

Despite this scenario of change, many judiciaries currently face a variety of challenges that hinder technological development —such as lack of budget, planning and support from key actors, among others—, in addition to the lack of knowledge on how to undertake a technological transformation process.

This document has emerged as a response to these challenges and aims to provide a roadmap that allows judiciaries to not only focus on the development of technological tools, but to engage in a deeper and richer reflection on how technology may help improve the processes that judiciaries carry out for the benefit of users.

These guidelines for the planning, development, implementation and evaluation of technological tools for the administration of justice is a compilation of collective knowledge. In other words, in this document we gather

the experiences of the judiciaries that have undertaken a process of technological transformation and identify the key stages involved in making it a reality.

Furthermore, this document includes the principles of the user-centered design methodology, which have been incorporated in a cross-cutting manner, allowing a transition from the traditional approach to the development of technological tools, placing the needs of people at the center. This, with the objective of guiding the design and development of these tools so that they have a real impact on the lives of the people they are intended to serve.

On the other hand, through case studies, this document provides examples and practical recommendations to inform decision-making within the judiciaries.

In this regard, I would like to thank the judiciaries of the State of Mexico, Tamaulipas and Yucatán, as well as the Judiciary of Uruguay and the Ministry of Justice of Spain for their support in sharing with us their invaluable experience.

I would also like to thank the Friedrich Naumann Foundation for Freedom for its support in the preparation of this document.

It is clear that today, more than ever, we are at a decisive moment that we must take advantage of so as to promote technological development within the judiciaries, but in a responsible, planned and assessable manner. Therefore, we hope that these guidelines may serve as support to the judiciaries in this process.



# Introduction

The use of technological tools by the judiciaries is not new. From the use of videoconferencing for hearings to the incorporation of electronic platforms for filing lawsuits and motions, the judiciaries have made use of these instruments to carry out proceedings remotely. However, despite their existence, prior to the COVID-19 health crisis, few judiciaries had ventured in this direction and their use was more exceptional than frequent.

With the pandemic and the sudden closure of courts and tribunals, it was precisely the use of technological solutions that allowed many judiciaries to resume their services to the public and, in this way, reestablish the administration of justice. Unfortunately, few judiciaries had such tools. As for the others, while some were able to develop some technological solutions in haste given the urgency of the situation, others did not have the capacity to do so and were left behind.

In addition to demonstrating the importance of technology in the administration of justice, this context provides an opportunity to reflect on how it can improve and make judicial processes more efficient beyond the situation caused by the pandemic.

With this objective in mind, some judiciaries have undertaken technological change processes, a complex task

because it involves lengthy planning, the adaptation and redesign of existing processes, the commitment of strategic actors, a solid internal and multidisciplinary team to execute the changes, and, of course, the resources to carry them out.

However, the pandemic only accelerated what several justice institutions had already started years ago with the aim of improving their services and consolidating them through a true technological transformation. The experience, successes and setbacks of some of these institutions may serve as inspiration for others who wish to prepare to follow in their footsteps.

Given the scarce information on these processes and the need to capitalize on experiences, this project is intended to create a roadmap for judiciaries seeking to undertake a technological transformation, taking into account the experiences and lessons learned from other institutions that have already taken this same path.

Therefore, this document compiles the transformation stories of various judiciaries that have managed not to digitally replicate what was done on paper, but to implement a series of comprehensive technological solutions created with a user-centered approach. These are then tools that take into account the needs, limitations, values and aspirations of people in order to achieve effective solutions.



And it is precisely this approach that is at the heart of this study. With it, we intend to provide judiciaries with a tool that will allow them to identify any areas for improvement from the users' perspective and to propose innovative solutions that they are willing to use. In this sense, we believe that the use of user-centered methodologies has great potential to transform the administration of justice systems, as well as to improve citizens' perception of the judiciaries. Therefore, in this document we propose general guidelines, in which the user is given priority for the planning, development, implementation and evaluation of technological interventions for the improvement of the systems for the administration of justice.

This research, which provides judiciaries (and possibly other justice institutions) with a practical guide for technological transformations, describes first-hand the main stages of the process to be followed, as well as the lessons learned, challenges and opportunities of other institutions that have already undertaken their transformation.

In order to carry out this study, we interviewed several technology specialists, as well as representatives of the judiciaries of the State of Mexico, Tamaulipas, Yucatán, the Eastern Republic of Uruguay and the Ministry of Justice of Spain.

These institutions were selected based on their experience with the use of user-centered methodologies, or some variant thereof, to develop a technological transformation process.

This proposal for guidelines is divided into three parts. The first section argues the need to rethink the functioning of the judiciaries and explains what the user-centered methodology consists of, as well as the benefits of developing technological tools under this approach.

The second part describes the preconditions necessary to initiate the transformation process, the steps that judiciaries must follow, and specific interventions that take into account the needs of people. Tools for evaluating their effectiveness are also proposed. This section also includes testimonies from representatives of various judiciaries that illustrate and exemplify how each of the stages was carried out, while providing a set of methods and ideas so that the judiciaries have a point of reference on the specific activities to be performed.

Finally, the third chapter provides some reflections on the specific challenges faced by judiciaries when developing technological tools and interventions, such as the need for these developments to be respectful of due process and human rights. Lastly, this section also offers recommendations on inherent aspects of technological solutions, such as cybersecurity or storage, which may represent challenges specific to judiciaries.

We hope that these proposed guidelines can help judiciaries to accomplish their technological transformation processes and deploy effective interventions that contribute to improving the administration of justice for all people.

## CAPÍTULO 1

# Why is it necessary to rethink the functioning of courts and tribunals?



Access to justice has been a particularly relevant issue on the international agenda in recent decades. As a sample, we can cite the inclusion in 2015 of this principle in the UN Sustainable Development Goal 16, thus recognizing it as a crucial part of the Rule of Law and as an essential element to achieve other Sustainable Development Goals. Likewise, the Organization for Economic Co-operation and Development (OECD) has pointed out that access to justice services “is a crucial determinant of inclusive growth, citizen well-being and sound public administration” (OECD, n.d.).

Despite national and international efforts, access to justice remains a pending issue in many countries. According to the OECD, in 2016 approximately four billion people in the world lived outside the protection of law by subsisting in a state of poverty or marginalization, which was equivalent to 53% of the world’s population (OECD, 2016). This situation is due in part to the numerous barriers people face in accessing justice, such as the remoteness of legal services, the costs associated with them, or the scarcity of legal representation, among others (OECD, 2016).

As a consequence of these and other obstacles, it is common for people not to seek legal help when facing a problem. The World Justice Project’s 2019 global survey showed that 49% of people surveyed had at least one legal problem in the past two years, and of these, only 17% took it to an authority or third party to mediate or resolve it. The survey points out that these



problems may have a major impact on people's lives, with 43% of the total respondents mentioning that the problem adversely impacted their life by experiencing physical health deterioration or stress and 23% indicated having lost their job.

These figures predate the emergence of the COVID-19 pandemic and do not reflect the impact that the health crisis has had, but it is clear that access to justice has been profoundly affected by what has been "the worst health, economic and social crisis since the Second World War" (OECD and Law & Justice Foundation, 2020). The closure of courts and tribunals and the delays caused by their limited operation have made access to justice impossible for billions of people, particularly for vulnerable groups, which already have a reduced capacity in terms of knowledge, resources and skills to deal with these types of problems (OECD and Law & Justice Foundation, 2020).

On the other hand, the health crisis has challenged the institutional capacities of the judiciaries, many of which have had to implement technological measures and new procedures in order to guarantee their services to the public. However, the response of the judiciaries in each country was different and was conditioned by a series of factors related to the existing institutional capacities, the available budget, and external factors, such as the degree of technological development of the communities in which they were located and the regulatory framework, among others (México Evalúa, 2020). That is to say, while a few judiciaries, which had implemented technological solutions for years, saw their use increase, some had to develop new tools in a matter of months and others were unable to do so. This has shown, on the one hand, the low level of

## ■ The closure of courts and tribunals and the delays caused by their limited operation have made access to justice impossible for billions of people, particularly for vulnerable groups.

technological development of the judiciaries before the pandemic and, on the other hand, the need to rethink the administration of the justice system.

Of course, the demand to transform justice systems is not new. For several years, representatives of the legal profession, academia, the judiciaries themselves and other sectors of society have recognized that the design of judicial processes often does not correspond with the needs and advances of modern society and that it is necessary to make justice systems more accessible, simplify processes or reduce costs, among other issues (Salter and Thompson, 2017). One of the ways that has been proposed to achieve this is to adopt technological tools that allow rethinking the functioning of judiciaries not only to automate internal processes, but also to transform their operation (Susskind, 2019).

In this sense, over the last two decades, several advances have been made to digitize justice<sup>1</sup> in countries such as Australia, Spain, Italy, Portugal and the United Kingdom, among others<sup>2</sup>. These countries have managed to automate processes within their judiciaries through the implementation of procedural management systems, judicial support systems and electronic

file platforms, among other tools that interoperate with other institutions of the justice system. To achieve these accomplishments, these countries have faced long and complicated processes, resulting from various barriers related to institutional, organizational and even political factors (Cordella and Contini, 2020).

Of equal relevance has been the work of the National Center for State Courts (NCSC), which has focused on

<sup>1</sup> Although we recognize that, in its original meaning, "digitize" means to record or convert data into digital format, by extension the terms "digital justice" or "digitize justice" have been used to refer to efforts to incorporate technological tools into the processes of administration of justice. In this document these terms will be used with this meaning.

<sup>2</sup> In Mexico, although the digitalization efforts have not been homogeneous at the national level, some local judiciaries have made multiple efforts over the years to transform and automate their processes. Judiciaries such as the State of Mexico, Guanajuato, Nuevo León and Tamaulipas have distinguished themselves as pioneers in this field.

providing technical assistance, training, and support for the implementation of technology tools in the United States and in more than 70 countries (NCSC, 2021). Among its projects, the reengineering of business processes that has been carried out within various judiciaries stands out. This approach proposes moving to a more corporate perspective (Hall and Suskin, 2010) in order to radically rethink and redesign the processes of judiciaries to achieve better performance, reduce costs, increase service quality and reduce delivery times (O'Neill and Sohal, 1999).

These processes are valuable because they start from a comprehensive perspective, where a profound change is proposed that makes it possible to reconsider the functioning of the judicial bodies. In general, these processes include the implementation of technology as a tool for change in six strategic areas: a) electronic filing of legal documents; b) electronic document management systems; c) electronic payments; d) electronic records; e) use of videoconferencing tools; and f) fully integrated case management systems (Hall and Suskin, 2010).

Technology is undoubtedly a catalytic tool for these changes. However, some critical opinions argue that the implementation of these tools generates significant digital gaps that may lead to unequal access for people, especially those in situations of poverty or vulnerability (Rose Hough, 2012).

Although the use of cell phones has increased in recent years, three years ago only 48.16% of the world's population had access to a smartphone (Turner, 2021)<sup>3</sup>. In addition, Internet access is still insufficient. According to World Bank data, in 2019 there were 15.67 fixed broadband subscriptions per 100 people and only 56.72% of the world's population used the Internet (Banco Mundial, 2019).

On the other hand, digital literacy understood as the set of skills and knowledge to use technology (García et al., 2016) remains a major barrier, especially for the elderly, people living in poverty or with a disability (Datta et al., 2019).

Another criticism regarding the use of technological tools for the administration of justice is that many of them fail to fulfill their intended purpose<sup>4</sup> due to low levels of use by users, especially when they are aimed at a broad and non-specialized audience (Bernal and Hagan, 2020)<sup>5</sup>.

One of the movements to transform the administration of justice systems that has sought to address this issue and that has gained momentum in recent years is that of "justice innovation". This trend consists of the generation of various interventions to improve the resolution of legal problems and participation in the justice system (Bernal and Hagan, 2020). To do so, a user-centered methodology is employed whose objective lies in understanding people's needs, values and aspirations, to subsequently use that knowledge to create interventions that can better serve the people to whom these services are directed (Hagan, 2018)<sup>5</sup>.

This methodology, which comes from the discipline of design and has been used to create technological innovations, has its roots in the humanistic psychology movement, behaviorism, and has expanded to other disciplines such as education, medicine and business (Quintanilla, 2017). Unlike other more traditional approaches, where solutions are built from the point of view of experts, this approach begins with a stage of immersion in the field to understand the perspectives of users and key actors, in order to take them as a guide to improve the experience and functionality of the tools developed (Hagan, 2018). In this way, the emphasis is no longer on the needs of the justice provider, but on the needs of those who access these services (Salter and Thompson, 2017).

Thus, based on the perspectives obtained thanks to the users, the problems to be solved are determined and possible solutions are devised. Subsequently, some of them are discarded based on their feasibility and economic viability, for which a series of prototypes and pilots are carried out. Afterwards, these prototypes are empirically tested to explore the effects of the interventions (Quintanilla, 2017).

<sup>3</sup> This percentage increases when non-smartphones are taken into account. In this regard, it is estimated that in 2021, 61.85% of people have access to a mobile device.

<sup>4</sup> An example of this is Rechtwijzer 2.0, an interactive negotiation platform aimed at couples seeking divorce, launched in 2015 by the The Hague Institute for Internationalization of Law (HiIL), which had to close down due to lack of users.

<sup>5</sup> In many countries, people who do not have the resources to access legal representation are able to represent themselves in civil matters. Therefore, many of the technological tools implemented by the judiciaries in those countries have focused on offering their services to a broader public as opposed to simply attorneys.





The advantages of developing user-centered tools are diverse. First, because solutions are created with a variety of users in mind, they provide greater accessibility to individuals, taking into account not only their needs and interests, but also their limitations. Secondly, this methodology allows interventions to be tested and evaluated before they are implemented in order to correct those aspects that may hinder their use or be confusing to users and thus ensure that the proposed solutions are effective when implemented. This is especially relevant because it prevents judiciaries from spending considerable resources on technological tools that users ultimately do not understand or use (Hagan, 2019).

Another advantage is that this methodology allows detecting unexpected results and identifying the reactions of people interacting with the tools during the prototyping and piloting phases (Hagan, 2018). This last aspect is of vital importance not only to improve the tools or interventions that are created, but also to learn how people experience and navigate the justice system.

Knowing the experiences of users is vital to design tools that facilitate their understanding of the processes in which they participate, during which it is common for them to feel intimidated, in addition to creating an environment where they feel that they are being listened to and taken into account. This could be the key to improving the low level of trust that citizens have in the

judiciaries, especially in countries such as Mexico, where only 56.9% of citizens say they trust judges somewhat or a great deal (INEGI, 2020).

In this regard, several studies have shown that institutions and public officials tend to gain legitimacy<sup>6</sup> when they “exercise their authority through processes that people experience as fair”, regardless of whether the outcome favors them or not (Tyler, 2006). This is relevant because legitimacy is key for people to more readily accept decisions and follow rules.

Finally, the judiciaries that have used this type of methodology to design technological tools report that their implementation is less complex, since the participation of users is included in all stages of the process, which causes them to take ownership of the instruments that are being designed, so there is less resistance to change.

The use of user-centered methodologies has great potential to transform the administration of justice systems. Therefore, this document reviews the main steps to carry out both technological transformation processes and specific interventions within the judiciaries. This study combines a theoretical and practical perspective on the use of this methodology through an exhaustive documentary review of specialized literature and documentation of the experience of institutions that have successfully carried out this process.

<sup>6</sup> According to Tyler (2019), legitimacy exists when “the belief in authorities, institutions and social covenants are appropriate, adequate, and just” and result in a person feeling obliged to obey them.

# TECHNOLOGICAL TRANSFORMATION CYCLE

## Preparando el terreno



Innovative leadership and open to change



Consolidated IT department



Consolidation of a group to lead the transformation



## Visualizing the transformation

Design of specific tools and intervention



Devise new solutions



Understanding user needs



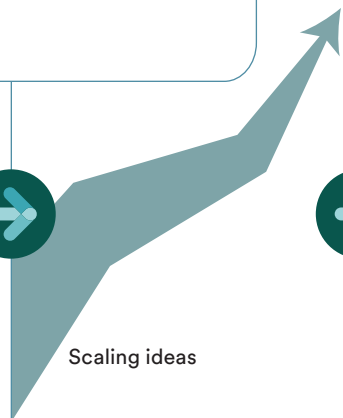
Budget analysis.



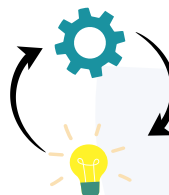
Prototyping



Testing good ideas



Scaling ideas



Implementation

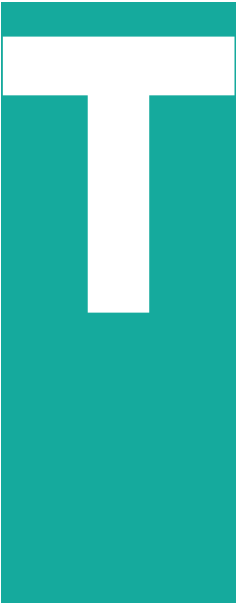


Evaluation



## CAPÍTULO 2

# How can the judiciaries be transformed so they can provide better service to users?



This chapter describes in chronological order and in detail the stages required for judiciaries to carry out technological transformation processes. It begins with the preconditions necessary to begin planning the process and describes the specific stages for developing interventions with an emphasis on users.

It is important to mention that throughout this chapter we do not go into technical details regarding infrastructure or technological capabilities for the development of technological systems, but rather provide a flexible framework so that the judiciaries may decide on a case-by-case basis the type of intervention required and the development specifications of each project, taking into account the needs of the users, the context, and the institutional characteristics and capabilities available.



## 1. Paving the way: necessary preconditions to start a transformation process

The reasons why justice institutions initiate a process of technological transformation or process reengineering are diverse. In recent years, these changes were mainly motivated by budget cuts resulting from the economic crisis, which prompted the judiciaries and other institutions to rethink their processes and identify those that could be modified and automated to make them more efficient and thus avoid falling behind. Another reason was the emergence of various regulatory changes that already contemplated the use of technological tools within their provisions and that ended up driving this transformation.

However, as we mentioned in the Introduction, the arrival of the COVID-19 pandemic forced judiciaries to look for mechanisms that would allow them to resume their services while complying with social distancing measures and other restrictions. The health crisis has thus been an important catalyst for change, as it has pushed many judiciaries to implement more and better technological tools and to make profound changes within themselves.

Regardless of the reason why a Judiciary decides to undertake a technological transformation process, it is important to identify the pre-existing conditions that may facilitate such a transformation or, on the contrary, hinder it. This section describes the preconditions necessary to carry out this type of process and revisits specific experiences of judiciaries that have managed to “pave the way” for a successful technological transformation.

### 1.1. Innovative leadership open to change

One of the most important elements to initiate a technological transformation process is to have a solid leadership that has the will to make these changes and a strategic vision that will provide direction to the institution. In the case of judiciaries, this process is usually led by the people who preside over the courts or the judicial governing body. This has several advantages since the fact that the transformations are led by people who have the power to make decisions may help resolve disputes and resistance that could arise within the institutions (Cordella and Contini, 2020).

During the interviews conducted with the judiciaries, one of the most recurrent characteristics regarding how

the transformation process had been initiated was that at a certain point in time a Chief Justice had taken an interest in the technological topic and had prioritized it in his or her work agenda during his or her term of office.

Some of the people interviewed even considered it a stroke of luck that marked a change of direction for the institution. However, having a strong, visionary and innovative leadership should not be a matter of luck. Therefore, the selection processes for presidents of judiciaries should ensure that they are able to “find and retain capable individuals in leadership positions” (NCSC and NACM, 2010), who can take on the challenge and have the vision to drive these processes forward.

This is important because the person leading these processes has the great responsibility of recovering the lost trust of citizens and officials and convincing them that change is necessary and possible (Borins, 2002). Furthermore, the leader must seek the support of various key actors, including the political sector, in order to be successful. According to Cordella and Contini (2020), this type of support is particularly relevant for making regulatory changes, obtaining long-term financing and aligning the priorities of the institutions involved. In this sense, the authors point out that it is necessary to assess the degree of political support and commitment through the analysis of the discourse, the identification of priorities within the agenda and public opinion on the subject (Cordella and Contini, 2020).

Another of the main challenges is to ensure that the continuity of a process of change is not linked to the length of time in office of the person who heads it. In other words, transformation processes are generally initiated by a person who is in power at the time; however, when his or her term ends, the efforts come to an end to make way for the plans and objectives of the person

■ **The person leading these processes has the great responsibility of recovering the lost trust of citizens and officials and convincing them that change is necessary and possible.**



who takes his or her place. This is especially important in judiciaries where the term of office of presidents varies between one and six years, as is the case in Mexico, depending on state regulations, and where, on occasions, it is not possible to reelect them.

Given the risk that a change of leadership may represent for the sustainability of a technological transformation process, it is important to establish this issue as a fundamental and permanent pillar in the institution's strategic development plan and thus ensure that it is not limited by any change of management or that it does not depend on the term of the person in charge<sup>7</sup>. In Mexico, one of the strategies that could ensure the continuity of the project within the judiciaries is for this plan to be approved by the judicial governing body and by the plenary of magistrates. In this way, consensus could be generated between both bodies and ensure its continuation by the person who assumes leadership in the future.

On the other hand, reducing the rotation of administrative officers could also help the continuation of the technological transformation plan. This is especially relevant in countries such as Mexico, where there is no professional career service for administrative officers and where the permanence in these positions is, most of the time, subject to the tenure of the local Supreme Court Chief Justice (México Evalúa, 2021a).

Having said that, despite the importance of leadership, it is necessary to recognize that the capacity to innovate is not exclusive to senior management. According to a study by Borins (2002) on the relationship between leadership and innovation in the public sector, bottom-up innovation is more frequent than one might think. This study analyzed data from several countries on innovations in the public sector and found that a high percentage originated from mid-level officials or front-line staff<sup>8</sup>. In this context, the role of leadership is essential in creating a favorable climate within the institution that allows public officials to innovate (Borins, 2002).

One way to foster creativity and innovation within institutions is through the creation of an innovation department that allows for the identification and follow-up of

promising initiatives. This department should be visualized as a robust area that enables the design, implementation and evaluation of all types of interventions.

Another positive practice in this regard is the creation of spaces in which personnel may express their proposals or suggestions, in order to facilitate communication between them and management. These spaces may also help identify promising ideas or initiatives and reduce existing obstacles within institutions where decision-making is more hierarchical and does not offer possibilities for experimentation.

## 1.2. Consolidation of the department or area of technology

Another relevant aspect when initiating a technological transformation process is to have a technology department that has the capacity to meet the demands of this process. However, several interviewees pointed out that there is often no consolidated technology department within the judiciaries and that it is generally perceived only as a support area.

In this regard, it is important to strengthen the capabilities of this area so that it can participate in decision-making related to the technological transformation process, as well as facilitate the development of technological solutions. This is of major relevance since it ensures, on the one hand, that the development of systems and their maintenance can be carried out internally—which, as will be seen later on, allows for long-term savings— and, on the other hand, that these systems will always belong to the Judiciary, which guarantees their autonomy by not depending on a third party, such as a private company.

One of the main aspects for strengthening technology departments is the allocation of an adequate budget. In this regard, it is common that these departments are not assigned a specific budget or that it is very small. The allocation of an adequate budget requires a great deal of institutional planning and a search for funding opportunities. In the following section we offer some ideas in this regard.

<sup>7</sup> The State of Mexico Judiciary is an example where the technological issue has permeated institutionally as since 2015 a process of technological transformation has been carried out, which continues to be one of the priorities of the current presidency.

<sup>8</sup> The author mentions that in the United States, from 1995 to 1998, 50% of innovations in the public sector originated from mid-level officials or front-line staff, 25% from agency heads, 21% from politicians, 13% from interest groups and 10% from people outside the government. In a sample consisting of Canada, Australia, New Zealand, Singapore and the United Kingdom, the percentage of innovation by mid-level and front-line officials increases to 82%. These latter results are similar in countries such as Bangladesh, Ghana, Jamaica, Malaysia, South Africa and Zimbabwe.



On the other hand, the rigorous selection of profiles is essential to identify individuals who possess the necessary skills to carry out the projects and meet the objectives set. Besides technical knowledge, these people must also have leadership skills that allow them to take an active role in the transformation of the judiciaries and not be mere spectators. In this regard, the General Director of the Administrative Services of the Judiciary of the Republic of Uruguay mentioned:

We have to become strategic operators, but with IT knowledge and not pure computer experts (so that someone is not going to tell us what to do. One thing we did was to take the lead, i.e., we ourselves say, “what you need is to have an application that does such and such things”. We are going to get everybody together and we are going to sell them the idea (M. Pesce, personal communication, August 24, 2021).

Likewise, members of the technology departments of some judiciaries pointed out that the inclusion of multidisciplinary profiles in this department is very useful. Having, for example, attorneys or people with a background in law who also have knowledge of IT or technology will facilitate the development of technological tools for courts and tribunals, by providing more clarity on the functioning of these bodies, as well as technical details on the processes.

Finally, another of the fundamental aspects mentioned by the interviewees to consolidate the technology area was the constant training of staff. Although it may be costly, it is indispensable for updating personnel and identifying good practices that may be adopted in the area.

Below are some successful cases of judiciaries that have managed to consolidate their technology departments.



## CASE STUDIES

### State of Mexico Judiciary

In recent years, the State of Mexico Judiciary has positioned itself as one of the most advanced judiciaries in the field of digital justice in Mexico. However, this required a long process of consolidation of its technology area (S. Medina, personal communication, September 3, 2021; I. Rodríguez, personal

communication, May 28, 2019; M. Lima, personal communication, August 31, 2021).

One of the main strategies adopted was to elevate the technology area hierarchically in the organization chart in order to involve it in the decision-making process. Originally, the Technology Department depended on the General Directorate of Administration; however, in 2017, it became the General Directorate of Innovation and Technological Development, positioning itself on par with the General Directorate of Administration and the General Directorate of Finance and Planning (I. Rodríguez, personal communication, May 28, 2019; Circular 15/2017, 2017)<sup>9</sup>. This provided the department with an important capacity in the decision-making process, as well as the authority to follow up on transformation projects with the areas involved.

This brought with it a different way of conceiving the technology area: it went from being perceived as a support area to becoming a development area. Thus, the number of employees increased from 23 people in 2015 to 100 people in 2020. During the strengthening process of the area, it was decided to hire mainly software development engineers so that all developments would belong to the Judiciary.

For the selection of personnel, rigorous recruitment processes were carried out, which included the application of practical and theoretical tests to ensure the suitability of candidates. In addition, competitive salaries were offered to avoid staff turnover. All this strengthening was accompanied by refresher courses and an environment of recognition for the work of the people who made up the department.

Finally, it was allocated a significant budget for its development.

### Tamaulipas Judiciary

In the late 1990s, the Tamaulipas Judiciary had a significant advance in terms of telecommunications and equipment (A. Cantú, personal communication, August 11, 2021). However, at that time, the technology area was still perceived as a support department, and the software used by the courts to follow up on cases was developed externally.

<sup>9</sup> The complete organization chart is available at the following link: <http://documentos.pjedomex.gob.mx/documentos/archivos/2021/03/587420210326004844.pdf>



It was in the period from 2006 to 2010 that the Judiciary increased the number of personnel in this area and focused on hiring developers, who were given the task of replicating the management systems that had been developed by third parties, as well as implementing new technological tools. As a result, the staff gradually became specialized in the development of systems for specific subjects.

Finally, another of the characteristics that has allowed the consolidation of the technology area is that it is structured within the organization chart as a Directorate<sup>10</sup> at the same level as the Administration and Finance Directorates.

## 2. Visualizing the transformation: how to plan the process?

### 2.1. Consolidation of a diverse group to lead the transformation and establishment of principles to guide the process

Once the necessary conditions have been met to initiate the transformation project, the first step is to convene the key actors to plan the process and establish strategic objectives and goals. As mentioned in the previous section, it is important to identify and include all key actors.

In this regard, the group in charge of leading the change should be composed of profiles representing diverse perspectives. In fact, some judiciaries and experts in the field (I. Rodríguez, personal communication, May 28, 2019; J. Apperson, personal communication, August 24, 2021; Cordella and Contini, 2020) stress the need to include in this group not only judges and other jurisdictional employees, but also administrative officials, such as representatives of the technology and administration department, as well as legislators, representatives of the Judiciary, leaders of the main bar associations, representatives of the community, of the public defender and district attorney's office, police and mediators, as well as representatives of other sectors of the legal profession that may be affected by the transformation processes. Additionally, it is advisable to have the support of strategic planning specialists and experts who have been involved in similar transformation processes (Apperson, 2019).

Shannon Salter, the Civil Resolution Tribunal's Chair, an online dispute resolution tool developed by the Judiciary of British Columbia in Canada, pointed out in an interview that including only judges, attorneys and court administrators in this group almost never yields good results, since these are the actors who originally designed the justice system and would basically be replicating the same logic (México Evalúa, 2021b). In this same sense, the NCSC suggests that this group should include one external person for every two or three members of the Judiciary (Hall and Suskin, 2010).

Once the key actors have been identified, it is necessary to summon them to a series of working meetings to plan the process. To this end, it is important that the Judiciary's highest authority is the one to convene them in order to ensure their participation (J. Apperson, personal communication, August 24, 2021).

The success of the process will depend on the support of all key actors and the consensus reached on how to carry out the transformation. In criminal matters, it is particularly important that the institutions of the justice system (district attorney's office, public defender's office, police, etc.) join the project, as this will facilitate the development of tools that interoperate with each other. In this regard, Cordella and Contini (2019, 49) point out that "when there is cooperation between the main institutional actors, it is possible to successfully design and deploy interoperable systems throughout the criminal justice chain". On the other hand, it is vital to obtain the support of the Legislative Branch, since, in many cases, the transformation process requires a change in the regulations regarding the operation and structure of the Judiciary itself.

In order to obtain it, it is necessary to put forward a strong message about the need for transformation and a clear vision about the ideal functioning of courts and tribunals and how this can have a positive impact on the administration of justice to users.

Therefore, Jesús Barba Lobatón, Deputy Director General of Digital Transformation Planning and Management, at the Spanish Ministry of Justice, comments as follows:

Another important aspect that we have to address, apart from the development of culture, is the issue of vision, because at the level of digital transformation projects, which are very big, long-term projects, with

<sup>10</sup> The IT management of the Tamaulipas Judiciary is composed of a Technical Support Department, a Systems Development Department and a Telecommunications Department. The organization chart may be consulted on the following website: <http://www.pjetam.gob.mx/layout.php?seccion=Estructura>



many components, with many interlocutors, differentiated stakeholders, it is very easy to get lost. It is very easy to get caught up in the details and forget the vision, the objective, the reason why we do everything, where we want to get to, how we want to do it, what the goal is, why it is good for society. It is important to set, maintain and agree on a common vision so that we can do it in the best possible way (J. Barba Lobatón, personal communication, September 13, 2021).

A good practice for not losing sight of the vision and objectives is for the group of key actors to come up with a set of principles that guide the efforts to be undertaken and connect the court's mission to the specific projects or interventions. In this regard, Clarke (2020, 30) notes that these principles "assemble the values, vision and fundamentals needed to guide efforts and communicate the basis for any decisions that are made".

In this sense, any decision, project or intervention is evaluated according to compliance with these principles, which can be divided into three: a) governance principles that standardize decision making; b) case management principles that define how each case is handled; and c) principles related to the essential functions of the Judiciary, which help justify budget reallocation.

In terms of governance principles, during the 4th National Symposium on Court Management, the Utah Judiciary presented ten fundamental principles (Becker and Durham, 2010), which are described below by way of example:

1. A well-defined governance structure for policy formulation and administration of the entire administration of justice system at the local level.
2. Significant contributions of the different levels of the Judiciary in the decision-making process.
3. A system that speaks with one voice.

**■ The success of the process will depend on the support of all key actors and the consensus reached on how to carry out the transformation.**

4. Leadership selected on the basis of competence and not just seniority or rotation.
5. A commitment to transparency and accountability.
6. The authority to allocate and spend resources in an independent manner from the legislative and executive powers.
7. An approach on policies, a clear delegation to administrative staff and a commitment to evaluation.
8. Open communication about decisions and how they are made.
9. Positive institutional relations that foster trust on the part of other authorities and citizens.
10. Clearly established relationships with court presidents, court administrators, boards of judges and court committees.

According to Clarke (2010), these principles are particularly useful for guiding the regulatory change, which is why it is important that legislators participate in this process of establishing principles as it may help during the decision-making process, especially when political pressure seeks to maintain the status quo.

Regarding case management principles, the High Performance Court Framework (Ostrom and Hanson, 2010) has established the following:

1. Each case receives personalized attention.
2. Personalized attention is proportional to need.
3. Decisions made reflect procedural justice.
4. Judges control the process.

Finally, the principles related to the essential functions of the Judiciary are the ones that could cause more controversy, but they may be crucial to deal with budget cuts and prioritize the essential functions that judiciaries must fulfill when long-term budget shortfalls do not allow for their optimal operation. According to Clarke (2010), these principles seek to identify which of the functions performed by courts and tribunals are central to fulfilling their constitutional mission, and which are not essential and could be performed by other government agencies.

It is important to emphasize that these principles are established to help with process reengineering and require





significant regulatory changes. The NCSC (2010) has set out, by way of example, some of the principles that could be defined in this regard:

1. Accept only cases where there is a dispute or controversy.
2. Accept only cases with two parties.
3. Accept only cases that cannot be handled administratively.
4. Accept only cases where more informal and less costly approaches such as negotiation and mediation processes have failed.

It is important to clarify that these types of principles are motivated by the significant budgetary constraints faced by judiciaries, while proposing an elimination in the regulations of processes that are not fundamental to the fulfillment of the judiciaries' constitutional mission. However, when it is not possible to carry out such a profound transformation, alternative approaches may be adopted. For example, without seeking to relinquish its power to resolve certain simple non-litigious matters, such as voluntary divorces where there are no children, some adoption processes or acquisitive prescription cases, the State of Mexico Judiciary has created courts that operate entirely online to resolve these matters. In this way, it has been able to reduce the duration of the processes and lower the institutional costs of resolving them, thus freeing institutional time and resources to resolve more complex cases.

It should be noted that this entire set of principles is listed as an example, since each Judiciary must define the type of principles that will guide its transformation process, taking into account its needs, its structure, its regulatory framework and its vision, among other factors.

## 2.2. Design of a strategic plan

The design of a strategic plan is one of the main steps in the transformation process. This plan should be constructed taking into account the current situation of the Judiciary (Apperson, 2019). To this end, a first step is to carry out a diagnosis that allows the institution to know the circumstance in which it finds itself.

This diagnosis should include an evaluation of the institution's current level of technological development,<sup>11</sup> interviews with people occupying jurisdictional and administrative positions in senior, middle and operational management, as well as with users, in order to detect the institution's needs, strengths and areas of opportunity. **In order to carry out this diagnosis, it is recommended to use the principles and methods listed in section 3.1 of this document.**

Another element that may help during the planning process is to learn about similar experiences and international good practice. In this regard, Marcelo Pesce, Director General of the Administrative Services of the Judiciary of the Republic of Uruguay, said:

We went to look at experiences in other places to see what they were doing, what they had done, where they had failed. In general, it is good to try to see what did not work, so that you do not do the same. Do not make extrapolations in a hurry, for example, go to Mexico and think that we are going to make things work here that work in Mexico or that work in Europe, because maybe they do not work here (M. Pesce, personal communication, August 24, 2021).

Once a diagnosis has been generated, it is important to develop a detailed work plan together with the group in charge of leading the change. This plan should clearly establish the mission and vision of the institution, address key issues such as the resources with which this process will be carried out, the stages it will consist of, the people responsible for supervising and executing the activities and the way in which the results will be evaluated, among others.

Finally, the identification of clear objectives that allow the evaluation of the progress and success of the project is a fundamental aspect of the construction of the strategic plan. An example of this is the experience of the State of Mexico Judiciary, where it has been preferable to establish a realistic number of objectives with their respective indicators to be able to measure their compliance, rather than a large number of objectives that in the end cannot be achieved (I. Rodríguez, personal communication, May 28, 2019).

These objectives must be accompanied by general indicators that allow us to measure the overall impact at the institutional level, as well as the results and progress

<sup>11</sup> To do this diagnostic assessment, some experts point out that it is necessary to conduct a detailed inventory of infrastructure-related issues, such as type of Internet connection, hardware, software, among other things (I. Rodríguez, personal communication, August 5, 2021).



of the different projects. **In section 3.5 of this document we address the topic of evaluation and design of indicators.**

Next, some of the key questions that may help build the strategic plan are provided below:

### **Mission and vision**

- ❁ Where are we and where do we want to go?
- ❁ What are the objectives and goals we want to achieve?

### **Problems to be solved**

- ❁ What problems have we identified or have been identified by external actors?
- ❁ What problems do we want to address and solve?
- ❁ What problems can we solve with the resources we have or what do we see as feasible to achieve?
- ❁ In what ways would solving the problems we have identified contribute to fulfilling the mission and vision of the institution?

### **Context analysis**

- ❁ How does the technological transformation process we want to undertake fit into the government's digitalization or modernization policy?

**■ This plan should clearly establish the mission and vision of the institution, address key issues such as the resources with which this process will be carried out, the stages it will consist of, the people responsible for supervising and executing the activities and the way in which the results will be evaluated, among others.**

❁ What is the state of the existing technological infrastructure throughout the territory that corresponds to our jurisdiction?

❁ Are legislative reforms being discussed that may encourage or discourage the use of technology in the administration of justice or that may force us to implement technological changes in some areas?

### **Material and financial resources**

- ❁ What can be accomplished with the available material and financial institutional resources?
- ❁ Is there sufficient funding to meet the objectives?
- ❁ What other sources of funding can be identified?
- ❁ What type of tools should be developed internally and what other tools can be contracted?
- ❁ What is the cost of developing a tool and what is its maintenance cost?

### **Stages of the process**

- ❁ Who will be in charge of the project execution and supervision?
- ❁ What stages will this process involve? How long will it take to achieve?
- ❁ Which projects can be carried out in the short term and which others should be considered in the long term?

❁ In the case of long-term projects, what are the probabilities that future administrations of the Judiciary will follow up on what has been implemented by the current administration?

❁ Even if we are not in a position to execute certain projects in a comprehensive manner, what aspects should we foresee or make flexible when developing technological tools that will allow us to scale and interconnect them with each other in the future?

### **Change management**

❁ What obstacles and resistance inside and outside the institution might be encountered?



❁ How will cultural change be addressed inside and outside the institution?

❁ What allies can we find to overcome these obstacles and resistance?

### *Evaluation of outcomes*

❁ How will the outcomes and progress be evaluated?

❁ What specific indicators and goals need to be established to measure the scope of specific projects or interventions?

❁ What general indicators and goals need to be established to measure the progress of the institution thanks to these specific projects or interventions?

Now then, it is important to recognize that technological transformation processes generally do not occur overnight, so it will be necessary to organize this process in various stages or time periods. To this end, priority should be given to those interventions that are most urgent. Another alternative is to focus on those changes that can be achieved more quickly and leave for later stages those that will take longer (Hall and Suskin, 2010).

In defining these priorities and stages, it is possible that during the process adjustments may be required due to unforeseen circumstances that were not initially contemplated. In this sense, the plan must be flexible enough to be able to change course.

## **2.3. Considerations regarding budget**

One of the main challenges when talking about transformations within judiciaries is the budget. Its insufficiency, budget cuts derived from austerity policies and the lack of budgetary autonomy are some of the obstacles faced by the judiciaries.

When a Judiciary undertakes a technological transformation process, a first step may be to reallocate resources from other sectors or departments to the area of technology. However, this may generate internal resistance, particularly from the areas that will be subject to cuts. For this reason, in order to facilitate the implementation of technological solutions, it is useful to evaluate the savings that may be generated by the

**All the people interviewed agreed that although initially its purchase from third parties appears to be more affordable, in the long term its cost-benefit turns out to be lower due to high maintenance and updating costs.**

technological solutions implemented. These may be varied: for example, in paper or toner, when part of the files is no longer printed or copied; in the construction of buildings, if the possibility is considered for certain employees to telework or if the aim is to expand access to justice through platforms to file lawsuits and motions and carry out other procedures online instead of in person. The long-term forecasting of these allocations and savings may identify resources to carry out these types of projects and overcome internal resistance.<sup>12</sup>

Another useful strategy to deal with these problems is the identification of possible alliances and projects to be developed jointly with the Executive Branch. In this regard, the case of the State of Mexico Judiciary—which is explained in the case studies section— provides a clear example of how collaboration with the Executive Branch made it possible to obtain additional budget to develop some technological tools.

Another way to finance technological development is by creating a self-sustainable technology scheme, i.e. charging a fee to some users for the use of the tool. For example, in some countries, files are publicly accessible to anyone who appears in court. But if instead of going to court a person would like to access the electronic version of the file from a website or an app, it could be considered that they pay a fee (J. Apperson, personal communication, August 24, 2021). As an example, we can cite the Federal Judiciary of the United States, which has implemented a Judiciary Automation Fund that is financed by authorized fees charged when non-parties to a matter make public inquiries of the courts' electronic files through the Public

<sup>12</sup> This, without taking into account that in many countries the budget of the Judiciary is determined each year by a vote of the Legislative Branch.



Access to Court Electronic Records (PACER) website.<sup>13</sup> In this way, this support is delivered to the judiciaries as supplementary budget (Apperson, 2019). However, it is important to be careful that these fees do not end up preventing access to justice, especially for those who do not have the necessary resources. For this reason, the benefits of these fees should be assessed on a case-by-case basis and, if they are implemented, there should be payment exemption mechanisms to facilitate access for those who cannot afford them.

Another strategy to obtain funds for the implementation of technological tools is through donations or financing granted by international cooperation agencies, development banks or other organizations,<sup>14</sup> which publish calls to grant subventions for the strengthening of justice institutions. Although this type of financing may be very useful, it is essential to evaluate the long-term sustainability of the projects and draw up strategies to ensure their continuity once the financing comes to an end, particularly because the costs related to the implementation of technological solutions derive not only from the tools themselves, but also from their maintenance.

In this respect, one of the questions to be answered when software is required is whether it should be purchased or developed internally. All the people interviewed agreed that although initially its purchase from third parties appears to be more affordable, in the long term its cost-benefit turns out to be lower due to high maintenance and updating costs, added to the fact that many technological solutions sold by third parties are not fully adapted to the functions and activities developed by the judiciaries (S. Medina, personal communication, January 23, 2020; I. Rodríguez, personal communication, May 28, 2019). Furthermore, relying exclusively on external software may lead to dependence on a company or a third party (J. Apperson, personal communication, August 24, 2021) and poses challenges in terms of interoperability between different tools.

The above opens up a variety of opportunities around the co-development of open-source systems, given that

judiciaries, for example, could establish a community—national or international—to develop open-source systems that would allow each of them to adapt them to their needs and mutually benefit from the improvements implemented. This is useful in budgetary terms as it allows judiciaries to reduce development costs, facilitate the transfer of knowledge and, at the same time, be the owners of their own software, as well as allowing these systems to be interoperable.

An example of co-development of systems has been promoted by the National Council of Justice of Brazil, which has undertaken a centralized strategy for the courts to use the same management system for judicial processes. To this end, in 2020 it launched the Digital Platform of the Brazilian Judiciary, which allows courts to design their own technological tools and encourage collaborative development. With the implementation of this platform, the aim is to develop its own software to avoid contracting software from private companies, reduce costs and standardize systems (Conselho Nacional de Justiça, 2020).

Similarly, the NCSC has worked cooperatively with judiciaries and courts in countries such as Nigeria, Trinidad and Tobago, Zambia, Namibia, Guyana, and Barbados to develop an open-source case management system. This system is accessible without licensing costs to other judiciaries that wish to use it through the subscription of an agreement to form a consortium (J. Apperson, personal communication, August 24, 2021).

In Mexico, joining this consortium or adapting this model could be of particular interest. In this regard, the National Commission of Supreme Courts of Justice of the United Mexican States (Conatrib), an association that brings together the Chief Justices of the 32 State Supreme Courts of the republic, could take the lead in proposing and implementing a project of this nature, given that among its objectives is “to strengthen the links of collaboration, coordination and cooperation among its members according to their particularities and generalities in the context of renewal, modernization and innovation of the administration of justice” (Conatrib, 2020).

<sup>13</sup> In the United States, the parties to a case and their attorneys may access the electronic file free of charge. For its part, the public is authorized to consult most court files, with some exceptions, such as cases that are confidential by court order or by law (e.g., when the matter involves an underage person) or when certain documents in a public record are classified as confidential. In the event that a person who is not a party to the case wishes to access the file, he or she may do so through the PACER system for a fee. These fees range from payment for electronic access to any case document, file sheet or case-specific report, transcripts or access to an audio of a hearing, to the search for a specific case. There are also exceptions to these fees: for example, judicial opinions, as well as the consultation of any information or document made directly on the public terminals inside the Courts are free of charge (there, the only thing that is charged are the printouts made from these terminals). Finally, each Court determines which individuals may be exempted from this payment. For more information about these fees, see: <https://www.uscourts.gov/services-forms/fees/electronic-public-access-fee-schedule> or <https://pacer.uscourts.gov/pacer-pricing-how-fees-work>

<sup>14</sup> For example, in the framework of criminal reform, the Bureau of International Narcotics and Law Enforcement Affairs (INL) provided support for equipment, training and technical assistance to various justice system institutions, particularly some state judiciaries, especially under the Merida Initiative.



## CASE STUDIES

### State of Mexico Judiciary

One of the strategies that the State of Mexico Judiciary carried out to ensure the sufficiency of resources when implementing the technological transformation axis of the 2015-2020 strategic development plan was the reallocation of budget. Previously, the vision of the Judiciary had been to increase access to justice through the construction of buildings that would become assets of the Judiciary. The new vision of digital justice was a paradigm shift that allowed channeling budget previously dedicated to construction to the area of technology (S. Medina, personal communication, January 23, 2020).

On the other hand, efforts were coordinated with the Executive and Legislative Branches. In this sense, the Judiciary's agenda was intertwined with government social programs. One example was when the local Executive Branch stated among its priorities the creation of a government program for social usucapion. The Judiciary then proposed to the Executive Branch the creation of an electronic trial to regularize the properties and grant their owners a property title in a shorter period of time, for which it obtained the financing to promote the technological tool. On this matter, Sergio Medina, then president of the State of Mexico Judiciary, commented on the importance of collaboration with the executive powers and the need to make the judiciaries visible and attractive to offer more than "just dictating trials" (S. Medina, personal communication, January 23, 2020).

Finally, the State of Mexico Judiciary generated significant savings thanks to its digital transformation process. With the implementation of the electronic file, which became "zero paper" in certain matters, its paper and toner consumption was significantly reduced.<sup>15</sup>

### Judiciary of the Eastern Republic of Uruguay

In 2001, Uruguay was experiencing a severe economic crisis and the public sector faced several budget cuts that left the Judiciary<sup>16</sup> with limited capacity to hire and pay suppliers. Faced with budget reductions, the Judiciary decided to bet on hiring more personnel in the area of technology that could develop internal systems (M. Pesce, personal communication, August 24, 2021).

Nowadays, the internal development policy is still in force, since most of the tools are developed by the technology department, which allows, among other things, all of them to interoperate with each other. For example, a single judicial management system was developed for all matters and all agencies, which allows information to be exchanged with various systems inside and outside the Judiciary. Besides, only free-use software is used, which has considerably reduced the cost of licensing fees.

So far, the Uruguayan Judiciary has managed to maintain a computer operating cost of approximately 5,200,000.00 Mexican pesos per year, the equivalent of about 260,000.00 dollars (this includes the budget for developing technological tools and paying for licenses, excluding staff salaries and operating costs such as electricity and Internet). In addition, it is estimated that the total computer cost of processing a case is approximately four dollars (M. Pesce, personal communication, August 24, 2021).

The Director General of the Administrative Services, Marcelo Pesce, emphasized that the strategy of developing all programs and tools internally responds to the need to recognize that the services provided by the judiciaries are continuous and infinite, since the administration of justice does not end on a single date or period. Therefore, it is necessary to have a long-term perspective that allows a constant improvement of services and where the internal development of tools responds precisely to this logic of operation, as opposed to the acquisition of third-party software that does not facilitate the implementation of improvements.

<sup>15</sup> It was noted that prior to implementing electronic trials, two paper and toner tenders were held annually and that once these trials were implemented, only one tender was held annually (S. Medina, personal communication, January 23, 2020).

<sup>16</sup> The Judiciary of the Eastern Republic of Uruguay, centralized at the national level, is composed of approximately 5,000 officials and serves about 3.4 million people. According to its 2019 Annual Directory, a total of 210,178 cases were initiated (Anuario estadístico 2019. Poder Judicial de la República Oriental del Uruguay, 2020).

### 3. Development of specific interventions for the transformation of the judiciaries

Once the transformation process has been planned, it is necessary to carry out the specific interventions that will help meet each of the objectives established. In this section, the main steps and criteria for designing these interventions with a focus on the user are described. As already mentioned, this section takes up the principles of the user-centered methodology to explain in detail each of the steps to be followed. Also, some ideas are taken from other project management methodologies, such as agile methodologies, which may provide useful guidelines for proper project management and more effective intervention development.

The following methodology does not dictate a single way to solve problems; on the contrary, it is a procedure that when used can derive a variety of interventions (Hagan, 2018). That is, the methodology is not exclusive to the development of technology projects, but rather represents a flexible work framework accompanied by a series of tools that judiciaries can adapt to different projects.

With it, it is possible to create completely new processes, tools or services or redesign existing ones regardless of whether they have a technological component or not. In this way, judiciaries are invited to innovate, to look beyond the automation of their processes and not to fall into the trap of assuming that technological transformation implies digitally replicating what is already done on paper, but to rethink how to transform the administration of justice so that it can better serve citizens. Furthermore, throughout this section, some experiences, lessons learned and challenges that different judiciaries and other institutions have faced when executing each of the stages are mentioned.

#### 3.1. What is user-centered design?

As mentioned at the beginning of this document, the user-centered methodology, also called “design thinking” or “human-centered design”, is used in various sciences and disciplines (Hagan, 2018) and has as its fundamental objective to generate a deep understanding of the people facing the problems, in order to solve them in the best way and thus create solutions based on their real needs (IDEO, 2015). This process is a way of bringing

together “what is desirable from a human point of view with what is technologically feasible and economically viable” (IDEO Design Thinking, n.d.).

The adaptation of this methodology to the legal field is known as legal design and “is a way of assessing and creating legal services, with a focus on how usable, useful, and engaging these services are” (Hagan, 2015). This methodology is then intended to be used to generate “public services that meet the challenges of satisfying users and saving costs” (Wallace, 2008).

Various judiciaries, justice institutions and other organizations around the world have used this approach to create technological and non-technological interventions to improve the administration of justice. Some of them are the British Columbia Civil Resolution Tribunal (CRT) in Canada, an online dispute resolution tool that uses artificial intelligence to guide people who have a problem and offer them different alternatives to solve it (Salter and Thompson, 2017); The Hague Institute for Innovation of Law’s Justice Transformation Lab, which has implemented several justice innovation projects in Syrian and Nigerian courts (Hill, 2021); the Legal Design Lab at Stanford, a laboratory focused on creating interventions to improve access to justice in U.S. courts and improve legal information offered through the Internet (Stanford Law School, n.d.); or the Government Laboratory in Chile, which is in charge of promoting a joint creation with various institutions of solutions to public problems in order to improve the services offered to citizens with a focus on people (Laboratorio de Gobierno, n.d.).

The stages of the methodology vary from one author to another. For example, Quintanilla (2007) identifies three major phases: inspiration, ideation and implementation. And Bernal and Hagan (2020) identify up to six: setting

**Methodology is not exclusive to the development of technology projects, but rather represents a flexible work framework accompanied by a series of tools that judiciaries can adapt to different projects.**

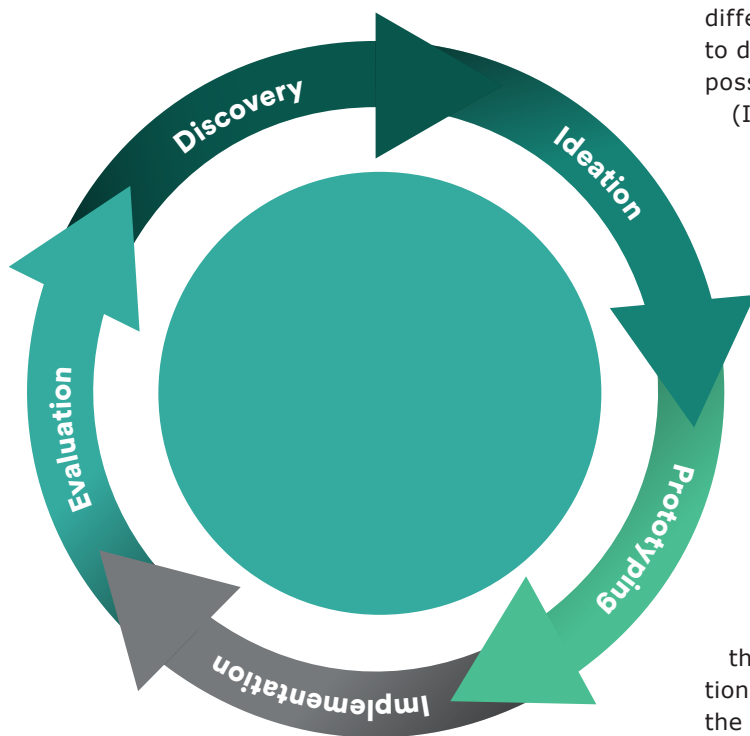


up a project, identifying user needs, exploratory design and assessment of solutions, evaluation, piloting and iteration, short-term evaluation and long-term evaluation.

Our proposal revisits the model proposed by Bernal and Hagan (2017) and suggests a series of stages adapted to the organization, structure, operation and particularities of the judiciaries. In this way, the proposed methodology consists of the following stages: a) Discovery, b) Ideation, c) Prototyping, d) Implementation and e) Evaluation.

This methodology does not represent a linear sequence of steps, but an iterative and experimental process, where it is possible to return to previous stages. For example, if in the prototyping phase the expected results are not obtained, it is possible to return to the ideation stage to identify those ideas that can help us to solve the identified problem.

**Figure 1.** User-centered design methodology for judiciaries



Next, the stages described above are presented one by one.

## 3.2. Discovery: understanding users' perspectives to create solutions that respond to their needs

### 3.2.1. Intervention Design Team and Process Guidelines

Before starting this process, it is important to have a team in charge of carrying out the interventions. This team is different from the working group made up of the key actors described above, since it is in charge of executing the entire process. That is, it designs the intervention, presents progress to the working group, involves the key actors in some parts of the process to ask for feedback, and is in charge of piloting, implementing and evaluating the intervention, among other things.

This work team should be made up of multidisciplinary profiles with a variety of skills and different perspectives that allow analyzing and solving problems from different angles. During its formation, it is necessary to determine the required skills so that, to the extent possible, profiles with these skills may be included (IDEO, 2015).

In the judiciaries, this process may be led by the Technology and Innovation Department staff, especially when it has a variety of profiles (e.g., engineers, attorneys, administrators, etc.). If there is no such department, then the appropriate area is technology, ensuring that the team incorporates multidisciplinary profiles.

A useful practice is to include court officers from different levels as members of the work team.<sup>17</sup> Their background, technical experience on the system and processes and their knowledge of the different types of internal users could undoubtedly enrich the perspective of other team members with profiles more focused on the technological aspect. Of course, this participation requires a great commitment and willingness on the part of the court officers, so it will be important to identify those profiles that could have an adequate performance and disposition to contribute to the project, in addition to agreeing from the beginning on the terms of their participation.

<sup>17</sup> The type of official to be included will depend on the type of intervention in question. In other words, if an intervention is intended to improve an administrative process of the judiciaries, it is necessary to include administrative officials. On the contrary, if the intervention is aimed at improving the way in which cases are followed up, it will be necessary to include jurisdictional officials

Finally, it is also possible to hire a specialist who has previous experience in the development of these types of processes and who can accompany the team in the first interventions in order to strengthen its various skills for future projects.

Once the appropriate team has been formed, it is important to recognize that the design process has its peculiarities and that it may be especially difficult to navigate in institutions with traditional rationales such as those of the judiciaries. This requires an open mind and an awareness of some guidelines to follow in order to better conduct the process. According to the global design company IDEO (2015), some of these guidelines are:

✿ To have creative confidence: it consists of recognizing the creative potential of all people and the ability to trust our intuition within a context of ambiguity and persevere until we find the solution to the challenge that arises.

✿ Bring ideas to fruition: Prototypes are useful tools for bringing ideas down to earth and making them tangible. Nowadays it is possible to make prototypes of any idea: from high-fidelity versions to simple low-fidelity artifacts. Prototypes make it possible to evaluate the feasibility of solutions and to obtain feedback from users.

✿ Accept that mistakes are part of the process: it is important to recognize that in these types of processes it is possible that mistakes may arise, especially because this methodology encourages us to test ideas, evaluate them and experiment, and it is very likely that not everything will work properly during the first attempt. As opposed to the private sector where the culture of error may be accepted and even encouraged, within the judiciaries and other public institutions, it may be challenging. For example, accountability implies that the operation and management of the judiciaries must be made transparent to citizens. In this sense, communicating errors is particularly difficult, especially when they can be interpreted by public opinion as a wrong expenditure of public resources. However, accepting that any intervention is perfectible and that mistakes can be an opportunity to learn and correct the course is vital during the process.

✿ Show empathy: "It is the ability to put ourselves in the shoes of others, understand their lives and begin to solve problems from their perspectives" (IDEO, 2015). Empathy allows reaching a degree of understanding of people that facilitates seeing the world through their eyes and understanding the complexity of their context

in order to design solutions that can be truly effective.

✿ Embrace ambiguity: the process is not free of uncertainty, which can be frustrating for attorneys who are used to more linear and less ambiguous processes. However, it is important to remember that the process allows for learning, innovating and working collaboratively until the right answer is found.

✿ Keep optimism: this consists of believing that, even when facing difficult challenges, it is possible to find an innovative solution.

✿ Understand that the process is iterative: this approach to problem-solving allows for refining ideas in a trial-and-error process, while receiving valuable feedback from users, who are ultimately the guide for the entire process.

The group in charge of designing the interventions must embrace these principles, because doing so may not only facilitate the process, but also drive a long-term effect in order to transform the organizational culture and allow for more collaborative and innovative environments, in which experimenting is seen as another way to solve problems.

### 3.2.2. Identifying user needs

The first step is to know how the system we want to study works and who is involved. This requires "a thorough and nuanced understanding of the problem and the stakeholders" (Lupica et al., 2017). That is, to know the vision of the users about what the problem is, as well as their needs, objectives and limitations. During this stage, the goal is to collect as much information about the users without making any judgment about it (Hagan, 2015).

For this, it is necessary to start with a general idea or question about the problem to be solved, without falling into the temptation of specifying the nature of the problem before immersing oneself in the field to get to know the users (Hagan, 2015). The problem will be defined and anchored little by little, but starting with a general idea avoids framing it according to our preconceptions and assumptions about the issue and allows us at the same time to visualize and understand, from people's perspectives, the complexity of the issue and the underlying problems.

It is also necessary to locate the target users, that is, to identify whether they are internal users, such as judges, clerks or other types of jurisdictional or administrative





officials, or whether they are external users, such as trial attorneys, public defenders, public prosecutors, defendants, among others. It is also possible that our intervention may require knowing the perspectives of both groups.

In this sense, there are many methods that may help to get to know both internal and external users. Some of them are interviews, participant or non-participant observation and focus groups. These methods allow us to obtain first-hand information and collect not only data about the functioning of the system, but also deeper details such as people's behavior and the dynamics and relationships within the system. Besides this empirical research, it is important to conduct secondary research that allows us to understand the problem from a contextual and historical perspective. For this purpose, it is recommended to consult specialized literature and statistical data, among other relevant information (IDEO, 2015).

Next, a summary of the main empirical methods and some suggestions for carrying out each of them are given:

### Interviews

Interviews are a very useful method for gathering information about the needs, motivations, limitations, as well as experiences of people in a specific context. Several types of interviews may be used for this purpose.

For example, the contextual interview allows obtaining information from people in their work environment. This helps the researcher to better understand the environment and observe the behavior of people within it (TISDD, n.d.). This type of interview is useful when wanting to know how certain public servants experience their day-to-day work, and to identify what instruments and tools they use. Furthermore, it allows reducing the probability of error in the development of the tool, because as Goodwin (2009) comments, "when people have artifacts around to induce their resources, they are less likely to overlook details they do not usually think about".

For their part, in-depth interviews allow getting to know different perspectives on a specific topic. This type of interview is particularly useful when we want to know the opinion of relevant actors.

Before conducting an interview, it is necessary to identify the people to be interviewed. As mentioned at the beginning of this section, the type of users to be interviewed will depend on the problem to be addressed.

Once the target users have been identified, it is recommended to prepare an interview questionnaire to guide the conversation, which may include the following types of questions (Goodwin, 2009; Hagan, 2015):

❄️ Questions that explore people's day-to-day lives: Can you tell me what you do on a normal work day? What do you do first? What do you do after...? What is your role in the organization?

❄️ Questions about the process: Could you describe the process of... What are the different stages?

❄️ Questions about the people involved: What are the different groups or roles involved in the process of...?

❄️ Questions about the main problems: What is the main problem or inefficiencies in the process of...?

❄️ Questions with examples: For example, what do you do when the system doesn't work...?

❄️ Questions about the best or worst experience: For example, what has been your best experience when registering files? What has been the worst...?

❄️ Time comparison questions: How does the workload feel now compared to last year...? How does the tool you are using now compare to the tool you have used elsewhere...?

❄️ Diagram questions: Could you make a diagram of how the issues are processed?

❄️ Speculation questions about the future: What do you think would happen if...?

It is essential that during the interview we establish trust and make it clear that we are interested in the responses of the interviewees. To do this, we must leave the role of the expert and adopt the role of the learner (Goodwin, 2009). Another recommendation is to avoid

■ **There are many methods that may help to get to know both internal and external users. Some of them are interviews, participant or non-participant observation and focus groups.**



closed questions (i.e., questions that can be answered with a yes or no) or questions that induce a specific answer (TISDD, n.d.). This is vital in order to have answers that really provide essential information about the interviewees and also avoid answers that may contain or replicate the interviewer's biases.

### ***Participant and non-participant observation***

During participant observation, the researcher immerses him/herself in the field to establish relationships with the participants, but without being an intrusive element in the environment (Taylor et al., 2016). The main difference between participant and non-participant observation is that, in the former, informants know that they are being observed, while in the latter they do not. This research method is mainly useful to identify those aspects that people cannot express in interviews, in addition to the fact that their attitudes and behaviors may be observed in a direct way (Hagan, 2015).

An exercise that may be carried out using this approach is to experience the services offered by the courts from the user's perspective, i.e., to carry out a procedure in the same way as the users perform it in order to observe the dynamics, the actors involved and the areas of opportunity, among other things.

Finally, it should be noted that during observations it is required not only to be alert to the things people do, but also to the things they omit doing (TISDD, n.d.). For example, if someone is in a role that includes contact with the public and ignores the telephone, this information should be recorded. It is also important to observe people's body language, as it may provide information about their emotional state.

### ***Focus groups***

Focus groups are another way of gathering information from users, both external and internal. To conduct them, a group of approximately six to ten people are brought together to talk about their experiences on a specific topic. The objective of the group discussion is to conduct a novel analysis of the problem, allowing individuals to contribute ideas that may awaken or provoke new thoughts in others. In this method the role of the researcher is limited to being a facilitator of these discussions (Taylor et al., 2016).

### **3.2.3. Analysis of the information**

Once the information has been collected, the next step is to systematize and analyze it. The objective of this analysis is to identify the characteristics of the users, the dynamics, the processes and the main problems of the system. This information should be documented in clear materials to guide the entire design process (Hagan, 2015). That is, instead of having lengthy documents with user specifications, the objective of this stage is to have a practical and precise document to which the user may turn during later stages.

The following are some of the tools used to systematize and analyze information on preferences and processes, as well as to identify problems:

#### ***User or person profile***

A useful exercise that may help systematize and analyze the information collected during this stage is the creation of profiles of people representing the various groups interviewed. The creation of user or person profiles allows for clear communication of findings about specific groups of people. Each profile includes information about their needs, skills, limitations, preferences, work habits, etc. It is advisable to create three to seven main profiles that are representative of all the people interviewed and/or observed (TISDD, n.d.). This exercise will be the basis for deciding which characteristics or requirements should be met by the interventions being designed.

For example, let us imagine that a Judiciary wants to improve its process of receiving and processing cases and identify its deficiencies. To do so, it will have interviewed and observed the personnel of the filing clerk's office, the jurisdictional and administrative personnel of the courts, judges and magistrates, the persons represented, trial attorneys, etc.

The information gathered could be grouped into four profiles of persons, one representing citizens, one representing officials in managerial positions such as judges and clerks, one representing the rest of the personnel, and another representing trial attorneys. Each profile or person will be constructed by incorporating the findings of the group it is intended to represent.



**Figure 2.** Example of user or person profile



**MARÍA**

**Age:** 30 years old

**Profession:** Attorney. Currently, she is a Judicial Clerk. Specialist in civil matters. She has been working in the Judiciary for seven years. Her first position was as an unpaid intern and she moved up

### Interests

She enjoys keeping up to date on law topics.

She is very familiar with the use of technologies.

She usually looks for videos or podcasts that talk about related topics.

She is interested in the training courses offered by the Judiciary, but generally does not have time to attend because they take place during working hours.

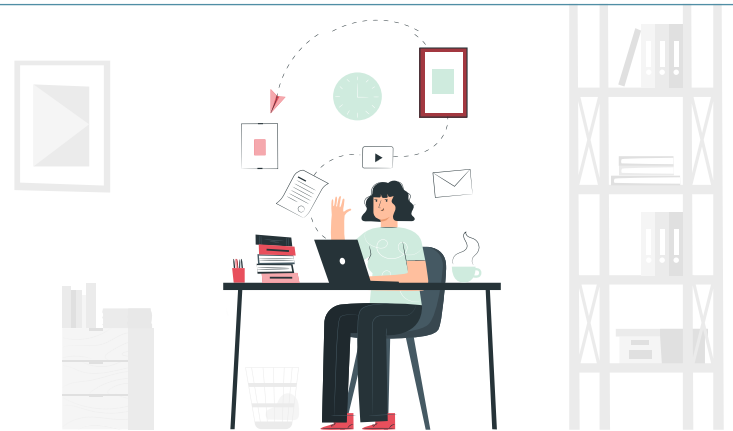
She likes her job very much but has always thought that some things could be done differently.

### Needs

She would like to have an easier way to remove sensitive data from the judgments, as it takes a long time with the current tool.

She would like to exchange documents more easily, as she currently has to send them by mail.

She needs more space to store all the files because her office is full of documents most of the time.



### Values

She thinks that the way sentences are written could be improved.

Her peers have a lot of confidence in her and her leadership.

She likes to try new things.

She would like to be able to work more as a team.

### Aspirations

She wants to become a judge.

She feels the workload is too demanding and would like to be able to optimize her time to spend more time with her family.

## Journey maps

A journey map is “a visualization of the process that a person goes through in order to accomplish a goal” (Nielsen Norman Group, 2021). This tool is especially useful when specific processes need to be mapped and is very similar to a process diagram.

The objective of this map is to identify the stages that make up, from beginning to end, a process or experience. To do this, it is important to select in whose “shoes” we want to go through the process. Once we have selected the perspective from which we will go through it, we must define the scale, the duration of the experience (this can range from a few minutes to several years), the stages that compose it and the specific steps to follow in each one of them.

This map may be complemented by adding the key actors involved and the fluctuation of their moods, among other things. (TISDD, n.d.). This method is useful both if one wants to map current processes and if one wants to imagine ideal processes (i.e., what the ideal process would look like from the eyes of a specific key user or actor).

## User requirements

This is a list that allows the identification of the characteristics a solution must have to satisfy the user’s needs. It is a kind of compass that provides a direction regarding the possibilities and features that solutions must have.

This method is of special relevance when designing a technological solution since the different modules and functionalities of the tool will be designed based on this information.

Once the information has been analyzed and systematized through these materials, it is necessary to frame or define the problem to be focused on. This phase is generally challenging because during the diagnostic process several problems have been identified, so the objective here is to identify the central problem. Hagan (2015) recommends developing a problem map, i.e. trying to identify what the problem is and its causes and consequences, in order to be clear about the depth of the type of problem to be solved.

Once the problem has been identified, it is important to clearly state it in a summary that will guide the entire intervention design process. This summary may be constructed with the following elements: a) the type of user or users to whom the intervention will be directed; b) the problem, and c) why it is important to solve it (Hagan, 2015).

## 3.2.4. Presentation of findings

Finally, it is advisable to make a presentation to the working group, composed of the key actors, summarizing all the findings derived from the research. This should include all the generated materials and diagrams (personas, list of requirements, maps, etc.). This communication is valuable as it represents an opportunity to generate “consensus and commitment from each of the key actors before proceeding” (Goodwin, 2009, 352). It also allows verifying that the complexities of the system or process under study have been captured correctly, as well as to make decisions regarding the definition of the problem to be solved.

In that regard, Goodwin (2009) proposes to structure this presentation according to the following aspects:

- ✿ Introduction containing the parameters of the project, i.e., objectives, timeline, approach and contact information.
- ✿ An explanation of the methods and activities used for the research and the justification for their use. It includes a description of the data collected during the fieldwork, as well as other sources consulted.
- ✿ A summary of the findings describing the main problems and patterns identified. This summary should include a description of the lessons learned from the key actors, the institution, the users and the process (what they consider most important, what part of the process causes them frustration, what improvements can be made, etc.).
- ✿ Profiles of the people and other materials that summarize the characteristics of the main users.
- ✿ Several scenarios describing what the ideal process would be like for each type of user.

■ It is advisable to make a presentation to the working group, composed of the key actors, summarizing all the findings derived from the research.



✦ The list of requirements for each of the scenarios.

✦ A work plan proposal.

### 3.2.5. Particular challenges of the judiciaries with respect to the identification of users' needs

One of the main characteristics of the judiciaries is the complexity of their operation, which is reflected in the diversity of procedures, dynamics, contexts and users, both internal and external, that may be found in each of the judicial bodies.

Therefore, when a process of reflection on the needs of the users of the judiciaries is carried out, it is essential to identify the challenges that lie ahead. One of them, among many others, is the independence of judges. Since each judge is free to decide how to work within the limits set by law, each judicial body has a different way of working.

To this, it should be added that the functioning of the courts depends on the context in which they are located. For example, the work dynamics of a court in the country's capital is not the same as that of one located in a peripheral locality, where there are neither the same material and technological resources nor the same workload<sup>18</sup>.

These differences have a great impact on the amount of information to be collected. Thus, if the challenge of improving the operation of the courts in a specific matter is to be met, a complete picture and knowledge of the particularities of that matter, the rules governing each of the procedures, the operation of each of the courts (their work practices, the characteristics of the communities they serve, the context, etc.), and the different types of users of each of these courts are required.

It is clear that this information gathering work may increase the complexity of the process, costs and execution time. However, strategies may be implemented to facilitate the process, as has been done by the State of Mexico Judiciary. In order to homogenize work practices and be aware of the needs of internal users in such a

complex environment, this Judiciary has formed work teams by subject matter through the identification of officials at different levels (judges, judicial clerks and other jurisdictional officials) who are interested in improving the processes.

These officials participate in the development of new work methodologies by offering their experience in the day-to-day operation of the courts, sharing technical knowledge on the subject matter in question, as well as providing ongoing feedback at different stages of the project. But they are also chosen for their leadership capacity and their potential to serve as instructors or promoters of the new methodologies developed in their courts.

The information obtained through this exercise is of great importance as it may help to recognize both good practices and areas of opportunity with respect to the functioning of the courts, while standardizing operations and processes to make them more efficient. It also offers the possibility of identifying obstacles and possible resistance within the courts or tribunals in order to address them in the next stages of the process.



## CASE STUDIES

The following cases illustrate the way in which judiciaries have adopted, prior to the development of an intervention, some user-centered design principles for the identification of user needs.

### Yucatán Judiciary

For several years, the Yucatán Judiciary has implemented the SCRUM<sup>19</sup> work methodology for project development. Although this methodology is aimed at managing complex projects, it incorporates user-centered design principles throughout the entire process. In addition, the Judiciary has adapted this methodology to its needs, incorporating a usability evaluation stage during which tests are conducted with users to receive their feedback.

<sup>18</sup> The types of issues most frequently dealt with by these courts also vary. In some cases, there are mixed courts that handle different matters.

<sup>19</sup> SCRUM is a framework used to reduce complexity in product development —such as software— and fulfill customer needs. This process has an iterative and incremental approach that helps to control risk and improve predictability. It was created by Ken Schwaber and Jeff Sutherland in the 1990s and is part of the so-called agile methodologies (Schwaber and Sutherland, 2016).



From the beginning of the process, a multidisciplinary group in charge of developing the project is formed; it includes different types of users who contribute with technical knowledge. Verónica Castillo Loría, Director of the Innovation and Systems Implementation Department, explains this:

The methodology generates an interdisciplinary work team, and this team no longer replicates the situation of computer specialists with the user or computer specialists with the attorney, but rather we are a work team composed of different people depending on the system we are developing, because we do it for administrative systems as well as for legal systems. Within this work team, we are accompanied by experts in the operation (V. Castillo Loría, personal communication, August 21, 2021).

One of the main stages of this process consists of defining the tool, based on the needs of the users and a list of requirements and functionalities that the product must include in order to be considered finalized.

#### **This is how Castillo Loría explains it:**

Once they define what projects are going to be worked on, we choose the owners of the process. Normally we do this in September-October, for example in 2021, to plan what we are going to do in 2022. And within the first activity that is carried out in this methodology is the definition of the product backlog. The product backlog is nothing more than a container of requirements desires; so this container is organized by a set of user stories. User stories have three important parts. One: [in what quality] do I want it? For example, as a settlement secretary. I have already defined the role. I want a startup report. That's the second part: what do you want? What do you want the functionality to do? And finally, what for? (V. Castillo Loría, personal communication, August 21, 2021).

According to the interviewee, the owners of the process are generally jurisdictional or administrative officers who are part of the development team to participate in specific projects and who express various needs through the user stories. To compile this information, a requirements board is formed with all the user stories, generally in small adhesive paper blocks, which guide the whole process.

## **Judiciary of the Eastern Republic of Uruguay**

For the Judiciary of Uruguay, one of the main steps before starting any project is to establish a work team with the users. This team is generally made up of administrative and jurisdictional officials, as well as attorneys, among other users.

In this regard, the Director of the Jurisdictional Area of the Technology Division, Fabiana Cosentino, said:

We gather and make a thorough analysis of how it is going to be. Before thinking about who we are going to program it with and how, or who is going to do it, we make a good design and ask, for example, the Bar Association and other bodies about the needs. We collect information on what is needed beyond what we think might be useful (F. Cosentino, personal communication, August 24, 2021).

Once information about the users has been gathered, a document of specifications for the development of the project is prepared.

### **3.3. Devising new solutions to tackle old problems**

Once the dynamics of the system and its users are known, the information has been systematized and analyzed, the approval and consensus of the key actors about the problem to be solved has been obtained, and the target users and the requirements that the intervention must have in order to meet their needs have been identified, it is time to generate solutions.

During this phase, the objective is to have as many ideas as possible and discard them until the most promising ones are defined. This stage requires an intense exercise of creativity, and the analysis of their viability is left for later.

Some general rules for improving the ideas generation process are (Hagan, 2015; IDEO, 2015):

1. Do not judge the ideas of others.
2. Encourage unconventional ideas.
3. Build on the ideas of others.
4. Be generous with ideas.
5. Stay focused on the topic.



6. Maintain a single conversation.
7. Be visual.
8. Generate as many ideas as possible.

During this phase it is important to use visual resources such as diagrams, drawings, words, etc. This helps to express ideas in a way that everyone can understand more easily (Goodwin, 2009).

Next are listed some of the methods that may help the design team to generate various ideas:

### Brainstorming

This is probably one of the best-known methods and consists of generating a series of ideas from a question or concept. It is recommended that each person has time to expose the idea before writing it down. The goal of this method is to generate a large number of ideas (IDEO, 2015).

### Top five

This exercise consists in asking each team member to generate five ideas. Subsequently, each of them is classified according to their similarity. This practice serves to discover ideas, identify patterns and establish a strategy around them (IDEO, 2015).

### Six Thinking Hats

This is a creative thinking technique that allows devising solutions according to different points of view. That is, during this exercise a group of people is asked to analyze a problem under six different perspectives, which in this case are represented by six different colored hats (De Bono, 1999):

- 🌟 White hat: represents neutral and objective thinking.
- 🌟 Red hat: it takes into account the emotional point of view.
- 🌟 Black hat: it is the one that provides the negative point of view.
- 🌟 Yellow hat: represents joy and optimism.
- 🌟 Green hat: indicates creativity and new ideas.

- 🌟 Blue hat: represents control and thought process.

According to each of these descriptions, participants are asked to analyze a problem under a particular hat.

### How can we...?

The objective of this exercise is to revisit the user needs identified during the discovery phase and formulate them through questions for the team to answer. This method helps turn challenges into opportunities (IDEO, 2015). An example is provided below:

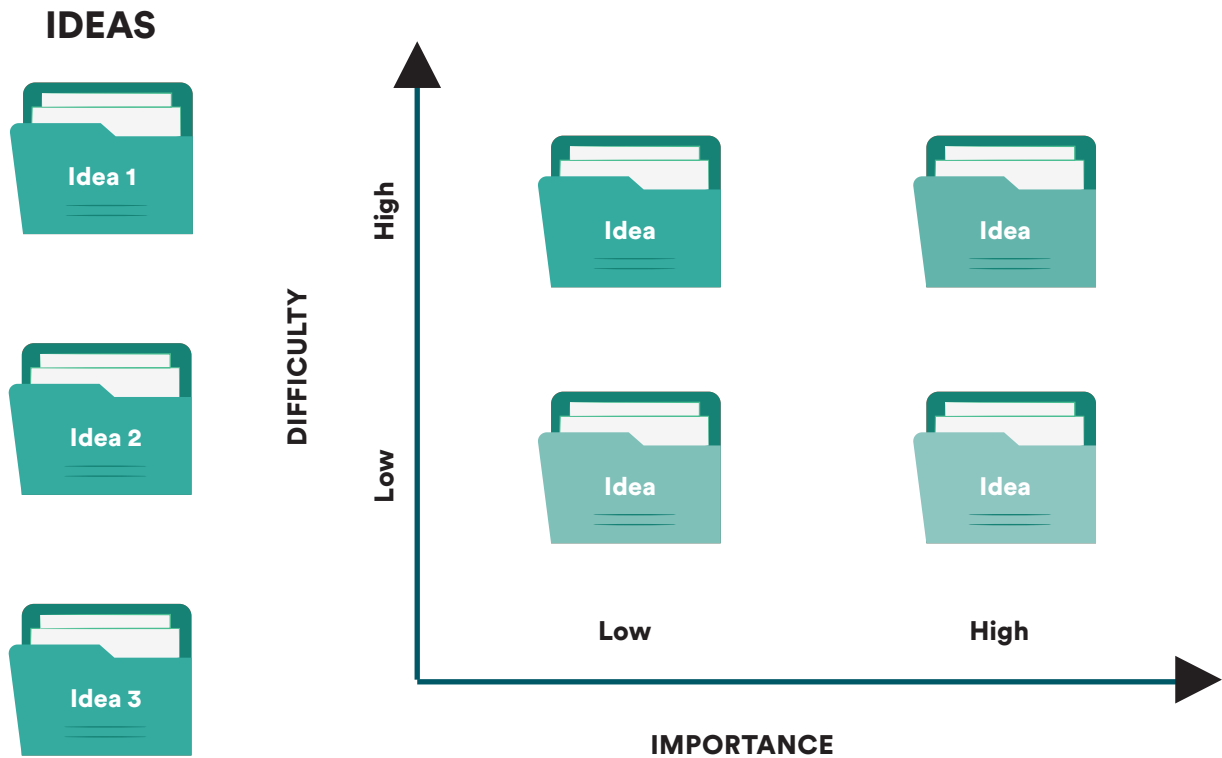
- 🌟 Identified need: external users need to follow up on their case without having to spend time and money going to court.
- 🌟 Question: How can we create a way to follow up on a matter without the need for users to spend time and money going to court?

### 3.3.1. Prioritizing ideas

Once a good number of ideas have been generated, it is time to prioritize them according to their relevance. This evaluation exercise may be done by the design team alone, or it may also include key actors to help prioritize them. Their participation is very valuable as it allows getting feedback on the ideas, discarding some and identifying new ones.

To prioritize the ideas or choose the most promising ones, different methods may be used. For example, instead of taking a classic vote, group members may be given a specific number of votes (e.g., 10) so that they can distribute them among all the ideas and even give more than one vote to one of them. Another way is to use a scale to give a rating to each idea; that is, each person is asked to give a rating between -2 and +2 to each of the ideas and then the results are averaged to identify the idea with the best rating (TISDD, n.d.).

Another good strategy for prioritizing ideas is through a difficulty/importance matrix. To do this, it is necessary to divide the matrix into four sectors depending on their level of difficulty and importance. In this way, the ideas are discussed among the team in order to locate them in some sectors of the matrix according to their viability and suitability (Hagan, 2015), as can be visualized in the following Figure.

**Figure 3.** Difficulty/Importance Matrix**CASE STUDY****The Legal Design Lab at Stanford University Law School**

The Legal Design Lab at Stanford University Law School has conducted several co-design exercises with key actors in order to identify the most promising ideas during their interventions.

One of the activities carried out consists of presenting to the participants each of the ideas generated by the design team written on a piece of paper, as well as white cards in case the participants want to add new ideas.

Subsequently, they are asked to imagine that they have been hired by a philanthropic foundation to allocate resources to each of these ideas. The objective is for participants to classify these ideas according to the resources they would give them in a table with four categories: high value (\$100,000 dollars), medium value (\$50,000 dollars), low value (\$10,000 dollars), and no value (\$0 dollars). Finally, participants explain the rationale behind each of their decisions (Hagan, 2019).





### 3.4. Prototyping and evaluation: putting good ideas to the test

A prototype is a rough representation of a product, service, or system (Camburn et al., 2017). Creating a prototype of ideas before committing to developing a higher fidelity version has several benefits: it provides an opportunity to test and explore the idea, identify errors, observe the interaction with users, and actively learn (Camburn et al., 2017).

Therefore, during the design process it is important to generate several low-fidelity prototypes that allow testing the promising ideas that have been previously identified. However, more complete and higher fidelity versions of the tool or service in question will be made during the process (Hagan, 2015).

Creating prototypes does not have to be complicated or require a lot of money or time. In fact, prototypes may be built with materials such as cardboard, paper or even through websites or apps. The most important thing is that the idea can be easily understood and that

decisions can be made with a minimum investment of time and money (Goodwin, 2009).

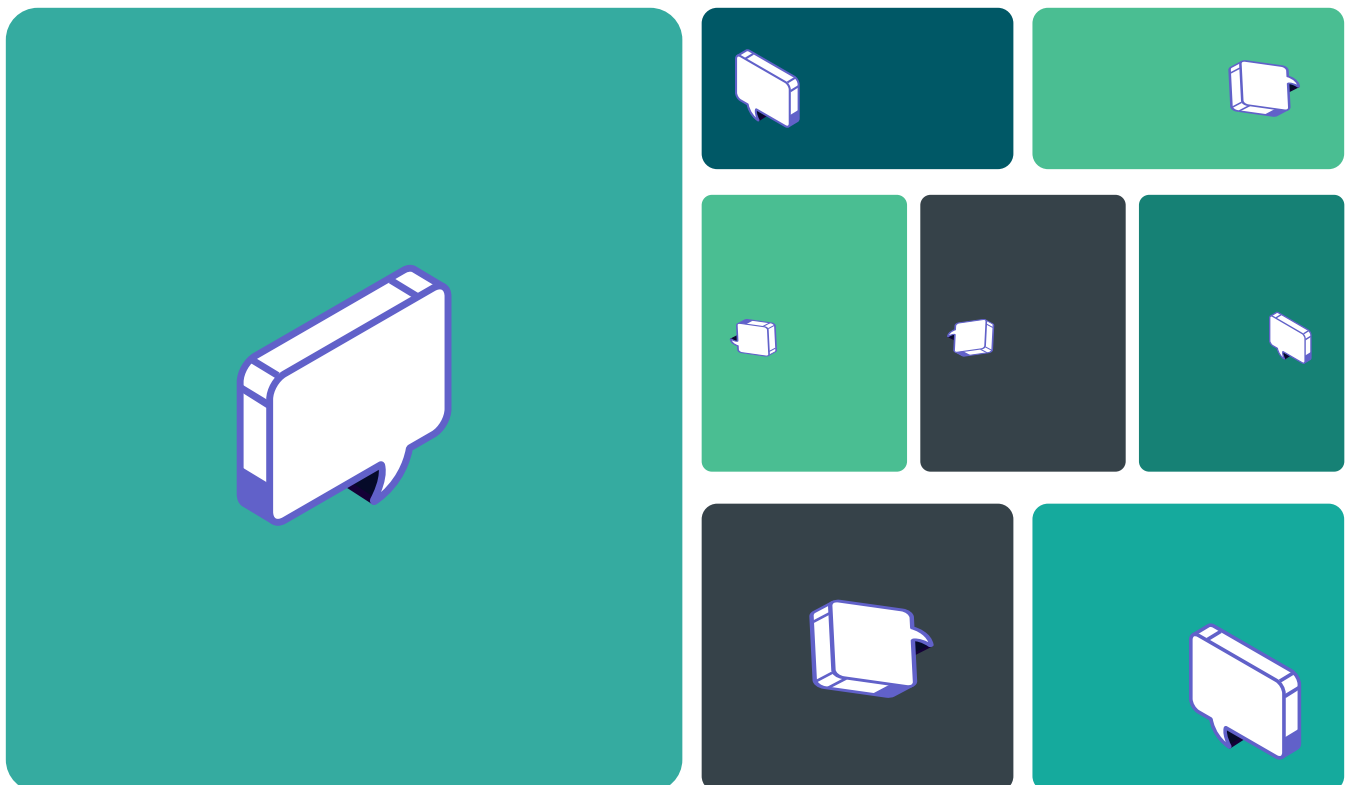
Next are some of the most common methods for generating prototypes:

#### Sketches

Sketches are one of the most common methods for generating a prototype quickly and easily. One type of sketch is storyboards, which are composed of a series of images that visualize actions, similar to those used in the animation industry, and indicate what users do, what they say and how they move sequentially within the story (Goodwin, 2009).

Storyboards can be useful for mapping processes, services, the interaction of users with someone or even the interaction with a software or digital artifact, among other things. Besides, one of the advantages of this tool is that it allows focusing on the most important elements of the intervention and leaving the details for a later evaluation stage (Camburn et al., 2017).

**Figure 4.** Structure of an eight-frame storyboard



## Simulation or role play

This technique may help visualize a specific experience or process, as well as the users' interaction with the intervention through it. This tool is very useful as it "can clarify the emotional side of an experience and reveal many practical aspects of the use of physical space, language and tone of voice" (TISDD, n.d., 118). In this way, for example, user interaction with electronic kiosks or chatbots could be tested to identify the type of attention users require, the type of messages or quality of interaction, etc.

## Concept Poster

The concept poster summarizes an idea and its core parts in a precise and visual way. It can serve to give more details about both the tool and the requirements needed to implement it (Hagan, 2015). Usually, a sketch of the idea is included at the top, from which information about the expected type of users, its functionalities, form of use, etc. is broken down.

## Prototypes of technological tools

A common option for making prototypes of technological tools is the use of sketches made with pencil and paper, especially when it is intended to illustrate easily and quickly the options displayed on the interface or the type of information intended to be shown.

However, nowadays, several tools may be used to design digital prototypes, such as applications, web pages or software that allow designing the interface of an app or program and including some functionalities<sup>20</sup>. This type of tool is especially useful to design the set of screens of the application or software.

Another common practice when creating software is to make coded prototypes, i.e., by means of a programming language a preliminary version is designed that will later evolve into a final version of the software. This type of prototype is of high fidelity and is especially useful to collect quantitative and qualitative information regarding the usability of the software (Arnowitz et al., 2007).

### 3.4.1. Evaluation of prototypes

Once one or more prototypes have been built, it is essential to test them with users to receive their feedback.



This evaluation is fundamental to test various aspects of the intervention, as well as to make decisions to improve them, which may have a great impact on user experience (Rubin and Chisnell, 2008).

In this regard, three types of evaluation may be carried out (Hagan, 2015):

- a) Usability tests: focused on measuring how easy or difficult it is to use the tool and the time it takes for people to understand how it works, among other things.
- b) Usefulness tests: they explore the degree to which the tools help people achieve their objectives or meet their needs.
- c) Value tests: these focus on discovering whether people consider the intervention to be valuable or important, whether it adds value to their lives, or even whether they would pay to use the tool.

It is important to point out that the type of prototypes that are used and the aspects that are evaluated depend directly on the stage we are in. If, for example, we are at an early design stage and want to evaluate several ideas, the best option will be to use low-fidelity prototypes that allow us to identify the most promising option and evaluate its usefulness to users. If, on the other hand, we are at a more advanced stage of the process, have already performed several initial tests and want to test the specific functionalities of some tool, it would be best to use a higher fidelity prototype to explore its usability and value.

Before starting the assessment process, the following elements should be defined to guide the intervention (Goodwin, 2009):

-  Decide the objectives of the evaluation; that is, what we want to know.
-  Identify the people who will participate in the evaluation. The assessment participants must be the end users or, in any case, very similar to them; otherwise, the results of the assessment could be biased and make it not very representative or useful. If there is some feature or aspect that one wants to test with a specific segment of users, it is necessary to include that type of person.

<sup>20</sup> Some tools that may be useful for developing prototypes of technological instruments are Figma, Framer and Arduino, among others.



✳️ Design the basic specific tasks that users can perform with that prototype.

✳️ Decide which type of prototype to use (high or low fidelity).

Next, two of the most common methods for evaluating initial prototypes are given below:

### **Exploratory or formative study**

This type of study is used to test prototypes at an early stage of intervention development, when functionalities are not yet fully defined. Its objective is to assess effectiveness at a general level and to evaluate the assumptions on which the prototype was built.

According to Rubin and Chisnell (2008), in this study users try to carry out a series of predefined tasks or just give their opinions about the prototype. To do this, a moderator can ask a series of questions or ask the user to reflect aloud on what he or she thinks of the tool; it is also possible to ask the user for feedback by asking what and how the prototype can be improved.

Also, in this type of testing, two prototypes that may be similar can be evaluated to compare their effectiveness. For example, two different types of interfaces of the same software could be assessed.

### **Summative test**

This type of testing is performed when the functionalities and design is more defined. This requires a high-fidelity prototype. The objective is to test specific elements of a more advanced version of the intervention or tool and detect its deficiencies. In this test the user will perform a series of tasks that test the functionality to be tested, which will be observed by the moderator, who does not intervene in the user's interaction with the prototype and only records the experience.

### **3.4.2. Particular challenges for judiciaries during prototype evaluation**

One of the main challenges for judiciaries at this stage is conducting evaluations with external users, since it is often difficult to identify and invite these types of users to provide feedback. For this, one option is to seek alliances with bar associations, law schools, citizen committees, associations, civil society organizations, which can provide feedback to this type of tool.

**Iteration will be a permanent element during and after the implementation process since the user-centered method requires both constant evaluation of the intervention and identification of key aspects for its improvement.**

### **3.4.3. Iteration**

Once usability information has been collected and feedback has been received from users, it is necessary to use that information to improve the tools that have been designed.

Traditionally, refining an intervention requires a process of trial and error. In this way, the procedure becomes iterative; that is, it becomes necessary to integrate feedback from users to generate a new prototype and repeat the operation until having an intervention that is refined enough to be implemented (IDEO, 2015). Iteration will be a permanent element during and after the implementation process since the user-centered method requires both constant evaluation of the intervention and identification of key aspects for its improvement.

Hagan (2015) proposes asking the following questions to guide the iteration process with respect to the overall journey map, the prototype, the implementation plan, and the presentation of materials:

✳️ What were the findings during the tests and evaluations?

✳️ What changes need to be made in response to these findings?

✳️ What is the action plan for the following days/weeks?

During the iteration stage, the design team generally works on developing a business plan, securing funding, and building different alliances to launch its intervention, among other things. In the case of judiciaries, where a budget has been previously allocated to the project and

where the key actors' consensus has already been built from the initial stages, this stage can be omitted.

However, it is possible that during the process of designing the intervention, the need for more budget may be identified to develop the whole idea or to add some functionalities not foreseen at the outset. In that scenario, it will be important to identify a variety of additional funding sources that may help support the intervention. Section 2.3. on budget considerations provides some ideas on how to obtain additional funding.



## CASE STUDY

### Yucatán Judiciary

In order to evaluate its usability and functionality, the Yucatán Judiciary has incorporated prototyping in both the initial and final phases of software development. Once user needs have been defined and ideas on how to solve them are available, a low-fidelity prototype is developed for an initial test.

We present a prototype that can be on paper, that can be with screens or some software, that serves to simulate what it will be (...) Usability tests really help a lot and do not hamper the basic principles of the methodology. Today, if we can, we apply usability tests at two stages (V. Castillo Loría, personal communication, August 21, 2021).

The complexity of the prototype increases as the project progresses, until a usability test is conducted with end-users to evaluate the functionality of the tool, receive their feedback and identify potential improvements.

At the end of the development, we present [the prototype], that is, we let the user [use it], without training him/her, without telling him/her anything. Several people are invited to participate in the use of this system and they start testing and reviewing it. This usability test even consists of recording people. The programmer is seeing the person because we pay attention to the reactions, for example, when he or she suddenly needs to grab the mouse instead of the keyboard. These are the situations that help us to identify whether the development we are carrying out is functional, is easy, or what we can do to improve even the interface of the system (V. Castillo Loría, personal communication, August 21, 2021).

Another interesting aspect of the process of designing technological tools for the Yucatán Judiciary is that software development is divided into several cycles, which have a duration of four weeks. In each of them, by means of the aforementioned "user stories", the user requirements to be developed are established. In addition, during these four weeks, daily meetings are held with the users for 15 minutes to discuss the progress of the project.

This strategy is interesting because dividing the process into several cycles allows the development team to test the tool or intervention developed at different points in order to progressively receive feedback from the users, avoiding leaving this feedback for the end of the project when the entire development is already done and where an error not identified in early stages may have scaled up to the final version.

## 3.5. Solution scalability and implementation

When the tool or intervention has been tested, evaluated and obtained good feedback from users, it is time to scale up the solution (Hagan, 2015). Generally, for the development of technological tools, scalability involves working on the code that has been developed during prototyping. In the event that a coded prototype has not been developed, it will be required to pass the design to the technology area so that they can develop the beta version that will be used during the piloting of the tool.

Once the intervention is ready to operate in real conditions, it is time to perform the piloting. This exercise is indispensable to make sure that the intervention works the way it was envisioned (IDEO, 2015). An important exercise before piloting the intervention is to establish which aspects and functionalities will be tested and reflect on which features could be added in the future in case the piloting is successful (Hagan, 2015).

Finally, it is important to carefully plan the process. In this regard, organizational issues must be defined, such as who will be in charge of piloting the intervention, at what time frame, and what achievements must be reached in the short, medium and long term to conclude that the piloting has been successful (Hagan, 2015).

When it comes to implementing technological tools, judiciaries generally use piloting as a way to test their usefulness in a reduced context in order to further refine the intervention and, subsequently, scale it



up to the entire institution. Often, when it comes to tools for internal use, piloting is carried out in specific courts or areas. As mentioned, this is a good practice that allows the intervention to be refined and tested in real contexts.

One challenge for judiciaries during implementation is the resistance to change on the part of some public servants. It is therefore necessary to devise strategies to ensure that this resistance is minimized and does not hinder any efforts made.

If an intervention has been carried out with users' needs in mind and they have been included in the evaluation and feedback process, people will likely adopt it without much resistance. However, no design is infallible, so it is vital to improve interventions by taking into account what was observed during piloting.

A useful strategy to eliminate resistance is to have the support of public servants who have participated in the entire development process and who can help "evangelize" the personnel of their courts about the usefulness and functionality of the new interventions or tools developed, as mentioned in the case of the State of Mexico Judiciary, in Section 3.2.5.

Besides, it is important to consider that when technological interventions are implemented, training is a vital

**■ Regardless of whether the intervention is aimed at internal or external users, another essential strategy is the development of materials such as manuals, brochures and video tutorials that explain clearly and simply how the tools work and the logic behind the interventions.**

element so that users, both internal and external, can become familiar with the tool. In this regard, one of the interviewees mentioned:

Digital transformation is analogical, it depends on people and as people, even for me, a technology lover, change does not work... If everything changes overnight, then obviously the resistance and rejection are going to be total... Then we have another important part which is change management and here this is about our main asset which is our hardware, our software and our "peopleware". Within this "peopleware", what we have to do is launch the different changes in our programs of transformation, training, support, assistance, so that they can work in the best possible way, so that they know the new processes, so that they know the new tools, so that they know the directives and what to do in case there is a problem (J. Barba Lobatón, personal communication, September 13, 2021).

This training and change management require a strong commitment on the part of the intervention design team to provide accompaniment to each of the users, follow up on any doubts that may arise and gather opinions and suggestions for improvement.

When the intervention is aimed at internal users, it is necessary to plan the training sessions in such a way that the court is accompanied in the transition and a few weeks are dedicated to follow up on the doubts. If the intervention is aimed at external users, both the dissemination of the tool in bar associations and other organizations, as well as face-to-face and, above all, remote training sessions, can be useful to familiarize users with the tool or intervention.

Regardless of whether the intervention is aimed at internal or external users, another essential strategy is the development of materials such as manuals, brochures and video tutorials that explain clearly and simply how the tools work and the logic behind the interventions. In this way, users can access the information and consult it whenever they have any doubts.

Another good practice is the one implemented by the Tamaulipas Judiciary, which has made available to users a help desk to assist them via telephone or e-mail and follow up on their doubts and comments.

### **3.5.1. Particular challenges for the judiciaries during the implementation of interventions**

One of the main challenges for judiciaries during the implementation of technological tools is the adaptation of regulations. It is essential to have a legal framework that authorizes the use of this type of tool, especially because many of these regulations may be incompatible with some technological solutions (Cordella and Contini, 2020).

In this process of regulatory harmonization, it is first necessary to identify the specific laws that need to be modified to allow the use of this type of tool, both in the regulatory framework of the judiciaries and in the procedural codes for each of the matters. At this stage, it is of great importance to take advantage of the political support and that of other key actors that are already part of the group in charge of leading the transformation in order to carry out the corresponding reforms.

Having a regulatory framework that foresees the use of these tools is also vital to encourage their adoption and use. In this regard, several interviewees mentioned that, when it comes to implementing new technological tools, having a regulatory framework is essential because it can institutionalize the mandatory nature of their use. On the contrary, the implementation of these tools without a legal framework to endorse them may violate the principle of legal certainty and generate important legal consequences, such as the nullity of the proceedings.



## CASE STUDY

### Judiciary of the Eastern Republic of Uruguay

The team of the technology area of the Uruguayan Judiciary comprises not only specialists with experience in IT and technological developments, but also people with experience in the jurisdictional operational area (such as clerks, court clerks and attorneys). This multidisciplinary team is in charge of testing the area's developments and supporting their implementation and training for internal users so that they learn how to use the new tools and all their functionalities.

In this regard, when it comes to implementing new technological tools, part of this team travels to the courts where the implementation will take place. During this process, people with jurisdictional experience,

who are also familiar with the system being implemented, are the ones in charge of the training. This peer training model has been developed because many times functional doubts arise that require technical-legal knowledge, which programmers do not necessarily have.

We have teams of female trainers. They go in pairs, they are two clerks of the court, notaries public or attorneys who work in technology with us and who know how to use the system. They have been with us for years and they go out to the interior of the country to train, as I was saying, two weeks of in situ training plus one week of support when they start using the system, which means that they stay three weeks in each place. That is what we did when we implemented the criminal and peace matters throughout the country. We spent a whole year traveling around the country to leave all these matters with the new system. It is a big job, but the result is worth it (...) They have this legal training and also everything they have learned with us here, they even speak our language and we speak theirs. We are like merged and they also talk about the system of the technical part with the people but they also have the legal knowledge and that is very valuable (F. Cosentino, personal communication, August 24, 2021).

When it is necessary to implement a tool aimed at external users, the approach is different. First of all, an extensive dissemination work is carried out, which includes establishing communication with the main key actors, such as law schools and bar associations, generally by means of press conferences. Secondly, training is provided by videoconference addressed to attorneys and other users, in addition to the development of manuals and videos on the operation of the tool.

Yes, it is a strong dissemination work prior to launching the application to the public, but then this is the production system. For example, with the single window, we made several videoconferences with the Bar Association, with the Association of Notaries, a press conference here, minutes in the news, a whole work of dissemination as extensive as possible when it is for the general public (F. Cosentino, personal communication, August 24, 2021).

Besides, for both internal and external interventions, a help desk has been set up to receive telephone calls from users about the functioning of the tools implemented.



## 3.6. Evaluation of the intervention

According to Hagan's (2020) model of justice innovation, evaluation may be carried out in the short and long term. The former makes it possible to analyze whether the intervention or tool has the expected impact. It helps to understand any possible unforeseen consequences of the system and, if the intervention has a positive impact, it allows the exploration of its replication elsewhere. The second, on the other hand, allows us to understand the subsequent effects of the intervention, both on the system and on individuals and their communities.

Impact evaluation has many benefits, as it allows for the improvement of interventions and provides evidence for them to be replicated elsewhere, as well as strategic information to help obtain additional funding (Keyte and Ridout, 2016).

Next, we offer some methods that may be useful to evaluate the impact of the interventions developed:

### Development of indicators to assess the impact

Indicators are "the quantitative or qualitative variables that provide a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of an organization against the stated outcome" (Banco Mundial, 2005, 65).

The development of indicators is probably the most common means of assessing the impact and measuring the changes and results over time. Although the methodology for designing indicators is quite extensive and beyond the scope of this project, the following is an overview of some of the most important steps identified by the World Bank (Banco Mundial) (2005) that may help in constructing them:

✳️ **Goal setting:** Is a way of defining what success means for the project. Goal setting is essential as it is a starting point for developing the inputs, activities and outputs needed to achieve them.

✳️ **Indicators setting:** Indicators are useful to measure the degree of progress of the goals. To this end, it is necessary to include indicators that are clear, relevant, economic, adequate and measurable (Schiavo-Campo, 1999, in Banco Mundial, 2005).

✳️ **Baseline setting:** These are data that help to establish the initial condition that serves as a starting point for measuring progress; in other words, they are useful for getting to know the scenario prior to an intervention. The baseline also makes it possible to make comparisons after the intervention and provides evidence for decision-making (Banco Mundial, 2005). These data may be quantitative or qualitative.

When designing indicators to measure the effectiveness of a specific technological tool, it is important to take into account all those related to its level of use, but also its impact in terms of time, costs, and user satisfaction, among other aspects.

On the other hand, it is also possible to design indicators to measure the impact and follow up the transformation process in more general terms. For example, the NCSC (n.d.) has established ten indicators to measure the performance of courts and tribunals. Although these indicators are designed under the logic of the U.S. justice system and may have particularities or characteristics that are not compatible with other justice systems (for example, the use of juries), some of them can be a good guide to measure the general performance of judiciaries.

These indicators measure aspects such as user satisfaction (the rating given to the courts and tribunals with respect to accessibility and treatment in terms of justice, equality and respect), the rate of concluded cases (percentage of concluded cases with respect to the number of new cases), case completion time (the percentage of cases disposed or resolved within the established terms), the time active cases have been pending (number of days since the cases are filed to the day they are measured), cost per case (average cost of processing a case by type of case).

Although these indicators are aimed at measuring institutional changes and are not specific to measuring the impact of technological transformation projects, it is important to consider them as part of the strategic plan discussed in section 2.2, since the results of these interventions will be measured indirectly. In this regard, it should be noted that the introduction of new technological tools or other interventions should have overall effects in terms of cost, time and quality of services.

### Conducting user surveys

A useful method that judiciaries may use to evaluate the impact of the interventions carried out are structured surveys. This type of instrument makes it possible to

## ■ When designing indicators to measure the effectiveness of a specific technological tool, it is important to take into account all those related to its level of use, but also its impact in terms of time, costs, and user satisfaction, among other aspects.

gather information on users' experiences, know their level of satisfaction and offer a space for them to provide feedback on the technological tools. The advantage of using surveys is their flexibility, since they allow the inclusion of open and closed questions and even rating scales, thus adapting to different evaluation objectives.

An important aspect to take into account when constructing the survey is to ensure that it is reliable (i.e., that it gives the same results when applied repeatedly to a subject), valid (that it effectively measures what it is intended to measure) and objective (free of bias), since this will ensure the reliability of the results. To this end, it is important that before being applied, a pilot test is conducted on a small sample to help identify some errors and evaluate its effectiveness (Sampieri et al, 2014).

Finally, it is important to mention that surveys should be administered before and after the intervention in order to effectively identify whether the intervention produced any changes (Bamberger, 2012).

### *Citizen report cards*

This method, developed in India in 1994, is an effective way of measuring users' perceptions of the quality, efficiency and suitability of public services (Swarnim et al., 2004). The objective of this technique is to quantitatively rate and measure the overall performance of public sector services.

This method is composed of three parts: a survey, designed through focus groups with citizens; complementary interviews to validate the information in the questionnaire; and dissemination of the results (generally

by organized civil society) to generate a public debate around them (Swarnim et al., 2004).

This method could be used by judiciaries to map citizen satisfaction with respect to their services as a whole or with respect to a specific service or intervention. On the other hand, if conducted periodically, it may be useful for monitoring and evaluating in the long term the effects of the intervention. Besides, the fact that the results are publicly discussed may help to encourage the use of the tools and thus overcome possible resistance. In the context of judiciaries, this discussion could be led by bar associations, law firms and civil society organizations.

### *Randomized controlled trials*

This type of test is used to determine the impact of an intervention on a specific population. To do this, it is necessary to randomly identify two different groups: the treatment group, which actually receives the intervention, and the control group, which does not receive the intervention. Subsequently, a test is applied to compare the two groups and evaluate whether the intervention had any significant effect (statistically speaking) on the treatment group (Hernández Sampieri et al., 2014).

In this regard, Quintanilla (2017) refers that this type of test is beneficial to ensure that the changes identified are really due to the intervention and not to external factors, as well as to understand the mechanisms that lead to these changes. On the other hand, he points out that these tests are essential before scaling up the intervention to other places.

A hypothetical example of the use of this test would be to have two groups of attorneys with similar matters; one group that is offered the option of carrying out some process by means of the technological tool designed and another group that can only carry out the process in the traditional way. Subsequently, their level of satisfaction, process duration times, etc., could be evaluated and the impact of the tool could be identified.



## CASE STUDY

### Spanish Ministry of Justice

The Ministry of Justice of Spain, through the Digital Transformation General Directorate of the Administration of Justice, has carried out several technological transformations within the judiciaries in that





country during the last decade. In order to measure the impact of these interventions, five objectives to be attained have been established, each with different indicators that reflect the type of justice to be achieved.

**1) More efficient justice.** This objective is focused on improving results and is evaluated in terms of resources saved in travel to the judicial venue, work hours saved thanks to the use of technological tools and the estimate of the additional workforce available as a result of automation.

**2) More conciliatory justice.** It focuses on improving the family and professional life of public servants. It is measured in terms of the number of people who work from home and its consequence in the promotion of the economy of the places of origin, since the public servants do not have to travel.

**3) Greener justice.** This objective is aimed at reducing the impact of climate change and is measured by the amount of CO2 emissions avoided due to the fact that public servants and users do not travel to judicial offices.

**4) More transparent justice.** It focuses on making justice accessible and public. It is measured by the average number of people who watch the retransmission of judicial hearings conducted by electronic means.

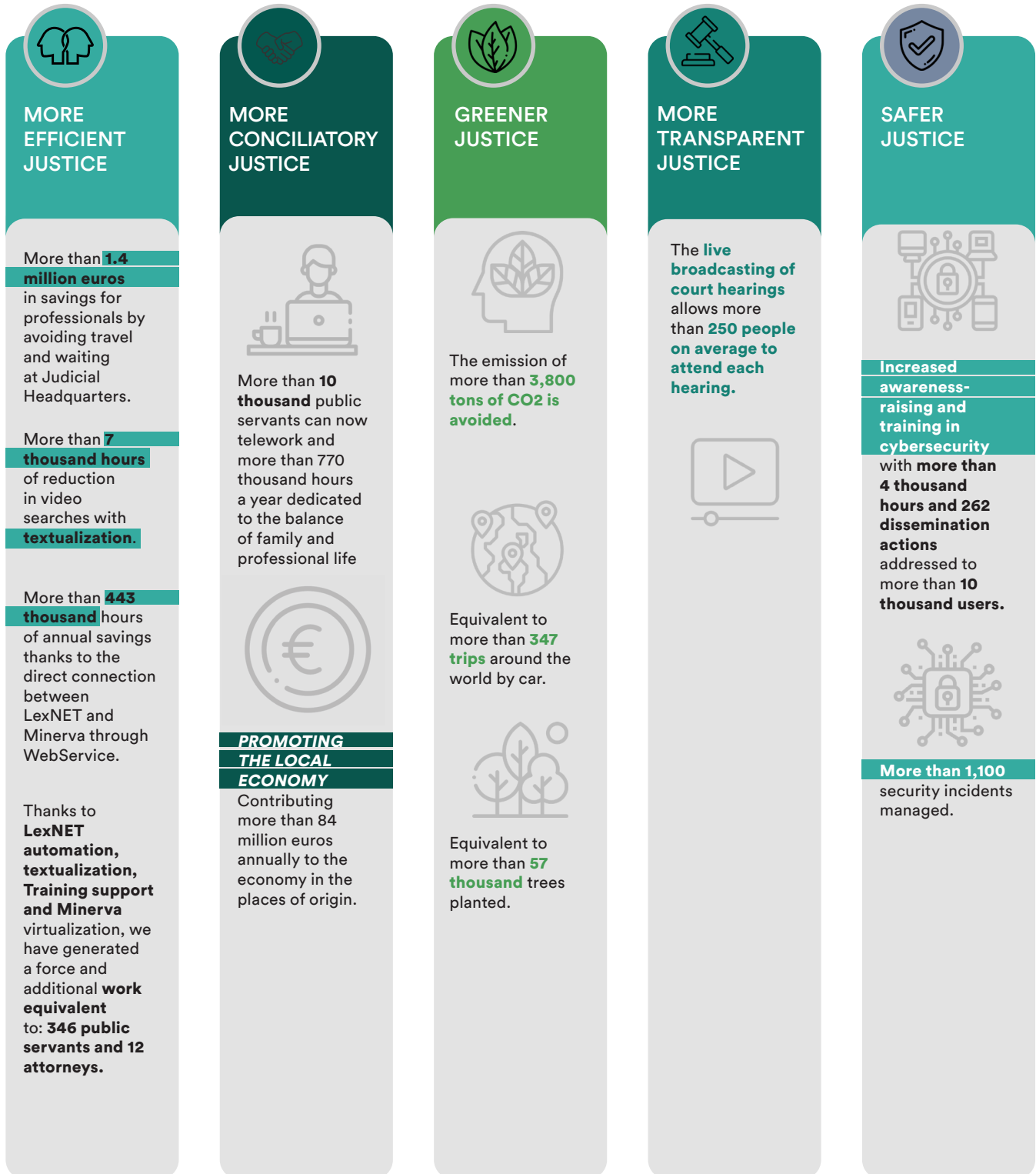
**5) Safer justice.** It allows addressing the cybersecurity challenges that are brought up. It is evaluated through training directed at public servants on cybersecurity issues (number of hours offered, number of users trained and number of dissemination actions) and security incidents management transformations within the judiciaries in that country during the last decade. In order to measure the impact of these interventions, five objectives to be attained have been established, each with different indicators that reflect the type of justice to be achieved.

One of the advantages of having these indicators is that they are useful to demonstrate the efficient use of the budget allocated to the technology department and provide evidence of how the resources invested in this area are multiplied in terms of results. In this regard, the General Deputy Director for Digital Transformation Planning and Management mentions:

One of the important aspects is to count the benefits, to count the benefits we are achieving through digital transformation, what we want to see is that the digital transformation section is not an expense center, but a center that allows us to multiply each euro invested in technology by five, by six, by ten or by twenty, so that we can not only improve the public service perceived by the citizen, but also have an economic return that can be quantified, that can be evaluated (J. Barba Lobatón, personal communication, September 13, 2021).

Figure 5. Impact evaluation objectives of the Digital Transformation General Directorate

## BUT THE REAL IMPACT ON JUSTICE IS:





## CAPÍTULO 3

# Specific considerations for the development of tools and/or technological interventions by judiciaries



The purpose of this chapter is to reflect on the additional aspects that should be taken into account when a Judiciary seeks to develop a tool or intervention with a technological component.

On the one hand, from the analysis of different case studies, some of the preferences of both internal and external users regarding the use of technological tools are collected, with the aim of providing ideas to facilitate their development.

On the other hand, some considerations regarding safety and storage are discussed, as well as some recommendations.

Finally, a reflection is made on the current debates regarding the use of technologies and the assurance of due process and human rights, and some recommendations are identified.

## 1. Preferences of external users regarding the use of technological tools

This section summarizes some findings on the preferences of external users regarding the use of technological tools. These findings are not intended to replace the research phase on users' needs—since these may not be representative of specific communities or groups—; on the contrary, they are offered as ideas and options to explore or take into account when developing this type of tool.


### 1.1. Preferences regarding the way in which external users view and obtain legal information

Several studies on external users' preferences regarding access to legal information through technological tools (Hagan, 2018; IAALS, 2018) point out some things that judiciaries should take into account when offering information to the public, either on their websites or through a tool designed to provide legal information.

#### **Designing tools with a responsive design.**

When designing a website or other web-based tool it is important to take into account that the information must be displayed correctly on any mobile device, i.e., text and images must be suitable for different devices. This is known as "responsive design" (IAALS, 2018) and is relevant due to the large number of

people who use cell phones to access the internet<sup>21</sup>. It is also possible to resort to the development of applications specially designed for mobile devices. In this regard, many judiciaries have already developed applications for cell phones that allow a series of processes to be carried out virtually, such as receiving notifications, consulting the electronic file or sending electronic lawsuits and/or motions<sup>22</sup>, or even watching hearings remotely<sup>23</sup>.

 **Prioritizing information.** The tools must facilitate the search for information, be interactive and take into account the preferences of users, especially when they are aimed at external users who do not necessarily have specialized knowledge of the law, like many of the parties in a trial. In that regard, in research into how people search for legal information on the internet (Hagan, 2016), it was found that to facilitate this search, web pages and tools should facilitate navigation and search tools, i.e., provide in a summarized way the relevant information and highlight it using boxes that distinguish it from the rest of the information. This may be especially relevant for interventions that include the creation or redesign of Judiciaries' websites.

Another recommendation is to structure the information according to people's mental models—especially in countries such as the United States<sup>24</sup>, Canada<sup>25</sup> and the United Kingdom<sup>26</sup>, where most of the parties in civil and family trials are self-represented and the tools should be aimed at a wider audience—. This means that the information should not be organized using the legal categories that attorneys normally use to describe problems (for example, putting information under the subheading of usucapion may not communicate anything to the user). Instead of these categories, questions<sup>27</sup>, examples, narratives and tools that enable conversation (chatbots or real-time chat tools<sup>28</sup>) can be used, so that people can better understand the information (Hagan, 2016).

<sup>21</sup> According to the World Bank, in 2020, the number of mobile cellular subscriptions in the world was 107 per 100 people. On the other hand, in 2019, 56.72% of the world used the internet.

<sup>22</sup> This is the case of the Nuevo León Judiciary, which launched the app Virtual Mobile Tribunal, which allows external users to manage their judicial proceedings, consult the case file remotely, send motions and receive notifications (Poder Judicial de Nuevo León, 2020). Similarly, the Judiciary of Costa Rica has developed an application where it is possible to consult judicial deposits, receive notifications and consult the electronic file (Poder Judicial de la República de Costa Rica, 2021). Another example is the State of Mexico Judiciary which, in 2019, launched an application through which it is possible to consult statistics and the judicial bulletin, the electronic file and intranet (Poder Judicial Estado de México, 2019).

<sup>23</sup> This is the case of the Guanajuato Judiciary which, in 2019, launched its remote hearing viewer application that allows public defenders, public prosecutors, attorneys, federal agencies in protection matters and the general public to view the hearings of oral proceedings via cell phone or computer (Ramblas, 2019).

<sup>24</sup> For example, in the United States in 2017, 80% to 90% of the parties in trials did not have a legal representative (Meals and Sudeall, 2017).

<sup>25</sup> In Canada, in 2012, this percentage ranged from 64% to 74% (Government of Canada, Department of Justice, 2013).

<sup>26</sup> During the 2013-2014 period in the UK, 80% of cases in family matters had at least one party without legal representation (Garton Grimwood, 2016).

<sup>27</sup> As an example, an online dispute resolution platform stands out, the Civil Resolution Tribunal in Canada, which uses artificial intelligence that interacts with the public through a series of questions to identify the problem and offer solutions.

<sup>28</sup> The Guanajuato Judiciary has implemented a chat on its website with business hours from Monday to Friday from 9:00 AM to 3:00 PM. The tool may be located at: <https://www.poderjudicial-gto.gob.mx/>



Another useful recommendation is to create tool interfaces according to the user who is navigating. For example, the Federal Judiciary in Mexico has created a portal that concentrates all its online services, in which it has enabled a series of differentiated interfaces according to the user who enters the portal (Consejo de la Judicatura Federal del Poder Judicial de la Federación, 2021).

Lastly, official websites and tools offered by these means must allocate resources so that their information and sites are the first to appear in browsers when people search for specific information that concerns them (Hagan, 2016).

**✳️ | Enabling various channels to obtain information and forms remotely.** Enabling various contact channels —such as telephone, email, text messaging, chat, or videoconferencing— may be useful to provide general or specific information about the functioning of some tool to external users (Hagan, 2018; IAALS, 2018). On the other hand, a tool that has proven to be very useful is sending text messages to users with reminders about specific events (hearing dates, for example), legal information or instructions (IAALS, 2018). An example of this is the application for mobile devices developed by the Judiciary of the Republic of Uruguay that allows following up on judicial proceedings and receiving automatic alerts on the progress of the process (Poder Judicial de Uruguay, 2016).

**✳️ | Information in plain language.** Often the information included in the tools may contain language riddled with technical terms or very specialized terms that are incomprehensible to the citizenry. It is necessary for technological interventions to take into account that, although attorneys may be one of the main target audiences, many times citizens will also use these tools, especially when they do not have legal assistance. Therefore, the use of plain language is essential to communicate information that is understandable to everyone<sup>29</sup>. On the other hand, it is suggested that these tools be visually clear and customizable (Hagan, 2018).

## 1.2. Preferences of external users regarding interaction with courts and tribunals

**The use of plain language is essential to communicate information that is understandable to everyone.**

**✳️ | Enable users to submit information during legal proceedings from their mobile devices.**

Although it might seem like something very simple, many courts lack the infrastructure to allow users to present information during a trial from their mobile devices. In this regard, a good practice is that of the Ninth Judicial Circuit Court of Florida, which has an evidence presentation system that allows connecting any

device wirelessly to display documents, images and videos. Among its functionalities, it allows printing evidence or information and integrating it electronically to the court record (IAALS, 2018).

**✳️ | Provide a space for guidance and listening to external users.**

Websites or other technological interventions of judiciaries aimed at the general public should enable a space for help and guidance to users that allows them to obtain information on how to use digital services, locate an office or a room within a courthouse (IAALS, 2018), and allow them to even submit complaints or suggestions. As an example, the OPERAM Opportune Attention Program developed by the State of Mexico Judiciary stands out, which consists of the installation of booths in the judicial headquarters of greater attendance to offer users guidance via telephone or videoconferences through an operator. The operator provides information on the procedure to be carried out, provides users with forms, names and addresses of those responsible in the jurisdictional or administrative area and allows them to file complaints and allegations (Circular No. 42/2019, 2019).

<sup>29</sup> Currently, there are several tools that can help estimate the level of difficulty of a text as well as the level of readability and suggest alternative words that may be used to make it more understandable. One of them is Hemingway App for English texts: <https://hemingwayapp.com/> or Legible for Spanish texts: <https://legible.es/>

### 1.3. Considerations regarding the identification, diagnosis and support for the resolution of legal problems of external users


Extended services of the judiciaries. This term, coined by Susskind (2019), refers to those services that should be offered by courts and tribunals to guide people during their process. These services could be especially useful in countries where there is the figure of self-representation in various matters and where technological tools may constitute a source of help and be a way to increase access to justice.

Within these extended services, one of the proposals is the creation of a diagnostic or triage system, similar to the one used by hospitals to assess the level of urgency of an injury or illness and redirect people to the right place. In this regard, several experts argue that it could be useful to help users, especially those with limited or no legal assistance (Rose Hough and Zorza, 2012; Susskind, 2019).

The objective of this system is to guide users through different stages of the process. For example, to help people identify whether they have a legal problem and classify it, determine their options for resolving it, and support them with filling out forms and developing arguments, as well as offering different resources for obtaining help (e.g., contact with the public defender's office, a non-profit association that provides legal support, or pro bono services). Besides, it could be useful to provide people with basic knowledge about the legal system (Stanford Legal Design Lab, 2016).

Rose Hough and Zorza (2012) argue that this system can be automated by technology that has the ability to analyze data and identify patterns in order to provide solutions to the people who use it. At present, several systems of this nature are in use; as an example, the Civil Resolution Tribunal in British Columbia stands out, which, as mentioned in previous sections, has created a platform that uses artificial intelligence to identify the type of problem the person is facing and thus provide him/her a series of options to try to resolve it before judicializing it, which happens only in the event that an agreement has not been reached (Salter and Thompson, 2017).

### 1.4. Considerations regarding dispute resolution processes and their design

 **Online dispute resolution** Since the 1970s, the use of dispute resolution mechanisms in several countries has been a solution intended to decongest courts and tribunals and offer parties alternatives adapted to the variety of problems and needs (Hensler, 2003). This type of mechanism emerged from the recognition that, for some issues, litigation was inappropriate and that there were instruments that could solve the problems without damaging the relationship between the parties, and thus mitigate the consequences of economic inequality between them (Hensler, 2003; Rabinovich-Einy, 2008).

At present, technology has played a fundamental role in the implementation of these mechanisms. Online dispute resolution has emerged as a tool to solve different types of problems remotely, synchronously or asynchronously, and sometimes without the need for the assistance of a human mediator (Susskind, 2019). Even private companies such as eBay have implemented this type of mechanism to resolve more than 60 million disputes annually (Susskind, 2019).

Some experts have pointed out that these tools save time, reduce costs and facilitate access to justice (Vázquez, 2014). In this regard, the potential of these tools to resolve disputes without the need for judicial proceedings has been recognized by several countries. For example, the United Kingdom established the Financial Ombudsman Service in 2000, which is used in the financial sector with high effectiveness to resolve disputes online between consumers and banks or similar institutions. During the 2020-21 cycle, for example, 278,033 new complaints were received, of which 247,916 were resolved (FOS, 2021).

Another example of this type of mechanism is the European Online Dispute Resolution (ODR) platform launched by the European Commission to "make online shopping safer and fairer through access to quality dispute resolution tools". This platform offers the parties involved to resolve the problem directly with the trader or through the dispute resolution body, which acts as a neutral third party that helps the parties to settle any differences (European Commission, n.d.).

Without a doubt, online dispute resolution is a mechanism that may be used by judiciaries as a preliminary stage, so that parties may reach agreements in a faster, more efficient way and thus prevent disputes from becoming judicialized. This option is especially relevant for judiciaries whose delays have been increased by the health crisis.



**✱ Dispute system design.** One of the aspects that judiciaries must consider when carrying out a technological transformation process are the changes that its implementation will bring in terms of procedure, which is why procedural rules must be adapted or completely redesigned to allow the use of this type of tool.

In that regard, the lessons learned from the discipline of the dispute system design can be particularly useful for the redesign of processes by judiciaries. This area of knowledge, which has gained relevance in recent decades —especially in companies or organizations that want to offer internal, private and confidential solutions to disputes that arise (Rabinovich-Einy, 2007)—, analyzes the impact that the procedure has on the results that individuals can achieve, as well as the values that are promoted through such procedures. This discipline recognizes the importance of the procedure and argues that the design of processes has an effect on the values (legitimacy, justice, equality, equity, etc.) that are promoted through the system<sup>30</sup>.

When redesigning the processes of the judiciaries it is vitally important to take into account the impact that the choice of a type of procedure has on the promotion of a particular value or values and to ensure that this combination of values generates legitimacy (Rabinovich-Einy, 2008). That is to say, if we want courts to issue rulings that are fair and effective, the procedure that is designed must also promote these values.

Also, Rabinovich-Einy (2008) mentions that courts and tribunals have implemented technologies to make their processes more efficient, but have failed to recognize the transformative potential that technology could have on the procedure and its role in promoting other judicial values beyond efficiency.

In this regard, it is necessary to visualize that procedural rules, as well as structures and ways of working, may be transformed. Some judiciaries have already taken steps in this direction. For example, the Spanish Ministry of Justice is developing a delocalization project that consists of allowing public servants to work remotely without being assigned to a judicial headquarters, i.e., they can attend several locations and thus

allow an optimal distribution of the workload among public servants (J. Barba Lobatón, personal communication, September 13, 2021).

Another impact that technology may have with respect to the procedure is when it allows documenting and evaluating how these rules and proceedings lead to compliance with judicial values. For example, technology can provide data to examine how fair the processes are by jointly analyzing the characteristics of the parties in a proceeding, the type of cases and the procedure used, among other aspects (Rabinovich-Einy, 2008). In this sense, technology may enable justice systems to learn and continuously improve their proceedings.

The transformative potential of technology with respect to procedure confirms something we mentioned at the beginning of this document: technological transformation should not be understood as a way of digitally replicating what is already done on paper, but rather it is necessary to think about how technologies may help us rethink justice systems so that they can do their job better.

**■ When redesigning the processes of the judiciaries it is vitally important to take into account the impact that the choice of a type of procedure has on the promotion of a particular value or values and to ensure that this combination of values generates legitimacy.**

<sup>30</sup> Rabinovich-Einy (2008) explains, for example, that the decision to allow a case to be retried in different bodies (a procedural rule) promotes values such as the search for truth, the predictability or the stability. She also warns that a system cannot promote all values simultaneously, since in the example above, the existence of different bodies can promote legitimacy, in the sense that it may help reverse wrong judicial decisions but, on the other hand, it also undermines it since it generates different judicial decisions that may contradict each other.

## 2. Considerations regarding respect for due process and human rights

### 2.1. Use of artificial intelligence

It is evident that with the increase in the processing power of computers<sup>31</sup>, the advance of technology has begun to break down the barriers of imagination. An important leap has been the evolution of artificial intelligence and techniques such as machine learning<sup>32</sup>, through which tasks that were previously exclusive to humans (such as playing chess, answering questions, composing music and painting, among other things) are being developed.

In this context, it is to be expected that in the not-so-distant future these advances will have a great impact on our personal lives, but also on social, political, economic and even legal aspects (Susskind, 2019).

Nowadays, there are several tools that use artificial intelligence in the judicial field<sup>33</sup>. An example of this is Pretoria, an intelligent tool implemented by the Supreme Court of Justice of Colombia with the help of the Innovation and Artificial Intelligence Laboratory of the University of Buenos Aires, to support the analysis and selection of priority acciones de tutela in health issues (Corte Constitucional de Colombia, 2020)<sup>34</sup>. Another tool is the solution explorer from the Civil Resolution Tribunal in British Columbia, Canada, which uses artificial intelligence to guide people to find solutions to their problems and offer alternatives to solve them.

On the other hand, artificial intelligence has also been used to support judicial decision-making, providing, for example, information that a judge evaluates in

conjunction with other data to make a decision. This particular use, however, has generated criticism from various actors.

One of the arguments against the use of these technologies for decision-making is that they may violate human rights and institutionalize discrimination due to inherent biases. The most controversial example has been the use of COMPAS in the United States, an automated system designed to assess the risk of recidivism of defendants and inform various decisions in this regard, such as conditions of supervision. This system has been criticized because it has been identified that the scales it uses to measure have problems of consistency with respect to the assessment, i.e., it is not known if what is being measured is the risk of recidivism (Skeem and Loudon, 2007). It is also criticized for its bias against people of color, as several studies have found that it incorrectly predicts a higher recidivism risk for this community compared to white people, who were incorrectly assigned a lower risk<sup>35</sup> (Mattu, 2016).

Another criticism of this type of system is the lack of transparency regarding how the decision is made. Many of these algorithms are extremely complex to decipher and it is difficult to interpret the information on which they are based and the way in which they use it to make a decision. Besides, many times the algorithms are not disclosed because they constitute a trade secret (México Evalúa, 2020), and even in some cases, even if they were disclosed, the source code is not enough to understand how the result was reached (AI Now Institute, 2018), especially when techniques such as machine learning<sup>36</sup> or neural networks<sup>37</sup> are used, since the code does not reveal this type of information.

The potential problem with these types of algorithms underlies that a large amount of data is required to train them, data that are generally obtained from other

<sup>31</sup> The advancement of technology has been exponential, especially in terms of processing. Indeed, Kurzweil (2006, cited in Susskind, 2019) notes that by 2050 an average desktop computer will have more processing power than all the human brains on earth.

<sup>32</sup> About this, the AI Now Institute (2018, 3) states that machine learning is "a set of techniques and algorithms that can be used to 'train' a computer program to automatically recognize patterns in a set of data".

<sup>33</sup> These tools, which are not for exclusive use in the judicial field, are also used by law firms. Some have the capacity to analyze a large number of documents instantaneously, such as Matilda, a tool developed by the firm EMC software, which automates the management of judicial notifications and reads the notifications in a matter of seconds, identifies the most relevant parts and makes an instant summary of each one of them (EMC Software Jurídico, 2021).

<sup>34</sup> This tool helps to analyze rulings based on 33 criteria defined by the Court and is capable of reading and making summaries automatically in a matter of seconds.

<sup>35</sup> The study conducted by Mattu (2016) analyzed more than 10,000 defendants sentenced in Broward County, Florida, and compared the recidivism score given by COMPAS with the actual recidivism of these defendants over a two-year period. In this regard, it was found that the tool tended to incorrectly predict a higher risk of recidivism for people of color (43%) compared to white defendants (23%). Besides, white defendants were generally and incorrectly assigned a less risky rating, as white defendants who repeated an offense during the period studied were twice the number of defendants of color who re-offended.

<sup>36</sup> In this regard, the AI Now Institute explains that while revealing the source code would be sufficient for one to understand how "expert systems" make decisions (where the code is composed of rules for decision making), when using techniques such as machine learning, the code might only reveal the set of data that was used to train the model or the model that the algorithm learned, but not the set of rules that the algorithm applies to make decisions (AI Now Institute, 2018).

<sup>37</sup> This type of technology works based on various "hidden layers of relationships and combinations of all different characteristics in the data" (FRA, 2018).





institutions and may be biased due to human error. Therefore, the IA Now Institute (2018, 6) recommends to “not take for granted that the data is ‘correct’, or representative of a reality that we want to perpetuate in future”.

Therefore, it is important to reflect on the possible impacts that the implementation of this type of technology could have as part of the decision-making process, especially when rights such as freedom are at risk.

One of the recommendations for detecting possible biases is to audit them. One way to do this is to conduct experiments with fictitious examples that help to identify some type of discrimination with respect to vulnerable groups. Another way is through extraction methods to detect the information that the algorithm takes as a priority for decision making and to verify that the differences in the results are not due to characteristics such as gender, race or social class (FRA, 2018).

Another recommendation is to make transparent how these algorithms are constructed, something complex for the reasons explained in previous paragraphs. Some experts point out that authorizing public bodies to make different evaluations of these tools could be a useful mechanism to detect bias (FRA, 2018; Sandvig et al., 2014).

## 2.2. Use of videoconferencing tools for judicial proceedings

One of the technological solutions adopted by various jurisdictions has been videoconferencing to hold procedural acts remotely. Although this tool has several benefits, such as helping to reduce costs<sup>38</sup>, facilitating communication when the parties are not physically in the same place and potentially increasing access to justice (Susskind, 2019), many specialists have shown the negative effect that the use of video communication may have on judicial proceedings.

For example, a study on the impact of the use of closed-circuit television to conduct hearings to set bail

for persons accused of committing felonies in Cook County showed that the use of video at hearings increased bail<sup>39</sup> by an average of 51% compared to hearings conducted face-to-face (Diamond et al., 2010). It is important to mention that the closed-circuit television used in Cook County had very low-quality technology consisting of a black and white image with low contrast and occasional flickering. Another factor that may have influenced the results is that defense attorneys had little time to speak with their clients and the hearings had an average duration of 30 seconds (Diamond et al., 2010).

Although this may be an extreme case that may not reflect the impact of the use of current technology or transfer to other contexts, it certainly provides interesting data regarding the effects that technology could have on judicial decisions.

In this regard, a study on the effects of remote interaction through video, analyzed from a social sciences perspective, explains that several aspects of the use of this modality impact how people make decisions (Vavonese Bailey et al., 2020). The authors point out that one of these aspects is nonverbal communication, which mainly influences the way we judge and are judged.

■ It is important to reflect on the possible impacts that the implementation of this type of technology could have as part of the decision-making process, especially when rights such as freedom are at risk.

<sup>38</sup> In France, the use of videoconferencing for judicial hearings was motivated by the lack of judges in one of its overseas territories inherited from the colonial era (St. Pierre and Miquelon), but was subsequently promoted by the Ministry of Justice, which sought its generalized use in order to reduce the cost of transferring convicted or accused persons deprived of their liberty when they had to participate in a trial (Janin, 2011).

<sup>39</sup> In fact, the analysis by offense revealed that the difference in bail ranged from 54% to 90%.

That is, eye contact and body language may affect the perception of how we see other people and how they perceive us. For example, if a person makes eye contact, they are more likely to be perceived as more attentive and friendly, as opposed to someone who does not make eye contact or looks down, which may convey boredom or lack of interest. This is relevant because when interacting via video, it is very difficult to identify people's body language or register specific reactions. For example, in a videoconference interaction it is difficult to know if a person is making eye contact because the angle at which the camera is located may affect the image we see. On the other hand, the identification of body language is made difficult as usually only a reduced image of the body is shown (Vavonese Bailey et al., 2020).

Additionally, the authors point out that interpersonal factors, such as closeness to the person we are talking to or the feeling of empathy may also impact people's perceptions and, consequently, affect decision making. In this regard, it has been shown that interpersonal connections may develop more slowly when people communicate via video. Because of all these reasons, the authors of the study conclude that "the ability of video to achieve the same level of effective communication as in-person interactions is not possible" (Vavonese Bailey et al., 2020, 15). This is especially relevant for judges, who must often assess the credibility of the testimonies presented to them.

On the other hand, some experts point out that during criminal hearings conducted via videoconferencing, the right of defendants to confront witnesses and control how they appear before judges is lost (Skove et al., 2021). For example, some studies note that the use of technological solutions may affect the way in which the accused interact in these proceedings as these solutions obstruct confidential communication between the accused and their legal representation, hinder the possibility of rejecting arguments or pointing out contradictions in real time, and even deprive the accused of the possibility of presenting themselves in different clothing, especially in justice systems where the accused are provided with a uniform<sup>40</sup> (Australian Human Rights Commission, 2018).

Despite these criticisms, during the pandemic, the use of videoconferencing has been key for courts and tribunals to continue offering their services to the citizenry. In this sense, it is necessary to recognize that these tools may be very useful in certain cases and will inevitably be part of the daily operation of judiciaries in the near future. In this regard, Susskind (2019, 182) points out that although these tools may have some disadvantages, they "constitute an advance on the disproportionate system used for many of today's lower value disputes; and so on balance, are worth embracing despite their shortcomings".

To counteract some of its effects, several specialists have urged judiciaries to use this tool in a responsible manner, adopt better technology and train users (Skove et al., 2021). For example, Bellone (2015) proposes several recommendations such as establishing standardized rules with the help of experts in psychology governing the use of videoconferencing, implementing means to overcome obstacles to communication, adopting advanced technology that may eliminate technical difficulties, and limiting its use to certain processes and matters.

In fact, many judiciaries have begun to establish these rules, generally by means of protocols, to detail in which cases<sup>41</sup> and in what manner hearings should be conducted remotely (México Evalúa, 2020). In Costa Rica, for example, several protocols were established for conducting oral hearings by technological means in civil, family, commercial and criminal matters. These protocols establish, among other things, the platform to be used, the method of authentication of the persons participating, the clothing and the type of technical support to be provided, among other things (Poder Judicial de la República de Costa Rica, 2020). Similarly, several judiciaries<sup>42</sup> have created protocols where, in addition to determining how this type of hearing should be carried out, they establish the way in which users may access them remotely (México Evalúa, 2020).

This is positive, since through these protocols it is possible to establish the minimum technical requirements to carry out this type of videoconference, such as, for

<sup>40</sup> In some cases, a defendant deprived of his or her liberty has the possibility to change into formal clothes before appearing in court, however, when the hearing is conducted virtually, the defendants deprived of their liberty are in detention centers and not given the possibility to change their clothes. This may undermine their self-confidence and give them the impression that their presumption of innocence is not respected.

<sup>41</sup> The Chilean Judiciary implemented the feasibility hearing in criminal matters in which parties agree on the manner in which the oral trial hearing will be conducted (México Evalúa, 2020)

<sup>42</sup> These are the judiciaries of Aguascalientes, Campeche, Mexico City, Coahuila, Colima, Durango, Guanajuato, Jalisco, State of Mexico, Morelos, Nayarit, Nuevo León, Puebla, Sinaloa, Sonora and Tamaulipas.



example, the acceptable connection conditions to guarantee the quality of the call or the type of tests to be carried out before the videoconference —such as audio and image tests— among other things. In addition, these protocols may provide a macro of action that is flexible enough to recognize when conditions are not optimal and, therefore, hearings must be postponed or held in person.

Another recommendation is to train users in the use of these tools (México Evalúa, 2020). This is especially important since the effectiveness of technology depends on the ability of public servants and external users to use it (Australian Human Rights Commission, 2018). In this regard, it will be important that, through informative workshops, tutorials, and other materials, it is ensured that those involved in the development of these types of hearings have the necessary knowledge and skills to use the tools. In particular, law schools and judicial schools should begin to provide training that prepares their students for their use (México Evalúa, 2021c).

This training also involves educating the legal profession about any effects that the use of these tools may have (Bellone, 2015). To this end, bar associations, law schools and judicial schools should take an active role in reflecting on the implications and potential risks, as well as possible solutions.

Although the use of videoconferencing to carry out judicial procedures will likely expand in the coming years, these elements should be a starting point to analyze how it may be used and design new technological interventions that seek better practices of courts and tribunals, without affecting due process and adversely impacting the lives of millions of people, especially in matters where fundamental rights such as the life and liberty of individuals are at stake.

Therefore, more research is still needed on the impact of videoconferencing on how judges decide, but above all, on the type of issues that are likely to make use of videoconferencing<sup>43</sup>.

### 3. Considerations regarding the cybersecurity of tools

At present, information technologies have allowed and facilitated the interconnection and exchange of information among millions of people in the world through the creation of a new space: cyberspace. However, information technologies have also increased the possibility of electronic attacks from anywhere, from which the administration of justice is not exempt.

In this regard, Rodríguez (2021) mentions that the risks to which judiciaries are subject include the alteration of information when the content of databases is changed or deleted, advanced attacks from persistent threats, code injection attacks, phishing, ransomware, hacking, information theft or the violation of privacy.

One of the main reasons for ensuring the security of judiciaries' information as a priority is the fact that the administration of justice is one of the essential services and part of the "critical infrastructure" of countries, which, if interrupted by an attack or security breach, could have serious consequences for the citizenry (Rodríguez, 2021). Thus, placing special emphasis on cybersecurity may have several benefits for judiciaries, such as increasing the confidence that users have in technological tools and increasing their use.

On the other hand, the way judiciaries operate presents a series of distinctive features that make security a priority issue. First of all, they handle a large amount of confidential and sensitive information —such as personal information of the parties, testimonies, bank account numbers, trade secrets, among others—, which makes them a particularly attractive target for cybersecurity threats since this information could be used by third parties for criminal purposes.

Additionally, poor security could jeopardize the credibility and legitimacy of judiciaries, since a security breach would increase the possibility that third parties could

<sup>43</sup> The National Institute of Justice (NIJ) points out in an article the priority areas of research to be conducted in the coming years, among which the following stand out: research on the impact of telepresence technology on court and actors' outcomes, creation of technical standards for the use of these technologies and the identification of potential areas of expansion. The article is available at: <https://nij.ojp.gov/topics/articles/known-unknown-research-needed-plug-knowledge-gaps-impact-court-telepresence>

## ■ The effectiveness of technology depends on the ability of public servants and external users to use it.

manipulate judicial records (Rodríguez, 2021). Even a leak of information could be used to affect judicial independence or legitimacy.

Despite these dangers, very few judiciaries are aware of the importance of security with respect to information systems and have special departments to deal with these types of threats (I. Rodríguez, personal communication, May 28, 2019). Given this situation, judiciaries must make their members aware of the importance of security and implement the appropriate security measures to ensure the integrity of their information at the highest level, in order to prevent, react and counter any type of attack (Rodríguez, 2021).

There are various strategies to ensure the cybersecurity<sup>44</sup> of information systems in judiciaries, such as the use of firewalls to prevent third parties from accessing data on a private network, backup files, updating software, using secure passwords and other authentication mechanisms, or encrypting sensitive information, among others.

Next, some recommendations are offered to ensure information security in the institutional framework:

**✿ Identification and classification of the most important information.** Experts agree that not all information should be protected equally (Choi et al., 2019; Embley, 2021; Naseem and Conklin, 2021). To this end, it is important to classify and prioritize any information that needs to be protected, represents the greatest value or is the most sensitive for judiciaries. One of the most important steps is to make an inventory of all the software, applications and servers of the Judiciary. Without an exhaustive list of all assets, it is almost impossible to prioritize them

(Embley, 2021). Subsequently, it is essential to classify the information according to its level of importance and sensitivity and determine the cybersecurity mechanisms required to protect each of them (Choi et al., 2019). Another useful step is to document the backup and restoration approach, to determine the periodicity of the backup and also do a risk analysis on how much information may be lost without significant damage to judiciaries (Embley, 2021).

**✿ Incorporate nationally and internationally recognized standards.** These standards, also called cybersecurity framework, may be used as general guidelines to increase the security of systems and information. The ISO/IEC 270001/270002 standards, the PCI DSS (Payment Card Industry Data Security Standard), the CIS Critical Security Controls and the NIST cybersecurity framework stand out.

**✿ Teamwork and communication. Security must be a cross-cutting issue within the institution.** In this sense, it is key to involving the technology department staff in decision-making spaces so that they may discuss issues related to cybersecurity. Since the language of the technology department (which is often very technical) may often be a barrier for public servants, it is important to take some measures such as using visual materials and incorporating a results-oriented message, for example, specifying how much money may be saved by taking a certain security measure (Choi et al., 2019). Other experts recommend identifying a leader in order to serve as an interpreter between the group of public servants and this department (Embley, 2021).

**✿ Training.** Individuals may also pose a risk to the cybersecurity of judiciaries, especially when there is no awareness of the dangers of sharing, for example, passwords or opening unknown links or emails (Naseem and Conklin, 2021). Therefore, one of the strategies is to promote a culture of privacy and personal data protection (Rodríguez, 2021, 26). This requires, of course, training users on the subject and making them aware of any habits, strategies and good practices they may adopt to avoid compromising the security of the institution (J. Barba Lobatón, personal communication, September 13, 2021).

<sup>44</sup> The term cybersecurity has been defined by the International Telecommunication Union (ITU) as: "the collection of tools, policies, security concepts, security safeguards, guidelines, risk management approaches, actions, training, best practices, assurance and technologies that can be used to protect the cyber environment and organization and user's assets. Organization and user's assets include connected computing devices, personnel, infrastructure, applications, services, telecommunications systems, and the totality of transmitted and/or stored information in the cyber environment. Cybersecurity strives to ensure the attainment and maintenance of the security properties of the organization and user's assets against relevant security risks in the cyber environment. The general security objectives comprise the following: availability; integrity, which may include authenticity and non-repudiation; confidentiality" (ITU, 2010, p. 20).



Lastly, it is important to recognize that judiciaries are also exposed to the risk of internal users breaching security systems in order to carry out corruption.

To avoid such threats, it is essential to have the appropriate mechanisms in place. For example, individual user accounts should be implemented, with differentiated privileges and separation of roles; this way, the type of users who may access certain information and what they may do with it is controlled (J. Apperson, personal communication, August 24, 2021).

It is also essential to enable logbooks that record all user actions in the system, as well as to program a series of alerts to identify when an irregular event occurs, such as the modification of a record or an intervention that alters the random assignment of cases between courts, for example. This, in order to be able to trace the person responsible for any irregularities, should they occur, and call them to be held accountable. Finally, it is also important to establish internal control policies, audits and quality controls that provide guidelines and measures to ensure information security (J. Apperson, personal communication, August 24, 2021).

## 4. Considerations regarding storage

At present, with the implementation of new technological tools, judiciaries must be prepared to manage a large amount of digital information, so storage is a very important aspect in the digital transformation process.

The types of storage available vary in nature: judiciaries may opt for storage in a data center on the institution's premises (on-premises), cloud storage<sup>45</sup> and hybrid storage.

Some experts point out several advantages and disadvantages in each of them. Among the advantages of on-premises storage are that data may be accessed without the need for the internet, there is greater control over information management and, although a large initial investment is required, it is amortized over time.

Some of the disadvantages are the need for specialized personnel within the organization to manage it, which means a greater number of tasks for the team in charge, the risk of data loss due to system malfunction, as well as increased maintenance costs. Finally, with this scheme it is difficult to expand the storage capacity in case of an increase in the flow of information, since, to do so, it is necessary to modify the infrastructure (ITD Consulting, 2020).

For its part, the benefits of cloud storage are that it eliminates the investment in the purchase of hardware since it is a third party who manages and protects the information; it provides large storage capacity at the time required, while modulating this capacity according to fluctuating needs; it facilitates the management of information by centralizing it in a single place, and reduces the responsibilities of information technology personnel since it relieves them of the work of managing information (AWS, 2021). Among the disadvantages are the need for a good internet connection for faster access to data, lack of direct control over the information<sup>46</sup>, and higher costs if not handled properly (ITD Consulting, 2020).

As for hybrid storage, it consists of the combined use of on-premises and cloud storage. Some organizations use it to back up information and reduce the risk of data loss. Other organizations store their most sensitive and important information on their own servers and the rest

**■ Individuals may also pose a risk to the cybersecurity of judiciaries, especially when there is no awareness of the dangers of sharing, for example, passwords or opening unknown links or emails.**

<sup>45</sup> According to Amazon Web Services, one of the companies commercializing this type of service, cloud storage "is a cloud computing model that stores data on the Internet through a cloud computing provider who manages and operates data storage as a service. It's delivered on demand with just-in-time capacity and costs, and eliminates buying and managing your own data storage infrastructure" (AWS, 2021).

do it in the cloud. Some of the benefits of this storage are the possibility of its growth according to consumption, decreased risk of data loss and greater information and services availability from any location (Chávez, 2017).

In addition to these advantages and disadvantages, the issue of security is one of the concerns that may arise around the storage decision. Some institutions consider it safer to have their information on their own server, because commercial cloud storage services tend to be the target of many attacks. On the contrary, these services argue that the investment they make to protect their storage will always be much more important than the investment that any non-specialized organization may make, particularly when it is a public institution.

At a time when the generation of electronic files has grown rapidly, judiciaries are debating which type of storage is most appropriate for them. While there is no simple answer to this, experts note that the choice depends on issues such as the volume of information handled or the timeliness of file retrieval and the degree of willingness or reluctance to accept cloud storage as a lower-cost option (Joint Technology Committee, 2016).

Some of the interviewees considered cloud storage to be a very useful tool, especially when software is being developed between different institutions (known as Development Operations or DevOps), since this type of tool facilitates co-creation and reduces software creation time (J. Apperson, personal communication, August 24, 2021). In this regard, cloud storage could facilitate the joint development of technological tools, as in the case

of Brazil, which, as mentioned above, has developed a platform for the co-creation of technological tools.

Other judiciaries have raised various concerns not only about security, but also about the legality of the use of cloud storage (I. Rodríguez, personal communication, May 28, 2019). In this regard, many of these doubts may be dispelled when analyzing the legal framework of the country or Judiciary in question, since it is easy to identify whether this type of solution is contemplated in the law or not.

In Mexico, the General Law on Archives (2018), which establishes general guidelines for the organization, conservation, administration and preservation of archives of liable parties (among which are local and federal judiciaries), mentions in its Article 62<sup>47</sup> the possibility of managing electronic archival documents in the cloud.

Whether or not there is a law or general standards on storage, it is advisable for judiciaries to design a program that provides specific guidelines for managing archives properly and that may facilitate decision-making in this regard. This way, if it is known what type of documents should be kept and for how long, it is possible to discern the most appropriate storage option.

Additionally, Linhares and Raaen (2013) mention that this program must also ensure compliance with applicable laws on the creation and maintenance of records<sup>48</sup>, the integrity of records<sup>49</sup>, access by public servants and the general public, the preservation of records<sup>50</sup> throughout their entire life cycle<sup>51</sup> and the proper disposal of records that have reached the end of their life cycle<sup>52</sup>.

<sup>47</sup> According to Article 62 of the General Law on Archives, liable parties may manage electronic archival documents in a cloud service. The cloud service shall allow:

- I. Establishing the specific conditions of use in terms of document management and responsibility for the systems;
- II. Establishing high security and information privacy controls according to applicable Mexican regulations and international standards;
- III. Knowing the location of the servers and of the information;
- IV. Establishing the terms of use of the information in accordance with current regulations;
- V. Using infrastructure for private use and access, under the control of authorized personnel;
- VI. Safeguarding sensitive information and mitigating security risks through information security policies;
- VII. Establishing the use of standards and adaptation to quality standards to manage electronic archival documents;
- VIII. Enabling interoperability with internal applications and systems, intranets, electronic portals and other networks, and
- IX. Reflecting in the system, in a coherent and auditable manner, the documentary management policy of the liable parties.

<sup>48</sup> Management and storage practices must comply with the legal framework, especially with respect to data creation and maintenance, entry of data and information, timeliness of record creation and entry of information, organization, labeling and indexing, and access by the public, personnel and other bodies (Linhares and Raaen, 2013).

<sup>49</sup> The authenticity, reliability and accessibility of records must be guaranteed. In this sense, "maintaining the integrity of judicial records is fundamental to the rule of law, because records provide evidence of the judicial decision-making process and, therefore, directly affect the rights of individuals and organizations". Therefore, it is important to maintain procedures and policies to prevent information leakage and access, protect records from physical damage or destruction (Linhares and Raaen, 2013, 7).

<sup>50</sup> Some of the best practices in this regard are: maintain accessible systems for storage of digital records as well as index and retrieval systems, create information search tools, establish controls for the protection of confidential data, periodically assess the reliability of the system to access records (Linhares and Raaen, 2013, 13).

<sup>51</sup> Linhares and Raaen (2013) point out that there are several challenges regarding the preservation of electronic records, especially those that have to be kept for long periods of time, as they require the intervention of specialists who are monitoring and managing this information. On the other hand, there is a major challenge in terms of space and costs. However, they note that in suitable storage environments the role of maintenance is minimal

<sup>52</sup> Linhares and Raaen (2013) mention that there should be rules about the destruction of records as well as retention schedules to help identify which records should be removed. To this end, some best practices identified are to perform a cleanup of obsolete or duplicate records, conduct the record destruction by appropriate methods and in a secure manner, and carry out continuous assessments to identify those records that are no longer valuable and may be removed.



## CAPÍTULO 4

# Conclusions



At present, judiciaries face diverse pressures to improve the services they offer to the citizenry, make them more efficient and raise their quality. This is not an easy task given the great budgetary challenges they face.

With the arrival of the pandemic, many judiciaries were in need of transforming the way they offer their services. On the one hand, this situation forced many judiciaries that did not have technological solutions to implement some in order to resume their services and, on the other hand, forced those that already had these tools to expand or improve them in order to better meet the needs of users in terms of access to justice. However, there are still some judiciaries that have not yet managed to take the step towards the implementation of technological tools, and these are the ones that have accumulated the greatest lag. This may have important consequences in terms of social conflict management.

Undoubtedly, the health crisis has been a watershed in the use of technological tools, as more and more judiciaries have seen the benefits of their use and have reflected on the need to rethink the traditional schemes that have regulated their processes for centuries. Some have already taken steps in this direction and have begun processes of change with the help of experts in the field.



To maximize resources and leverage them in interventions that truly transform the judiciaries, the technological tools implemented must propose solutions that not only automate or replicate existing processes digitally, but also make it possible to reimagine the judiciaries, i.e., rethink their organization, structure and functioning. This, of course, requires committing to a long-term transformation process that allows for profound changes in several fields. This requires a detailed planning process that allows the accomplishment of the proposed goals and objectives, but is also flexible enough to change course at the right time or to incorporate new ideas that may add to the transformation.

At the same time, this process requires an open, innovative, strategic leadership that is committed to the transformation it seeks to achieve, and that also has the accompaniment and support of various key actors throughout the process —such as a consolidated innovation and technology department, jurisdictional and administrative officials, legislators, community leaders and the legal profession, among others— who contribute different perspectives at different points in the process.

On the other hand, and as we have emphasized throughout this document, the solutions generated must focus on the needs of the users. This consists of understanding the limitations and interests of the different types of people that these interventions must serve, as well as taking into account their opinions and preferences at different stages of the process, elements that may make the difference between the success and failure of an intervention.

This approach also allows the technological tools or interventions designed by judiciaries to have a broader

scope and to be used by both attorneys and the citizenry in general.

Designing these tools with this objective in mind opens the door to imagining new possibilities where judiciaries are able to offer new services, processes and interventions that truly help reduce the access to justice gap, strengthen the legitimacy of judiciaries and promote judicial values.

In other words, judiciaries are in a position to build tools that are accessible to users regardless of whether or not they have specialized knowledge of the law. From a more radical perspective, these tools could even give users the possibility of carrying out simple procedures without the need to resort to an attorney (in those matters where the regulations allow it). Or, from a more conservative perspective, they could simply allow citizens to navigate the justice system, identify whether their problem has a legal remedy, provide information about any legal advice they may access, or help them to better understand the stages of their process.

Another of the reflections that judiciaries must reach is about the potential for transformation that alternative dispute resolution mechanisms have and the redesign of their traditional processes, in order to decongest the justice system and offer people more attainable and faster solutions, and promote the values that we want to preserve in the justice systems.

Lastly, not only the judiciaries, but all actors directly involved in the administration of justice and, in general, all those interested in expanding access to justice, are invited to keep an open mind and participate in the reflection of any technological transformation processes that may improve the quality of justice.





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