

The Future of Digital Justice



Boston Consulting Group (BCG) is a global management consulting firm and the world's leading advisor on business strategy. We partner with clients from the private, public, and not-for-profit sectors in all regions to identify their highest-value opportunities, address their most critical challenges, and transform their enterprises. Our customized approach combines deep insight into the dynamics of companies and markets with close collaboration at all levels of the client organization. This ensures that our clients achieve a sustainable competitive advantage, build more capable organizations, and secure lasting results. Founded in 1963, BCG is a private company with offices in more than 90 cities in 50 countries. For more information, please visit bcg.com.

Bucerius Law School is the first private law school in Germany. Established in 2000 by the ZEIT-Stiftung Ebelin und Gerd Bucerius, Bucerius seeks to offer the highest quality in internationally focused and practical-oriented legal education. Combining rigorous legal instruction with a mandatory term abroad, business administration classes, foreign language studies, a technology curriculum including computer science, and data science as well as coding, professional internships, and a broad nonlegal academic program, a Bucerius education offers students a complete and well-rounded package. Its international orientation sets Bucerius apart from other law schools in Germany and is central to its mission to advance international legal education by focusing on the diverse legal systems shaping international law and business today. Since its inception, Bucerius has been recognized as a model for higher-education reform throughout Germany.

The Legal Tech Association Germany is committed to an innovation-friendly legal framework. Together with our members, we are shaping the transformation of the legal market. We believe that innovation arises when different perspectives and disciplines interact. We are the platform for exchange between a wide variety of players in the German legal market—regardless of whether they are law firms, legal departments, legal protection insurers, software companies, legal-tech startups, the judiciary, or others.

The Future of Digital Justice

Dirk Hartung, Florian Brunnader, Christian Veith, Philipp Plog, and Tim Wolters

June 2022

AT A GLANCE

Justice systems worldwide are under increasing pressure as legal complexity rises and more people rightfully demand access to justice. Digital transformation is the key for courts to keep pace. Digital justice is an immense chance to improve the lives of millions of people, but only if the technology is understood and implemented fast.

DRIVERS OF DIGITAL JUSTICE

Globally, the digitalization of justice systems is just beginning and generally lagging behind the digital transformation of the rest of society. This has led to a widening gap between the expected user experience for both consumers and businesses and the actual services provided by the courts.

STATUS QUO OF DIGITAL JUSTICE TRANSFORMATION

The current state of digital justice can be understood using an adapted version of the three-layer framework previously developed for private legal technology: It differentiates between enabler, process support, and substantial law solutions. Compared to other parts of the legal system, courts and public offices are several years behind in technology adoption. Despite recent incentives to innovate during the COVID-19 pandemic, even economically strong countries such as Germany risk missing the boat when it comes to future readiness. Insufficient hardware and software infrastructure, budget issues, a hindering mindset, and fear of personal disadvantages among stakeholders are all to blame.

INTERNATIONAL BEST PRACTICES

Austria, Canada, Singapore, and the United Kingdom are leading in justice digitalization. They demonstrate several key traits that help make for the successful digital transformation of a justice system. Adoption of software development best practices from the private sector, early, strong, and decisive leadership, user-centricity, and openness to process optimization and data-based strategies have helped them manage the relevant changes.

FUTURE OF DIGITAL JUSTICE

Digital justice enables faster, more efficient case management and the effective resolution of legal conflicts, better working conditions within courts, and greater access to the legal system. Countries that strive for these positive results require a bold vision at the outset, a purposefully designed governance, and an adapted legal framework to ring in the required paradigm shift. For help, they can tap into a young generation of judges, clerks, and other civil servants eager to bet on technology to advance their country and their careers.

Drivers of Digital Justice

THE ADMINISTRATION OF JUSTICE is a core function of modern societies. Yet it is also an enormous, resource-intensive task operating in a complex, multilayered system shaped by societal conflicts, fundamental rights, and organizational challenges. Globally, justice systems exist at very different levels of maturity: According to the World Justice Project, nearly a quarter billion people live in conditions of extreme injustice such as slavery, lacking all fundamental rights. Another 1.5 billion people cannot obtain justice to resolve everyday legal issues, and an astonishing 4.5 billion people lack the legal tools to protect their assets or are incapable of accessing the public services to which they have a right. While some of these challenges are linked to poverty and lack of institutions, insufficient access to justice persists in some of the richest, most developed countries. Remedies are often available in theory, but the complexity, costs, and duration of legal proceedings discourage their pursuit in practice.

Many factors often simultaneously influence the availability and administration of justice, but one is at the center: legal complexity. It results from an increasingly globalized economy in which products and services blend physical, augmented, and virtual realities. The rules required to organize this multidimensional global marketplace form a constantly growing, ever more complex, and interlinked regulatory ecosystem. Courts—as the primary institutions to interpret these rules and resolve resulting conflicts—not only have to navigate more and more complicated laws but also deal with an explosion of case numbers in certain areas. Often understaffed and ill-equipped with complexity management tools from the past (e.g., paper records or fax machines), they take longer to decide cases, require costly outside expertise, or reach results that are unexpected by the parties involved.

High costs, the lengthy time required to resolve cases, and uncertainty regarding outcomes affect individuals and companies alike. As a result, individuals often display rational ignorance—failing to understand that a particular problem has a legal solution—or rational indifference—not pursuing valid legal claims because it seems like too much hassle. Consumer-facing legal technology companies have helped millions of people worldwide overcome these hurdles, understand their rights, and pursue their claims in courts. Companies are more likely to turn to professional providers of legal services, which increasingly use technology to handle legal complexity (see our report “*How Legal Technology Will Change the Business of Law*”). Their advice is refined by in-house legal departments benefiting from improved processes, multidisciplinary approaches, and, again, widely adopted legal technology and operations tools (see our report “*Legal Operations: Getting More from In-House Legal Departments and Their Outside Counsel*”).

Yet when legal proceedings leave the sphere of the consumer or the company and enter the courts, they are often thrown back in time: While collaboration software and chatbots enable near real-time communication and decisions, inquiries from judges and minor procedural orders can take months to resolve. Processes that could be instantly tracked on department-wide dashboards turn into opaque proceedings with irregular updates provided only upon request. Documents that could take minutes to create at negligible cost lead to perennial lawsuits that cost tens and hundred of thousands to decide.

Why is the experience so different between legal services in the private sector and public dispute resolution in courts? In this report, we argue that this is primarily due to the lack of digitalization in our justice systems. Courts try to manage 21st-century complexity with 19th-century tools such as paper file keeping. As a result, insufficient digitalization leads to a bad user experience and eroding trust in our legal institutions. It drives parties into private dispute resolution and is increasingly seen as a negative location factor, inhibiting business activity and economic growth. It risks overwhelming judges and clerks. Justice systems, intended to satisfy both those seeking and administering justice, instead leave each group dissatisfied. Therefore, this report is, first and foremost, a strong call to action regarding digital justice reform.

Our research, however, also reveals grounds for optimism, including some countries that are celebrating great improvements with digital justice systems. Examining digitalization efforts in Austria, Canada, Germany, the United Kingdom, and Singapore, we found drastic differences and impressive success stories. Digital approaches seem to benefit countries from different legal traditions, sizes, and geographies. While not every aspect is universally transferable, the strategies employed by today's leading nations can provide strategic guidance and specific blueprints to strengthen justice systems in less advanced nations.

ABOUT THE STUDY

The study, conducted by the Boston Consulting Group, Bucerius Law School, and the German Legal Tech Association, comprised nearly 50 in-depth interviews with judges, clerks, and court IT managers, government officials, general counsels, partners and managers from large law firms, insurance company owners and managers, board members of trade associations, and academics researching the legal system, court organization, and their legal and economic effects.

During the interviews, we gained insights on questions such as how courts successfully launch digital prototypes and procedures, which tools both judges and parties find most helpful, what is most challenging about establishing digital justice, how those challenges can best be overcome, and how these measures are intertwined with legislative actions and law reform.

The interviews were complemented by extensive desk research, analysis, and evaluation of the existing literature.

A successful digital transformation of the justice system does not merely require the right set of technologies; it needs extensive change management and coordinated legislative reform. Ideally, a clear strategic vision leads to governance structures tailored to the specifics of a legal system, such as federalism or self-government of the judiciary. Where necessary, procedural law and court organization have to be adapted to meet the expectations of parties, judges, and political stakeholders.

An enormous task in and of itself and not without demanding challenges and risks, digitalization currently presents our greatest chance to meaningfully and sustainably improve access to justice.

Status Quo of Digital Justice

Given the vastness of the term *justice* and the great diversity of justice systems worldwide, it is important to specify what we call *digital justice* for the purposes of this report. Justice is closely related to courts, which are its most important institutions. Courts were originally named after the location where justice was administered, but today that meaning is shifting. Digital justice can be understood as a process rather than a location or institution. Digital courts can be technology-based extensions of traditional, physical courts. As such, they are part of a well-understood public environment, determined by court organization rules, hierarchy, and formalized relationships and modes of interaction. These raise questions concerning the digitalization of existing processes, tools to support both judges and parties involved in cases, and interfaces to other forms of digital public services, such as a national digital identity.

Digital justice, however, can also take the form of fully online dispute-resolution mechanisms. These can be public, such as the European Online Dispute Resolution platform, but can also be operated by private players, such as e-commerce platforms or online payment system providers. They offer functions of conflict settlement from dispute avoidance and containment to dispute resolution in an increasingly decentralized form. This independence from the nation state as the traditional provider of dispute resolution leads to questions about their democratic legitimacy and concerns about a healthy evolution of the law as cases dry up. In fully digital proceedings, new solutions have to be found concerning cybersecurity, evidence, and the effects of both asynchronous communications and telecommunications.

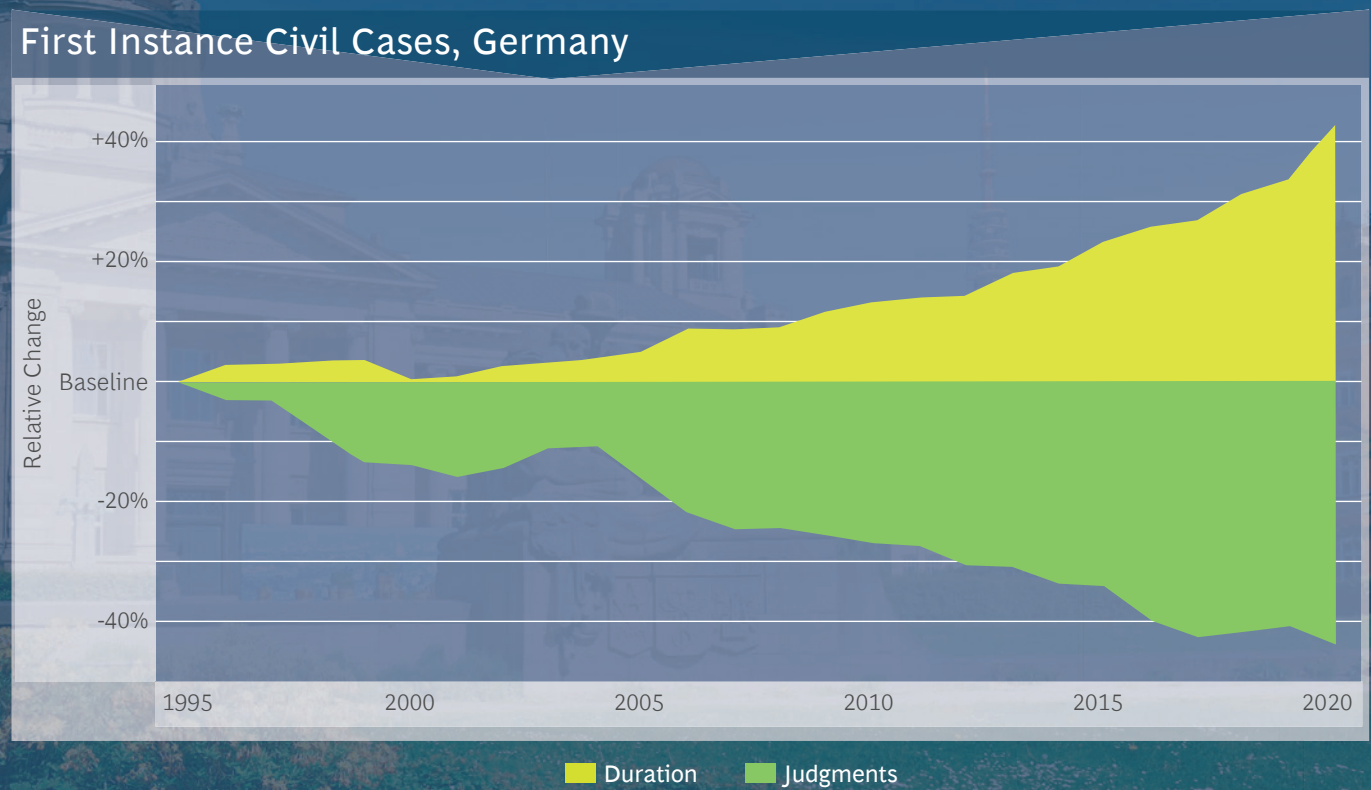
Against the backdrop of an increasingly digital society, some aspects of justice systems seem archaic. As the judiciary is a traditionally monopolistic provider of justice, few of the larger trends of digitalization have taken place within it. While the business world went from emails and text on static websites to instant messaging and video on mobile devices and is on the cusp of virtual reality, many courts still require printed documents, wet signatures, and in-person appearances. As processes at traditional courts and experiences in everyday life diverge more and more, societal friction between the justice system and its users increases. This results in fewer individuals and companies enforcing their rights in court, as evidenced by the dramatic reduction of case numbers in some parts of the justice system in countries like Germany (-40% from 1995 to 2020 in civil proceedings). When, in other areas, case counts rise due to technology-enabled ease and economic incentives (e.g., passenger

rights or car-emissions scandal claims), they risk overburdening the courts and causing longer durations for proceedings (+40% from 1995 to 2020 in first-instance civil proceedings in Germany).

These developments in turn further deter those seeking justice from using the legal system. This phenomenon is most visible in the business-to-consumer space and has led to a (partial) liberalization of the market for legal services in many countries, such as the Legal Services Act in the United Kingdom or its equivalent in Germany. Our interview partners, however, revealed a similar problem in the business-to-business market. They cited the duration of proceedings along with intransparency on case status and painstaking communications as major hurdles to pursuing their claims in court. These are complemented by very low foreseeability for both the costs and the end results of legal proceedings. More than once, companies and their legal counsel spoke of a system optimized for its providers—judges and clerks—rather than for its users.

So is it at least working well for those on the bench? Unfortunately, our analysis finds them equally dissatisfied. While they share a desire for less formal, more efficient communications and reliable infrastructure, they are more interested in administrative and operational aspects. These include easy and permanent

EXHIBIT 1 | Case Numbers and Duration of Proceedings in Germany



Source: Geschäftsentwicklung der Zivilsachen, Bundesamt für Justiz, buceri.us/verfdaueirg

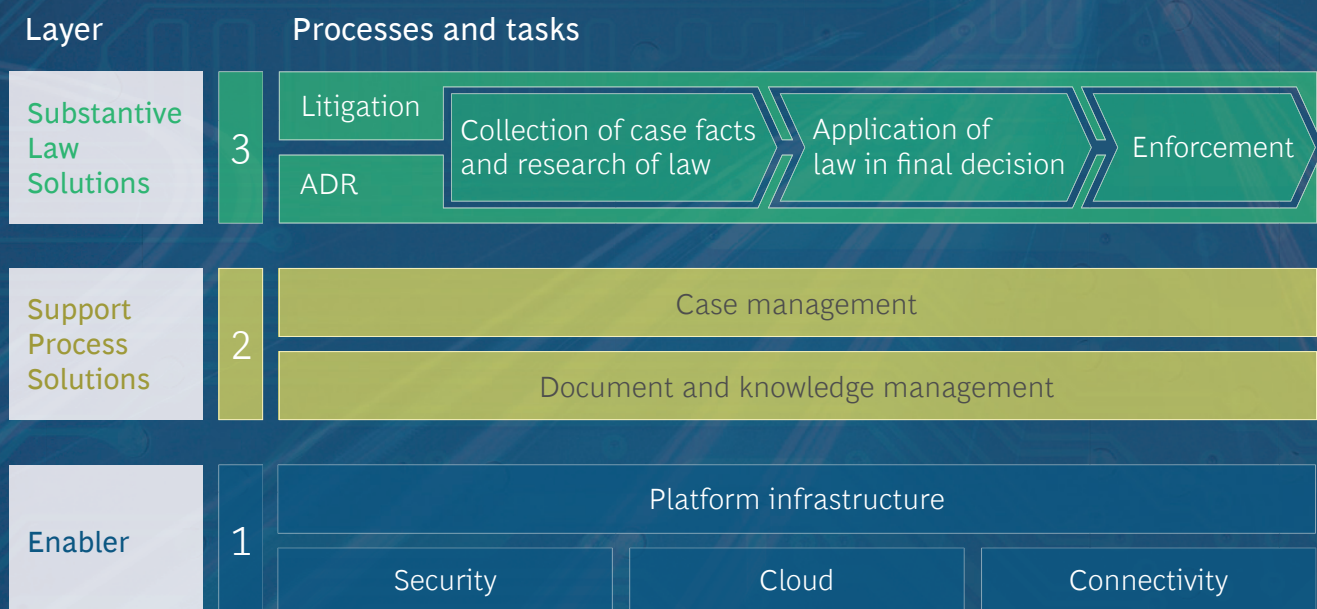
access to court records and automatization of recurring administrative tasks such as scheduling trials or monitoring deadlines. Judges also say it is very important that they be respected both personally and as members of the institution. A repeated concern is that this respect, which is in part displayed in some of the more archaic procedural rituals, could be eroded by an augmented use of technology.

Updated Three-Layer Framework

The original division of legal technology tools into three layers was a cornerstone of our first study on the topic (“*How Legal Technology Will Change the Business of Law*”). It has proven both flexible and popular in recent years and can be equally used in the justice technology space. As the market for legal technology becomes more mature over time, the lines between the layers start to blur. However, the core distinction between enabler technologies, support process solutions, and substantive law solutions can still be made. These categories can be ordered by their specificity, from general-purpose to those specifically built for legal and justice use cases. They are also interconnected, as higher-level solutions often require capabilities from lower-level solutions.

EXHIBIT 2 | Updated Three-Layer Framework

Technology solutions used in the future can be organized in three layers in our existing legal technology framework



Source: BCG analysis

The first category is at the more general end of the spectrum. **Enabler technologies** are focused on facilitating digitalization. Some of these offerings, such as cloud storage tools and cybersecurity solutions, have been developed by general tech vendors and are relevant for a variety of other public players. Therefore, potential synergies are greatest at this level, since solutions such as a national digital identity can be used not only in courts but in contact with a variety of public institutions. Our research reveals dangerous gaps in connectivity and cybersecurity if justice institutions treat enabler technologies as an afterthought. These types of solutions require extensive resources and are not particularly prestigious. When they are neglected, however, consequences can be dire—from long-term shutdowns to loss of data through breaches or loss of productivity. Especially since many higher-level solutions need a functioning infrastructure, inattentiveness to enabler technologies risks inhibiting more capable, more prestigious projects.

Tools in the justice system are most numerous and advanced at the intermediate level: **support process solutions**. Within many justice systems, some form of electronic case management system has been implemented. Quite often, however, courts or even individual judges run paper-based systems in parallel, and solutions vary greatly from judge to judge, court to court, and jurisdiction to jurisdiction. Many of our interview partners reported a great variety of these tools being used in their day-to-day activities. Where these tools exchange data seamlessly, they tend to fulfill the expectations of their users. More often than not, though, solutions are built for a single purpose and data portability and open interfaces are not a priority. This leads to lower adoption rates as judges and clerks even revert back to existing paper-based solutions.

The third category is **substantive law solutions**, which support or in part take over core legal tasks traditionally handled by judges, clerks, or parties. At the border of support process solutions, tools can be used to create standard documents required to advance the proceedings while also bearing legal meaning, such as a notice of summons. More advanced tools, some of which are currently tested in several jurisdictions, can help analyze facts and reorganize submissions by the parties, which is particularly helpful in extensive litigation. At the most advanced level, technology tools draft entire opinions in high-volume, little-variation case scenarios, in which the law is sufficiently clear. These tools can learn from past decisions and save a lot of time, but they currently require a judge to sign off on them. Substantive law solutions, however, do not always require cutting-edge machine learning technology. In many cases, properly designed information about the law and self-education processes can help parties reach a settlement. While information aggregation such as recidivism risk assessment and fully autonomous robot judges get a lot of attention in the press and academic publications, our research finds that they do not play a relevant role in practice. Instead, technology solutions at this level are typically part of human-designed and human-driven processes and augment rather than replace judges and clerks. Although these solutions exist in a number of jurisdictions and for the most part are successfully deployed, their adoption is still below the rates for enabler technologies and support process solutions.

Germany: A Case Study

Germany is the largest economy in Europe and consistently ranked among the leading countries in the World Justice Project Rule of Law Index. The country's civil justice system performs even better, currently bringing it to third place. Its lowest results concern accessibility and affordability of civil justice and freedom from unreasonable delay, which fall behind other categories such as freedom of improper government influence, corruption, or effective enforcement. Germany is an ideal candidate for a case study as it has both sufficient room for improvement and the necessary economic power to invest in long-term developments. With many of the traditional, straightforward solutions for access to justice, such as legal aid, already implemented and legal expense insurance widely popular, Germany has to look for new approaches to further improve its access to justice.



So where does the German justice system currently stand? Our research reveals an inconvenient truth: Technology solutions used in Germany are not only comparably small, outdated, and insufficiently user-centric, but also scattered and inconsistent across individual states, courts, and subject matter jurisdictions (for example, nearly 50 different solutions for digital files called “eAkte”). The digitalization of the justice system is lagging 10–15 years behind leading countries, while case overloads, cost pressure, and an impending wave of retirement (over 25 percent of all judges will retire by 2030) increase the pressure to modernize and digitalize the courts. Key challenges emphasized by our interviewees are insufficient hardware and software, as well as budget concerns and an overall perceived incapacity of public institutions to execute technology development projects (such as the infamous email service for lawyers, “beA”). The main reasons are seen as a lack of technologically capable personnel and a fear of personal disadvantages for key decision-makers. The latter is part of a pattern our interview partners reported: Many members of the judiciary are very skeptical, if not outright technophobic. This is primarily rooted in a general hostility toward technology in general and more specifically data collection and handling. It stems from an outdated understanding of data protection, rooted in negative experiences with unjust regimes abusing citizens’ data in the past. It is also caused by negative experiences with badly managed public technology projects that overpromised and under-delivered. All of this contributes to an overall lack of ambition for digital leadership in the legal profession.

These challenges concern all layers of legal technology tools. In parts of Germany, internet connectivity remains problematic. Cybersecurity in one court was so problematic that consultants publicly urged the administration to rebuild the entire IT infrastructure from scratch, and a nine-year project to implement digital file storage adopted as a law in 2017 is already severely behind schedule. At the support process level, many German courts currently use a case management system that was developed over 20 years ago and implemented over 15 years. Its successor has been planned for more than half a decade, and the project is currently developing approaches and infrastructure, not for a future tool but for the development of a future tool. The current system is not available online. At the substantive law solution level, Germany has developed a graphic programming prototype for passenger rights claims and tenancy law claims, while several companies already offer much more sophisticated, fully developed tools for consumers and generally receive very high satisfaction rates.

The situation is serious and requires decisive and swift action, but it is far from hopeless. Under a recently formed government and initiatives from the Ministry of Justice, digitalization seems to be a new priority. The COVID-19 pandemic demonstrated the usefulness of legal technology and directly and meaningfully impacted their adoption, e.g., for digital hearings and videoconference technology in courtrooms. The expected shift in the judiciary could bring in a new generation of judges and clerks that will be more open to digital solutions, less suspicious of data collection and analysis, and more interdisciplinarily and quantitatively educated. Additionally, a great variety of digitalization initiatives and prototypes can be found thanks to numerous working groups within the judiciary and administration and also among law and computer science students, which demonstrates increasing awareness and interest in digital topics. Finally, Germany has a thriving legal technology private sector due to forward-looking courts allowing for the liberalization of the market for legal services and bold reforms of the legal framework. In summary, digitalization presents an enormous chance for a meaningful and impactful justice reform in Germany.

International Best Practices

In addition to our case study of **Germany** laid out above, we have selected four focus countries for this report based on their reputations for digital justice: **Austria**, **Canada**, the **United Kingdom**, and **Singapore**. These countries represent a variety of legal traditions, population sizes, surface areas, forms of government, and geographic locations. Among them, we find a total of ten specific technology solutions relevant for digital and online courts: At the enabler level, we examine mobile infocommunications technology in courtrooms, mobile and digital signatures for court services, comprehensive cloud storage platforms, and video hearings and conferences. At the support process level, we spotlight court analytics, online filing, case-tracking platforms, and digital case management systems. Finally, at the substantive law solution level, we take a closer look at (fully) online dispute resolution, interactive legal solution explorers for self-assessment by the parties, and tools to organize and analyze the process materials and automatically draft court decision.

Singapore: A Global Leader Uniquely Positioned for Justice Digitalization

Singapore is an island city-state with a population of nearly 5.5 million people and a surface area of roughly 730 square kilometers at the southern tip of the Malay Peninsula. Though independent since 1959 and established in its current form as the Republic of Singapore in 1963, it follows the Common Law legal tradition. Singapore handles around 380,000 court cases per year in a three-tier court system with the Supreme Court, the State Courts, and the Family Justice Courts. In total, the Singaporean justice system consists of 12 civil courts, eight criminal courts, and three appellate courts.



Singapore has a longstanding strong reputation for digitalization in the public sector. Since the early 1980s, the digitalization of the judicial branch has been a key component of broader government strategies initiated by several prime ministers, driven by their ministers of justice and presidents of the Supreme Court, and executed by the Attorney-General's Chambers, the Singapore judiciary, and the Singapore Academy of Law.

Singapore has complemented these strategic and organizational initiatives with specific legislation to modernize civil and criminal procedural law and expressly address electronic evidence, records, and formal requirements for signatures and other communications. At times—for example, during the COVID-19 pandemic—swift legislative action was taken to further lower adoption thresholds and eliminate uncertainties regarding the use of remote communication technology.

As a result, Singapore has the most comprehensively digitalized justice system in the world and has established itself as a clear global leader. While its size, manageable surface area, and prosperity encourage digital justice, we find a set of strategic decisions to be at the center of this success. First and foremost, Singapore started its digitalization efforts early and with visible support from its most senior leadership. A top-down push for adoption was crucial at the beginning, combined with innovation diffusion measures by legal organizations to create buy-in from members of the judiciary, lawyers, and litigants.

Over time, Singapore has developed an end-to-end online case management system for all jurisdictions and all stakeholders including parties, their counsels, government authorities, and courts. It allows for initiation and monitoring of proceedings and provides data for court analytics, including key performance indicators as well as caseload analysis and prediction. The system builds on existing public technology, such as identity and payment systems, and makes use of legal-specific infrastructure, such as video hearing equipment and other mobile infocomm technology in courtrooms. Lawyers can access their case files, schedule dates for hearings, and even participate in virtual hearings using a mobile application, which is built on top of the case management infrastructure.

While the full extent of digital justice tools in Singapore would go beyond the scope of this report and can be found in the materials suggested for further reading, its most outstanding characteristic is its full integration. All different solutions, from legal information offerings through digital self-information and self-service legal expert systems, case management, and filing systems to video hearing and cybersecurity infrastructure, work together and build upon each other. They provide a clear, tangible benefit for their users and are continuously improved and developed. This creates trust for the legal community and makes Singapore attractive for businesses. The current infrastructure enables and facilitates the development of the justice technology of tomorrow as well.

Canada: The Most Modern Tribunal in the World

Canada is a North American federal parliamentary constitutional monarchy with a population of nearly 37 million people. With a surface area of nearly 10 million square kilometers, it is the second largest country in the world. Most of its ten provinces and three territories follow the Common Law tradition, with Québec typically classified as a mixed legal system. Canada operates a multilayer court system comprising the Supreme Court of Canada, courts of the provinces and territories, federal and military courts, and administrative tribunals. Canadian courts handle well over 1 million cases per year.



While Singapore was included in our focus countries due to its sheer breadth of digital justice projects, Canada is featured for one narrow yet impressive digital judicial endeavor. The Civil Resolution Tribunal (CRT) in British Columbia (BC)

might well be the most advanced online dispute resolution solution in the world. Established in 2012 by the provincial parliament through the dedicated Civil Resolution Tribunal Act, it is Canada's first online tribunal.

Its jurisdiction was gradually expanded from strata (condominium) disputes to most small claims (up to CAD 5,000) and motor vehicle claims. During the entire proceedings, all interactions with the tribunal and its systems are fully digital. The expected user journey starts with a self-service expert dialogue system called the Solution Explorer. In subsequent negotiations and in mediation, parties are encouraged to settle the matter amicably. Case managers guide parties through the process. Only in the final step, after reviewing evidence, do tribunal members, who are independent legal experts, make a formal, written decision. Parties at the CRT are not represented by lawyers, but all legal services providers can of course assist parties in preparing their claims. Decisions by the CRT, which are enforceable just like court decisions, can be appealed in the Provincial Court or the Supreme Court depending on the subject matter. However, appeal rates are very low. The CRT has closed a total of nearly 20,000 disputes with a very high user satisfaction rate: Nearly 85 percent (including losing parties) would recommend the CRT to others.

Unlike many courts and tribunals in various jurisdictions, the CRT had the great advantage of being designed from scratch in the 21st century. As a result, recent findings on user friendliness, simplicity of language, and user-centric design could be incorporated from the start without any legacy. For example, the CRT enables low-threshold communications via mobile phone, web, and traditional mail but emphasizes a digital-first approach and constantly improves its services based on extensively collected public and user feedback. Such feedback and other, more comprehensive statistics are made transparent on the tribunal's website on a regular basis. The website itself is regularly updated and redesigned. The technology employed operates on all three layers of our legal technology framework. The resulting system has enabled the CRT to continue procedures during the COVID-19 pandemic without interruption.

Naturally, not everyone is as enthusiastic about this new form of digital dispute resolution as its users. The Trial Lawyers Association of British Columbia and others challenged the constitutionality of the CRT's exclusive jurisdiction to classify injuries from motor vehicle accidents as "minor." They were partially successful in the first instance in front of the BC Supreme Court, but the BC Court of Appeal later overturned the judgment in a split decision. The matter might ultimately be decided by the Supreme Court of Canada, but at present, the CRT is regarded as constitutional.

Digital innovation in the justice system in Canada is naturally not limited to the Civil Resolution Tribunal, as several Canadian jurisdictions operate video hearing, online filing, and case management systems including digital court records and mandatory electronic communications. The CRT, though, is a positive reminder that continuous improvement, agile methods, and user-centric design combined with technological capability and persistence can have a powerful impact in the public space.

Austria: A New Generation of Digital Trailblazers

Austria is a federal parliamentary republic in the heart of Europe with a population of around 9 million and a total area of nearly 84,000 square kilometers. The justice system is separated into ordinary (civil and criminal) and public (administrative and constitutional) courts. With up to three stages for each legal dispute, there are more than 150 courts in total, all operated by the federal state (except for some administrative courts at the individual state level). Austria is a classic example of a Civil Law country, and as a member of the European Union, it is subject to European laws and regulations.



Austria has recently launched an online case management portal offering a comprehensive set of services. At the support process solutions level, users can access digital dunning and court proceedings including case files and messages from the courts, fill in forms for civil and criminal procedures, and make inquiries to company, land, and trademark registers. The portal also offers self-service legal information and a chatbot for more complicated inquiries, reaching into substantive law solution territory. On this level, a specialized agency for passenger rights operates an expert system to generate passenger claims, later adjudicated by the agency, with potentially legally binding outcomes. Additionally, on the enabler solution level, Austria operates infrastructure for video and remote hearings and a platform for justice-specific e-learning offerings; it also provides access to vast numbers of court decisions online and free of charge via the legal information system.

The Austrian mobile signature solution provides an interesting example for the interconnection between enabler and higher-level solutions. While not specifically developed for the justice system but rather all forms of digital government, the application is at the core of the new justice portal. Nearly one in three Austrian residents is an active user, with several hundred new users on any given day. Daily log-ins and document signatures vary between 100,000 and 200,000. Wherever legal proceedings require a proof of identity or a signature, the application can be used. This has freed developers of the justice portal from developing their own login and user management infrastructure. It requires, however, some alignment between the justice portal and the existing solution. The successful rollout and high customer satisfaction demonstrate that the time invested to create this user-centric, seamless experience was well worth it.

In its development of modern justice technology, Austria has benefited from a long tradition of relative openness toward digital solutions and successful use of digital infrastructure in the public domain. Electronic communications with the courts, for example, have been possible for over 30 years and mandatory since 2000. Our interview partners highlighted a strong focus on user experience, extensive focus-group testing, as well as comprehensive and adequate training as important success factors. In addition, an overall young judiciary in Austria seems open to further developing the existing solutions and investing to build new ones. The Federal Ministry of Justice is seen as a reliable partner and accelerator for digitalization projects, and the relationship between the ministry, the courts, and stakeholder groups is often described as very productive. Austria's success in justice digitalization accordingly also demonstrates the benefit of a future-oriented mindset for all stakeholders.

United Kingdom: The Most Ambitious Digital Justice Reform

The United Kingdom is a parliamentary democracy and constitutional monarchy in northwestern Europe and the sixth largest economic power in the world. With a population of more than 67 million people and a total area of nearly 250,000 square kilometers, it is the birthplace of the Common Law legal tradition and a major provider of legal services and dispute resolution to the global economy. The public justice system consists of up to five levels of courts including the Supreme Court, the Court of Appeal, the High Court, Crown Court and County Courts, and Magistrate's Court(s) and Tribunals.



Since 2016, the United Kingdom has been undertaking the *Her Majesty's Courts and Tribunals Service (HMCTS) Reform Programme*, investing more than 1 billion pounds (EUR 1.2 billion) into 50+ projects to improve efficiency and provide a vast variety of new, user-friendly digital services. The reform is directed at improving access to justice and operational excellence in the entire court system, stretching from consumers and victims of crimes to families and commercial businesses. The reform is intended to transform the United Kingdom's justice system into a user-centric, future-ready version of itself. The COVID-19 pandemic

refocused some of the efforts in 2020, with remote hearings, paperless systems, and digital services becoming an even more important component of a functioning justice system.

HMCTS, an executive agency of the Ministry of Justice, is the single driving force behind this ambitious project. It is primarily responsible for the administration of the courts and tribunal of England and Wales. It operates from more than 600 locations all over the United Kingdom and employs around 17,000 staff. In order to successfully manage the transition, HMCTS engaged additional experts from academia and the private sector.

The reform's progress is regularly reported on HMCTS websites, at dedicated workshops and conferences engaging stakeholders from both academia and civil society, and in parliamentary reports and reviews. This has led to lively public discussion, including both praise and criticism, that has kept the topic in the public's mind and on the political agenda. In addition, the reform is independently evaluated on a regular basis to ensure it actually improves access to justice (see our further reading suggestions for more operational details). A great variety of stakeholder groups and organizations have rolled out their own innovation projects to complement the reform process.

The active involvement of different stakeholders was quite visible in our interviews, and although not everyone agrees with all measures taken, interviewees expressed that they felt they were being heard. This is crucial to the reform's success since it includes unpopular measures such as the closure of physical courts and unforeseen challenges such as lower digital literacy in certain groups. At present, no empirical evidence has been presented that the reform negatively impacts the legal services market, though some legal profession organizations have offered narratives of practices closing down.

This lack of data on court operations and consequences for the economy, which is not uncommon even in modern nation states, is at the core of a particular court analytics project on the support process level. Started at the outset of the reform and currently still under continuous development, it uses tools to collect court performance data (e.g., case numbers and duration) via a unified digital case management system. The system was originally met with criticism over fears of surveillance of and pressure on individual judges, as well as a belief that the information collected would be insufficient, since only basic data was planned to be collected. Over time, though, the system, which requires no additional input and does not meaningfully increase the court's workload, has led to a deeper understanding of stakeholder needs, enabled a more efficient organization of administrative matters, and shortened average case durations. It functions as an important pillar of future reform, providing reliable and accurate data as a basis for management decisions.

The current reform is grounded in a general understanding of English law and the United Kingdom's justice system as location factors and export goods and a geopolitical tool. Firmly rooted in its past as an early global commercial power,

the United Kingdom views a modern and functioning justice system not only as a societal achievement but as an instrument to attract businesses, increase legal services, and spur the economy in general.

Lessons Learned

Our international survey provides a number of learnings from a group of best-in-class nations in digital justice.

First and foremost, the digitalization of justice systems is a monumental but ultimately very rewarding task. It has potential for some quick wins but requires stamina and extraordinary skill to coordinate large-scale projects. Public institutions should employ state-of-the-art tools from software development, such as agile development, and place an emphasis on user-centricity and defining use-cases early on. In many constellations, off-the-shelf software can enable a fast rollout, and countries have been successful in adapting existing processes to available software (not vice versa). Change management and, more specifically, setting the right, optimistic, and problem-oriented mindset have often proven to be crucial.

EXHIBIT 3 | Success Factors for Digital Transformation

Five success factors are critical for the acceleration and successful implementation of digital justice



Governance

Digital justice governance with clear responsibility



Legal framework

Supporting legal framework for justice digitalization



Strategy

Holistic digitalization strategy at top level



Budget

Sufficient budget for digitalization initiatives



Buy-in

Buy-in from relevant stakeholders

Source: Expert interviews

Finally, most large-scale advances have taken years and sometimes decades to fully materialize. As the above examples demonstrate, it pays to start digitalization initiatives and pursue them continuously. All of our focus countries strongly benefit from their past commitment. Some of them are able to punch above their weight, reaping reputation gains and attracting businesses and commercial activity.

These benefits can serve as a motivation for another success factor: stakeholder buy-in and specifically high-level political and administrative support. For digital justice reform, inclusion in a larger government-level strategy can be disproportionately helpful, and particularly high impact is often linked to bold ambition from a passionate leader at the cabinet member or supreme court level.

The Future of Digital Justice

For digital justice systems to improve worldwide, we need to take two important steps. The first is to describe the space of possible future digitalization developments so we can determine how far exactly we want to go. Then we must map out the way ahead, with a full understanding of what it will require to get there.

EXHIBIT 4 | Country Comparison

A country comparison reveals major potential for improvement in Germany

Layer		Key solution					
Substantive Law Solutions	3	1 Online Dispute Resolution	✓	✓	✓	✓	✓
		2 Self-Service Solution Explorer	✓		✓		
		3 Justice Chatbot				✓	
Support Process Solutions	2	4 Digital Case Management	✓	✓	✓	✓	✓
		5 Online Filing	✓	✓	✓		
		6 Court Analytics	✓	✓			
Enabler	1	7 Video Hearings	✓	✓	✓	✓	✓
		8 Single Cloud Platform	✓	✓			
		9 Mobile Signature for Digital Justice Services	✓			✓	
		10 Mobile Infocomm Technology in Court Rooms	✓				

Source: Expert interviews, BCG analysis & project experience

✓ Covered ✓ Partially covered

A Vision for a Future Justice System

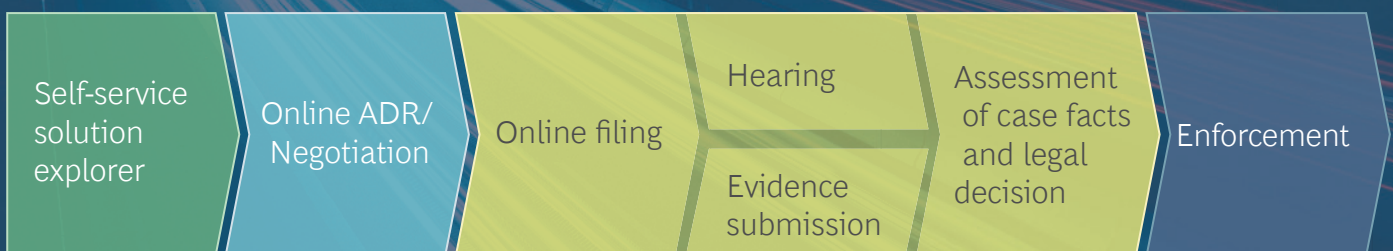
As the international best practices in our focus countries demonstrate, meaningful progress toward digital justice systems is possible and desirable, but getting there requires resources and perseverance. Both are substantially easier to acquire and maintain when following a clear vision. We have therefore asked our interview partners to describe their ideal version of the future:

The justice system of the future is rooted in the fundamental values and achievements of civilization that are the components of a modern understanding of the rule of law: Equality before the law, laws that are publicly disclosed, transparent, and applied proactively (never retroactively), consistent laws and processes, and an independent judiciary. In these regards, it mirrors current justice systems, but it also improves and repairs current systems that cannot handle increasing legal complexity (see above).

In the future, courts will no longer be only physical locations and centralized institutions that require personal interaction and primarily synchronous communication. Instead, all legal disputes will be initiated online, just as the vast majority of conflicts are settled without a physical hearing. When required by the court, trials will be held in person, but the default would be remote participation, thereby avoiding lengthy commutes and potentially intimidating situations for parties. As businesses—accelerated by the COVID-19 pandemic—are shifting toward remote work, people have become increasingly comfortable with conducting important business from home. As a result, remote interactions are no longer conceived as informal, and therefore remote hearings do not impede proper legal assessment of a case or lead to a lack of respect for the court. On the contrary,

EXHIBIT 5 | Fully Digital Online Courts

Flow of future court proceedings



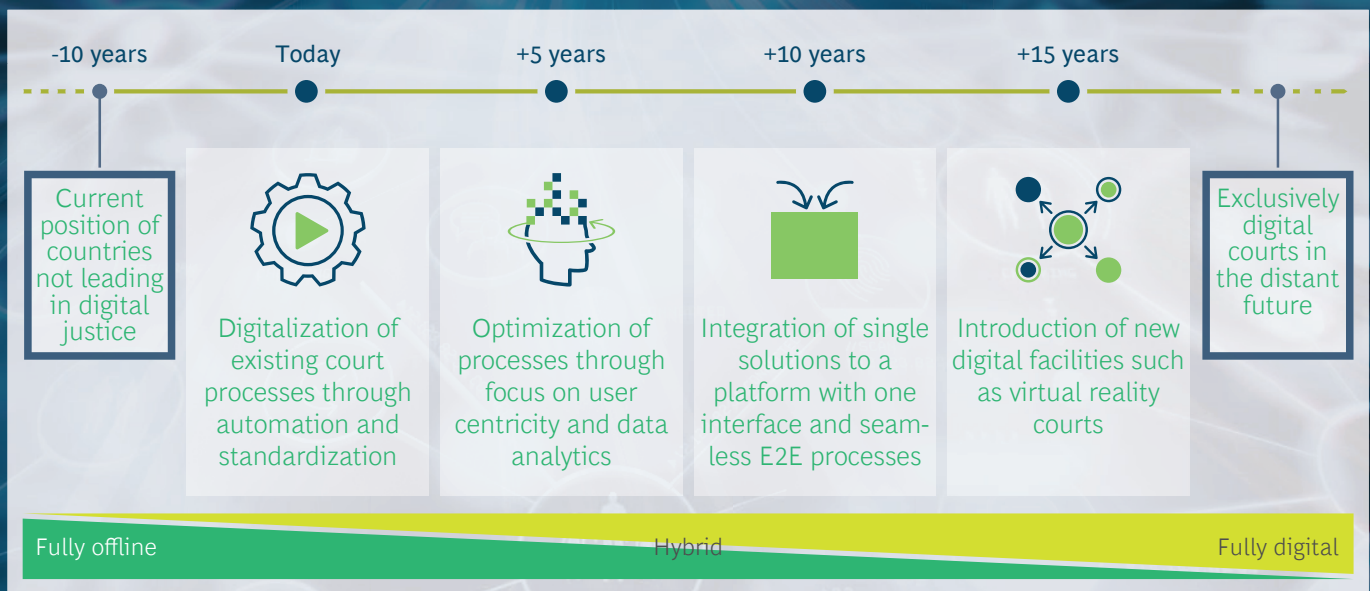
Source: Adapted from "Online Courts and the Future of Justice" by Richard Susskind 2019, Expert interviews

appearing in court may become more similar to people's day-to-day interactions, boosting trust as the justice system grows more and more approachable. This includes a shift toward asynchronous communication as the default to accommodate changing schedules and decreasing planability of people's days, again mirroring a wider societal development in which young generations prefer text over communication via phone or in person. When it is beneficial to the solution of the disputes, hearings will be conducted in virtual reality. This will allow judges and parties to experience relevant details more directly and go beyond possibilities in the physical space.

In order to improve accessibility, court processes will be designed in a more user-centric manner. This includes self-service tools to understand the law and explore potential legal remedies and procedures without the need for professional assistance. Since lawyers and judges might not be required for many run-of-the-mill cases, they could focus their attention and time on more complicated conflicts or, if the parties prefer, decision by judge and representation by a lawyer. Proper legal representation is undoubtedly an achievement of modern legal systems, but it seems unlikely that the current one-size-fits-all approach is the best allocation of legal advice. Instead, expert systems could help determine the most appropriate process for a party seeking resolution of a legal conflict.

EXHIBIT 6 | Path toward the Future of Justice for a leading country

Path towards the future of justice for a country leading in digitization



Source: Expert interviews

If a party then wanted to initiate formal proceedings, an alternative dispute resolution or negotiation pre-stage could help sort out conflicts that could be settled without the court's full attention. This stage might be an automated, structured dialogue, inspired by dispute resolution platforms familiar from e-commerce platforms, or a guided process managed by a human mediator, arbitrator, or case manager. Those conflicts that cannot be settled would be subsequently filed online using mobile-friendly interactive forms or chatbots that would automatically identify missing information and eliminate uncertainties. Subsequently, evidence would be submitted and hearings conducted as set out above. The court would assess the facts, supported by tools organizing the process materials and parties' submissions, and apply the law using integrated legal research solutions. Once they have formed their legal opinion, judges would write their decisions. But instead of starting from scratch, they could use a draft created by a machine learning system that was trained on similar past cases. Again, this would save time and effort while leaving flexibility to refine the law if required.

Finally, the exchange of information with those institutions of the justice system tasked with enforcement would be swift, so that neither time nor information would be lost. Judges and officers of the court could follow up on their decisions (if desired), and enforcement data would help measure the effectiveness of past decisions and inform future ones. Just like all other steps, enforcement officers would use the same end-to-end online case management system to exchange data and communicate with all other user groups, including parties, case managers, clerks, and judges. Wide adoption of this one central system would ensure sufficient pooling of resources for its maintenance and further development.

None of the above design decisions are set in stone. Based on near-real-time court analytics and by applying continuous, user-centric process improvement, a more flexible justice system could be adapted more easily and faster than today.

How to Get There

The above vision of a future justice system, shared in full or in part by many of our interview partners, currently does not even exist in the most advanced nations. This raises the question of how to move toward this goal. As laid out above, the process is lengthy and requires a myriad of interconnected decisions specific to the individual justice system and therefore impossible to lay out in detail. Some steps are generalizable but in turn depend on the current status of a justice system.

Advanced systems in countries leading in digitization can follow a clear four-step plan and achieve fully digital online courts over a period of 15 years. They have already mostly digitalized existing court processes, operate a case management system, communicate via an online portal, and seamlessly conduct many hearings digitally. Over the next five years, they optimize their processes, focusing on user-friendliness and using insights from data analytics. This leads to a vastly improved user experience, greater efficiency, and time to develop a digital front door for self-assessment of cases. In the next phase, all existing solutions are

integrated into a single platform, the use of which can then be made mandatory without harming the parties' rights. This dramatically reduces the requirement for physical presence and allows sufficiently integrated data collection for future developments, taking place in the final phase. The data collected allows for semi-automatic or automatic decisions for small and standard claims (comparable to but more differentiated than today's dunning proceedings) and faster processing of larger, more complex cases. Once this stage is achieved, courts can set their sights on more futuristic developments such as the guarantee of legal standards and the development of court proceedings for computational law and self-enforcing contracts.

Less advanced countries—including our case study Germany—are currently at least 10–15 years behind the global leaders. If they continue their current digitalization strategy (or lack thereof), they are likely going to spend the next 15 years on the digitalization of existing court processes and the improvement of existing solutions. As the pressure to provide better access to justice grows with increasing legal complexity, costs rise and they risk playing catch-up with new technology and corresponding user expectations forever. Carrying on as they did in the past is not an advisable option.

FURTHER READING

This report provides a very condensed view of access to justice through digitalization and emphasizes its organizational and economic consequences. For those interested in more details, we recommend the following materials and publications:

- **Aedit Abdullah** and **Tan Ken Hwee**, *Practice of Law—Courts in Law and Technology in Singapore*, edited by Simon Chesterman, Goh Yihan, and Andrew Phang Boon Leong, 2021, SAL Academy Publishing
- **Natalie Byrom**, *Digital Justice: HMCTS Data Strategy and Delivering Access to Justice*, 2019, The Legal Education Foundation
- **Adam R. Pah et al.**, *How to build a more open justice system*, 2020, Science Magazine
- **Shannon Salter** and **Darin Thompson**, *Public-Centred Civil Justice Redesign: A Case Study of the British Columbia Civil Resolution Tribunal*, 2017, McGill Journal of Dispute Resolution
- **Richard Susskind**, *Online Courts and the Future of Justice*, 2019, OUP
- **Jason Tashea**, *Justice-as-a-Platform*, 2021, MIT Computational Law Report

Our own analysis of and experience in justice digitalization naturally goes beyond the content of this summary report. Please do not hesitate to reach out to any of the institutions or authors to learn more, discuss specific projects, or request presentations tailored to your particular audience.

Instead, these countries could benefit from the experience of global leaders and adapt their strategies. At the outset, this requires setting the **ambitious goal** of becoming a leader in digital justice followed in turn by **leadership buy-in**, ideally at the minister level or higher. Leadership in this context includes a clear prioritization and the development of a **high-level strategy**. A significant budget must be allocated and multi-year procurement procedures have to be redesigned. Developed countries, especially those with a thriving legal technology industry, should tap into the private sector's experience to reach results faster and improve their quality.

The operational implementation can be guided by three elements: increasing **court efficiency**, including the acceleration of proceedings, a clear commitment to **user-centricity**, including modern software and process design principles, and a near-term establishment of **data analytics** to provide the relevant information in order to identify and address the most urgent problems. This includes the establishment of a fast-acting governance structure, especially in countries with a federal structure, in which conflicts with or between individual states risk slowing the project down. Many countries set up specific digitalization agencies, but other global leaders show that swift developments are also possible in the existing infrastructure if intrapreneurs and innovation teams are given sufficient authority.

Most importantly, data on the justice system is required, in as much detail as possible. This includes court statistics and further empirical research on users' expectations of the justice system toward its institutions, including legal service providers, but it does not stop there: All legal information, such as statutes and regulations, decisions by courts, and administrative acts, need to be as easily available as possible. In the digital age, access to justice necessitates easy, unhindered access to information.

Finally, the digitalization of the justice system requires comprehensive law reforms and a meaningful redesign of the legal framework. This includes procedural laws, court organization laws, administrative orders, procurement laws, and potentially remuneration regulations for civil service employees. Naturally, the creation of new legislation and the amendment of existing laws is a strong suit of justice departments, so they might spur into action here first. While the encouragement of law reforms is important and should start early on (given the often long durations it takes for bills to become laws), the organizational and political measures accompanying them should start equally early.

In federal countries, the legislative process involves cooperation between the national and subnational governments, and bold, comprehensive justice reform can require extensive coordination. Our focus countries Canada and Austria are examples of the two winning strategies: regional sandboxes and competitive experiments by single states such as British Columbia and national leadership and pooling of digitalization resources such as in Austria. Federalism can be an enabler for digitalization but should not be used as an excuse for lack of ambition. Countries should have a strong interest in digitalization for another reason too.

Increasing legal complexity and resulting rising costs can easily focus the discussion between the federal government and the states on financial aspects only. In such a scenario, interests are naturally diametrically opposed as both sides want the other to pay for more judges and clerks, courtroom equipment, and infrastructure in general. Justice digitalization, on the other hand, is in everyone's interest as the increase in efficiency can help lower costs and reorient the discussions toward productivity.

Building a digital justice system is an ambitious task and requires technical, legal, and management capabilities. Successful digitalization task forces consist of interdisciplinary skilled members motivated by the social impact of their work. Ideally, they are a mix of both young professionals eager to leave their mark on the system and seasoned professionals with experience in navigating hierarchical structures and building lasting coalitions. Globally, the countries leading in digital justice are succeeding in part because they motivate their digitalization workforce and reward those taking on the challenge of these transformation projects, turning digital engagement into career success. This unlocks a trove of talent as it speaks to an ambitious and yet intrinsically motivated part of the workforce.

CONCLUSION

PRESSURE ON JUSTICE SYSTEMS in all stages of development is rising as the complexity of legal relationships, rules, and disputes increases in a world shaped by globalization and digitalization. This risks impairing access to justice for both consumers and companies. As a result, trust in courts is eroding and businesses are moving to jurisdictions that are capable of dealing with increased complexity.

The most promising answer to these developments is the digitalization of justice systems. However, bringing courts and their administration into the digital age is a monumental task. To make it a success, our traditional understanding of courts and their procedures has to be rethought, and ambitious strategies have to be developed and implemented. Administrations that accept this challenge can look to three sources for guidance: globally leading countries in justice digitalization, general government technology initiatives, and successful legal technology providers in the private sector.

As demonstrated in our international case studies, justice digitalization provides a huge chance for countries, their politicians, and their public administration. They can distinguish themselves, celebrate tangible successes, and attract positive international attention and business activity.

About the Authors

Dirk Hartung is the founder and executive director of the Center for Legal Technology and Data Science at Bucerius Law School. You may contact him by email at dirk.hartung@law-school.de. He serves as the corresponding author for this report.

Florian Brunnader is a principal at BCG and focuses on insurance, digital, and managing large-scale programs (transformations, PMI, DD). You may contact him by email at brunnader.florian@bcg.com.

Christian Veith is a former senior partner and managing director at BCG and chairman of the Board of Trustees at Bucerius Law School. You may contact him by email at veith.christian@law-school.de.

Philipp Plog is managing partner at Fieldfisher Germany and chairman of the Board of Legal Tech Association Germany. You may contact him by email at philipp.plog@fieldfisher.com.

Tim Wolters is head of business development and strategy at German digital law firm Rightmart and oversees the Legal Needs section of Legal Tech Association Germany. You may contact him by email at twolters@rightmart.de.

Acknowledgments

The authors acknowledge the contributions of all interview partners and in particular all government officials of the countries featured in our case studies. They would like to thank Crispin Passmore for very helpful guidance and contacts. Alexandra Pley and Nikolas Wernecke were instrumental in conducting numerous interviews and contributing important parts of the analysis. Special thanks to Lauritz Gerlach, Lars Hamerich, Julia Storkenmaier, Sven Störmann, and Alexander Ulmer for their invaluable input and sharp eye. They also acknowledge John Hogan for his writing assistance and Ulrich Kremer for his design and production contributions.

For Further Contact

If you would like to discuss this report, please contact Dirk Hartung as the corresponding author or any of the authors.

