Digitalization and AI in the Korean Judiciary: Challenges and Prospects

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1. Introduction

Digitalization of justice is no longer a "technology project." It is a structural change in how rights are exercised, evidence is presented, and decisions are produced and scrutinized. For courts, the transition has three non-negotiable requirements: (i) record integrity (authenticity and completeness), (ii) confidentiality and security, and (iii) procedural legitimacy (fairness, transparency, and equality of arms).

Korea's experience is instructive because it has moved beyond partial digitization—such as PDF filing layered onto paper workflows—toward an integrated operational model: electronic filing, electronic service, electronic records, and on-screen trial practice supported by a dedicated record viewer. In parallel, Korea has expanded video hearings and is now developing AI-based judicial support. These developments offer concrete implementation lessons—system architecture, operating models, and governance mechanisms—rather than abstract "innovation" narratives.

This paper provides a practitioner-focused account of what has worked, what remains difficult, and what the Korean judiciary is building next. It traces (1) the staged rollout of electronic litigation, (2) the post-COVID expansion of video proceedings, and (3) the judiciary's emerging AI toolchain—together with the governance framework designed to ensure that judicial AI remains secure, explainable, and firmly human-controlled.

2. Korea's Electronic Litigation System

(1) History and Implementation of E-Litigation

Korea's electronic litigation ("e-litigation") system has transformed a traditionally paper-bound process into a digital one. What is electronic litigation? In essence, it means that court filings, evidence, and even hearings can be conducted through electronic means rather than paper and physical appearances.

The concept took shape over decades. As early as 1979, the Korean courts began studying judicial computerization. By the 1980s and 90s, basic case management programs and client-server systems were introduced in civil and criminal courts. These early IT efforts laid the groundwork, but they primarily supplemented paper processes.

A real breakthrough came in the 2000s. The judiciary undertook phased modernization projects: establishing a nationwide court intranet, launching a Supreme Court website, and implementing electronic document systems.

(2) Chronology of Korea's E-Litigation Rollout by Case and Procedure Type

Korea's e-litigation system was not introduced in a single "big bang" reform. Rather, the judiciary adopted a staged expansion strategy in which electronic litigation was first piloted in a specialized docket, and then progressively extended to high-volume civil matters and, later, to additional domains such as family and administrative litigation, petition and provisional-remedy proceedings, insolvency, appellate proceedings, and compulsory execution. This incremental rollout was preceded by a foundational planning and legal phase that made nationwide operational deployment possible.

(a) Foundational planning and legal enabling phase (2008–2010)

The institutional and technical groundwork for Korean e-litigation began with a formal development initiative in December 2008, when the judiciary launched the project as part of business process reengineering and information-strategy planning (BPR/ISP). This pre-implementation phase was essential because e-litigation required the redesign of procedural workflows (filing, service, record formation, and access control), not merely the creation of a document-upload portal.

A key legal milestone followed in March 2010, when the legal framework for using electronic documents in civil litigation entered into force. Establishing this statutory basis was a necessary condition for treating electronic filings and electronic service as legally effective and for enabling digital records to function as official court records.

(b) Initial deployment in intellectual property litigation (April 2010)

With the planning and legal groundwork in place, Korea launched operational e-litigation for IP cases at the Patent Court in April 2010. Starting with IP litigation was a strategic choice: these cases typically involve sophisticated users, relatively standardized pleadings, and a manageable caseload compared with general civil matters—making them well suited for an initial rollout and early troubleshooting.

(c) Expansion to general civil litigation (May 2011)

Following the initial launch, the system was expanded to the general civil docket in May 2011. This marked a pivotal moment for scaling, as civil litigation accounts for the vast majority of the court's caseload. Its success required stable nationwide infrastructure, standardized user authentication, and robust record-management capabilities.

(d) Expansion to family and administrative litigation (January 2013)

In January 2013, the rollout moved into additional areas, extending e-litigation to family and administrative cases. This was a significant step beyond private-law disputes, because these case types involve different procedural dynamics and participant profiles—family matters often include highly sensitive personal information, while administrative litigation typically involves government bodies and public-law issues.

(e) Expansion to petition cases and provisional-remedy proceedings (September 2013)

In September 2013, Korea expanded e-litigation further to cover petition matters and provisional remedies. This phase brought into the digital system procedures that often demand urgent filings and swift

judicial action—such as applications for interim relief—where the benefits of electronic submission and immediate access to the record are particularly significant.

(f) Expansion to insolvency and rehabilitation matters (2014)

The next major step came in 2014, when e-litigation was extended to bankruptcy and rehabilitation (insolvency) proceedings. This expansion was operationally important because insolvency cases typically involve large creditor lists, multiple stakeholders, and heavy document flows—making standardized electronic workflows especially valuable while also requiring strict access controls and secure record management.

(g) Expansion to appellate proceedings (March 2015)

In March 2015, Korea extended e-litigation to appellate proceedings. This expansion went beyond simply enabling e-filing at a higher court; it necessitated the seamless continuity of records across judicial instances. By ensuring reliable transmission and consistent document organization, appellate judges and counsel could work on a shared digital record without ever needing to revert to paper.

(h) Expansion to compulsory execution procedures (March 2015)

Also in March 2015, the judiciary extended e-litigation to compulsory enforcement (execution) proceedings. This step matters for access to justice because enforcement—often viewed as a post-judgment phase—determines whether a judgment has real effect in practice. Digitizing execution procedures can reduce administrative delays, improve the traceability of enforcement actions, and strengthen coordination among courts, parties, and enforcement-related actors.

(i) Expansion to non-contentious matters (2015)

In 2015, e-litigation was also extended to non-contentious matters. In this paper, “non-contentious matters” refers to proceedings that are primarily supervisory, confirmatory, or authorization-based, rather than adversarial dispute resolution. This phase is notable because such proceedings often follow specialized procedural rules and require documentation practices that differ from those in ordinary litigation.

(j) Next-generation e-litigation system and the move toward criminal e-litigation (2025)

Korea took a major modernization step in early 2025 with the launch of its next-generation e-Litigation System (February 3, 2025), upgrading platform functions, user experience, and system integration after more than a decade of large-scale operation. Criminal e-litigation was then introduced in phases later in 2025—beginning with a pilot rollout at selected courts in October and expanding nationwide by mid-December. This phased approach reflects the stricter safeguards required in criminal procedure, where confidentiality, evidentiary integrity, and defendants’ rights are paramount and case files often contain highly sensitive investigative materials.

(3) Legal Basis and Technological Infrastructure

A robust legal framework was essential to the rollout of e-litigation. In 2010, the National Assembly enacted the Act on the Use of Electronic Documents in Civil Litigation, etc., which formally recognized electronic filings and digital documents as legally effective in court proceedings. Together with implementing rules, the Act established the validity of electronic submissions, electronic service of process, and electronic case records—so that a PDF or online filing carries the same legal effect as a paper filing. Over time, related court rules were further updated to allow online payment of court fees, electronic issuance of court orders, and the use of digital signatures by judges and court personnel.

From a technological standpoint, the Korean judiciary has made substantial investments in the IT infrastructure needed to sustain e-litigation. A dedicated Judicial IT Center within the Court Administration Office was established to develop, operate, and continuously upgrade the relevant systems. By 2005, the judiciary had also set up a Court Registration Authority and an e-Signature Certification Center, enabling the secure use of digital signatures on court documents.

In parallel, a nationwide court network connecting all courthouses was completed, and "digital courtroom" pilots were introduced to support on-screen presentation of electronic evidence and video conferencing. The e-litigation system is accessible through an online Court Filing Portal, allowing both lawyers and self-represented litigants to file cases remotely, 24 hours a day.

Most recently, on February 3, 2025, the judiciary launched a next-generation electronic litigation portal that consolidated previously separate online services—such as e-filing, support for self-represented litigants, and electronic payments—into a single user-facing platform. The portal also incorporates a Judicial Information Disclosure service, providing integrated access to judgments, legal information, and court statistics. These services are supported by secure servers and data centers designed to protect the large volume of digital case records.

(4) The Supreme Court IT Center as a Critical Enabling Institution

A nationwide digital judiciary cannot function effectively if IT responsibilities are fragmented across individual courthouses. Korea has therefore adopted a centralized model, anchored in the Supreme Court's judicial IT function. The Supreme Court IT Center—established in 2008—operates as a piece of critical national infrastructure and is staffed by approximately 150 court officials. In 2021, the judiciary further expanded this capacity by establishing an additional IT center in Sejong.

The IT Center's core responsibilities include: (i) ensuring the stable operation of servers, databases, and networks; (ii) strengthening cybersecurity to prevent hacking and unauthorized access to personal data;

(iii) developing and operating judicial informatics and information systems; and (iv) leading forward-looking digitalization policy, including architecture planning and budget coordination.

(5) Current Use and Transformative Effects

Electronic litigation has had a significant impact in Korea. In general civil cases, adoption rose quickly after the system was rolled out nationwide—moving from early double-digit usage in 2011 to widespread, mainstream use within a few years. As the system matured, court-reported acceptance rates continued to climb year by year (for example, from 73.75% in 2018 to 87.2% in 2023). By 2023, key first-instance case categories reportedly reached near-universal electronic processing (e.g., 99.9% for civil first-instance panel/single-judge/small-claims matters; 99.5% for family cases; and 100% for administrative filings).

Within a few years of its introduction, e-filing became the default in civil litigation. Usage rose steadily year after year, suggesting that both lawyers and the public found online filing far more convenient than paper-based procedures. That convenience has translated into real efficiency gains. Research indicates that e-litigation can reduce both the time and cost of proceedings: electronic filing and service can save days—sometimes even weeks—compared with postal delivery, and hearings can be run more smoothly by shifting attention from paperwork to the merits. Judges also report faster case handling because they can review and manage records digitally instead of working through bulky paper files. Court staff benefit as well, as routine tasks such as scanning, copying, and physically storing or retrieving documents have largely been eliminated, allowing them to focus on higher-value work. Internal assessments likewise suggest a marked reduction in routine workload and a lighter administrative burden for judges handling electronic files compared with paper cases.

Perhaps the clearest external validation has come from international benchmarking. The World Bank's Doing Business indicators—especially the "Enforcing Contracts" measure—have consistently ranked Korea among the strongest performers, and have pointed to online case filing and digital case management as efficiency-enhancing practices.

E-litigation has also expanded public access to the courts. Parties can file claims online at any time, monitor case progress through the portal, and receive decisions electronically. The Supreme Court has further increased transparency by providing a public service that allows users to search and read court judgments online around the clock, with appropriate anonymization to protect privacy.

Taken together, these developments signal a broader shift in litigation—from paper-heavy, in-person procedures toward a more open, digital, and user-friendly system. The result is not only time and cost

savings, but also greater transparency and, ultimately, stronger public confidence in the judiciary.

Implementing e-litigation was a long-term effort, not an overnight change. Along the way, the courts had to manage resistance—both internally and within the legal profession—while also strengthening data security and investing in training for judges and court staff. These challenges were addressed through a gradual rollout of e-filing, a transitional period in which digital and paper processes operated in parallel, and continuous upgrades to improve system stability.

After more than a decade of experience, e-litigation is now firmly established across civil, family, administrative, and other proceedings. The next frontier is criminal e-litigation. Pilot programs are currently digitizing criminal filings and records, but progress is necessarily cautious given the heightened demands for evidentiary integrity, confidentiality, and the protection of defendants' rights. Even so, building on the success of civil e-litigation, the Korean judiciary expects criminal procedure to follow the same broader trajectory toward digital transformation.

3. Evolution of Video Trials in Korea

Another key pillar of Korea's judicial digitalization has been the expansion of video-based proceedings—i.e., holding hearings by videoconference. Remote hearing technology is not entirely new in Korea. As early as 2007, courts permitted video testimony in criminal cases involving vulnerable witnesses, such as child victims, allowing them to testify from a separate, protected location.

For most routine hearings, however, in-person appearances remained the norm until quite recently. The COVID-19 pandemic became the major turning point. As in many other jurisdictions, Korea needed practical ways to keep courts operating under social-distancing constraints, which in turn accelerated both legal reforms and investment in the infrastructure needed for video hearings.

(1) Post-COVID Legal Reforms and Adoption

In November 2021, the National Assembly amended the Civil Procedure Act and the Criminal Procedure Act to expressly permit video hearings in a wider range of circumstances. With the amendments taking effect in 2022, courts were able—subject to the parties' consent—to conduct certain civil oral arguments by videoconference and to hold specific criminal pre-trial proceedings (such as arraignments or bail hearings) remotely when appropriate. In practice, this meant counsel could argue a motion from an office and a defendant could appear from a detention facility via live video, with the judge and courtroom displayed on screen.

At the same time, the Supreme Court revised procedural rules to govern how remote sessions should operate, including standards for presenting evidence and verifying participants' identities—such as safeguards against off-camera coaching of witnesses and requirements for recording the transmission.

Once the legal framework was in place, video hearings expanded quickly. Uptake in late 2021 was still limited—only a small number of remote sessions were held, including 18 in November 2021, when the expanded system was first rolled out. By spring 2022, however, courts were conducting hundreds of video hearings each month. In March 2022 alone, more than 400 remote hearings took place, and the numbers continued to rise. By the end of 2022, monthly volume had reached roughly 850 video hearings.

Growth accelerated further in 2023. In March 2023, the courts surpassed 1,000 remote hearings in a single month for the first time, and by October 2023 the monthly figure exceeded 3,000. Taken together, these figures show how rapidly both the judiciary and court users adopted remote proceedings once the option became available.

These statistics represent significant practical innovations. Civil hearings that do not require witness testimony—such as preliminary hearings, scheduling conferences, and procedural arguments—are now routinely conducted via video, eliminating unnecessary travel for counsel and parties. In criminal proceedings, video links for arraignments and detention hearings allow defendants to appear directly from detention facilities, enhancing both security and efficiency.

Innovation also extends to settlement and mediation conferences. Many judges report that conducting these discussions via video or audio is highly effective and convenient for parties, significantly aiding in backlog reduction. Building on this infrastructure, the judiciary is exploring Online Dispute Resolution (ODR) for standardized disputes. Currently, ODR is a capability under development and evaluation rather than a fully operational service. Its implementation will follow a staged approach, moving from pilot programs to evaluation and eventual expansion.

(2) Usage Patterns and Remaining Challenges

Despite rapid expansion, the adoption of video trials has been uneven across courts. An analysis of 2022 data revealed that just 7 out of 35 major courts—primarily large jurisdictions like Seoul, Suwon, Daegu, and Busan—accounted for the majority of hearings, driven by early-adopting judges. For instance, Seoul Central District Court alone conducted 628 sessions between January and August 2022 (nearly 20% of the national total), jumping from 18 sessions in January to 172 in August. In contrast, over 20 smaller courts averaged fewer than 10 hearings per month. This highlights a significant disparity: while a core group of

tech-forward courts drove usage, others remained slower to move away from traditional practices.

Several factors contributed to this uneven uptake. First was a lack of awareness and demand. Many litigants and counsel were initially unaware of the option or simply preferred the familiarity of physical court appearances. A 2022 survey indicated that 73% of judges believed parties were ill-informed about video trial options. Second was judicial skepticism. Judges expressed concerns about assessing witness credibility remotely and the potential for technical disruptions. Strikingly, only about 20% of surveyed judges planned to continue regular video trials post-pandemic. Most remote hearings were initiated by party request rather than sua sponte by the judge, reflecting a distinct judicial hesitation to proactively replace in-person proceedings.

A third major challenge lies in technology and infrastructure. Since many courtrooms were not originally designed as dedicated 'video courts,' judges often had to improvise with standard equipment, resulting in frequent audio feedback and connectivity issues. Outdated hardware in some locations led to system instability; notably, 31.7% of surveyed judges cited potential interruptions as a significant drawback. Actual instances of delays and disruptions caused by technical failures further reinforced judicial caution. Moreover, ensuring that all participants—particularly older attorneys and pro se parties—could effectively use the system necessitated substantial training and support.

The Korean judiciary is taking decisive action to mitigate these challenges. The National Court Administration initiated a nationwide infrastructure overhaul, replacing obsolete audio systems with advanced video conferencing units. Comprehensive inspections of courtroom AV equipment were conducted to rectify technical deficiencies. To bridge the awareness gap, the courts produced educational videos and guides. Furthermore, in late 2022, the Supreme Court convened a symposium to mark the one-year anniversary of expanded video trials, sharing success stories and best practices. Experienced judges are now mentoring colleagues on the effective use of remote hearings. We are also exploring plans to institutionalize support by training certified 'remote proceeding facilitators' for each courthouse.

Looking ahead, video trials in Korea have gathered strong momentum, yet they are intended to complement, not replace, in-person proceedings. The objective is not total virtualization, but rather the strategic use of remote options for appropriate scenarios—such as procedural hearings or cases involving travel hardships—while preserving the physical courtroom for substantive trials. The core challenge lies in striking the right balance. As one lawmaker noted, courts must 'seek the appropriate balance between video and face-to-face trials in line with changing times.' Experience confirms that video hearings significantly enhance efficiency and access, particularly in a post-COVID landscape valuing flexibility.

However, success hinges on reliable technology, user acceptance, and judicial innovation. Consequently, the Korean judiciary continues to invest in these areas, treating video trials as an integral component of its broader 'Smart Court' initiative.

4. AI Tools in the Korean Judiciary

The integration of Artificial Intelligence represents the vanguard of judicial digitalization. We recognize that responsible AI adoption can significantly augment judicial capacity—processing vast amounts of data, automating routine tasks, and offering decision support. Building on recent pilot projects, the Korean judiciary has established a comprehensive roadmap to guide these applications. This section examines our key initiatives: (1) big data analytics platforms, (2) similar-case recommendation systems, (3) automated document summarization and issue extraction, (4) procedural chatbots, (5) proprietary research into Large Language Models (LLMs), and (6) our governance framework covering strategy, ethics, and sandbox testing.

(1) Big Data Platform for Judicial Analytics

Any meaningful AI capability starts with data. Korean courts have developed a Big Data Platform to consolidate large volumes of case data for analysis and model development. In practice, it functions as an end-to-end data pipeline: it gathers and centralizes both structured information (such as case metadata and statistics) and unstructured materials (including judgments, filings, and transcripts) from courts nationwide. The data is then stored and processed securely in a way that supports machine-learning workflows.

The platform can, for example, generate datasets of past sentencing decisions or traffic-accident cases for targeted analysis. It has also enabled court analysts and AI developers to produce operational insights through dashboards that track filing trends, backlogs, and processing times across jurisdictions. Judges and court administrators can see how many cases are filed and disposed of, monitor case duration, and flag anomalies—such as matters that appear to be stalled—based on the underlying data.

More broadly, the Big Data Platform serves as the backbone for developing and training judicial AI. It enables development teams to curate machine-learning datasets from court records while protecting privacy through anonymization. Under the judiciary’s current AI use-case framework, the courts can draw on roughly three million past cases as a training and reference corpus, and can benchmark new filings against approximately the last ten years of judgments when building tools such as similar-case recommendation systems.

This capability is essential for data-intensive applications. For example, an AI tool that supports sentencing consistency requires large numbers of historical case records; the platform can supply them in a structured form, with personal identifiers removed, ready for model training. In the judiciary's long-term view, this big-data foundation will underpin future AI initiatives. It reflects a simple premise: better data produces better AI. By investing early in data governance and infrastructure, the courts aim to avoid "garbage in, garbage out" and instead develop tools grounded in accurate, comprehensive, well-managed information.

The platform also supports research collaboration. Subject to strict safeguards and agreements, academic partners can access anonymized datasets to develop new models or study patterns in the justice system.

(2) AI for Similar Case Recommendation and Legal Research

One of the earliest AI applications introduced in Korean courts is a similar-case recommendation system for judges. Identifying relevant precedents and factually comparable cases is essential to judicial decision-making, but it can be labor-intensive. Traditionally, judges have had to rely on keyword searches in internal databases, supplemented by their own experience, to locate the most pertinent authorities.

The new system aims to streamline that process. Using machine-learning–based semantic analysis, it reads the substance of a case and automatically surfaces prior decisions that are likely to involve comparable facts or legal issues—moving beyond simple keyword matching to a more meaning-based approach.

When a judge inputs key documents—such as complaints, answers, and briefs—the AI analyzes the text to retrieve the most relevant precedents. This process goes far beyond simple keyword matching. Utilizing a BERT-based language model, the system evaluates semantic similarity, understanding the context rather than just the vocabulary. Drawing from a massive corpus of approximately 3 million past cases and a decade of judgments, it can identify relevant precedents even when legal labels or specific provisions differ slightly, effectively detecting nuanced connections that a keyword search might miss.

In January 2025, alongside the launch of the Next-Generation e-Litigation System, the Supreme Court integrated this AI recommendation program directly into judicial workflows. Now, upon logging into the system, judges have the option to receive automatic recommendations for relevant prior judgments. Crucially, the AI functions as a smart research assistant, not a decision-maker. Early feedback has been positive; judges report significant time savings and the discovery of useful precedents that traditional keyword searches often miss. Importantly, judges retain full discretion to accept or ignore these

suggestions. As the technology matures, we anticipate it will accelerate legal research and minimize the risk of overlooking key authorities, ultimately enhancing the quality and consistency of rulings.

Closely related is the advancement of AI-powered semantic search. Unlike traditional methods where users had to guess exact keywords or statute numbers, semantic search utilizes Natural Language Processing (NLP) tailored to legal texts. It understands the user's intent to retrieve contextually relevant materials. Furthermore, this technology is integrated directly into the drafting workflow; as a judge addresses a specific legal issue, the system proactively surfaces related precedents. Ultimately, the AI performs the 'heavy lifting' of scanning millions of records, allowing judges to dedicate their energy to substantive legal reasoning and decision-making.

(3) AI-Based Document Summarization and Issue Extraction

Another promising use of AI is helping courts cope with the steadily growing volume of litigation documents. A single civil case can include thousands of pages of pleadings, briefs, evidence, and transcripts, and judges and court staff often spend significant time identifying the key points. To ease that burden, the Korean judiciary is testing AI tools that can summarize documents and extract the main issues. Using natural-language processing, these tools can read a long brief or judgment and generate a clear, concise summary of the central facts, arguments, and conclusions.

They can also try to pinpoint the main issues the parties are arguing about. For example, in an insurance case, the AI might flag two central questions: ① whether an exclusion clause applies, and ② how much compensation (damages) should be awarded, based on its review of the parties' filings.

These AI summarization models have been trained on large numbers of case documents, learning to recognize patterns of legal writing (e.g., that typically a judgment's first part is background, later sections cover claims and issues, etc.). The results so far are promising. In tests, judges found that AI-generated summaries were a useful starting point, though not perfect – some fine-tuning by a human is still needed to ensure accuracy. One concrete example is in summarizing past judgments: given a 50-page judgment, the AI can produce a one-page summary capturing the outcome and reasoning. This is extremely useful when a judge needs to quickly familiarize with prior case law. Another example is helping write the summary of arguments section in a judgment – the AI can compile each party's main contentions from their briefs, which the judge can then verify and edit.

These tools target a real bottleneck: the time judges spend reading and distilling massive case files. As cases become more complex, judges have noted that administrative reading can crowd out time for

careful analysis and deliberation. By automating the most repetitive parts of document review, AI can free judges to focus more on legal reasoning and what happens in the courtroom.

Issue extraction can also improve case management. If the system flags that a motion raises a threshold question—such as jurisdiction—the court can address it early and structure the proceedings more efficiently. In that sense, AI summarization and issue-spotting function like a skilled clerk, pre-processing the record so the judge can work faster and more effectively.

Of course, the judiciary understands that AI outputs must be handled with care. These tools are meant to support judges—not to substitute for human judgment. Any AI-generated summary or issue list is reviewed and verified by a judge or legal staff before it is used. Work is also ongoing to improve accuracy, especially when the documents involve nuanced legal reasoning.

Looking ahead, the aim is for AI to take on more of the summarization work in routine matters—such as straightforward debt collection cases—so that simpler cases can move faster, while judges devote more time to complex disputes.

(4) Litigation Procedure Chatbots and Public Service AI

Beyond supporting judges, AI is also being used to improve services for the public and for litigants. One notable example is the Litigation Procedure Chatbot—a virtual assistant available on court websites. Launched in late 2024, it offers 24/7 guidance on common procedural questions.

For example, someone visiting the court portal after hours might ask, “How do I file an eviction case?” or “What documents do I need to file for divorce?” The chatbot can respond interactively with step-by-step instructions, required forms, fees, and other practical information in plain language. For people without a lawyer—or anyone unfamiliar with court procedures—this kind of on-demand support can significantly improve access to justice, replacing dense manuals and long waits at help desks with immediate, tailored assistance.

The Supreme Court of Korea announced that its “lawsuit procedure guidance chatbot” would enable the public to access basic procedural information anytime and anywhere. The service is bilingual—Korean and basic English—to better assist foreign litigants. It initially covers common questions such as filing deadlines, jurisdiction, how to use the e-filing system, and where to find required forms.

Importantly, the chatbot is integrated into the new e-litigation portal. As users complete an online

complaint form, it can appear with timely, context-specific prompts—for example: “You left the address field blank. Would you like help entering it in the correct format?” This kind of just-in-time guidance helps prevent mistakes and reduces user frustration.

In addition, the judiciary has introduced internal chatbots for court staff. The Court Administration Office has referenced an “office work support chatbot” that employees can use for HR and day-to-day administrative questions. For example, a staff member might ask how to process a specific type of filing or how to arrange a video hearing, and the chatbot—drawing on internal manuals—can provide step-by-step guidance. This helps streamline internal workflows and promotes more consistent practices across courthouses.

While these chatbots rely on fairly standard AI—mainly scripted Q&A with some natural-language processing—they reflect the judiciary’s broader push for more user-friendly digital services. They also reduce the workload on frontline staff: every routine question the chatbot answers is one fewer phone call or counter inquiry for clerks, freeing them to handle more complex matters and provide help where it’s truly needed.

The key challenges going forward are keeping the chatbot’s content current as laws and procedures change (for example, when filing fees are updated or new legislation revises a process) and ensuring that its responses remain accurate and appropriately limited—so users do not mistake procedural guidance for legal advice. So far, feedback has been positive, and the judiciary views these tools as a practical step toward AI-enhanced public service in the courts.

(5) In-House AI Research: LLMs and the “AI Law Clerk” Vision

Instead of relying solely on off-the-shelf AI products, the Korean judiciary has pursued a proactive strategy of developing AI capabilities in-house.

In 2023, the Supreme Court established a dedicated Judicial AI Research team to explore advanced technologies, including large language models (LLMs) comparable to GPT, for legal use. The long-term goal is an “AI law clerk”—a high-level assistant designed to support judges with tasks such as drafting, legal research, and case management, much like a human clerk would.

To realize this vision, the team is developing a judiciary-specific LLM architecture. At its center is a large language model linked to a curated legal knowledge base—the Korea Law Information Center. Rather than relying on an open-ended, internet-trained model, the system is designed as a closed, controlled

environment that connects directly to internal legal databases, including Korean statutes, judicial precedents, and potentially academic commentary.

A key component is a vector database that converts legal texts into embeddings, allowing the system to retrieve the most relevant passages quickly in response to a query. In effect, it uses a retrieval-augmented generation (RAG) approach: the model "looks up" authoritative materials in the knowledge base and then generates responses grounded in those sources, with citations so users can verify them.

The user interface would let judges ask questions in plain language—for example, "Draft an outline for a judgment in this case," or "What are the elements of negligence under Korean law?" The underlying orchestration layer would parse the request, retrieve relevant statutes and case excerpts from the knowledge base, and then have the LLM generate a response or draft that the judge can review and refine.

The system could also support multimodal inputs, such as uploading a document (e.g., a complaint PDF) for the model to summarize or analyze. The ambition is clear: if this works as intended, it could shrink hours of routine work into minutes—producing a first-cut draft of a judgment, or quickly orienting a judge to the key legal framework for an unfamiliar issue.

The judiciary is proceeding carefully. It recognizes the ethical and practical risks of generative AI—especially the possibility that an AI-produced draft could contain subtle errors or reflect hidden biases. For that reason, the "AI law clerk" is conceived strictly as an assistive tool under human supervision. Judges would review, verify, and revise any AI-generated text, and the system would be designed to show supporting sources—such as the legal provisions or precedents it relies on—so users can check its work.

The judiciary is also developing robust anonymization methods to protect personal data whenever filings or decisions are used for AI training or analysis. Building the technology in-house is essential: it keeps sensitive judicial data within the court's security perimeter and ensures the system can be aligned with core judicial values. Unlike a general-purpose model, a court-developed AI can be tailored to uphold judicial ethics, confidentiality, and procedural fairness.

We are still at an early stage. Pilot versions of the LLM-based assistant are being tested on closed networks in sandbox environments within the Supreme Court's research unit. A full "AI law clerk" is still several years away, but the progress to date—building a legal LLM architecture, curating a high-quality knowledge base, and running trials of generative AI for tasks such as drafting judgments—shows a clear and sustained commitment. If these efforts succeed, Korea could become one of the first judiciaries to

deploy a home-grown AI assistant that supports judges in their day-to-day work.

(6) The Judiciary's AI Roadmap

All of these AI initiatives sit within a single overarching framework: the Korean judiciary's official AI roadmap. Recognizing AI's potential to reshape court work, the Supreme Court of Korea established a Judicial AI Committee in 2023. Made up of judges, academics, and technologists, the Committee was charged with developing a strategic plan for responsible AI adoption. After extensive deliberations—including a public consultation process—it finalized its recommendations in late 2025. The resulting roadmap now provides a coordinated, principles-based direction for the judiciary's AI program.

The roadmap sets out an AI Development Master Plan with a total budget of about KRW 16.1 billion and a four-phase implementation schedule:

* Phase 1 (July 2025–February 2026): AI-enabled legal document search and retrieval; establishment of the core AI platform
* Phase 2 (March–December 2026): judgment summarization and dispute analysis; platform enhancement
* Phase 3 (2027): trial prediction and case-relationship mapping; litigation trend analysis; platform advancement
* Phase 4 (2028): knowledge summarization and analytical support for judicial research; final platform upgrades

The roadmap matters not because it envisions "AI judges," but because it treats AI as a practical toolkit—search, retrieval, summarization, structured issue extraction, relationship mapping, and analytics—aimed at reducing administrative burden and improving consistency while keeping decisional authority firmly with human judges.

At the heart of the roadmap is a clear vision and a set of guiding values. Its vision—"Justice with Human-Centered AI"—signals that AI should strengthen the delivery of justice while keeping people firmly in control. The roadmap also sets out core values such as human-centeredness, fairness and equality, innovation and efficiency, transparency and reliability, and accessibility. Together, these principles are meant to ensure that judicial AI supports and empowers judges, court staff, and court users—without shifting responsibility away from humans or introducing bias. In short, AI should make the justice system fairer and more accessible, not the other way around.

The roadmap embraces an "Agile AI Approach (AAA)". Instead of trying to build a single, all-

encompassing AI system at once, it calls for an incremental, iterative process: select high-value use cases, develop prototypes, test them early, incorporate user feedback, and refine them continuously. This approach reflects the reality that AI technologies—and the judiciary's needs—change quickly, so flexibility is essential.

The roadmap also sets out a phased plan with clear time horizons. In the short term, it aims to establish the core foundations by 2026. In the medium term, it targets broader deployment of proven tools by 2028. And in the long term, it envisions advanced, sustained integration of AI across judicial workflows by 2030. This sequencing supports sound budgeting and change management, giving courts the time and capacity to adapt at each stage.

(7) Governance and Ethics

A central pillar of the roadmap is a strong AI governance framework. It first calls for reinforcing internal governance by creating dedicated structures within the judiciary. In line with that recommendation, the Court Administration has established an AI Transformation (AX) Task Force to coordinate AI initiatives and ensure policy consistency. Working across departments—including IT, judicial training, and public communications—the task force helps prevent fragmented, siloed implementation and serves as an internal control function to ensure projects comply with agreed standards and safeguards.

In parallel with building the necessary organizations, the roadmap also calls for legal and regulatory updates to enable responsible AI use. This includes developing judiciary-specific AI ethics guidelines and standards—for example, rules making clear that AI must never be the final decision-maker in a case and that any AI recommendation must be explainable and verifiable by a human decision-maker. The judiciary is also reviewing relevant statutes, including the Personal Information Protection Act, to ensure that court data can be used appropriately for AI development while still protecting privacy. Where legal gaps are identified, the roadmap anticipates working with the legislature to address them—for instance, by clarifying or expressly authorizing the use of properly anonymized judgments for machine-learning purposes.

Another governance innovation in the roadmap is the creation of a "Judicial AI Sandbox." The sandbox is a controlled test environment where new AI tools can be tried in real workflows by volunteer users before any wider rollout. Borrowing from practices in the tech sector and financial regulation, it allows limited experimentation, close monitoring of results, and risk mitigation before scaling.

The sandbox is backed by an internal rule that lets judges pilot an AI tool—such as a similar-case

recommender—in selected cases on a trial basis. During these pilots, the judiciary closely reviews performance and any issues that arise, including errors, reliability concerns, and user feedback. Only tools that prove safe, effective, and compliant with the governing standards would be cleared for broader deployment. This approach helps build trust by ensuring that no AI system is adopted at scale without rigorous testing and review.

The roadmap also stresses capacity building and AI literacy for judges and court staff. It calls for broad training programs so that judicial personnel understand AI's basic concepts—along with its benefits and limits. The Judicial Research and Training Institute, which educates new judges, has added courses on data science and AI ethics, and the courts are running hands-on workshops to show how the new tools work in practice. The goal is to make AI usable not only for early adopters, but also for more experienced judges and staff who may be less comfortable with new technology.

Above all, the judiciary is promoting a mindset of human–AI collaboration. As the Committee's report puts it, the aim is a model in which AI supports procedural innovation while ultimate decision-making authority remains with humans. The roadmap anchors this approach in three principles: human decision-making, explanation and verification, and safety. In practical terms, judges must always make the final call; AI outputs should be transparent and explainable enough to be checked; and the system must meet clear standards of security and reliability.

A key—and very practical—pillar of the governance framework is the judiciary's guidance on using external AI. In short, outside AI tools may be used only as limited aids: court records must not be uploaded to external services; personal or confidential information must not be shared; outputs must not infringe copyright, defame others, or violate human rights; users remain responsible for how the tools are used; and appropriate security controls must be in place to prevent leaks or breaches.

This guidance reflects a core institutional concern: once case materials leave the judiciary's secure environment, the court can no longer control how they are stored, reused, retained, or potentially incorporated into model training. From a risk-management perspective, the ban on submitting litigation records to external AI is not simply cautious—it is the minimum necessary safeguard to protect confidentiality and the integrity of evidence.

Finally, the roadmap situates AI within a broader set of ethical principles. "Human-centered" is not a catchphrase; it is a commitment not to adopt AI in ways that weaken due process or equal protection. For that reason, the judiciary treats certain uses—such as predictive analytics for sentencing or bail—as

especially sensitive because of the risk of bias. These “high-risk” applications, if pursued at all, would be introduced only cautiously and in later phases. By contrast, “low-risk” productivity tools—such as document sorting, scheduling, and hearing transcription—are being prioritized early.

The roadmap therefore adopts a risk-tiered approach. AI that touches core judicial functions is to be introduced slowly, with strict safeguards and close human oversight, while administrative tools and public-service chatbots can be deployed more quickly. This calibrated strategy reflects a simple reality: not every AI use in the justice system poses the same level of risk. Some applications are largely benign and efficiency-enhancing, while others sit close to the heart of judicial discretion and demand deeper debate and stronger protections.

To support continuous improvement, the roadmap also calls for a formal feedback and performance-monitoring mechanism. As tools such as the similar-case recommender are rolled out, courts would collect user feedback, track error rates, and review operational outcomes. That evidence would be used to refine models over time—and, where necessary, to scale back or discontinue tools that do not meet required standards. The roadmap further envisions the Judicial AI Sandbox evolving into a permanent innovation environment, where new ideas can be tested safely and successful solutions can be integrated into routine court operations.

In short, Korea’s judiciary has adopted a forward-looking but cautious AI strategy—one that encourages innovation while insisting on accountability. Its governance framework, spanning the Judicial AI Committee, an implementation task force, ethical guidelines, sandbox testing, and strict limits on external AI use, offers a practical model for other jurisdictions considering AI in the courts. By putting ethics and human oversight at the center, the judiciary aims to align new technology with the justice system’s core values. Looking ahead, this kind of framework will be essential to preserving public trust while responsibly capturing the benefits of AI.

5. Conclusion

Korea’s experience with judicial digitalization and AI offers both encouragement and caution. Over the past two decades, the Korean judiciary has built one of the world’s most advanced electronic litigation systems, significantly improving efficiency and access to justice. The rapid expansion of video hearings—accelerated by the practical demands of the pandemic—demonstrated that legal culture can adapt quickly when necessary. At the same time, it underscored a familiar lesson: technology succeeds only when it is matched by sustained training, investment, and institutional support. Today, as courts move toward an AI-enabled future, Korea is working to balance the promise of innovation with carefully

designed safeguards.

For practitioners—judges and lawyers alike—the central takeaway is that technology is not an end in itself. It is a tool to serve justice. Each initiative, whether e-filing or AI-assisted case analysis, should be assessed by how well it strengthens fairness, improves efficiency, and enhances the experience of court users. Korea's "Smart Court" journey remains a work in progress, and it has not been without challenges: early resistance to e-filing, uneven uptake of video proceedings, and persistent concerns about bias and accountability in algorithmic systems. Even so, the overall direction—both in Korea and globally—is toward a more digital, connected, and capable judiciary.

Looking ahead, Korean courts are likely to deepen the integration of criminal cases into the e-litigation framework, normalize hybrid proceedings that combine in-person and remote participation, and expand the careful use of AI tools in court administration and judicial support. The aim, consistent with Korea's roadmap, is not to automate judging, but to build a system of "human–AI collaboration" in which AI assists and humans remain decisively in control—preserving the human judgment that lies at the heart of adjudication.

I hope this overview has been both useful and thought-provoking. The Korean example suggests that digital transformation in the judiciary can succeed when it is guided by strong leadership, clear ethical principles, and engagement from all stakeholders. The challenges are real, but so are the benefits: improved access to justice, reduced delays, and new tools for managing complexity. I look forward to our discussions as we share experiences across Asia, Europe, and the Americas. By learning from one another, we can ensure that technology—from electronic litigation to AI—reinforces the rule of law and strengthens public trust in our judiciaries.