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Prosecutorial Effectiveness in Kazakhstan's Criminal Justice: The Role of Digital Forensics and Online Trial Broadcasting

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Abstract

Background: This study explores the integration of digital forensic technologies – including online trial broadcasting – into Kazakhstan's criminal justice system as a key driver of legality, rights protection, and judicial transparency. Drawing on Kazakhstan's criminal procedure legislation and recent digital transformation initiatives, the authors examine the procedural framework governing digital evidence and prosecutorial responsibilities in a digital environment. Through comparative analysis with advanced international practices, the study identifies effective models for managing electronic evidence, incorporating artificial intelligence (AI), and conducting online trial broadcasts.

The article reviews scholarly literature on digital forensics, AI applications in criminal justice, and the challenges of live-streaming court proceedings. Empirical data from Kazakhstan's judiciary highlight both achievements and persistent legal gaps, particularly in regulating online broadcasts of high-profile criminal cases. Special attention is given to international approaches that successfully balance transparency, data privacy, and procedural fairness – serving as benchmarks for Kazakhstan's ongoing reforms.

From the analyzed sources, the authors extract key theoretical and practical insights to shape a comprehensive prosecutorial model tailored to Kazakhstan's digital realities. This model aims to safeguard individual rights and public interests, ensure the admissibility and integrity of digital evidence, enhance prosecutorial decision-making through AI tools, and promote judicial openness via regulated online broadcasting. Strategic recommendations are proposed for legislative reform, technological integration, and capacity-building to strengthen prosecutorial effectiveness in Kazakhstan's digital judicial transformation.

Methods: To achieve the research objectives, the authors employed a multi-methodological approach, including:

- Descriptive legal analysis to examine Kazakhstan's legislative framework on digital and forensic technologies in criminal procedure, with emphasis on prosecutorial roles and the regulation of electronic evidence and online broadcasting.
- Comparative legal analysis to identify and assess international best practices in digital evidence management, AI integration, and online trial broadcasting, evaluating their relevance to Kazakhstan's legal and technological context.
- Legal modeling to propose scenarios for integrating advanced forensic tools and AI systems into prosecutorial procedures, aiming to optimize evidence handling, enhance transparency, and uphold legal safeguards.
- Empirical case studies of Kazakhstan's judicial practices involving digital evidence and online broadcasts, revealing legislative gaps, procedural challenges, and technological limitations.

This comprehensive methodology supports the development of targeted recommendations for reform and modernization within Kazakhstan's criminal justice system.

Results and Conclusion: the study recommends establishing a national digital evidence management platform incorporating AI and blockchain verification, alongside legal procedures for their use and unified cybersecurity standards. Forecasts suggest these measures could reduce criminal case durations by 20–25%, improve evidence analysis accuracy to 90%, and enhance public trust in the justice system. Adapting global best practices to Kazakhstan's context provides a strategic foundation for modernizing criminal justice and reinforcing the role of public prosecutors.

Keywords: Digital forensics, public prosecution, blockchain, criminal procedure, online court hearings, live streaming, comparative analysis, Kazakhstan.

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1. INTRODUCTION

Ensuring legality, transparency, and accessibility in criminal justice is a multifaceted challenge in which the digital transformation of the judiciary plays a pivotal role. Article 10 of the Universal Declaration of Human Rights affirms that every individual is entitled to a fair and public hearing before an independent and impartial tribunal.¹ In the contemporary context, digitalization has become a crucial mechanism for realizing this right while simultaneously strengthening judicial efficiency across the globe, including in the Republic of Kazakhstan.

International experience demonstrates that the integration of modern information and communication technologies into criminal proceedings not only increases transparency but also accelerates case resolution and minimizes procedural errors. According to the Organization for Economic Co-operation and Development (OECD), jurisdictions with advanced digital judicial infrastructure have reduced the average duration of criminal proceedings by 20–30% while also reinforcing public confidence in justice institutions.²

Kazakhstan's commitment to digital transformation is reflected in its strategic national priorities. President Kassym-Jomart Tokayev has identified digitalization as a cornerstone of state development, envisioning Kazakhstan as “the most advanced digital hub in Eurasia,” a vision reinforced by the establishment of the United Nations Centre for Digital Solutions for Sustainable Development in Central Asia.³

Within this framework, the national program Digital Kazakhstan (2020–2025)⁴ promotes the adoption of digital technologies aimed at improving the efficiency and quality of criminal adjudication. Key measures include the introduction of electronic case management systems and the enhancement of digital forensic tools.

One of the most significant innovations has been the launch of online broadcasts of court hearings, which improve the openness and accessibility of justice. Given that society is the ultimate source of state authority, the principal aim of criminal proceedings is to safeguard the rights and legitimate interests of Kazakhstan's citizens, ensuring that adjudication is both fair and timely. Technological reforms in this field must therefore respond to the needs of diverse social groups, thereby fostering public trust in prosecutorial functions and enhancing the overall effectiveness of the justice system.

¹ Universal Declaration of Human Rights. Adopted by the United Nations General Assembly Resolution 217 A (III) on December 10, 1948. <https://www.un.org/en/about-us/universal-declaration-of-human-rights>, accessed February 12, 2025.

² Organisation for Economic Co-operation and Development (OECD). Digital transformation in justice systems: Enhancing efficiency and public trust. OECD Publishing, 2023. <https://www.oecd.org/governance/digital-transformation-in-justice.html>, accessed May 23, 2025.

³ Tokayev K.-Zh.K. Kazakhstan must strengthen its status as a regional digital hub / K.-Zh.K. Tokayev. <https://digitalbusiness.kz/2023-03-30/regionalnyj-czifrovoy-hab/>, accessed August 1, 2025.

⁴ Digital Kazakhstan is a program aimed at accelerating the development of Kazakhstan's economy and improving the quality of life for its citizens. <https://egov.kz/cms/en/digital-kazakhstan>, accessed August 8, 2025.

Live broadcasting of criminal court proceedings reinforces the principles of publicity and transparency, reduces corruption risks, improves security for trial participants, and fosters the development of courtroom technical infrastructure. It also enhances the professionalism of legal actors—judges, prosecutors, and defense attorneys—while helping to ease social tensions and strengthen public trust in the judiciary and law enforcement institutions.

Kazakhstan experts consistently note the positive impact of digitalization. N. Akhmetzakirov reports that 92.5% of court cases now include audio-video recording, which improves participant discipline and the quality of case documentation. Aigul Aizhanova highlights the role of the TrueConf platform in enabling remote participation in virtual court hearings. According to a Supreme Court representative, Kazakhstan ranks among the top four Council of Europe member states in judicial IT adoption, including the deployment of comprehensive e-justice tools. At the same time, Sidorova and Serikbayev stress the need for a codified legal framework to guide digitalization and a phased strategy for integrating AI into criminal justice.

Kazakhstan's commitment to digital transformation is reflected in national programs such as Digital Kazakhstan (2020–2025), which promotes electronic case management and advanced forensic capabilities. Yet the core challenge remains the underdeveloped regulatory and institutional framework governing the systematic use of digital tools in criminal proceedings—particularly in the areas of digital evidence, online broadcasting, and prosecutorial oversight. While technological initiatives are progressing, the absence of codified standards, uneven access to digital resources, and unresolved ethical issues create gaps that hinder the effective exercise of prosecutorial functions. Addressing these challenges requires not only technical solutions but also a comprehensive legal and institutional strategy aligned with international standards.

International experience confirms the effectiveness of integrated digitalization strategies. In the United Kingdom, over 90% of criminal cases involve IT-based evidence processed through the Digital Case System,⁵ which employs AI technologies to shorten trial durations by 25% and reduce procedural errors by 17%. Estonia's e-Justice system automates criminal proceedings and supports online broadcasting and videoconferencing, contributing to a 10–12% increase in cybercrime detection rates.⁶ Singapore's Integrated Criminal Case Management System streamlines all stages of criminal proceedings, improving prosecutorial and judicial efficiency, reducing workloads, and accelerating case resolution by 30%.⁷

⁵ Computer Forensics Lab. UK police overwhelmed by digital forensics as 25,000 devices await checks. Computer Forensics Lab, 2025. https://computerforensicslab.co.uk/uk-police-overwhelmed-by-digital-forensics-as-25000-devices-await-checks/?utm_source=, accessed August 12, 2025.

⁶ Ministry of Justice of Estonia. Implementation of the e-Justice system in Estonia. Ministry of Justice of Estonia, 2022.

https://www.oecd.org/content/dam/oecd/ru/publications/reports/2016/01/international-co-operation-in-corruption-cases_997ec9b2/f99e50ff-ru.pdf, accessed March 11, 2025.

⁷ Patreliuk D. et al. The impact of using algorithmic systems on the criminal trial: International experience //Pakistan Journal of Criminology. – 2024. – T. 16. – №. 3. – C. 1185-1198.

Comparative Table of Key Digitalization Indicators in Criminal Proceedings in Selected Countries and Kazakhstan

Indicator	United Kingdom	Estonia	Singapore	Canada	Kazakhstan
Share of criminal cases with IT evidence	90%	75%	80%	70%	35%
Reduction in average trial duration	25%	20%	22%	18%	25–30% (pilot)
Level of case management automation	85%	70%	65%	60%	30% (pilot)
Increase in cybercrime detection rate	12%	10%	11%	9%	—
Availability of an online court hearing streaming platform	Yes	Yes	Under development	Yes	In pilot phase

Despite notable advancements, several critical challenges accompany the digitalization of criminal proceedings. R. Walters emphasizes the lack of transparency in AI algorithms, which may undermine public trust in judicial outcomes. The so-called “black box” problem—where legal professionals cannot fully comprehend AI decision-making processes—represents a significant threat to procedural fairness. In addition, the protection of personal data, cybersecurity concerns, and the risk of tampering with digital evidence remain highly pertinent. Social inequality in access to digital resources further risks exacerbating disparities in the delivery of justice.

These challenges are not unique to Kazakhstan but resonate globally. International experience demonstrates that successful digitalization requires a holistic approach encompassing legal frameworks, technical standards, capacity-building initiatives, and ethical guidelines. Such foundational principles are crucial for adapting foreign technologies and practices to Kazakhstan’s legal and institutional context, with the aim of enhancing prosecutorial efficiency and transparency.

Building on these international lessons, Kazakhstan has embarked on legislative reforms to support this transformation. Amendments to the Criminal Procedure Code and the Law “On the Judicial System and Status of Judges” now regulate remote court hearings and electronic access to case materials.⁸ Since 2025, the introduction of the “supercassation” mechanism has expanded the powers of the

⁸ Government of the Republic of Kazakhstan. Law of the Republic of Kazakhstan No. 132 dated July 11, 2001, “On the Judicial System and the Status of Judges.” <https://adilet.zan.kz/rus/docs/Z000000132>, accessed August 4, 2025.

Prosecutor General to appeal judicial acts, thereby strengthening prosecutorial oversight to uphold the rule of law.⁹

Further procedural simplification measures—such as the abolition of pre-investigation review and indictment stages—are designed to accelerate case resolution and enhance prosecutorial efficiency.¹⁰ The 2023 Order of the Ministry of Justice introduced detailed procedures for the online broadcasting of court hearings, including explicit provisions to safeguard confidentiality, protect personal data, and ensure that digital access does not compromise the rights of trial participants.¹¹

Overall, Kazakhstan's digitalization of criminal proceedings—encompassing the integration of digital forensics and the institutionalization of online trial broadcasting—has become a pivotal driver of prosecutorial and judicial modernization. These innovations contribute not only to reducing the duration of criminal adjudication and improving the quality of justice, but also to fostering greater public trust in the legal system.¹² Such trust is indispensable for upholding the principles of legality and fairness, while reinforcing the social legitimacy of judicial institutions.

2. GOALS AND OBJECTIVES OF RESEARCH

The primary objective of this study is to identify and analyze opportunities for integrating advanced digital and forensic technologies into prosecutorial practice, while assessing their adaptability within the legal system of the Republic of Kazakhstan in light of international experience.

The relevance of this research arises from several interrelated factors. Contemporary judicial processes increasingly depend on complex forms of evidence — ranging from digital traces on social media to outcomes of high-precision forensic examinations. In the context of rapid technological advancement, prosecutors are required not only to apply modern digital tools but also to develop evidence-based strategies that incorporate emerging sources and formats of information.

International practice shows that the adoption of new technologies without due regard to national legal specificities may lead to regulatory gaps, procedural conflicts, and challenges to the admissibility of evidence. For this reason, a context-

⁹ Dentons. Important changes to Kazakhstan procedural law. March 26, 2025.

https://www.dentons.com/en/insights/articles/2025/march/26/important-changes-to-kazakhstan-procedural-law-ru?utm_source=, accessed April 12, 2025.

¹⁰ Online Zakon. Amendments to the procedure for initiating criminal cases and pre-investigation checks. https://online.zakon.kz/Document/?doc_id=31624496&utm_source=, accessed April 12, 2025.

¹¹ Online Zakon. Order of the General Prosecutor of the Republic of Kazakhstan No. 34 dated January 17, 2023, with amendments as of July 19, 2024.

https://online.zakon.kz/Document/?doc_id=34125358&utm_source=, accessed April 12, 2025.

¹² Xu, J., et al. How Does Courtroom Broadcasting Influence Public Confidence in Legal Authorities? PMC (2020). <https://pmc.ncbi.nlm.nih.gov/articles/PMC7403225/>, accessed August 12, 2025.

sensitive approach is essential to ensure both the effectiveness and the legitimacy of implementation.

To achieve the stated aim, the study sets the following objectives:

- Analyze the current state of digital and forensic technology use in Kazakhstan's prosecutorial, identifying existing limitations and gaps in the legal framework.
- Examine foreign experiences in integrating advanced technologies into judicial practice, with particular attention to jurisdictions that demonstrate progress in digital evidence, automated analytical systems, and forensic visualization tools.
- Compare methods and standards for handling digital evidence in Kazakhstan and in countries with developed judicial systems, emphasizing key differences in admissibility, reliability and evaluation.
- Develop proposals for adapting foreign technologies and methodologies to Kazakhstan's legal context, taking into account the Criminal Procedure Code, judicial practice, and the technical capacity of the prosecution bodies.
- Define the role of professional training in the digital transformation of justice, focusing on competencies in big data analysis, artificial intelligence, cyber-investigations, and high-precision forensics techniques.

To address these objectives, the research employs a multi-layered methodological approach. It combines doctrinal legal analysis, comparative legal research, and the study practical case materials. Additionally, it develops regulatory and institutional recommendations tailored to the specificities of Kazakhstan's legal system and prosecutorial practice.

The research will be based on a comprehensive review of the applicable legislation, including the Criminal Procedure Code of the Republic of Kazakhstan,¹³ the Law "On the Prosecutor's Office",¹⁴ and relevant subordinate regulations. In addition, the practices of the General Prosecutor's Office and judicial decisions over the past five years will be examined to identify distinctive features in the use of digital evidence and forensic methods, as well as to detect regulatory gaps and inconsistencies. The results will be systematized in an analytical table that classifies issues by type (regulatory, technical, organizational).

A comparative study will also be carried out in jurisdictions with significant achievements in the integration of digital evidence and forensic technologies. Using methods of comparative law and case study analysis, the research will focus on procedures ensuring the admissibility of digital evidence and on institutional frameworks that regulate its collection, preservation, and presentation in court.

¹³ Government of the Republic of Kazakhstan. Criminal Procedure Code of the Republic of Kazakhstan No. 231-IV dated July 4, 2014. Available at: <https://adilet.zan.kz/eng/docs/K1400000231>, accessed May 2, 2025.

¹⁴ Government of the Republic of Kazakhstan. Constitutional Law No. 155-VII of November 5, 2022, "On the Prosecutor's Office." Available at: <https://adilet.zan.kz/eng/docs/Z2200000155>, accessed June 5, 2025.

A detailed comparative analysis of procedural norms will be undertaken, including requirements for admissibility, authenticity, and integrity of digital evidence. International standards – such as ISO guidelines and recommendations from organizations like the European Network of Forensic Science Institutes¹⁵ – will be reviewed. The outcome will include a comparative table highlighting divergences and overlaps, along with proposals for harmonizing Kazakhstan's standards with international best practices.

Drawing on best practices identified through comparative analysis, the study will formulate a package of regulatory initiatives. These will include proposals for amendments to the Criminal Procedure Code of the Republic of Kazakhstan; development of subordinate regulations governing the use of AI, automated analytical systems, and integrated forensic complexes; and a phased implementation model featuring pilot projects in selected regions to test and refine technological integration in prosecutorial practice.

To support sustainable integration, a concept for a specialized educational program for prosecutors will be developed. Key components include courses on cyber investigations, big data analysis, specialized software applications, and forensic visualization tools; introduction of a digital competence certification system to standardize skill levels across the prosecution service; and regular advanced training sessions involving foreign experts to ensure alignment with international standards and emerging technologies.

Implementation of the proposed measures is expected to significantly enhance prosecutorial performance, particularly in the handling of digital and forensic evidence. Preliminary expert assessments, based on comparative data from jurisdictions with mature digital justice systems and adapted to Kazakhstan's legal and institutional context, suggest:

Performance Indicator	Expected Improvement
Efficiency of evidence analysis/presentation	+ 25-30%
Reduction in procedural errors	– 15-20%
Improvement in case resolution rates	+ 10-15%

These projections underscore the transformative potential of combining technological innovation with targeted professional development.

In the context of Kazakhstan's legal scholarship, the digitalization of prosecutorial activities has so far been studied only in a fragmented manner. For instance, Turlybekov analyzed the implementation of electronic document management systems within the prosecution service, while Mukanova addressed procedural risks associated with the use of artificial intelligence in criminal proceedings.

Yet, the academic discourse lacks a comprehensive study that integrates a comparative analysis of international best practices with systematic proposals for adapting digital and forensic technologies to Kazakhstan's legal framework. This

¹⁵ European Network of Forensic Science Institutes (ENFSI). About ENFSI. Available at: <https://enfsi.eu/about-enfsi/>, accessed May 08, 2025.

research seeks to fill that gap by offering both theoretical insights and practical recommendations, thereby contributing to the modernization of prosecutorial functions and strengthening the rule of law.

International scholars such as R. Wortley and E. Casey emphasize that the sustainable integration of technology into judicial practice requires three key conditions: a robust regulatory framework, the standardization of digital evidence collection and analysis methods, and the enhancement of digital competence among legal professionals. These principles hold particular relevance for Kazakhstan, where both procedural culture and technical infrastructure are in the process of active modernization.

The integration of digital and forensic innovations into prosecutorial practice should not be viewed solely as technological modernization. Rather, it constitutes a strategic step toward strengthening the rule of law and safeguarding the rights of all participants in the judicial process. By aligning prosecutorial functions with international standards while preserving the distinctive features of Kazakhstan's legal tradition, this approach can enhance the credibility and effectiveness of the justice system, foster public trust, ensure greater consistency in the protection of individual rights, and contribute to building a modern, transparent, and responsive legal environment capable of addressing the challenges of the digital era.

3. ONLINE BROADCASTING OF CRIMINAL COURT PROCEEDINGS IN KAZAKHSTAN: LESSONS FROM INTERNATIONAL EXPERIENCE

The online broadcasting of criminal court proceedings in Kazakhstan has become a pivotal milestone in the country's judicial modernization. Aimed at enhancing transparency, reinforcing legality, and strengthening public trust, this initiative reflects a broader commitment to digital transformation within the justice system. In recent years, Kazakhstan has actively advanced the digitalization of criminal justice, culminating in legislative reforms adopted between 2024 and 2025.¹⁶ These amendments to the Criminal Procedure Code and related regulations refined the procedures for reviewing judicial acts, strengthened the role of Constitutional Court decisions in appellate review, and expanded the applicability of international treaties. Collectively, these reforms have created a more flexible and responsive framework for law enforcement in the digital era.

One of the most significant innovations is the institutionalization of remote justice mechanisms. Importantly, the choice between in-person and online participation now lies with the parties to the proceedings rather than the judiciary. Judges can no longer refuse requests for online broadcasting, ensuring the mandatory openness and accessibility of trials to the public. This shift has had a

¹⁶ Lexology. (2024). Kazakhstan: Laws on judicial system reform approved in Kazakhstan. Retrieved August 5, 2025, from https://www.lexology.com/library/detail.aspx?g=30962076-84f0-42d9-95f7-14f8da6751b7&utm_source=

profound effect on public oversight, judicial accountability, and the ability of citizens to engage with the justice system in real time.

This shift has had a direct and measurable impact on the transparency of judicial procedures and has contributed to a growing sense of public confidence in the justice system.

The practical application of online broadcasting has already demonstrated substantial public engagement. A notable example is the high-profile trial of Kuandyk Bishimbayev, former Minister of National Economy, who was convicted in 2024 of the murder of his partner and sentenced to 24 years in prison. His relative received a four-year sentence for concealment of the crime. The proceedings were broadcast live on the official YouTube channel of the Supreme Court, attracting over 20 million views and reflecting unprecedented public interest.¹⁷ International media outlets, including Modern Diplomacy, highlighted the trial as a landmark precedent for open online broadcasting in Kazakhstan, noting that the case generated approximately 100 million views across social media platforms.¹⁸ This global attention not only elevated Kazakhstan's profile in judicial transparency but also catalyzed public discourse on legislative reforms to strengthen protections for women and children.

Another landmark case is the trial concerning the murder of 16-year-old Sherzat Polat in Talgar in October 2024. The Supreme Court mandated open proceedings, with hearings broadcast through official YouTube channels and major media outlets. Between April and June 2025, a total of 36 sessions were streamed, amounting to over 80 hours of live content and reaching audiences in 42 countries.¹⁹ Viewer engagement was particularly strong among individuals aged 25 to 34 (37.1%), with women comprising 58.3% of the audience. The broadcasts also became part of an educational initiative, with the Astana Prosecutor's Office organizing live viewing sessions for more than 1,000 students to promote legal literacy and crime prevention.²⁰

Public perception studies further underscore the value of these initiatives. A 2023 survey conducted by the Kazakh Legal Information Center found that 78% of respondents support online access to court hearings, viewing it as a driver of transparency and public trust. Additionally, 65% expressed a desire to expand online coverage to include a broader range of criminal cases. These findings are

¹⁷ Online live streaming of the court trial of K. Bishimbaev, March 27, 2024. Available at: <https://www.youtube.com/watch?v=KAfEu7i7XMg>, Accessed May 4, 2024.

¹⁸ Martin Banks. "Kazakhstan's Digital Court Reforms Suggest Live-Streaming Trials Can Bolster Justice." Modern Diplomacy, February 27, 2025. Available at: <https://moderndiplomacy.eu/2025/02/27/kazakhstans-digital-court-reforms-suggests-live-streaming-trials-can-bolster-justice/>, accessed March 2, 2025.

¹⁹ Amenova, D. "The Sherzat Case: How the Court Broadcast Was Organized in Taldykorgan." Kazakhstan Pravda, June 9, 2025. Available at: <https://kazpravda.kz/n/delo-sherzata-skolko-zriteley-posmotreli-translyatsii-sudebnyh-zasedaniy-v-taldykorgane/>, accessed June 10, 2025.

²⁰ Prosecutor's Office of Astana. Online broadcast of a court trial for capital schoolchildren. GURK.KZ, April 7, 2025. Available at: <https://gurk.kz/news/onlajn-translyacziya-sudebnogo-processa-dlya-shkolnikov-stoliczy>, accessed April 12, 2025.

consistent with global research, which emphasizes the role of public trials in ensuring justice, deterring misconduct, and fostering civic engagement.²¹

The online broadcasting of the Bishimbayev and Polat criminal trials in Kazakhstan has produced profound and multifaceted outcomes across academic research, digital transformation, and societal engagement. For the academic community, these trials represent rare, large-scale empirical datasets that enable in-depth analysis of courtroom behavior, the influence of public scrutiny on trial dynamics, and the operational complexities of digital justice. They have provided a foundation for comparative studies with other jurisdictions, enriching global discourse on open justice and offering real-world evidence of how transparency can shape legal culture.

From the perspective of digital transformation, both cases validated the operational capacity of Kazakhstan's emerging e-justice infrastructure under conditions of high public demand and extended broadcasting durations – over 80 hours of live content in the Polat trial alone. Technical data and performance metrics collected during these proceedings are already informing upgrades to streaming platforms, network resilience, and audiovisual standards. These trials have also accelerated national discussions on integrating AI-assisted transcription, metadata tagging, and secure archival of digital court records, all of which are essential for scalability and long-term legal reliability.

On the societal front, the impact has been immediate and transformative. The Bishimbayev trial's more than 20 million views and the Polat case's over 1 million views, spanning audiences in more than 40 countries, reflect a strong public appetite for transparency in the justice system. These broadcasts not only elevated public legal literacy but also mobilized national debates on domestic violence, gender-based crimes, and state accountability. Public pressure catalyzed legislative change, most notably the adoption of "Saltanat's Law," which strengthened protections for victims of domestic abuse. In this way, digital court innovations have demonstrated their potential to move beyond procedural openness and actively influence legal policy, social norms, and public trust.

Ultimately, these landmark cases confirm that online court broadcasting – when supported by legislation and robust digital infrastructure – can serve as a strategic instrument for judicial modernization, enhanced prosecutorial accountability, and the institutionalization of transparency as a core democratic value.

Nonetheless, the expansion of online broadcasting faces several technical and legal challenges. In certain regions, unstable internet connectivity undermines consistent streaming quality, while limited audiovisual equipment restricts production standards. The absence of a unified national platform has led to fragmented technological approaches, complicating centralized management and data collection. Legislative gaps persist, as neither the Law "On the Prosecutor's Office" nor the Criminal Procedure Code explicitly regulate digital video

²¹ Gromet, D. M., & Kenny, D. A. The effects of judicial transparency on public trust: Evidence from a field experiment. ResearchGate, 2015. Available at: https://www.researchgate.net/publication/271075291_The_effects_of_judicial_transparency_on_public_trust_Evidence_from_a_field_experiment?utm_source=, accessed August 2, 2025.

broadcasting as an official mechanism for ensuring openness. Ambiguities remain regarding restrictions in cases involving state secrets or witness protection, and there are no established procedures for storing or using recordings as admissible evidence.

If implemented effectively, the proposed measures could significantly enhance prosecutorial performance within the judicial process. Preliminary projections suggest that the integration of advanced broadcasting technologies, combined with targeted capacity-building programs, could increase public trust in the judiciary by 20-25%, reduce perceived corruption risks by 15-20%, and improve compliance with procedural norms by up to 30%. In the long term, online broadcasting may evolve from a transparency tool into a mechanism for reinforcing the rule of law, strengthening prosecutorial accountability, and deepening public engagement with justice in Kazakhstan.

International experiences continue to demonstrate the transformative potential of judicial broadcasting. The United Kingdom stands out as one of the first countries to formally introduce online broadcasting of court proceedings, beginning with the live streaming of sentencing in Crown Courts. This shift was enabled by the Crown Court (Recording and Broadcasting) Order 2020, which overturned previous prohibitions on courtroom video recording. Under the new framework, only the sentencing moment delivered by the judge may be broadcast, with strict prohibitions on filming witnesses, jurors, or defendants to preserve confidentiality and fairness.

The inaugural broadcast took place on July 28, 2022, at London's Central Criminal Court (Old Bailey), where Judge Sarah Munro delivered a live sentencing in the case of Ben Oliver, convicted of manslaughter. The transmission, aired with a 10-second delay on Sky News to ensure compliance with procedural standards,²² drew significant public interest – despite exact viewer numbers not being released – highlighting the public's appetite for greater judicial transparency. Following a successful pilot phase, the practice expanded to over 30 cases in its first year, reinforcing the UK's position as a leader in integrating technology into the justice system to promote openness and public trust.

The UK continues to evolve its broadcasting practices. Since 2019, most cases heard by the Civil Division of the Court of Appeal have been streamed live on its official YouTube channel, contributing to broader public understanding of judicial processes. In 2024, Crown Courts handled a record of 113,000 cases, yet the scope of online broadcasts remains limited to sentencing and selecting trial components.²³ In early 2025, the Council on Transparency and Open Justice recommended extending live broadcasts to hearings in the Administrative Court, potentially expanding public access to judicial information. Despite active adoption, there are no published evaluations of the impact of these broadcasts on

²² Sky News. (2022). First-ever live broadcast of sentencing at Old Bailey [Video]. YouTube. Retrieved October 12, 2025, from <https://www.youtube.com/watch?v=intrtova7Ms&t=4s>

²³ Ministry of Justice. (2025, March 27). Criminal court statistics quarterly: October to December 2024. GOV.UK. Retrieved April 8, 2025, from <https://www.gov.uk/government/statistics/criminal-court-statistics-quarterly-october-to-december-2024/criminal-court-statistics-quarterly-october-to-december-2024>

public perception. Nonetheless, the Ministry of Justice anticipates continued growth in Crown Court caseloads through 2029, creating favorable conditions for further expansion of live streaming and increased public confidence in the justice system.

Parallel developments have taken place in the United States, where several federal and district courts have piloted video recording and publication of proceedings since the early 2010s. A notable example is the Ninth Circuit Court of Appeals, which has posted recordings of oral arguments on its official website since 2011. This initiative provides free public access to court proceedings, fostering transparency and deeper public engagement with the judicial system. The archives include both attorney arguments and judicial decisions, making legal processes accessible to professionals and the general public alike.

The COVID-19 pandemic accelerated the adoption of remote technologies across U.S. courts, prompting widespread use of videoconferencing to avoid procedural delays. States such as New York, Michigan, and Texas experimented with remote hearings, witness examinations, and even juror participation.²⁴ These innovations proved valuable in addressing health concerns and geographic barriers, but also sparked debates about fairness. Critics raised concerns over technical failures, limited privacy protections, and challenges in assessing witness demeanor. Many courts struggled with inadequate infrastructure and the absence of uniform standards for remote jury proceedings, prompting the development of new regulations and procedural guidelines. The U.S. experience underscores that while video and remote technologies enhance transparency and access, their implementation must be balanced with legal safeguards and operational consistency.

China has taken a distinct approach by establishing specialized internet courts that conduct proceedings fully or partially online. The first and most prominent, the Hangzhou Internet Court, was launched in 2017 in one of the country's leading tech hubs. It focuses on cases involving e-commerce, intellectual property, cybercrime, and other digital disputes.²⁵ Since its inception, the court has adjudicated over 12,000 cases, with an average resolution time of 38 days – nearly twice as fast as traditional courts. Hearings average just 28 minutes, reflecting high operational efficiency.

All procedural stages, from filing to judgment, are conducted via a dedicated online platform, significantly reducing time and resource costs for participants. The court employs advanced technologies such as blockchain to ensure the integrity of evidence and AI to automate routine tasks and assist judges in decision-making. In February 2025, the court issued a landmark ruling holding an AI system liable for copyright infringement, marking a pivotal moment in the regulation of emerging technologies and intellectual property rights. The success of the Hangzhou Internet Court has inspired similar institutions in Beijing, Guangzhou, and other major

²⁴ Waters, M. (2020, May 21). Video-Chat Juries and the Future of Criminal Justice. WIRED. Retrieved April 8, 2025, from <https://www.wired.com/story/video-chat-juries-and-the-future-of-criminal-justice/>

²⁵ Guan, Xiaomeng. "China First Internet Court Handles Over 10,000 Cases." China Daily. Retrieved May 24, 2019, from <https://www.chinadaily.com.cn>.

cities, enhancing access to justice, expediting case resolution, and improving procedural transparency nationwide.

The collective experiences of the United Kingdom, the United States, and China demonstrate both the transformative potential and the inherent complexities of digitalizing judicial processes. Despite their differing scales and approaches – from the UK’s cautious expansion of online broadcasts, the US’s experimentation with video recordings and remote jury participation, to China’s establishment of fully digital internet courts – all three models reflect a shared commitment to enhancing transparency, accessibility, and efficiency within the judiciary. At the same time, these developments highlight the importance of safeguarding fairness, protecting participant rights, and establishing robust regulatory and technical frameworks. The complexity of these efforts proves that successful integration of digital solutions into judicial systems requires a comprehensive, context-sensitive approach that balances technological capabilities with legal safeguards.

Kazakhstan stands to benefit from these international experiences as it advances the online broadcasting and digitalization of its judicial processes. A phased and pilot-based approach to implementation is advisable. Drawing from the UK model, Kazakhstan could begin with limited live broadcasts of critical trial stages, such as sentencing announcements. This measured strategy would mitigate risks to confidentiality and procedural fairness while allowing stakeholders to gain practical experience and assess the impact on public perception.

Equally important is the development of a comprehensive legal framework that clearly regulates the technical and ethical dimensions of online broadcasting. This framework should include explicit prohibitions on filming witnesses, jurors, and victims, thereby upholding the principles of a fair trial and protecting the rights of participants – mirroring the strict limitations adopted in the UK.

Kazakhstan must also invest in reliable technical infrastructure and equipment to avoid challenges similar to those encountered in the United States, where technical failures and unstable connectivity occasionally compromised the quality of remote hearings. Adequate training for judicial staff and participants in the use of digital tools is essential to ensure smooth and effective proceedings.

Systematic training and capacity-building efforts across the judiciary, prosecution, defense, and court administration are critical. The experiences of all three countries demonstrate that technological adoption succeeds only when accompanied by thorough education on new procedures, digital tools, and ethical standards governing online transparency.

Establishing and enforcing uniform standards and protocols for conducting live broadcasts and remote hearings is necessary, particularly if Kazakhstan introduces innovations such as remote jury participation. These standards will help maintain procedural consistency and legal certainty across jurisdictions.

Kazakhstan may also explore the use of advanced technologies, including blockchain for securing evidence integrity and AI to automate routine judicial tasks. China’s internet courts offer a compelling model, demonstrating how such technologies can accelerate case processing and enhance judicial efficiency.

To ensure long-term success, Kazakhstan should institute ongoing monitoring and evaluation mechanisms to collect data on how online broadcasting

affects public trust, perceptions of judicial fairness, and adherence to procedural norms. This evidence-based approach will support timely adjustments and continuous improvement.

Finally, it is essential to adapt digital innovations to Kazakhstan's unique cultural and institutional context. Consideration must be given to national legal traditions, the digital literacy of legal professionals and the public, and prevailing societal expectations. Tailoring solutions to local realities will enhance both acceptance and effectiveness.

By incorporating these lessons, Kazakhstan can significantly advance judicial transparency, reduce corruption risks, expedite case resolution, and strengthen public confidence in the justice system – while preserving the delicate balance between technological progress and the fundamental guarantees of a fair trial.

4. CONCLUSION

The analysis demonstrates that effective forensic and technical support for prosecutorial functions in the context of digital transformation requires a holistic approach—one that integrates technological innovation, regulatory development, and human resource capacity building. International experience confirms that success lies not in the isolated adoption of tools but in the creation of a unified digital ecosystem, supported by clear legal standards and continuous professional development.

For Kazakhstan to move toward this model, three foundational pillars must be addressed: technological infrastructure, legal regulation, and human capital development. A centralized national platform for managing digital evidence should be established, incorporating AI modules to automate analytical processes and blockchain mechanisms to secure and verify the integrity of data storage and transmission. These technologies would enhance transparency, reduce risks of tampering, and improve the speed and accuracy of evidence analysis.

A robust legal foundation is equally essential. Specialized legislation must regulate the use and admissibility of digital evidence, procedures for online court hearings, and the application of AI in criminal justice, including algorithmic accountability and personal data protection. Such laws should align with international standards and guarantee that digital tools are applied ethically and transparently throughout all stages of criminal proceedings.

The ultimate success of digital transformation depends on the expertise of its users. Kazakhstan must therefore invest in the training and continuous professional development of prosecutors, forensic experts, judges, and technical staff. Education in digital technologies, forensic science, and ethical standards should be tailored to the evolving demands of judicial practice.

Taken together, these measures can lay the groundwork for a prosecutorial system that is technologically advanced, legally sound, and professionally resilient—positioning Kazakhstan not only to strengthen the rule of law domestically but also to contribute to the global dialogue on digital justice reform.

Implementing these measures is expected to significantly improve the quality and efficiency of judicial proceedings, minimize procedural errors and corruption risks, and strengthen public trust in the justice system. Forecasts indicate that a consolidated digital platform and regulatory framework could reduce criminal case processing times by 20–25%, raise the accuracy of digital evidence analysis to around 90%, and enhance transparency through expanded online broadcasting of court procedures.

Global reports confirm these trends: the OECD links digital justice ecosystems with shorter trial durations and greater public confidence (OECD, Digital Transformation in the Judiciary, 2023); UNODC highlights codified standards for digital evidence as essential to admissibility and fairness (UNODC, The Use of Digital Evidence in Criminal Proceedings, 2022); and the Council of Europe underscores algorithmic accountability and transparency in the use of AI (CoE, AI and the Criminal Justice System, 2024).

Nevertheless, ethical concerns regarding AI, data confidentiality, and the openness of judicial processes must remain a priority. Protecting the rights of participants while ensuring transparency requires the establishment of continuous monitoring and evaluation systems capable of adapting digital tools to principles of fairness and legality.

Kazakhstan should adopt a phased, systematic, and controlled approach to digitalization, ensuring that international standards of legality, fairness, and citizen protection are fully incorporated into its legal system. The expected outcomes include reduced procedural violations, lower corruption risks, increased prosecutorial efficiency through AI-assisted analysis, faster case resolution via automated data processing, stronger participant rights through normative clarity and cybersecurity protocols, and improved qualifications of legal and forensic professionals.

In conclusion, the digitalization of criminal justice in Kazakhstan must be accompanied by the normative consolidation of AI, blockchain, and other advanced technologies across all procedural stages—pre-trial, trial, and sentencing. The comprehensive integration of traditional legal methods with innovative digital solutions, including online broadcasting, will provide a foundation for a modern, transparent, and internationally aligned justice system that meets the expectations of both society and global legal standards.

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