
**THE IMPACT OF USING TECHNOLOGY AND INNOVATION IN LAW
ENFORCEMENT IN THE ERA OF DIGITALIZATION**

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ABSTRACT

In an era of rapid digitalization, technology and innovation have fundamentally transformed the landscape of law enforcement. This article examines the profound impact of information technology on various aspects of law enforcement in the digital age. It offers a comprehensive review of how technology has reshaped evidence collection, surveillance, rule enforcement, and dispute resolution processes. Additionally, the article discusses the challenges and opportunities the legal system faces in adapting to these technological advancements. Utilizing a literature review methodology, the research analyzes case studies and conceptual frameworks to provide a deeper understanding of how technology enhances the effectiveness and efficiency of law enforcement while considering its broader implications for justice and human rights. Furthermore, this study lays the groundwork for future research, encouraging further empirical exploration of these critical issues. This research examines the impact of technology on the accessibility of justice, highlighting both its potential to democratize legal services and the challenges it poses, such as privacy concerns and security risks. By exploring these dynamics, the study lays the groundwork for future research on the evolving role of technology in law enforcement and legal systems.

INTRODUCTION

The development of information technology has brought significant changes in various aspects of life, including law enforcement. Along with this rapid progress, new challenges have emerged that must be faced, such as issues of data privacy and security, as well as ethics in the use of advanced technology, such as artificial intelligence. These challenges require special attention to ensure that the use of technology in law enforcement is not only effective, but also in line with the principles of justice and human rights. Therefore, this study aims to examine in depth how information technology affects law enforcement, identify the challenges that arise, and offer solutions that can be applied to overcome these obstacles (Alhidayah et al., 2023). The digital age has brought about vast changes in every aspect of our lives, including the justice system. With advancements in information and communication technology, we have seen significant improvements in the efficiency and accessibility of information. These technological developments have played a crucial role in transforming social, economic, and legal structures, leading to changes in the enforcement of laws and regulations. While

technology is now a common tool in law enforcement, legal frameworks often struggle to keep up with the rapid pace of technological innovation (Khumairok, 2023).

Challenges in the legal realm appear to be increasingly complex, especially in terms of privacy and data protection, intellectual property rights in the digital environment, as well as increasing cyber security threats. Additionally, ethical questions arise around the use of new technologies such as artificial intelligence, which are attracting attention globally. Meanwhile, debates about the limits of free speech, digital surveillance, and individual rights regarding personal data are increasingly confusing. All these challenges emphasize the need for more rapid and relevant legal review and adaptation in the face of changing digital technologies. By understanding the dynamics of technological change and its impact on everyday life, this research aims to explore how the law can adapt to these technological developments and safeguard the rights and values of society in an ever-connected digital era (Jaya & Goh, 2021).

Prof. Larry Lessig, in his work entitled "Code and Other Laws of Cyberspace," voiced the idea that computer codes have a strong role in shaping rules and behavior in the digital world. He highlighted the urgency of understanding how technology structures our lives and how this impacts justice in digital contexts. On the other hand, Prof. Richard Susskind, a leading legal expert on technology and law enforcement, has emphasized the profound changes that have occurred in law enforcement, both practically and theoretically, due to advances in technology. The concept of "Online Courts" and the question of "The End of Lawyers?" have sparked important discussions regarding the future of law enforcement (Pibriana, 2020).

Increased complexity, costs, and risks in technological innovation occur as a result of changes in business processes, increasing competition, and the rapid development of technology itself. Technology is not only an important resource but also a sub-system of an organization. Thus, the impact of technology on a company's competitiveness and long-term profitability is very significant. To maintain their position and achieve excellence in a competitive market, companies must actively explore and exploit technological opportunities to support their business strategy and improve operational efficiency and service quality. In this context, the success of an organization or company often depends on how responsive and adaptive they are to technological innovation (Listiyono et al., 2022).

RESEARCH METHODS

Literature study is the method used in this research. Literature research involves analyzing kinds of written materials such as books, magazines, journals, and other sources relevant to the research topic and objectives (Sugiyono, 2016). This approach aims to address the problem by exploring insights from previous works. In conducting literature research, researchers need to have a comprehensive understanding of the subject being researched. Literature research was performed to strengthen the arguments investigated and provide a basis for understanding the impact and innovation of technology in the context of law enforcement in the digital era.

RESULTS AND DISCUSSION

Impact of Technology Use on Accessibility of Justice

Current life is increasingly influenced by global dynamics that offer various new alternatives, not only affecting national aspects of life, including the legal system but also

enriching the global dimension and raising concerns about increasing localism. The development of modern law today is influenced by a historical journey involving reciprocal relationships. After achieving independence, Indonesia committed to building a national legal system that reflects the nation's identity through the development of a legal system. In general, law in Indonesia tends to be written. The current legal structure evolves from a positivist tradition that emphasizes formal aspects, concrete actions, and national jurisdiction limited by geographical areas (Sihombing, 2020). Currently, legal narratives will be tested in their ability to respond to developments in information technology. Life is progressively interlinked on a global scale, evoking the perception of emerging alternatives that not only impact facets of national existence, including legal frameworks but also augment global dynamics while instigating apprehensions regarding the proliferation of localism worldwide. The manifestation of contemporary legal constructs is discernible within the trajectory of historical interactions between law, society, and the evolution of modern states. Key attributes of legal modernity encompass its codified nature, nationwide applicability, and deliberate utilization as a mechanism to enact political mandates.

Technology plays a vital role in equalizing access to justice, particularly by expanding the reach of legal services to previously inaccessible remote areas. For example, online applications allow people in remote areas to file legal applications online without having to travel long distances to the court. In addition, digital platforms can provide easy access to legal information, such as court dates and court decisions, which help people understand their rights and applicable legal procedures. In this way, technology not only speeds up the legal process but also ensures that justice is more evenly felt by all levels of society.

The presence of legislation mandating written documentation is deemed indispensable for modern states grappling with burgeoning complexity across diverse domains. Consequently, this renders legal frameworks more formalized, inflexible, and less adaptable, often crafted by authorities wielding unilateral authority, potentially at the expense of legal certainty and justice. Technology plays a pivotal position in enhancing the accessibility of justice. The following are some of the implications of technology on the accessibility of justice (Ravizki & Yudhantaka, 2022):

- a. Technology can help equalize access to justice by expanding the reach of legal services for people who live in remote or hard-to-reach areas. For example, courts may utilize information technology to enable individuals to access the court online (through information available on the court's website).
- b. Online Legal Services: Technology can also speed up and simplify the legal services process. For example, online applications can be used to submit legal requests or access legal information.
- c. Easier Discovery of Legal Information: Technology can also speed up access to legal information. For example, a court website may provide information about court dates, court decisions, and other legal information.

However, the use of technology can also abuse the accessibility of justice. One example is a disruption to the accessibility of information technology caused by development policies and limited access to information technology. Additionally, technology developers in the private sector may inadvertently violate basic legal protections in the justice system. In

addressing the impact of technology on the accessibility of justice, continued monitoring of the consequences of technological change on the justice process will be critical.

Challenges in the Implementation of Technology and Innovation in Law Enforcement in the Digital Era

Rapid technological developments in the last few decades have fundamentally changed the way humans live. One area that is greatly affected is the challenges in implementing it. The use of technology in the law enforcement field faces a series of significant challenges, such as privacy and security issues, increasing technological complexity, and sustainability of resources. Here are some details about these challenges:

a. Privacy and security issues

The proliferation of technology within law enforcement has prompted apprehensions regarding privacy and security. In an era characterized by the facile collection, storage, and utilization of personal data, stakeholders including individuals, governmental bodies, and organizations must comprehend the complexities entailed in safeguarding privacy. The escalating accumulation of personal data heightens the vulnerability to its misuse or unauthorized exploitation.

The surge in cybercrime and hacking incidents further complicates endeavors aimed at fortifying the protection of sensitive information. Principal among the challenges in the digital epoch is the extensive scope of data aggregation. With the ubiquity of the internet, social media platforms, and interconnected devices, the reservoir of data amassed about individuals continues to burgeon. This trove encompasses a spectrum of personal details ranging from names and addresses to browsing histories and consumer preferences, engendering heightened privacy apprehensions due to the potential for unauthorized dissemination or misuse.

Moreover, a significant challenge resides in the potential for third-party misuse of data. Numerous entities today accumulate personal data from users for diverse purposes, encompassing targeted advertising and consumer profiling. However, there exists a palpable risk of such data falling into malevolent hands or being repurposed for nefarious ends such as extortion or identity theft, constituting a grave encroachment upon individual privacy.

Additionally, the absence of robust security protocols poses a formidable obstacle to privacy preservation. Instances of cyberattacks targeting the pilferage of personal data have become increasingly prevalent. Malicious actors exploit various avenues including phishing campaigns, malware dissemination, and system breaches to acquire sensitive data. Weaknesses in security infrastructures amplify the likelihood of data breaches, imperiling individual privacy (Lucas, 2023).

b. Increasing technological complexity

As technology advances, complexity increases, posing challenges for law enforcement agencies to remain abreast of developments and utilize them effectively. Encryption and other security measures may impede access to relevant information for investigations.

According to a report from the Office of Justice Programs, law enforcement agencies have embraced various technological advancements to enhance operational efficiency and outcomes, particularly amidst resource constraints and heightened public scrutiny. However, there remains a need for deeper understanding regarding the extent of technology

utilization within these agencies and the factors influencing selection and implementation.

Budget constraints present a significant hurdle to technology implementation in security agencies. Governments allocating funds must recognize that effective solutions may entail substantial investment and should not be indefinitely deferred. Challenges persist in digital evidence management, with delays exacerbating the complexities.

The primary technology challenges confronting law enforcement pertain not to infrastructure or hardware, but rather to leadership paradigms. To enhance efficiency amidst resource limitations and reduced staffing, agencies must prioritize appropriate technology adoption. This entails a shift towards evaluating mobility and communication solutions more critically, alongside the adoption of specialized software applications to automate manual processes and enhance communication (Rudi Natamiharja, 2022).

c. Resource sustainability

The use of technology in law enforcement can incur significant costs, and there may be limitations in the resources available to invest in or maintain the necessary new technology. Additionally, with the rapid pace of technological development, investments in technology can quickly become obsolete. According to an Office of Justice Programs report, budget constraints are one of the main barriers to adopting technology. A survey of federal IT professionals also found that the main challenges in digital transformation efforts include security issues, time constraints, gaps in workforce skills, competing priorities, and inflexible legacy networks. Overall, the use of technology in law enforcement brings both opportunities and challenges. While technology can help law enforcement agencies become more effective and efficient, its use also requires careful consideration of privacy and security issues, as well as continued investment in resources and training to keep up with the latest technological developments.

Efforts to Overcome Challenges in the Application of Technology in Law Enforcement in the Digital Era

The enhancement of judicial systems to ensure justice involves the utilization of artificial intelligence, online courts, research, and development (Putri & Sinaga, 2021). Below are some specifications of each of these innovations:

a. Artificial Intelligence (AI) (Kusumawardani, 2019).

The advancement of artificial intelligence technology has propelled the world into a new era filled with remarkable progress and unlimited innovation potential. AI has surpassed the boundaries of traditional technology and transformed the way we work, interact, and access information. However, amidst the spotlight of this brilliance, the shadow of legal complexity highlights the evolution of AI. With the rapid pace of AI advancement, legal challenges emerge, necessitating evaluation and adaptation of existing regulations. These challenges extend beyond technical aspects and delve into profound ethical, privacy, security, and social impact dimensions. This research aims to thoroughly investigate and analyze the complexity of legal challenges associated with the development of artificial intelligence technology. AI brings an understanding that this technology not only produces tools and systems that replace human roles but also raises significant legal questions. With its ability to process and analyze massive amounts of data, AI raises legal issues related to individual privacy, system security, legal responsibility, and much more.

The development of Artificial Intelligence (AI) technology has been a historic milestone in technological evolution, introducing new opportunities and fundamental changes in how we interact with the digital world. Despite bringing remarkable innovation, AI development also poses several legal challenges that need to be taken seriously. The development of artificial intelligence (AI) and automation has raised various profound ethical questions. Machines capable of self-learning can make decisions without human intervention, raising questions about accountability for machine actions. In Indonesia, the Supreme Court has developed an AI system called Smart Majelis to assist in determining the composition of judges in every case at all levels of the judicial system. According to the Chief Justice, the use of this artificial intelligence system will continue to be developed in first-instance and appellate courts to enhance case-handling performance, while still emphasizing the role of humans as the primary driving force. Although AI technology can enhance the accuracy and efficiency of legal processes, it is important to ensure that human judgment and decision-making remain the primary focus of the process.

b. Online Courts (Kurniawijaya et al., 2021)

The Constitutional Court has issued Constitutional Court Regulation Number 18 of 2009 concerning Guidelines for Electronic Filing (e-filing) and the implementation of remote hearings (video conference). Remote hearings are examination processes conducted by the panel of judges, applicants, respondents, their legal representatives, witnesses, and/or experts online and in real-time through video conferencing technology, allowing visual and verbal interaction as in face-to-face hearings.

The adaptation of judicial institutions in the digital era has considered impacts from several perspectives. First, the potential to enhance public access to justice, with technological support expected to remove barriers of distance and time in seeking justice. Second, the reduction of court costs; although hearings in the Constitutional Court do not incur case fees, online hearings reduce travel and accommodation costs for involved parties. Third, achieving equitable justice for communities across regions.

The Supreme Court of the Republic of Indonesia is exploring the use of online/live-streaming media for the reading of cassation rulings and judicial reviews. This policy is expected to provide transparent and accountable legal services to seekers of justice, as with live broadcasting, the process of reading cassation rulings and judicial reviews no longer requires external sources of information, reducing the risk of fraud under the guise of Supreme Court Officials.

c. Research and Development (Yudoprakoso, 2019)

The Indonesian Constitutional Court has conducted workshops discussing the implementation of artificial intelligence (AI), the Internet of Things (IoT), and cybersecurity in the judicial system. According to the Chief Justice, the utilization of AI systems will continue to be enhanced in first-instance and appellate courts to improve case-handling effectiveness, while recognizing the central role of humans as the primary drivers. This is due to the ongoing technological advancements capable of providing accuracy and precision in supporting work to provide the best services to seekers of justice. However, it is important to remember that the role of humans remains crucial, as technology serves as a tool that can

only operate according to predefined programs, while humans possess the creativity and intelligence to innovate and bring about change.

Sustainable research and development can help identify new opportunities for innovation and improvement in the judicial system. Overall, these innovations have the potential to enhance the efficiency, accessibility, and fairness of the judicial system. However, it is important to ensure that the use of this technology is done with consideration for human rights and the principles of the rule of law, as well as to prevent bias or discrimination.

CONCLUSION

The conclusions of this research highlight the significant impact of technological advances and innovation in law enforcement in the digital era. Technology facilitates increased efficiency in legal processes, provides easier access to information, and provides new mechanisms for investigations. However, challenges related to privacy, ethics, and access gaps are also crucial concerns. Therefore, wise efforts need to be made to ensure that technology and innovation support, not hinder, the principles of justice in the legal system. The implications of this research for the impact of technology and innovation on law enforcement in the modern era include both positive and negative effects. Positive impacts include increased efficiency in law enforcement, while negative impacts can include potential violations of personal data privacy and misuse of technology in law enforcement. By understanding these implications, governments, legal institutions, and technology developers can work together to design solutions that strike a balance between efficiency and fairness in law enforcement in the modern era.

BIBLIOGRAPHY

- Alhidayah, M., Permata, R. R., & Muchtar, H. N. (2023). Analisis Yuridis Pelindungan Paten atas Produk Artificial Intelligence: Studi Komparatif antara Jepang dan Indonesia. *COMSERVA: Jurnal Penelitian Dan Pengabdian Masyarakat*, 3(5). <https://doi.org/10.59141/comserva.v3i5.940>
- Jaya, F., & Goh, W. (2021). Analisis yuridis terhadap kedudukan kecerdasan buatan atau artificial intelligence sebagai subjek hukum pada hukum positif Indonesia. *Supremasi Hukum*, 17(02), 1–11.
- Khumairok, M. (2023). Regulasi Hukum Perbankan Dalam Menghadapi Tren Inovasi Fintech Dan Keberhasilan Industri Perbankan di Era Society 5.0. *Jurnal Multidisiplin Indonesia*, 2(7). <https://doi.org/10.58344/jmi.v2i7.335>
- Kurniawijaya, A., Yudityastri, A., & Zuama, A. P. C. (2021). Pendayagunaan artificial intelligence dalam perancangan kontrak serta dampaknya bagi sektor hukum di Indonesia. *Khatulistiwa Law Review*, 2(1), 260–279.
- Kusumawardani, Q. D. (2019). Hukum Progresif Dan Perkembangan Teknologi Kecerdasan Buatan. *Veritas et Justitia*, 5 (1), 166–190.
- Listiyono, H., Sunardi, S., Utomo, A. P., & Mariana, N. (2022). Pengaruh kemudahan penggunaan dan kemanfaatan learning management system (LMS) terhadap niat penggunaan e-learning. *Jurnal Sisfokom (Sistem Informasi Dan Komputer)*, 11(2), 208–213.
- Lucas, M. (2023). The impact of technology on the criminal justice system Danial Khan Department of public health. Yale University.

- Pibriana, D. (2020). Technology acceptance model (TAM) untuk menganalisis penerimaan pengguna terhadap penggunaan aplikasi belanja online XYZ. *JATISI (Jurnal Teknik Informatika Dan Sistem Informasi)*, 7(3), 580–592.
- Putri, M. C., & Sinaga, E. M. C. (2021). Disrupsi Digital Dalam Proses Penegakan Hukum Pada Masa Pandemi Covid-19. *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional*, 10(1), 79.
- Ravizki, E. N., & Yudhantaka, L. (2022). Artificial Intelligence Sebagai Subjek Hukum: Tinjauan Konseptual dan Tantangan Pengaturan di Indonesia. *Notaire*, 5(3).
- Rudi Natamiharja, R. N. (2022). *HUKUM DAN ERA DIGITAL*.
- Sihombing, E. N. A. M. (2020). Implementasi penggunaan kecerdasan buatan dalam pembentukan peraturan daerah. *KUMPULAN BERKAS KEPANGKATAN DOSEN*.
- Sugiyono, P. D. (2016). *Metode Penelitian Pendidikan*, Cetakan Kelima belas. Alfabeta.
- Yudoprakoso, P. W. (2019). Kecerdasan Buatan Sebagai Alat Bantu Proses Penyusunan Undang-Undang Dalam Upaya Menghadapi Revolusi Industri 4.0 Di Indonesia. *Simbur Cahaya*, 25(2), 134–148.



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