Artificial Intelligence And The Future Of Judicial Systems In Africa Report (2024)

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EXECUTIVE SUMMARY

This report presents a comprehensive analysis of the transformative journey of judicial systems in Africa, focusing on the integration of Artificial Intelligence technologies. The findings highlight how AI is reshaping the continent's judicial landscape, the current state of AI adoption, the potential impacts, and the strategies necessary for successful integration.

Chapter One traces the evolution of Africa's judicial systems, highlighting their transition from traditional methods to the digital era. It underscores the critical role of modernization in enhancing the accessibility and efficiency of justice across the continent, driven by a clear vision and mission for judicial reform.

Chapter Two explores the current state of AI adoption within African Judicial Systems. It provides a detailed overview of both the advancements and gaps in AI integration, emphasising how AI can significantly enhance decision-making, streamline judicial processes, and address systemic inefficiencies. Additionally, the chapter sheds light on the disparities in AI adoption across different countries, offering insights into the uneven progress within the sector.

Chapter Three delves into the potential revolutionary impacts of AI on Africa's Judicial Systems. It discusses the benefits AI could bring, including improved case management, predictive analytics, and greater transparency. The chapter identifies key requirements for realising AI's full potential, such as the need for robust infrastructure, skilled human resources, and supportive policies. Challenges such as ethical concerns, data privacy issues, and resistance to change are also examined.

Chapter Four addresses AI governance, outlining the necessary frameworks and strategies for the effective integration of AI into Africa's judicial systems. It offers actionable recommendations for policymakers and judicial authorities to develop AI governance structures that ensure responsible and equitable implementation of AI technologies. The chapter concludes by proposing a strategic roadmap for AI adoption, aiming to build a more efficient, transparent, and accessible justice system in Africa.

This report emphasizes the transformative potential of AI in Africa's judicial sector while acknowledging the significant challenges that must be addressed. It calls for a collaborative effort among governments, legal professionals, and technology experts to ensure that AI positively contributes to the evolution of justice across the continent.

INTRODUCTION

Africa's judicial systems have a rich and intricate history, deeply woven into the continent's diverse cultural, social, and political fabrics. Over the years, these systems have undergone significant transformations, driven by the imperative to enhance efficiency, accessibility, and fairness in the administration of justice. Today, these systems are increasingly being shaped by the digital revolution.

The rule of law is universally acknowledged across the continent as a cornerstone for ensuring peace, justice, human rights, effective democracy, and sustainable development. However, access to justice has been a persistent challenge for the majority of people in Africa. In many countries, the rule of law is deteriorating, with over six billion people worldwide living in countries where it is in decline, a substantial portion of them in Africa.[1] Amid widespread institutional stagnation, many African countries are experiencing a regression in the rule of law, characterised by justice systems that fail to meet the needs of their citizens.

The table below shows the overall scores and rankings from the World Justice Project (WJP) Rule of Law Index 2023 for African countries. Scores range from 0 to 1, with 1 indicating the strongest adherence to the rule of law.[2]

Country/Jurisdiction	Overall Score	Global Rank
Algeria	0.49	84
Angola	0.43	115
Benin	0.48	90
Botswana	0.59	51
Burkina Faso	0.47	95
Cameroon	0.35	134
DRC	0.34	138
Congo	0.40	122
Côte D'Ivoire	0.45	106
Egypt	0.35	136
Ethiopia	0.38	129
Gabon	0.39	124

1 2023 edition of the World Justice Project (WJP) Rule of Law Index.

2 "World Justice Project Rule of Law Index 2023." World Justice Project, n.d. https://worldjusticeproject.org/rule-of-law-index/downloads/WJPIndex2023.pdf.

The Gambia	0.49	85
Ghana	0.55	61
Guinea	0.41	118
Kenya	0.46	101
Liberia	0.44	112
Madagascar	0.43	114
Malawi	0.52	69
Mali	0.40	121
Mauritania	0.36	133
Mauritius	0.61	46
Morocco	0.48	92
Mozambique	0.38	128
Namibia	0.61	44
Niger	0.44	109
Nigeria	0.41	120
Rwanda	0.63	41
Senegal	0.55	60
Sierra Leone	0.44	110
South Africa	0.57	56
Sudan	0.36	132
Tanzania	0.47	98
Togo	0.45	102
Tunisia	0.52	72
Uganda	0.39	125
Zambia	0.45	105
Zimbabwe	0.40	123

The Index organises data into eight factors that embody the concept of the rule of law, including Civil Justice and Criminal Justice, reflecting the perspectives and experiences of over 149,000 people and 3,400 legal experts globally, supported by a rigorous process of validation and analysis.[3]

3 2023 edition of the World Justice Project (WJP) Rule of Law Index.

From the foregoing, access to justice remains a significant challenge in Africa.[4] Without equitable access, efforts to build a just, free, and fair society—where the rule of law is upheld and democratic principles are followed—are severely undermined. This lack of access fosters corruption, diminishes criminal convictions, exacerbates poverty, and erodes public confidence in government institutions.

While efforts to reform the administration of justice continue, judicial systems in many African countries still grapple with challenges such as corruption, inadequate resources, political interference, and limited access to justice, especially in rural areas. These issues have often undermined the effectiveness of the judiciary, leading to widespread disillusionment and distrust among the population.

In response to these challenges, there has been a gradual incorporation of technology into the judiciary to improve service delivery. Emerging technologies, including Artificial Intelligence, are beginning to play a transformative role in reimagining traditional judicial processes. African nations are now striving to modernise their legal and judicial frameworks to address longstanding challenges, but the integration of AI presents both unprecedented opportunities and complex challenges.

This report examines how AI can help address the difficulties faced by the judiciary, ensuring that the rule of law prevails and that the people of Africa receive effective services and access to justice. It also explores the potential negative impacts of AI integration into the judicial system and outlines strategies to mitigate these effects to ensure better justice delivery across the continent.

4 "Access to Justice in Africa." ETH Zurich, n.d. https://www.files.ethz.ch/isn/112459/NO13OCT09.pdf.

CHAPTER ONE

1.0 Progressive Development of Judicial Systems in Africa

The judicial systems in Africa have seen progressive changes over the years from the pre-colonial, colonial, and current post-colonial periods. They have varied across a diverse range of traditional, colonial, and modern judicial practices, reflecting the continent's complex legal heritage.

1.1 Pre-Colonial Judicial Systems

Before the advent of colonialism, Africa was home to a vast array of societies, each with its own system of governance and justice. These systems were often rooted in customary law, which was a body of unwritten laws and practices passed down through generations. Customary law was based on community values, social norms, and traditional practices, and it varied widely across the continent[1], reflecting the diverse cultures and societies that existed.

In many African societies, justice was administered by local leaders, such as chiefs, elders, or kings, who played dual roles as political and judicial authorities. The emphasis was often on restorative justice rather than punitive measures, with a focus on reconciliation, mediation, and compensation. The communal nature of these societies meant that disputes were typically resolved in a way that sought to restore harmony within the community rather than punishing the offender in isolation.

> The "Lekgotla" Method
>
> Lekgotla is an ancient oral African Indigenous Knowledge System that continue to be practiced in various communities in South(ern) Africa. The process of Lekgotla involves calling the members of the community to address a community concern that might either be something positive or something negative or to resolve a community problem.[2] Historically, traditional leaders have used this method to address community members with any issues that affected the community. Lekgotla is not rigid and uniform but take different forms from community to community and the matter at hand determine its nature.

1 F Kariuki. "African Traditional Justice Systems." Kariuki Muigua & Company Advocates, 2007. http://kmco.co.ke/wp-content/uploads/2018/08/African-Traditional-Justice-Systems.pdf.
2 Mzondi, Abraham. (2022). Lekgotla and Magadi: Ubuntu oriented Practical Theology Research Methods. Pharos Journal of Theology. 103. 10.46222/pharosjot.10328.

The Impact of Colonialism

The advent of colonial powers in the late 19th and early 20th centuries marked a significant turning point in the development of judicial systems in Africa. Colonial administrations imposed Western-style legal systems that often conflicted with and side-lined existing customary laws and practices. Colonial judicial systems were hierarchical, with European law taking precedence over traditional legal systems. By the early 1900s, the emphasis shifted to common law and civilian law in the colonies, with colonialists replicating their judicial systems in Africa for dispute resolution.

These colonial legal systems were designed to serve the interests of the colonial powers, often prioritising the protection of foreign settlers and the exploitation of African resources. As the colonists solidified their control over Africa, they devised legal frameworks to exercise jurisdiction in territories not part of their dominions, incorporating English law and other Western laws. In many cases, colonial authorities established dual legal systems: one for the European settlers and another for the indigenous populations.

> In the East African region, jurisdiction in the courts was mandated to conform to the common law, doctrines of equity, and statutes of general application in force in England as of a specific late nineteenth or early twentieth-century date.[3]

These colonial legal systems led to the erosion of traditional governance structures and the alienation of indigenous populations from their own legal traditions, and were often seen as foreign and illegitimate by the African populations, leading to a lack of trust in the judicial process.

Post-Colonial Judicial Systems

The post-colonial period, beginning in the mid-20th century, saw African nations gaining independence and taking on the challenge of establishing their own judicial systems. Many newly independent states inherited the legal frameworks and institutions left behind by the colonial powers, leading to a continuation of the colonial legal systems in many respects, which to a great extent are used to date. However, there was also a concerted effort in some countries to revive and incorporate elements of customary law that vary across different ethnic and cultural groups into the formal judicial system.

In countries like Kenya, Ghana, and Nigeria, for example, customary law was recognized alongside statutory law, allowing for a hybrid legal system that seeks to bridge the gap between indigenous traditions and modern legal practices. Some countries start with local or customary courts/Tribunals that handle minor matters based on traditional laws and practices. For example, Liberia, Malawi, Namibia, and South Africa recognize “traditional courts” or “traditional communities” with their own justice systems based on customary law. Traditional authorities handle various disputes, including

3 H. F. Morris. “Some Developments in the Administration of Justice in East Africa Since Independence,” n.d. https://journals.co.za/doi/pdf/10.10520/AJA02562804_872.

civil issues, family law, inheritance, minor property damage, and boundary disputes. This dual system has persisted in many African countries, where customary law continues to play a significant role in matters such as family law, land disputes, and community governance.

In most of these instances, the judicial systems are characterised by heavy reliance on paper-based documentation, manual processes, and physical presence in courtrooms. This has resulted in inefficiencies, delays, and accessibility issues. Records are manually maintained, and case management is cumbersome, affecting the speed and transparency of judicial processes.

Early Adoption of Digital Technologies in African Judicial Systems

The early 21st century saw the initial steps towards digitization in African judicial systems. Technology is playing an increasingly important role in addressing some of the identified challenges faced by African judicial systems. The digital revolution has brought about significant changes in the way justice is administered. Countries like South Africa, Kenya, and Nigeria began to introduce electronic case management systems to streamline court processes and reduce the backlog of cases. These systems allowed for the digitization of court records, making it easier for judges, lawyers, and litigants to access information and track the progress of cases. Technological advancements such as online legal resources, and digital platforms for dispute resolution are creating the potential to enhance the efficiency, transparency, and accessibility of the judiciary across the continent.

The early phases of digitization have focused primarily on automating administrative tasks such as case docketing and record management, which laid the groundwork for moving from cumbersome paper-based systems to more efficient electronic databases. As technology evolves, courts continue to implement e-filing systems, allowing legal documents to be submitted electronically. This has not only reduced the reliance on physical paperwork but also sped up the filing process, significantly improving overall efficiency.

The advent of online portals and databases further transformed the judicial landscape, making legal resources more readily accessible to judges, legal professionals, scholars, and the public. These legal databases and repositories provided quick access to statutes, case laws, and research materials, revolutionising the way legal research is conducted.

The COVID-19 pandemic served as a critical turning point, accelerating the adoption of virtual court proceedings across Africa. This marked a significant departure from traditional in-person hearings, with courts increasingly relying on video conferencing platforms to conduct remote hearings, reshaping the future of judicial processes on the continent.

The digitization of court records has revolutionised the operation of courts in Africa by facilitating easier storage, retrieval, and management of case-related documents, significantly reducing reliance on physical records and leading to more organised and efficient record-keeping. In addition, the adoption of digital technology, including case management systems, process automation, online conflict resolution, and virtual courts, has fostered a more innovative and efficient justice system

across the continent.[4]

Below-mentioned is an analysis of a few countries and how they have used Technology in their Judicial system.

Table 1: Digitization efforts at national level for Judicial Systems:

Country	Digitization Efforts
South Africa	• Virtual courts; • Case Management; • Case backlog clearance; • Digitization for dispute resolution.[5]
Kenya	• e-filing commenced in all courts within Nairobi,[6] (8,314 e-filing accounts created in 2020/21). • Electronic payment of court fees (A total of KSh939, 975,091 comprising court fees, fines and deposits collected using the portal). • Adoption of an electronic Case Tracking System (CTS) where 1,359,297 cases had been captured. • 26 court rooms installed with the CRTS equipment. • Internet upgrade from 1.326 Gigabytes per second (Gbps) to 4.215 Gbps, • Audit of ICT systems to enhance robustness and security of the systems deployed in the Judiciary. • Judiciary Advocates Management System (JAMS) launched by the Judiciary for use by Advocates.
Malawi	• Adopted an electronic case management system; • Use of ICT for security of court records; • Digital tracking and retrieval of case files, leading to efficiency in justice delivery.[7]

4 Cordella & Contini, 2020; International Development Law Organization, 2020

5 LexisNexis, Covid 19 pushes courts to new era, available at https://www.lexisnexis.co.za/news-and-insights/virtual-working/covid-19-pushes-courts-to-new-era last accessed on November 16, 2022.

6 State of the Judiciary and the Administration of Justice annual report, 2021-2022.

7 Towards e judicial services in Malawi: Implications for justice delivery, 2019, W. Chawinga, C. Chawinga, S. Kapondera & G. Chipeta – Published at https://www.researchgate.net/publication/337909233_Towards_e-judicial_services_in_Malawi_Implications_for_justice_delivery.

Botswana	• Adopted the use of technology, which resulted in digitization, leading to "improvements in case file management at the Gaborone Magisterial District. • Electronic systems for retrieval of case files; and incidents of lost and misplaced case files went down significantly. [8]

Tanzania	• Adopted the JSDS Case Management Version 2.0;
	• Tanzania Advocates Management System (TAMS);
	• Government Electronic Payment Gateway (GEPG) and Video conferencing facilities in all 16 High Court centers, 4 High Court Divisions and 17 Prisons centers.
	• This adoption has eased:
	  • Case registration,
	  • Case tracking,
	  • Retrieval of proceedings and judgments and case information.
	The E-government has ensured that court users can pay court fees using the methods that they use to make their day to day payments.

Namibia	• Adoption of Namibia Case Information System (NAMCIS), an e-Justice portal that allows users to track case status, view documents and view court dates. • The Judiciary has a livestream section on its website, which allows the public to access any publicly streamed court proceedings and their Court records are kept safe and secure, reducing loss of records, and also aiding search ability of data. • The use of e - Justice has ensured that court users do not have to physically go to court to find out about case status updates. • Use of technology for search ability and retrieval of court cases.
Zimbabwe	Integrated Electronic Case Management System[9] which includes • electronic filing of documents (e-filing), • electronic payment of court fees (e-payment), • virtual court hearing platform, • the online tracking of court cases • Internet access to judgements.

8 Implementation of the Court Records Management System in the delivery of justice at the Gaborone Magisterial District, Botswana, 2018, T.L Mosweu, L. Kenoi – Published at https://www.emerald.com/insight/content/doi/10.1108/RMJ-11-2017-0033/full/html?skipTracking=true.

9 Poshai, L. and Vyas-Doorgapersad, S. (2023) *Digital justice delivery in Zimbabwe: Integrated electronic case management system adoption*. Available at: https://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S1560-683X2023000100022#:~:text=According%20to%20Malaba%20(2022b)%2C,and%20Internet%20access%20to%20judgements. (Accessed: 13 August 2024).

CHAPTER TWO

The Role of Artificial Intelligence in Transforming Africa's Judicial Systems

Africa and the world at large is experiencing the fourth industrial revolution that builds on the inventions of the Third Industrial Revolution (digital revolution) which brought us computers, other kinds of electronics, the Internet, and much more. This revolution extends these innovations through four disruptive technology categories:[1]

- connectivity, data, and computational power (including cloud technology, blockchain, and sensors);
- analytics and intelligence (featuring advanced analytics, machine learning, and AI);
- human–machine interaction (with VR, AR, robotics, and autonomous vehicles); and
- advanced engineering (like 3D printing, renewable energy, and nanoparticles).

This revolution is characterised by what is commonly referred to as, 'Artificial Intelligence.' This emerging technology is reshaping various sectors, and represents the next frontier in the technological transformation of African judicial systems.

What is Artificial Intelligence?

Artificial Intelligence refers to technology that enables machines to mimic human intelligence and perform tasks that typically require human intervention. AI includes machine learning and deep learning, where algorithms learn from data to improve their performance over time.[2]

Machine learning and deep learning are key sub-disciplines within AI, both utilising neural networks to analyse and interpret large volumes of data. They consist of layers of interconnected nodes that extract features from the data and make predictions about what the data represents.

Generative AI encompasses deep-learning models that learn from extensive datasets to produce outputs that are statistically similar but not identical to the original data. These models encode simplified representations of their training data to generate new, related works. While generative models have traditionally been used for numerical data analysis, deep learning has expanded their applications to images, speech, and other complex data types.

1 "What Are Industry 4.0, the Fourth Industrial Revolution, and 4IR?" McKinsey & Company, August 17, 2022. https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-are-industry-4-0-the-fourth-industrial-revolution-and-4ir.
2 "What Is Artificial Intelligence (AI)?" IBM, n.d. https://www.ibm.com/topics/artificial-intelligence.

AI systems have a wide range of real-world applications, including:

- Speech Recognition that uses natural language processing (NLP) to convert spoken language into text.
- Customer Service characterised by virtual agents and chatbots that are increasingly replacing human agents for handling frequently asked questions and providing personalised advice.
- Computer Vision that allows computers to interpret and act upon visual data from images and videos. Applications include photo tagging, radiology imaging, and self-driving cars.

Models like GPT-3/4, BERT, and DALL-E 2 have demonstrated the capabilities of generative AI. Future developments are expected to leverage foundation models trained on large, unlabeled datasets, enhancing their adaptability across various tasks and domains. This shift towards broad AI systems is anticipated to accelerate AI adoption in enterprises by reducing labelling requirements and enabling efficient, accurate automation across diverse applications.

AI has become the go-to technology for many sectors across nearly every industry. Innovations in AI continue to shape various industries, driving emerging technologies like big data, robotics, and IoT, with generative AI further expanding its possibilities and popularity. According to a 2023 IBM survey, 42% of enterprise-scale businesses integrated AI into their operations, and 40% are considering it. 38% of organisations have implemented generative AI, while 42% are considering it.[3]

AI is predicted to grow increasingly pervasive as technology develops, revolutionising sectors such as healthcare, banking, and transportation. The judicial sector is no exception, with AI adding significant value across its various domains by enhancing efficiency, accuracy, and decision-making.

Artificial Intelligence Adoption in Africa's Judicial Systems

The adoption of AI in African judiciaries is slow but progressive. Judicial sectors are exploring how to implement these technologies for more effective justice delivery. While some countries have embraced AI for various legal tasks, there is variability in how others are adopting and utilising these technologies within their legal frameworks. This is against the backdrop of African courts facing a profound crisis, characterised by an unprecedented backlog of cases awaiting trial. This situation is compounded by the overwhelming volume of evidence and legal documents that need to be processed, limited access to essential legal resources, and the complexities of managing cases effectively. Additionally, understaffing and inefficient processes further exacerbate the challenges, straining the judicial system and impeding the timely delivery of justice.

As one of the largest "text processing industries," the judiciary heavily relies on language, documents, and texts as the core of its work, making the judiciary particularly suited for the adoption of technologies like automation to aid in document processing. AI-powered tools can sift through vast amounts of legal data, including case law, statutes, and legal precedents, to provide judges and law-

3 "Global AI Adoption Index 2023." IBM, n.d. https://www.multivu.com/players/English/9240059-ibm-2023-global-ai-adoption-index-report/.

yers with relevant information quickly and accurately. Expanding the use of emerging technologies, especially AI, is now seen as a crucial step in addressing these challenges.

One forward step toward AI adoption in Africa that has already been achieved is the digitization of judicial systems. By converting analog information into digital formats, such as the use of management systems, e-filing, and legal databases, these systems generate rich, structured datasets crucial for AI algorithms.

Similarly, with digitization adopted by both law firms and court systems, a trove of data in the form of court opinions, statutes, regulations, books, practice guides, law reviews, legal white papers and news reports are available to be used to train both traditional and generative AI foundation models by judicial agencies. In this regard, AI can be used to develop predictive analytics tools that can assess the likely outcomes of legal cases based on historical data. These tools can help judges and lawyers anticipate the potential consequences of their decisions, leading to more consistent and fair judgments.

> Across the continent, AI is already being utilised, with judges, judicial support staff, prosecutors, and lawyers using chatbots powered by Large Language Models (LLMs) to draft legal documents, formulate judicial decisions, and construct detailed arguments for court hearings.[4] This marks a significant step forward in leveraging technology to address long-standing inefficiencies and enhance the administration of justice in Africa.

This transformation improves data accessibility, management, and analysis, providing the high-quality, comprehensive data that AI systems require to function effectively. In essence, digitization not only streamlines judicial processes but also lays a solid foundation for integrating advanced technologies into the judicial sector.

Some African countries have already started implementing AI into their judicial systems as discussed below.

Country Spotlight - Morocco

Morocco is taking steps to integrate AI into its judicial system, building on its progress in digitising various services. The country has started using AI in its courts to transcribe rulings, conduct research, retrieve archived texts, and more. The Justice Minister, Abdellatif Ouahbi, confirmed that the government had purchased an AI program and handed it to the President of the Supreme Judicial Council for distribution in the country's courts.[5]

4 Juan David Gutiérrez, 'Judges and Magistrates in Peru and Mexico Have ChatGPT Fever' (Tech Policy Press, 19 April 2023) <https://techpolicy.press/judges-and-magistrates-in-peru-and-mexico-have-chatgpt-fever/> accessed 16 October 2023; Juan David Gutiérrez, 'ChatGPT in Colombian Courts: Why We Need to Have a Conversation about the Digital Literacy of the Judiciary' (VerfBlog, 23 February 2023) <https://verfassungsblog.de/colombian-chatgpt/>; Juan David Gutiérrez, 'AI Technologies in the Judiciary: Critical Appraisal of Large Language Models in Judicial Decision-Making' in Regine Paul, Emma Carmel and Jennifer Cobbe (eds), Handbook on Public Policy and AI (Edward Elgar Publishing forthcoming)

5 Philippine News Agency. "Morocco Uses AI in Its Courts." June 12, 2024. https://www.pna.gov.ph/articles/1226782.

"We have purchased an AI program and handed it over to the President of the Supreme Judicial Council for distribution among judges. This program transcribes the judges' verdicts instead of them writing them manually,"

In addition to improving the speed of legal processes, the ministry plans to leverage AI to better utilise judicial precedents. By facilitating access to judgments stored in digital systems, AI will assist judges in forming well-informed views on the cases before them. This approach aims to streamline legal research and ensure consistency in judicial decision-making.[6]

The ministry also intends to use AI to record and transcribe court sessions automatically, addressing the challenges posed by the Darija dialect and the Amazigh language. This initiative is part of broader efforts to establish a smart, integrated digital system within the judiciary. To achieve these goals, the Ministry of Justice is seeking partnerships with leading international AI organisations and collaborating with the Supreme Council of the Judiciary, underscoring Morocco's commitment to modernising its justice system through advanced technology.[7]

Country Spotlight - Tanzania

Tanzania is leading the East African community in integrating AI into its judicial system, becoming one of the first countries in Africa to implement AI in the sector. This initiative aims to expedite court processes and enhance efficiency in managing case backlogs. A key aspect of this transformation is the introduction of an AI-driven transcriptions and translations system.[8] This system is designed to handle the diverse dialects of Kiswahili, the national language spoken across Tanzania's mainland and Zanzibar, as well as English, facilitating real-time, accurate translations and transcriptions.

The adoption of AI in the judiciary was officially announced by Chief Justice Professor Ibrahim Juma during a Law Week event in Dodoma in February.[9]

"Their primary job is to listen and make decisions, not to do transcriptions," Juma asserted. "And to hire stenographers competent in both languages for all 34 judges serving the Court of Appeal, 105 judges in the High Court, and over 2 000 magistrates at primary and district court level is an arduous and expensive undertaking, so this is one area where we expect AI technology to truly provide relief," he added.

The project is being executed under a four-year, $3 million contract with Italian company Almawave, which specialises in AI and Big Data solutions. The initial phase targets 50 courtrooms out of Tanzania's 169, with 11 courtrooms already equipped with AI technology. Almawave's system is tailored to recognize and process various speech patterns in Kiswahili and English, aiming to reduce manual

6 Adil Faouzi. "Morocco's Justice Ministry to Integrate Artificial Intelligence in the Court System." Morocco World News, July 15, 2024. https://www.moroccoworldnews.com/2024/07/363918/moroccos-justice-ministry-to-integrate-artificial-intelligence-in-court-system.
7 Ibid.
8 "AI-Powered Transcription: The Key To Faster Resolutions." thinkowl.com, June 13, 2024. https://www.thinkowl.com/blog/ai-powered-transcription-owlforce.
9 Kaijage Robert. "Tanzania's Court System Goes for AI Solutions." Africa Legal, March 4, 2024. https://www.africa-legal.com/news-detail/tanzania-s-court-system-goes-for-ai-solutions//.

errors and delays in court documentation.[10]

The AI system's outputs can also be reviewed by human staff to ensure accuracy before becoming official records. This technological advancement is expected to streamline the judicial process, reduce errors, and ultimately improve the efficiency of Tanzania's legal system.

Country Spotlight - Kenya

The Kenyan Judiciary is set to implement an AI-powered transcription system to enhance court proceedings. Speaking at the 2024 Chief Justice's Roundtable, Chief Justice Martha Koome announced that this AI tool is a key component of the Judiciary's ongoing digitization efforts, providing transcription services across multiple court stations. Koome also mentioned that as the project progresses, a dedicated Judiciary Transcription Centre will be established to extend these services nationwide.[11]

"This project, which received significant support from KEPSA during its pilot phase under the Ajira Digital Project, aims to accelerate the transcription of court proceedings," CJ Koome noted.

A Global Perspective on the Use of AI in Judicial Systems: Spotlight on India, Germany and China

India

India's judiciary is increasingly adopting AI, with recent cases highlighting its growing role in legal research and decision-making.

In November 2019, the Apex Court launched an indigenously engineered neural translation tool, SUVAAS, to translate judicial orders and rulings from English to vernacular languages faster and efficiently. The system uses AI to assist in translating judgements into regional tongues.[12]

In 2021 the Supreme Court of India launched its first AI Portal - SUPACE (Supreme Court Portal for Assistance in Court Efficiency)[13]: It was created to first comprehend the judicial processes that need automation, and by summarising the judicial methods that can be computerised through AI, it helps the Court increase efficiency and decreases pending cases. SUPACE is a blend of human and artificial intelligence, and not used in decision-making. The role of AI will be limited to the collection and analysis of data.

On February 21, 2023, Chief Justice DY Chandrachud of India introduced AI for transcribing hearings in the Supreme Court. This led to the Supreme Court's official publication of transcripts from

10 Kaijage Robert. "Tanzania's Court System Goes for AI Solutions." Africa Legal, March 4, 2024. https://www.africa-legal.com/news-detail/tanzania-s-court-system-goes-for-ai-solutions//.
11 Fridah Naliaka. "Judiciary to Roll out AI-Powered Tool for Transcription of Court Proceedings." Citizen Digital, July 17, 2024. https://www.citizen.digital/news/judiciary-to-roll-out-ai-powered-tool-for-transcription-of-court-proceedings-n346025.
12 Shanthi, S. (2021) Behind SUPACE: The AI Portal Of The Supreme Court of India , analyticsindiamag.com. Available at: https://analyticsindiamag.com/ai-origins-evolution/behind-supace-the-ai-portal-of-the-supreme-court-of-india/ (Accessed: 11 August 2024).
13 SUPAC https://analyticsindiamag.com/ai-origins-evolution/behind-supace-the-ai-portal-of-the-supreme-court-of-india/

Constitution Bench proceedings. The Court embarked on live transcription of hearings using AI technology. This initiative was first used during the live proceedings of the constitution bench hearing concerning the Maharashtra political controversy. The AI technology utilised for this purpose was developed by Technology Enabled Resolution (TERES), a start-up based in Bangalore[14]

In March 2023, Justice Anoop Chitkara of the Punjab & Haryana High Court used ChatGPT to deny bail in an assault case, relying on the AI for broader legal context.[15]

In 2024, Justice A Guneshwar Sharma of the Manipur High Court, used ChatGPT 3.5 for additional research in a case involving Zakir Hussain, a dismissed Village Defence Force (VDF) member. The AI clarified the role of VDF volunteers, leading to the court overturning Hussain's dismissal due to procedural lapses.[16]

These initiatives reflect India's cautious yet evolving approach to AI in the judiciary and crucial efforts to increase access to justice.

Germany

Germany is leveraging AI to enhance the efficiency of its judicial processes, following the recommendation of the Ministry of Justice in Baden-Württemberg.

The AI system, developed by IBM® and named OLGA,[17] uses natural language understanding (NLU) to categorise cases, extract metadata, and expedite case resolutions. OLGA allows judges and clerks to quickly sift through thousands of documents, applying specific search criteria to find relevant information while preserving the case history. The AI provides contextual information about lawsuits, helping users gain a comprehensive understanding of each case. By automating repetitive tasks, OLGA enables judges to focus on more complex issues, with the courts anticipating a potential reduction in case processing time by over 50%.[18] OLGA has no interference with decision-making.

In 2023, The Frankfurt District Court collaborated with IBM to test an AI system called "Frauke" (Frankfurt Judgment Configurator Electronic) to streamline the handling of air passenger rights lawsuits. Each year, the court processes between 10,000 and 15,000 cases related to passenger rights, such as flight delays, which require judges to draft nearly identical judgments repeatedly.[19] In a recent proof-of-concept, Frauke was able to extract case-specific data, such as flight numbers and delay times, from pleadings and use pre-written text modules to expedite the drafting of judgement

14 Supreme-court-of-india-uses-ai-to-transcribe-live-proceedings
15 Sparsh Upadhyay. "In First, Punjab And Haryana High Court Seeks ChatGPT's Response On Bail Jurisprudence Across The World," March 28, 2023. https://www.livelaw.in/news-updates/punjab-and-haryana-high-court-chatgpt-reply-bail-jurisprudence-world-224929.
16 Shivani Bhargava. "Manipur High Court Uses ChatGPT To Conduct Research During Verdict," May 30, 2024. https://www.medianama.com/2024/05/223-manipur-hc-chatgpt-usage-research-verdict/.
17 Sascha Slomka, Florian Scheil, und Anna Helle. "Experiential and Incremental Implementation," July 18, 2023. https://www.ibm.com/blogs/digitale-perspektive/2023/07/experiential-and-incremental-implementation/.
18 Eckard Schindler. "Judicial Systems Are Turning to AI to Help Manage Vast Quantities of Data and Expedite Case Resolution." IBM, January 8, 2024. https://www.ibm.com/blog/judicial-systems-are-turning-to-ai-to-help-manage-its-vast-quantities-of-data-and-expedite-case-resolution/.
19 Schindler, E. (2024) *Judicial systems are turning to AI to help manage vast quantities of data and expedite case resolution*, *IBM*. Available at: https://www.ibm.com/blog/judicial-systems-are-turning-to-ai-to-help-manage-its-vast-quantities-of-data-and-expedite-case-resolution/ (Accessed: 11 August 2024).

letters.[20] This AI system has significantly reduced the processing time for preparing judgments, allowing judges to focus on more complex aspects of their work.

The demand for an automated solution arrives as Germany's government has mandated that electronic file management be implemented by courts in all civil, administrative, social and criminal proceedings by 2026 as part of digitalization goals established by the European Union (EU).[21]

China

China continues to pour massive resources into developing artificial intelligence that will have a greater reach into everyday life and functions of the state. As of 2021, China had already filed the most AI-related patent applications globally, highlighting the country's commitment to harnessing the power of this adaptable new technology.[22] Now, even Chinese courts are using AI to assist with making legal decisions. The country reportedly has more than 100 robots in courts to recover case histories.[23]

In 2017, at the litigation centre of Beijing No. 1 Intermediate People's Court, a robot by the name of Xiao Fa was put into operation.[24] Xiao Fa offers legal advice and helps the public get to grips with legal terminology. She knows the answer to more than 40,000 litigation questions and can deal with 30,000 legal issues. This machine can print documents and can also verbally respond to questions and take questions via a touchscreen or keyboard on its screen.[25]

In 2019, The Hainan High People's Court in China implemented an AI system that utilises language processing and deep-learning technologies to generate sentencing decisions based on analysed case law data. This system enhances the consistency and accuracy of judicial rulings while reducing the time required for judgments by over 50%.[26] It is part of a broader array of technologies adopted by the Chinese judiciary to assist judges and legal professionals in retrieving decisions, offering litigation guidance, and predicting case outcomes.[27]

In 2019, a court in the city of Hangzhou located south of Shanghai started employing AI. The judge's assistant program called Xiao Zhi 3.0, or "Little Wisdom," first assisted in a trial of 10 people who had failed to repay bank loans. Previously, it would have taken 10 separate trials to settle the issue, but with Xiao Zhi 3.0, all the cases were resolved in one hearing with one judge and a decision was available in just 30 minutes.[28]

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20 Ibid
21 Schindler, E. (2024) *Judicial systems are turning to AI to help manage vast quantities of data and expedite case resolution*, *IBM*. Available at: https://www.ibm.com/blog/judicial-systems-are-turning-to-ai-to-help-manage-its-vast-quantities-of-data-and-expedite-case-resolution/ (Accessed: 11 August 2024).
22 *How Is China Using AI?* (2023) *apac-insider.com*. Available at: https://www.apac-insider.com/how-is-china-using-ai/ (Accessed: 11 August 2024).
23 Shanthi, S. (2021) Behind SUPACE: The AI Portal Of The Supreme Court of India , analyticsindiamag.com. Available at: https://analyticsindiamag.com/ai-origins-evolution/behind-supace-the-ai-portal-of-the-supreme-court-of-india/ (Accessed: 11 August 2024).
24 *Robot gives guidance in Beijing court* (2017) *chinadaily*. Available at: https://www.chinadaily.com.cn/china/2017-10/13/content_33188642.htm (Accessed: 11 August 2024).
25 Ibid
26 Yuan Shenggao, "AI-assisted sentencing speeds up cases in judicial system", China Daily, Updated 18 April 2019.
27 Baker McKenzie, "Adoption of AI in Chinese Courts Paves the Way for Greater Efficiencies and Judicial Consistency", 28 February 2018.
28 Zhabina, A. (2023) *How China's AI is automating the legal system* , *dw*. Available at: https://www.dw.com/en/how-chinas-ai-is-automating-the-legal-

Xiao Baogong Intelligent Sentencing Prediction System, another legal AI platform, is also used by judges and prosecutors in criminal law. The system is able to suggest penalties based on big data analysis of case information and prior judgments from similar cases.[29]

Using an AI-enabled robot chatbot named "FaXiaotao," Wusong Technology is being used in China to digitise the way courts operate by providing users with case analyses and assisting them in finding attorneys.

Austria

In the Australian Family Law courts, a collaboration between AI experts and legal professionals has led to the development of the Split-Up system, an AI-driven tool designed to assist judges in property dispute cases related to divorce and other family law matters. This system combines rules-based reasoning with neural networks to predict potential outcomes for property settlements.[30] Judges use the Split-Up system to support their decision-making processes, particularly in identifying marital assets that should be included in settlements and determining the appropriate division of these assets. The system takes into account 94 relevant factors, such as contributions, available resources, and future needs, to provide an analysis that guides judges in deciding what percentage of the shared assets each party should receive, a decision ultimately left to judicial discretion.

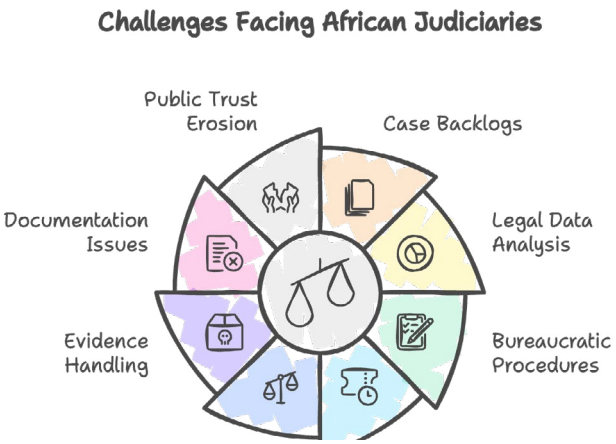
The AI system also aims to offer transparent reasoning behind its suggestions. To achieve this, it employs Toulmin Argument structures to clearly articulate the rationale behind its predictions, thereby helping judges better understand and communicate the basis for their final property orders.[31]

system/a-64465988 (Accessed: 11 August 2024).
29 Ibid
30 John Zeleznikow, Andrew Stranieri. "The Split-up System: Integrating Neural Networks and Rule-Based Reasoning in the Legal Domain," n.d
31 Ibid.

CHAPTER THREE

Revolutionary Impacts of Artificial Intelligence on African Judicial Systems

It is widely recognized that judiciaries across Africa are confronting significant challenges. Among the most pressing issues are the mounting case backlogs, the daunting task of analysing vast amounts of legal data and evidence, and the bureaucratic and complex filing procedures that hinder efficiency. Inefficient case tracking and poor case management systems further complicate matters, leading to prolonged trial processes often due to a shortage of judges or procedural delays. The inconsistent application of law, resulting from variability in judicial interpretation, adds another layer of complexity, leading to unpredictable outcomes. Additionally, the proper handling and preservation of evidence remains a challenge, while inadequate documentation and record-keeping often result in lost or incomplete case files. Public trust in the judicial system is further eroded by perceptions of corruption and a lack of transparency.



In light of these challenges, the advent of Artificial Intelligence presents a timely opportunity for judicial authorities to embrace emerging technologies to enhance service delivery within the sector. The role of AI in modern jurisprudence is gaining global attention as the technology, which has already revolutionised many industries, begins to make its way into the judicial sphere.

One of the most critical impacts of AI is its **ability to manage case backlogs** by automating the processing of repetitive tasks:

- AI-driven predictive models to prioritise cases based on urgency and complexity, enabling courts to allocate resources more effectively.

By **automating administrative tasks** such as scheduling, document handling, and initial case assessments, AI reduces the administrative burden on court staff, allowing them to focus on more substantive work.

AI-powered tools have the ability to quickly sift through vast amounts of legal texts, case law, and evidence, identifying relevant information and suggesting potential legal precedents. This accelerates the preparation process for trials and hearings, enabling judges and legal teams to make informed decisions faster.

AI can be **programmed to handle procedural tasks** such as bail hearings and issuing injunctions, allowing human judges to concentrate on more complex legal matters.

AI's impact extends beyond case management; it also **enhances legal research and document drafting.**

- AI-powered research tools automate the process of sifting through vast amounts of legal data, integrating information from various sources to provide accurate legal research and advice.
- AI can streamline the drafting of legal documents by generating initial drafts based on standard templates and previous case data, reducing the time spent on routine paperwork.

AI also improves accessibility in the judicial system by **providing translation and language processing tools,** making legal resources available in multiple languages spoken across Africa. This ensures that legal information is accessible to a broader audience, including those in remote or underserved areas.

Risk assessment algorithms can assist the judiciary in **making informed bail decisions.** By evaluating the probability of a defendant reoffending or not appearing in court, these tools help reduce the influence of biases in human judgement, making the process more objective and data-driven.

The judiciary can adopt AI-driven sentencing tools to help research various factors to suggest fair sentencing, aiming to decrease disparities and enhance consistency.

Organising information is another key impact. Identifying patterns in text documents and files can be particularly useful when sorting through large volumes of cases or dealing with complex cases with extensive information. A notable example from the United States is eDiscovery, an automated process used to investigate electronic data prior to court proceedings. eDiscovery employs machine learning, which, through training, determines the most effective algorithm for extracting relevant information from vast datasets. The involved parties agree on the search terms and coding used, and the judge reviews and approves the agreement. This method of document analysis is recognized by courts in both the United States and the United Kingdom,[1] offering a faster and more accurate alternative to manual file research.

1 The first case in which this methodology was accepted as legally valid was Anti-Monopoly, Inc. v. Hasbro, Inc., 1995 WL 649934 (S.D.N.Y., Nov. 3, 1995), by Andrew Peck, magistrate in the Southern District of New York. In Da Silva Moore v. Publicis Groupe & MSL Group, No. 11 Civ. 1279 (ALC) (AJP) (S.D.N.Y., Feb. 24, 2012) Peck decided that eDiscovery is an acceptable way of searching for relevant digital information in applicable cases, in Rio Tinto PLC v. Vale S.A., et al., 2015 WL 872294 (S.D.N.Y., Mar. 2, 2015) he approved the parties' stipulated review protocol for the technology assisted review (TAR) of documents, noting judicial acceptance of the practice when proposed by the parties and the emerging issue of disclosure of the seed set used to train the program. And in Hyles v. City of New York, et al., No. 10 Civ. 3119 (AT) (AJP) (S.D.N.Y., Aug. 1, 2016) he wrote that "Even though TAR will be permitted in cases before his court, its use won't be mandated. In the United Kingdom, the practice was also recognized in High Court of Justice Chancery Division, U.K. (2016). Pyrrho Investments Ltd v. MWB Property Ltd [2016] EWHC 256 (Ch).

AI has the potential to significantly improve access to justice, a core value of the judiciaries in Africa. Generative AI, in particular, offers the promise of making the law more accessible and usable for the people the justice system is meant to serve.

Challenges facing AI Adoption for Africa's Justice sector

Adopting AI in Africa's judicial systems will be a complex and gradual process. From the outset, several significant challenges are expected to hinder and delay this adoption, including:

Structural Challenges

1. Data Limitation

Examining the current AI models developed globally reveals a significant underrepresentation of African datasets in most training datasets. This gap not only limits the effectiveness of AI applications across the continent but also perpetuates broader issues of bias within these systems.

This underscores a critical challenge: Africa faces a significant data limitation problem, lacking the quality, accuracy, and completeness of datasets necessary for effectively training AI algorithms. It's well-known that AI systems perform best when trained on comprehensive and diverse datasets. However, the majority of data used for training these systems predominantly originates from North America, Europe, and Asia.

The judicial sector across Africa faces this data challenge that will hinder the development and adoption of advanced technologies like AI. Among the 55 countries on the continent, only a small fraction, at most 10, have established legal databases or repositories. This means that approximately 18.18% of African nations have accessible legal databases, leaving the vast majority without a centralised, reliable source for legal information. This presents several critical issues:

- In most countries, legal precedents, laws, policies, and judicial decisions are either not reported or not centralised in an accessible location. This absence will make it extremely difficult for AI developers to access necessary legal information, leading to inconsistencies in training these datasets for AI applications.

- Even in the countries with existing legal databases, the available data is often plagued by inaccuracies, incompleteness, underrepresentation, biases, or even corrupt judgments. Creating a significant gap in the legal record and making it difficult to find comprehensive legal data.

This lack of reliable, comprehensive legal datasets poses a major obstacle for the judiciary to develop AI systems that could improve judicial processes. AI models require large, high-quality datasets to function effectively, and without access to accurate and complete legal records, these models will struggle to understand or interact appropriately with the nuances of African environments, languages, and cultural contexts. This could lead to AI systems that perpetuate existing biases or fail to meet the needs of the communities they are intended to serve.

2. Lack of resources for the compute and infrastructure.

Africa's infrastructure deficit presents a significant barrier to the deployment and effectiveness of AI technologies. One of the key challenges is the lack of reliable electricity, which is crucial for powering AI systems. Machine learning models, especially those involving deep learning and large-scale computations, consume substantial amounts of energy. For instance, training a model like GPT-3 requires approximately 1,300 megawatt hours (MWh) of electricity, about the annual consumption of 130 US households.[2] This high energy demand highlights the disparity between the needs of advanced AI technologies and the current state of Africa's electricity infrastructure.

For the judiciary and other sectors in Africa to develop and implement their own AI models, a substantial increase in compute power and infrastructure is required. Without significant improvements in electricity access and stability, the deployment of AI technologies will remain limited, hampering their potential impact and effectiveness across the continent.

3. Limited skills, training and capacity to use the AI tools.

There is a shortage of skilled AI professionals in Africa which is a significant barrier to adoption. African countries struggle to produce and retain talent with expertise in AI, machine learning, and data science. This skills gap impedes the development and deployment of AI applications across various sectors including the judiciary.

4. Lack of AI regulatory framework

No African country has a defined AI law. Only nine have AI strategies and policies with at least 3 at the development stages. The absence of a regulatory framework for AI creates significant challenges for its implementation and adoption for the judicial sector. The challenges include Legal uncertainty, Ethical and privacy concerns, inconsistent standards across different jurisdictions and more.

Without clear regulations, developers may be unsure about the legal implications of their AI systems, leading to hesitation in adopting new technologies due to fears of potential legal consequences or compliance issues. In addition, AI systems could be used in ways that cause harm, such as biassed decision-making or privacy violations, undermining public trust.

Regarding data protection and privacy, only 36 of 55 countries have established data protection laws, and only a few have fully implemented these laws and appointed regulatory bodies for oversight. AI systems rely on vast amounts of data, and without stringent regulations, there is a risk of misuse or mishandling of personal information. This can lead to privacy breaches and erode public trust, complicating the implementation of AI technologies in the judicial sector.

2 James Vincent. "How Much Electricity Does AI Consume?" The Verge, February 16, 2024. https://www.theverge.com/24066646/ai-electricity-energy-watts-generative-consumption.

Implementation Challenges

1. Transparency

AI algorithms often operate as black boxes making it unclear how they were trained or whether they harbour biases. This challenges users to understand how these systems make decisions, why they produce specific results, and what data they're using.[3] For AI algorithms used in the judiciary, transparency is key. Without it, parties may be subjected to biassed or discriminatory outcomes with no means of recourse. For example,

- In R v McCann, an automated facial recognition system was used as evidence without disclosing its accuracy or reliability, casting doubt on the fairness of its use.[4]
- In State v Loomis, concerns were raised when an algorithm was used for sentencing recommendations without disclosing its methodology or factors considered, limiting defendants' ability to challenge or fully understand these recommendations.

Ensuring AI transparency in the judiciary is essential to maintain fairness, accountability, and trust in legal outcomes.

2. Accountability

Who will be held accountable? While an AI system can make decisions similar to humans, it does not possess human characteristics such as consciousness, intentionality, or moral agency to take responsibility for its actions. This complicates the delegation of tasks to AI systems and the attribution of accountability for AI outcomes.

The opaque and unpredictable outcomes of AI systems pose challenges in pinpointing individual responsibilities for wrongdoings, similar to the 'many hands' problem.[5] Factors such as biassed training data, system bugs, and the replication of social discrimination further complicate determining accountability for AI-perpetrated wrongdoings

3. Interpretability

The judiciary will face the challenges of explaining how AI arrives at its conclusions or recommendations. It is very important that AI decisions are comprehensible to both legal professionals and citizens alike. If AI outcomes are not interpretable, it becomes difficult for legal parties to understand why certain decisions were made. This undermines trust in the justice system.

3 "AI: 'The Biggest Challenges Are the Biases and Lack of Transparency of Algorithms.'" CIVICUS, August 24, 2023.
4 R v McCann [2019] UKSC 34.
5 Poel, van de, I. R., Royakkers, L. M. M., & Zwart, S. D. (Eds.) (2015). Moral responsibility and the problem of many hands. Routledge Taylor & Francis Group. https://doi.org/10.4324/9781315734217.

4. The Bias challenge

One of the most significant challenges Africa's judiciaries will face when integrating AI into their systems is addressing bias. AI algorithms often have inherent biases from their creators and datasets. Bias in AI arises primarily from two sources: the biases present in the training datasets and the biases of the individuals developing and deploying these models.

The consequences of bias in AI extend far beyond algorithmic errors, impacting individuals' access to opportunities and decision-making processes. In criminal justice, biassed predictive policing algorithms may unfairly target or disproportionately penalise specific genders, perpetuating systemic inequalities. Instances of gender bias in AI erode public trust in technology, undermining faith in its neutrality and objectivity. This loss of trust can hinder broader societal acceptance and adoption of AI-driven solutions.

CHAPTER FOUR

AI Governance and Strategic Implementation

For effective AI adoption and implementation so as to achieve AI's full potential, governance is key. The progressive deployment of AI in the judiciary will raise complex questions about ethics, privacy, and their potential impacts on gender equality and fundamental Human rights. It is imperative to develop comprehensive policies, regulations, and frameworks that address these challenges, ensuring AI systems do not perpetuate existing biases or introduce new forms of discrimination. This is why;

UNESCO carried out a survey for judicial operators where 563 responses were recorded from judges, prosecutors, lawyers, civil servants in legal administration, and researchers working in 96 countries. The aim of the survey was to understand their use of AI tools in work- related activities, the extent of such usage of AI in legal tasks, and what some of the perceived risks of the use of AI tools within judicial contexts are. Some of the notable results from the survey were:[1]

- 93% of judicial operators are familiar with AI and its workings. 31% of respondents consider themselves experts or very familiar with AI, 41% have moderate knowledge, 20% have slight knowledge, and 7% are unfamiliar with the topic.
- 44% of judicial operators have used AI tools for work-related activities, with 41% specifically utilising ChatGPT or other AI chatbots. Regarding the frequency of AI system use, 20% of respondents use these tools only a few times, 13% use them on a weekly or monthly basis, and 11% use them daily.
- A significant number of judicial operators do not use AI tools, with 53% either not using them or using them for activities unrelated to their jobs. 59% of respondents have not used AI chatbots for work-related activities.
- 16% of judicial operators obtained access to AI tools through their organisations, while 71% accessed free versions, and 12% paid for subscriptions.
- Judicial operators using AI chatbots perform three main tasks: 43% use them for searching, 28% for drafting documents, and 14% for brainstorming.
- 55% of judicial operators use the output from AI chatbots to write their texts, 39% use the output after reviewing and editing, and only 6% use the chatbot's output directly without any review or verification.

1 Gutiérrez, Juan David. "UNESCO Global Judges' Initiative: Survey on the Use of AI Systems by Judicial Operators." UNESCO, 2024. https://unesdoc.unesco.org/ark:/48223/pf0000389786.

- 27% of judicial operators are concerned about the quality and reliability of the chatbot's output; 18% are worried about privacy, data protection, and security issues; 17% have concerns about potential copyright infringements and the originality of the output; and 14% are troubled by the lack of transparency regarding how AI chatbots are trained, developed, and operate.

- 9% of judicial operators have guidelines or regulations for using AI chatbots provided by their organisations, and the same percentage have received AI-related training. 18% of respondents were unsure whether their organisations had issued any rules or guidelines.

- 27% of the judicial operators who voluntarily shared additional comments for the survey mentioned the need for courses and training on AI specifically tailored for judicial operators.

The survey results indicate that while most judges in Africa and globally are familiar with AI, few are experts in its applications. AI, particularly chatbots like ChatGPT, is being used by judicial operators, but its frequency remains low. This suggests that although interest in AI exists, its integration into daily workflows is still in its early stages.

Factors such as limited access to advanced tools, insufficient training, and concerns about the reliability, privacy, and copyright issues of AI-generated content may contribute to this slow adoption. In addition, there is a noticeable gap in organisational support for AI usage.

The survey reveals why regulation is key as it showed that there is strong support among judicial operators for mandatory regulations on the use of AI tools. Specifically, 73% of respondents believe that judges and prosecutors should have mandatory rules, 72% think lawyers should, and 73% advocate for regulations for civil servants in legal administration and researchers.

Effective governance of AI integration in the judiciary requires several key measures. First, it must regulate the design and deployment of AI systems by adhering to stringent human rights standards to mitigate risks, ensuring that AI models are non-discriminatory. Additionally, these AI models should be designed to be explainable and transparent, allowing for independent scrutiny and public understanding. It is crucial that individuals have the ability to contest AI-influenced decisions, thereby supporting compliance with rights such as access to courts, the presumption of innocence, and the right to liberty.

AI systems should undergo rigorous testing and impact assessments to prevent discriminatory outcomes. Comprehensive data collection must be mandated to continuously evaluate the real-world impacts of AI, ensuring alignment with justice and human rights standards. Furthermore, robust procedural safeguards should be implemented to prevent over-reliance on AI, ensuring that decision-makers are well-informed about AI risks and capabilities.

Maintaining procedural transparency is essential, with parties being notified when AI is used and provided with clear explanations of AI processes and decisions. Regular training programs for stakeholders, including judicial officers, defense lawyers, and technical experts, should be implemented to enhance understanding of AI's benefits and risks, promote responsible use, and safeguard

against potential harms.

Data Governance and Quality Assurance

For the judiciary to develop AI tools, they need a large amount of data used to train AI systems. This will raise complex questions of data lineage, trust, and privacy. Hence the need to develop robust data governance strategies and frameworks to ensure AI systems are designed to align with user safety and the law. This means AI requires its own data governance to handle data security, user interface safety, and testing standards to maintain trust.

It is paramount to have solid security and access permissions for training data. If any sensitive data is included in an AI system, there is a potential for leaks. Therefore, strong data governance is the first step in AI development. This involves committing to data stewardship, where everyone who works with data is responsible for its security and accuracy. An established stewardship framework allows data to be shared with trust.

AI tools used in judicial processes will have the ability to handle and answer a wide variety of questions, which introduces new risks. Users can mistakenly reveal sensitive information to the model, which can end up in logs, or perform malicious prompt injections to get the model to disclose private information. The judiciary must ensure that the data coming in and out is as safe as the data used to train it.

Maintaining security will involve scrubbing sensitive data from input logs and rejecting inputs that can compromise security. From a design perspective, it also means minimising use cases that may bring sensitive information into the system. To track these risks, the judiciary needs to build a management system that can identify problems with the data. Reducing discovery time for potential issues helps ensure that AI systems remain safe at all times.

Strategies for Successfully Realising AI's Potential in the Judicial Systems in Africa

For the judiciary in Africa to implement AI tools into their judicial systems and to expect AI features to be present in every software product to enhance judicial systems capabilities. The following strategies need to be in place;

1. Collect accurate, quality, quantity, diverse data sets.

Data is one of the key requirements in the development and implementation of AI models. Available, accurate, complete, free from bias and quality of data are critical factors in ensuring the success of these initiatives. Data serves as the foundation upon which AI models are built, trained, and refined. Without robust and accurate datasets, AI systems cannot function effectively, leading to flawed predictions, biassed outcomes, and ultimately, a lack of trust in these technologies.

Good-quality AI training data is the key ingredient for developing reliable AI applications. Before it can be used for AI training, data must be meticulously collected, annotated, validated, and pre-processed to form a robust training dataset.[2] With the digitization efforts in many African judicial systems, it has led to the development of comprehensive legal databases or repositories. These resources provide a wealth of legal documents, case law, and other essential data that can be leveraged to train AI models, ultimately enhancing the efficiency and accuracy of legal processes across the continent.

Countries with legal databases or repositories;

Country	**legal databases or repositories Available**
Kenya	Yes
Uganda	Yes
Tanzania	Yes
Rwanda	Yes
South Africa	Yes
Ethiopia	Yes
Senegal	Yes
Benin	Yes
Ghana	Yes
Morocco	Yes

The performance, accuracy, and dependability of AI models, especially those driven by ML and deep learning, hinges on the quality of their training data:

- Poor data quality leads to inaccurate or biassed AI models, which have serious consequences in the judicial sector.
- Insufficient data leads to models that are too simplistic and incapable of accurately predicting real-world outcomes.
- A lack of data diversity leads to biassed models that do not accurately represent the population they are designed to serve.

For effective AI models and tools developed for the judiciary, the sector needs to develop strategies and frameworks that promote collection of data that is quality, quantity, and diversity. This may involve;

2 Nayna Jaen. "How AI Is Trained: The Critical Role of AI Training Data," March 26, 2024. https://www.rws.com/artificial-intelligence/train-ai-data-services/blog/how-ai-is-trained-the-critical-role-of-ai-training-data/.

- implementing data cleaning and validation processes to ensure data quality,
- collecting and managing large quantities of diverse data, and

By focusing on these challenges, the sector will leverage the power of data to create accurate, effective, and fair AI applications that benefit society.

2. Have compute power and infrastructure

For the judiciary to fully implement and adopt AI models, especially for complex tasks like legal decision-making, it requires significant computational resources to process vast amounts of data, run sophisticated algorithms, and deliver accurate results in real time. Without adequate infrastructure, the potential of AI to enhance judicial efficiency and fairness remains unrealized. Computational infrastructure influences who can build AI, what kind of AI gets developed, and who profits,[3] while also shaping industry concentration and impacting the environmental footprint of artificial intelligence.[4]

Computing power is essential for AI applications because it helps computer systems process and execute tasks. These applications require substantial computational resources to manage complex algorithms and large data sets.[5] ML and AI tasks require large amounts of compute power and resources to run. Well-designed AI infrastructure often includes specialised hardware like a graphics processing unit (GPU) and a tensor processing unit (TPU) to provide parallel processing capabilities and speed ML tasks.

AI infrastructure is the hardware and software needed to create and deploy AI-powered applications and solutions. Strong AI infrastructure will enable developers to effectively create and deploy AI and machine learning applications. As the judiciary discovers more and more ways to use AI, creating the necessary infrastructure to support its development is paramount.

Some of the strategies for building a strong AI infrastructure for the judiciary include;[6]

- Clearly set down what it is you need from it. Which problems do you want to solve? How much are you willing to invest?
- Choose the right hardware and software
- Find the right networking solution.

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3 AI Now Institute, Toxic Competition: Regulating Big Tech's Data Advantage, April 11, 2023, https://ainowinstitute.org/publication/toxic-competition; Sarah Myers West and Jai Vipra, Computational Power and AI, AI Now Institute, June 22, 2023, https://ainowinstitute.org/publication/policy/computational-power-and-ai.

4 AI Now Institute, The Climate Costs of Big Tech, April 11, 2023, https://ainowinstitute.org/spotlight/climate.

5 "Understanding the Impact of Compute Power on AI Innovations." ultralytics, May 16, 2024. https://www.ultralytics.com/blog/understanding-the-impact-of-compute-power-on-ai-innovations#:~:text=Computing%20power%20is%20important%20for,the%20tip%20of%20the%20iceberg.

6 IMB. "What Is AI Infrastructure?" n.d. https://www.ibm.com/topics/ai-infrastructure#:~:text=ML%20and%20AI%20tasks%20require,capabilities%20and%20speed%20ML%20tasks.

- Decide between cloud and on-premises solutions

The first two guardrails are meant to protect against the significant risk of "hallucinations," (i.e., text or results that an AI program presents as fact, but which is, in fact, false), such as a court decision that is fabricated, or an inaccurate summary of an actual decision.8 The third guardrail is critical to protecting the privacy and confidentiality of a court's deliberations and processes

3. Training and Capacity Building

There is an underlying skill gap in Africa when it comes to technologies like AI. In order to effectively integrate and make good use of this AI application for the judicial system, there is a need to develop, train these skills into the judicial staff members and anyone in the chain of the system that will be impacted by the technology.

One effective recommendation is that the judiciary should establish an Artificial Intelligence Capacity Building Initiative within the judiciary. This initiative will enhance AI literacy and awareness by organising Training of Trainers (ToT) courses, integrating educational materials into curricula, and fostering skills development in AI use and implementation.

The capacity building program needs to be designed to support ongoing skills development and understanding of AI tools and applications within the judiciary, with provisions for knowledge sharing among colleagues. It should facilitate peer-to-peer learning and engagement with co-learners to enhance AI literacy across the judiciary.

Specialised training programs for judges, legal professionals, and AI developers should cover topics such as gender issues, AI ethics, and the implications of AI in judicial decision-making. This includes understanding and mitigating biases that can manifest in AI algorithms, ensuring informed and ethical use of AI technologies in legal contexts.

4. Develop regulatory frameworks for AI adoption and implementation.

Before AI systems are integrated into the judicial system. The judiciary should develop regulations to monitor, guide and develop processes for effective AI development and use. This can be in terms of;

- Development of policies and guidelines that establish clear protocols for developing, implementing, and monitoring AI systems. An effective policy framework should address crucial issues including data privacy, gender equality and inclusivity, accountability, transparency, and promoting a responsible AI ecosystem. Guidelines developed should recommend practices and principles, help the sector operate ethically and effectively by offering a flexible framework.

- Use of Regulatory frameworks specifically designed to oversee the ethical and responsible development, deployment, and use of AI technologies. This involves implementing enforceable

laws and regulations to ensure ethical, transparent, and accountable use of AI technologies. These frameworks should establish clear standards for data protection, privacy, bias mitigation, and accountability, which are crucial for maintaining the integrity and fairness of judicial processes.

Use sandboxes

The judiciary should also opt to use sandboxes. A controlled environment where AI systems can be developed, tested, and validated before being released to the market. The goal is to foster innovation while identifying and mitigating any risks, particularly those related to fundamental rights, and safety. Such sandboxes may include testing in real world conditions supervised therein.

Multidisciplinary Collaboration and Inclusive Stakeholder Engagement

Before implementing the AI systems, there is also a need to employ Multidisciplinary Collaboration and Inclusive Stakeholder Engagement within the justice, legal and other sectors including the public. AI products and services are complex and often affect several areas. For effective AI development and governance, several regulatory authorities must be involved in their development, testing and integration.

Bringing together diverse expertise will help judiciaries develop better models and governance frameworks that address the complexities of the challenges affecting the judiciary and AI integration while safeguarding legal principles, gender and human rights. This allows a holistic assessment of AI technologies' impacts on legal processes.

Conclusion

As Africa stands on the brink of a new era in judicial transformation, the integration of Artificial Intelligence into its judicial systems represents a step forward. This report has outlined the vast potential of AI to enhance efficiency, transparency, and accessibility within the judiciary, while also acknowledging the significant challenges that must be overcome to realise these benefits.

The progressive development of judicial systems in Africa, from analog to digital, sets the stage for AI to play a role in revolutionising legal processes. AI's ability to streamline case management, improve decision-making, and provide predictive analytics could fundamentally reshape the way justice is administered across the continent. However, achieving this vision requires addressing infrastructure deficits, developing skilled human resources, and establishing robust governance frameworks to ensure the ethical and equitable implementation of AI technologies.

The challenges identified in this report, including data privacy concerns, ethical dilemmas, and data deficit, must be met with proactive strategies and collaborative efforts. Policymakers, legal professionals, and technology experts must work together to build a judicial environment that embraces AI while safeguarding the rights and freedoms of all citizens.

Ultimately, the successful integration of AI into Africa's judicial systems will depend on a collective commitment to innovation, education, and governance. By embracing the opportunities that AI presents, Africa can pave the way for a more efficient, transparent, and just legal system, one that is capable of meeting the demands of a rapidly changing world. The future of justice in Africa is not just about technology, it is about ensuring that justice is accessible to all, upheld with integrity, delivered effectively and with fairness.

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