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Artificial Intelligence and Blockchain: The Tools of the Modern Era for Speedy Justice

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ABSTRACT

Technology has become a part of human life. It has helped us to connect, improve our living conditions provide access to better services and has enhanced the fulfilment of every aspect of our day to day activities. But the question arises as to how much technology has influenced our legal system. "Justice delayed is justice denied": The Indian Legal system still suffers from backlogs in litigation and final decision making in cases, creating difficulty for aggrieved parties to acquire justice in time. Cases as long as 30 years are still pending in the courts. The low judge population ratio is often considered as a significant reason for this backlog but beyond that, lack of proper use of technology is also a major reason. Implementing technology in law aims to prevent the unending delay in granting justice in time. Digitization of services has become prominent in all sectors as part of E-governance as the Govt. has recognised the importance of paperless services, but modern technological innovations such as Artificial intelligence and blockchain is still considered through a sceptical view by many. The application of AI and blockchain has increased gradually throughout these years but is limited by the level of innovation in the area. The use of AI could simplify and improve the performance of several sectors while blockchain can be used to securely store data, as data is considered as the "new currency" thus making it valuable and requiring protection. Several studies have been made by the Government regarding the use of these modern technologies and have further recognised the use of AI and blockchain technology for future development under the E-Governance Mission. This paper aims to understand the extent of digitization of our Legal system, the scope and benefits of Artificial Intelligence and Blockchain in the Legal system and how it contributes to speedy justice.

***Keywords**: Speedy Justice, Artificial Intelligence (AI), Blockchain, E-Governance*

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I. INTRODUCTION

Technology has trickled into every part of our society, let it be medicine, banking or finance or even education. India is a country that holds the largest ed-tech company in the world. But the question arises whether and how far has technology ascended into the field of law. Moreover, the proven benefit of technology is its ability to make everything faster, to connect with everyone without boundaries in a seamless way. With this application of technology in law, can the delay of justice be prevented?

As stated, "Justice delayed is justice denied". The right to speedy justice is a fundamental right. A right that has been recognised from the birth of the Magna Carta to today's modern constitutions. This right to speedy justice was developed in English law with its roots in Magna Carta in 1215 ("To no one will we sell, to no one will we refuse or delay, right or justice.") In India, the constitutional framework for speedy justice flows from the correlated reading of Articles 14,19 and 21. It is the duty of the state to ensure that this fundamental right is protected (in relation to the Directive Principles of State Policy as per articles 38(1), 39 and 39-A) and as such must take measures at the legislative level to ensure this.

II. CURRENT SITUATION OF SPEEDY JUSTICE IN INDIA

Though constitutionally recognised and protected, the right to speedy justice is still a far fetched goal. As stated in *P.Ramachandra Rao* v. the *State of Karnataka*[3] : "…The root cause for the delay in dispensation of justice in our country is the poor judge population ratio…….. The judge-population- ratio in India (based on the 1971 census) was only 10.5 judges per million population ….The Law Commission suggested that India required 107 judges per million of Indian population". At present, the judge population ratio in India is 21.03 judges per 10 lakh people. With the rising court cases, this issue of low judge population ratio is a matter of concern.

As per the National Judicial Data Grid[4], There are about 4 crores pending cases. As per The PRS legislative research[5], Between 2010 and 2020, pendency across all courts grew by 2.8% annually. As of 2021, over 4.5 crore cases were pending across all courts in India. Of these, 87.6% of cases were pending in subordinate courts and 12.3% in High Courts. In High Courts, 41% of cases have been pending for five years or longer. A total of almost 45 lakh cases have

[3] *JT para 20,pp* 105-06

[4] National Judicial Data Grid (District and Taluka Courts of India), available at: https://njdg.ecourts.gov.in/njdgnew/index.php

[5] Pendency and Vacancies in the Judiciary, available at: https://prsindia.org/policy/vital-stats/pendency-and-vacancies-in-the-judiciary

been pending before subordinate courts and High Courts for over ten years. 21% of cases in High Courts and 8% cases in subordinate courts have been pending for over ten years. As of 2021, over 9.2 lakh cases were pending in 956 Fast Track Courts across 24 states/UTs (the remaining do not have functional Fast Track Courts). As of December 31, 2019, almost 4.8 lakh prisoners were confined in Indian jails. Of these, over two-thirds were undertrials (3.3 lakh).

This delay in trial and completion of cases along with the stunted judge population ratio is a serious issue and often leaves the common man without justice in time.

Globally, about 5 billion people have their justice needs unmet as per the report[6] by world justice project.org. Attempts have been made by both the judiciary and the legislature to improve and fasten the process of trial. Towards this goal, technology plays a vital role.

III. FROM PAPERLESS COURTS TO LIMBS

Modern Technology strengthens courts to improve efficiency and better administration of justice. In countries like the U.S and U.K, information technology is being extensively used in courts. In India, there has been a tremendous interest in IT in recent years. The development of courts have been considered as a part of the E-governance project and initiatives such as E-courts have been taken. Several initiatives have been taken. This includes notably:

E-Courts:

The E-Courts[7] Integrated Mission Mode Project is one of the national eGovernance projects being implemented in High Courts and district/subordinate Courts of the Country. The project has been conceptualized on the basis of the "National Policy and Action Plan for Implementation of Information and Communication Technology in the Indian Judiciary-2005" by the e-Committee of the Supreme Court of India. The Government approved the computerization of 14,249 district & subordinate Courts under the project by March 2014 with a total budget of Rs. 935 crore. India's first e-court was opened at the High Court of Judicature at Hyderabad in the year 2016.

NICNET:

NICNET is a satellite-based nationwide computer-communication network, that is a type of Wide Area Network (WAN)[8]. All High Courts have been computerized and interconnected

[6] *Measuring the Justice Gap: A People-Centered Assessment of Unmet Justice Needs Around the World*
[7] Brief on eCourts Project, available at: https://doj.gov.in/sites/default/files/Brief-on-eCourts-Project-(Phase-I-%26-Phase-II)-30.09.2015.pdf
[8] National Informatics Centre (NIC) through its Information and Communication Technology (ICT) Network –

through NICNET.

Tele Law Program[9]:

Launched in 2017, the Tele-Law programme has been created by the Department of Justice as a legal empowerment model for the poor and vulnerable. Tele-Law is designed to provide pre-litigation legal advice and consultation to people with an aim to connect people to Panel Lawyers via video conferencing/ telephone facilities available at Common Service Centres (CSCs) situated at the village level.

LIMBS:

LIMBS is a web-based application for monitoring cases involving the central government of India, in a more effective and transparent manner[10]. It is an initiative of the Department of Legal Affairs (DoLA), Ministry of Law and Justice, and aims to digitise the legal process and monitor the entire life cycle of a case.

IV. THE FUTURE OF TECHNOLOGY: ARTIFICIAL INTELLIGENCE (AI) AND BLOCKCHAIN

(A) Artificial intelligence (AI)

AI or artificial intelligence has been defined by John McCarthy as "the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable"[11]. In simple terms, the goal of AI is to create systems or programs that can perform with individual independence and intelligence.

AI has streamlined into all the major sectors of society. To name a few, it includes Banking (to provide customer support, detect anomalies and credit card frauds), Agriculture (to find more efficient ways to cultivate crops and protect crops from weeds), Health Care, Manufacturing, Cyber Security e.t.c.

Potential of AI in justice systems

AI has already been recognised as a major tool for the future of the judiciary.

NICNET, has institutional linkages across all the Ministries /Departments of the Central Government, State Governments, Union Territories, and District administrations of the country, available at: https://www.nic.in/servicecontents/nicnet/

[9] Tele-Law programme has been conceptualized by the Department of Justice, available at: https://doj.gov.in/page/tele-law-programme

[10] legal information management and briefing system, available at: https://limbs.gov.in/

[11] WHAT IS ARTIFICIAL INTELLIGENCE by John McCarthy

The American Bar Council has recognised the use of Digital data in conducting speedy trials as: "Standard 12-4.4 Acquisition and use of information for case processing - Jurisdictions should seek to use modern information technology to enable the courts and all of the other organizations involved in the criminal caseflow process to rapidly gather, store, disseminate, and retrieve information about cases, and should structure the flow of information to enable the prosecution and defence in obtaining reliable information and to enable the court to have reliable information upon which to make decisions"[12].

In India, the implementation of SUPACE proves the growing utility of AI. SUPACE or Supreme Court Portal for Assistance in Courts Efficiency[13] was developed with the aim of dealing with the huge data related to cases and sorting the data in order to make it available to the judges. Whatever technology we bring into the judicial system, the overall objective is to make the judiciary to be more accountable, accessible and efficient for the common man as stated by Gregor Strojin, chair of the Ad hoc Committee on AI (CAHAI) at the Council of Europe, *"while we should strive for increased efficiency, we should also keep in mind the essential aspect of justice in the eyes of citizens: They rely on trust and confidence in the functioning of the system."*

In 2017, the Ministry of Commerce and Industry set up the Artificial intelligence Task Force to " kick-start the use of AI for India's economic transformation"[14]. With the vision to " Embed AI in India's Economic, Political and Legal thought processes so that there is the systemic capability to support the goal of India becoming one of the leaders of AI-rich economies".

The judicial system and the legal profession is highly dependent on analysis and decision making. AI-based software and activities can help the Legal field to better deal with cases in a more efficient and faster manner.

1) Legal Analytics:

AI can be used to implement legal analytics. Legal analytics is the science of drawing insights from large volumes of data[15]. Legal analytics will help lawyers and judges to make data-driven decisions. Legal analytics can provide powerful insight to lawyers as it is based on Big data. Through various analytical tools operated by an AI, Lawyers will be able to acquire the desired

[12] Speedy Trial by the American Bar Association, available at: https://www.americanbar.org/groups/criminal_justice/publications/criminal_justice_section_archive/crimjust_standards_speedytrial_blk/

[13] SHANTHI S, Behind SUPACE: The AI Portal Of The Supreme Court of India, available at: https://analyticsindiamag.com/behind-supace-the-ai-portal-of-the-supreme-court-of-india/

[14] artificial intelligence task force constituted by ministry of commerce and industry, government of India, available at: https://www.aitf.org.in/

[15] Lexis Nexis, What is Legal Analytics? , available at: https://www.lexisnexis.ca/sites/en-ca/sl/2020-03/what-is-legal-analytics.page

data which otherwise would take hours of a manual search.

2) Contract Review and Contract Analytics:

Manually, it takes a serious amount of time to check and ensure the aspects of a contract that will still be vulnerable to human-made errors. Application of AI to automate the process of Contract review can ease this issue of committing errors and can save time. Various Startups such as Lawcheck, Klarity and Clearlaw are developing AI software that can determine the errors and acceptable parts of a contract[16]. Further, an issue usually arises with regard to the renewal of contracts and protecting the rights and liabilities of contracts, especially in large companies that are involved in several contracts. AI-based contract analytics can help organisations to keep updated about the major parts of contracts and the legal team will be able to track the renewal and expiry periods of contracts.

3) Legal Research and Legal prediction:

Legal Research has been transformed by software intervention. Previously, research in law had to be done manually by searching over a plethora of case laws and journals. With the advent of software, this has been digitized. But this software such as Manupatra and LexisNexis still lacks the intelligence to provide the exact data required by a researcher. By developing Ai based search systems that analyze tons of data, the researchers will receive better and quicker access to the desired data. Further, by using predictive analytic techniques, the outcome or outcomes of cases in court could be determined based on analysis of precedent cases and similar facts of previously decided cases.

4) Legal Guidance:

Chatbots powered by Artificial Intelligence can help in providing legal guidance to citizens. These applications could be used to create questions and answers so as to act as a legal tool to clarify law-related enquiries of users. AI could be used in such a manner as to make the common man more legally educated. This could make them closer to the judiciary and its capability to provide justice and protect the rights of the individuals.

(B) Blockchain

Blockchain is a method of storing data in a secure manner. Data is stored securely into *blocks* which gradually creates a *chain*. For each data kept inside the block, a hash is created. Hash is a process algorithm that converts a large chunk of data into a fixed size. For instance, the word

[16] Rob Toews, AI Will Transform The Field Of Law, available at: https://www.forbes.com/sites/robtoews/2019/12/19/ai-will-transform-the-field-of-law/?sh=cb120747f01e

"Mouse", using a hash function, may be cryptographically converted to *"1f43156th1".* This conversion makes the data irreversible thus giving extra security to the data stored. This feature of security and transparency provided by blockchain has made it a central technology in many sectors.

Blockchain technology came into the limelight after the introduction of Bitcoin. Bitcoin is based on blockchain which has made the currency secure and impossible to duplicate creating value to the currency. Gradually, blockchain has moved into other sectors namely banking services and financial sector, capital markets insurance industry for underwriting purposes, supply chain management, healthcare and Patient record maintenance.

Potential of blockchain in the justice system

Countries such as China, the UK, and Sweden have already adopted blockchain into their judicial system. One of the notable entities in the field of blockchain is the Global Legal Blockchain Consortium which comprises various law firms, companies and universities. The consortium aims to bring "Data integrity and authenticity for contracts, documents, and similar data, Data privacy and security for contracts, documents, and communications, Interoperability between large corporate legal departments and law firms, Productivity improvements and cost savings in the operation of legal departments and law firms, Use of blockchain to fortify and augment existing legal technology investments adding important functionality to legacy systems to extend their useful life"[17].

In India, The concept of implementing the use of blockchain in the legal sector has been suggested by the NITI Aayog in its report titled "Blockchain: The India Strategy Part I"[18], wherein it puts forth the effective need of putting this unprecedented technology to good use in the existing legal setup. The Central Government has recognised the importance of blockchain as a part of the E-*Governance* mission and has opined that "Blockchain has applications in healthcare, Governance, cyber security, automobiles, media, travel, logistics & hospitality, education, *legal*, energy, smart cities and so on"[19].

Blockchain may have multiple uses in the legal field, such as smart contracts, land registries, IP rights, litigation and settlements, and commercial transactions.

1. Smart Contracts:

Presently, contracts are framed manually which is prone to human errors. Blockchain could

[17] Global Legal Blockchain Consortium, available at: https://legalconsortium.org/what-is-the-glbc/
[18] Government of India, *Blockchain: The Indian Strategy*, (NITI Ayog, January 2020)
[19] National Strategy on Blockchain : Ministry of Electronics and Information technology (January 2021)

change this by creating a contract that can automatically execute based on pre-coded specific requirements i.e. a *smart contract*. Smart contracts are software programmes that can be programmed in such a way that the completion of every action will be based upon the completion of certain predetermined parameters. These parameters are coded into the software and will get triggered in a succeeding manner step by step.

For instance, smart programs could be coded in a step by step action manner such as - Firstly: the user or lawyer signs up to the software using valid credentials, Secondly: Parties create a digital software validated by the lawyers, Thirdly: All required parties may sign the contract, Fourthly: the contract will be transferred to the blockchain where the contract will be validated and will be rejected if any of the pre-coded steps are not followed by the parties while formulating the contract. One of the issues pertaining to the implementation of smart contracts is the availability of programmers who can create such software that can identify legal contracts. Expert legal professionals will have to work closely with programmers in such a scenario.

2. Evidence in electronic form:

During the stage of the trial, if approved by legislation or judicial pronouncement, Blockchain may be used by the judiciary to authenticate and certify the evidence in electronic form. The evidence collector can gather the evidence and upload it to the blockchain servers. With the use of blockchains, this evidence recorded in electronic format can not only be verified as genuine but will also allow judges to easily dispose of false evidence.

3. Protection of IP rights:

Blockchain technology can be used to frame contracts that govern licenses related to intellectual properties. The annual time-consuming process of registering a new IP as jellifying as transferring existing IP rights can be removed by using blockchain. The use of blockchain technology in the IP domain could also assist in identifying a genuine product and differentiating it from a duplicate. Blockchain-based transaction ledgers, holding IP rights data, will allow for better authentication and enforceability of the intellectual property rights of the participants.

4. Criminal Cases:

The criminal justice system would benefit from blockchain technology. Records created by blockchain could be used by various stakeholders from law enforcement officers to parole officers. Alterations in the defendant's legal status could be documented immediately. Various parties such as victims could be kept informed about the status of defendants. Cases could be

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logged into a blockchain system. This will provide the public with greater access to information. Interested parties could be allowed to receive updates spontaneously. It will lead to transparency in the system making it easier to keep records of all data.

V. CONCLUSION

In conclusion, transparent, secure and time-stamped blockchain records can be beneficial in judicial proceedings. The technology is still in the developing process and there may be scepticism from various sides regarding questions such as faults in coding and knowledge of cryptography which will have to be taken into account by the Judicial system and the Government before making major investments in AI and Blockchain Technology. The fact that the Govt. has identified blockchain and AI as an important part of the E-governance mission itself is a major factor that reflects a prosperous future for AI and blockchain technology in India. With the technological infrastructure empowered by AI and emerging blockchain, there is a clear spot for development in all areas.

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