
WAY FORWARD INTO THE TECHNOLOGICAL ERA: DIGITAL LAW ENFORCEMENT

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ABSTRACT

Man applied his knowledge and power in creating machines and technologies to make his life easier and convenient. Man substituted his inventions in place of his hard labour and showcased efficient results, proving that technological research and development is very much essential for evolution of mankind. The 21st century is witnessing rapid advancements in the field of science and all other areas with the help of digital technology and internet. A new avenue has been opened to experiment and come up with new innovations to maximise efficiency of existing subjects by using the same technological support. This has yielded excellent outputs till date in major fields like agriculture, education, health care, space research and so on. But with regards to incorporation of technologies in legislations and law enforcement, we are at an intermediate stage. There is a very huge way forward waiting to be explored. Law and regulations must outrun technological advancements so that we have an upper hand over the technologies that we created. The use of appropriate technological assistance and computer programs can save a lot of time and provide speedy remedies in maintaining order in the society. This can be rewarding only if utilised through a channelized framework and spreading awareness amongst the public about the existence such assistance and support in case of need. Over the years, we have developed various technologies including artificial intelligence and incorporated them in law enforcement but they are not uniformly implemented and there's no control over the same. Herein we have examined about the various digital technologies currently being available, their uses and also how their usage can be optimised. Digital law enforcement can be a milestone in rendering justice and peace-keeping if its potential are explored while containing the risks with due diligence. This also helps to bridge between public and officials to offer direct and prompt services with a more refined framework.

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Introduction

Digital law enforcement, as the name suggests, is the means to ensure enforcing laws, maintaining public order, and managing public safety in the virtual space. In common parlance, law enforcement is maintenance of public order through governmental or institutional agencies by way of prevention of crime and adhering to the rules and norms of the society. The need of digital law enforcement is raising with rapid boom in the development new-age technologies. New dimensions are being explored very other day creating a whole new opportunity to expand its application and utilise it in the right path. At one end the journey into the digital world, it is highly adventurous with a lot of surprises for us to reveal and be amazed but on the other hand it is quiet concerning about the danger of the unknown. Here in this article let's find out how law enforcement in the digital era is evolving and also discuss the potential challenges and repercussions of the same. As mentioned by Hon'ble Prime Minister, Shri Narendra Modi, "Technology will integrate police, forensics, jails, and courts, and will speed up their work as well. We are moving towards a justice system that will be fully future-ready".³ There no doubt it that but it is our duty to ensure that it happens with sustainability and not at the cost of machines and computers running over humans.

Digital evolution

Digital evolution involves more than just technology; it requires a change in mentality, a willingness to adapt, and a holistic, cultural innovation. History has never witnessed an evolution as fast as the one happening in digital era i.e. the contemporary world now. It took several years to evolve from stone age to metal age; from monkey to humans; form nomads to civilians; from servitude to independent and so on. But it is different in case of digital technology. It only took very few years before telegraphs and pagers were replaced by cell phones; smart phones superseded computers; wireless transactions came in place of wired ones; 5th generation of cellular network technology superseded 4th generation and much more. The trend of evolution has significantly sky rocketed in the 21st century leading to more innovations and alternatives to make things simple and uncomplicated. The irony is that the technical aspects behind whatever that is making our work simple is quiet complex to build and understand which is why it can be a challenge at times to tackle the hardships created by the same. Nevertheless, digital transformation has proven efficient by enhancing operational

³ Digital Transformation of Justice: Integrating AI in India's Judiciary and Law Enforcement, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2106239>, accessed on 10.09.2025.

efficiency and reduction in costs and time. At the same time adapting such conditions with very short span of time is a real challenge and a test of time. In countries like India where are still in the phase of developing country, the process of transforming digitally is a mammoth task while a lot has to be accompanied for peaceful enjoyment of the same. Law and regulations needs upgrade; creation of sophisticated infrastructure and its maintenance: people should be educated and made aware of such advancements and most importantly, readiness to tackle unforeseen risks and threats associated with it. With all that being said, with global cooperation and collaboration, we are almost in par with the world countries in terms of modern digitalisation and implementation such technologies in varied fields, right from agriculture, education to law enforcement and national security. Therefore, Digital evolution is the continual adoption and refinement of new and emerging technologies.

Incorporation of digital technologies in law enforcement

Technology in law enforcement has gone beyond just modernisation; it's now the driving force behind how police departments operate, make decisions and interact with the public. And also Artificial Intelligence (AI) is driving a transformative shift in India's judiciary and law enforcement, enhancing efficiency, accessibility, and decision-making. By integration of AI into judicial processes, case management, legal research, and law enforcement, India is streamlining operations, reducing delays, and making justice more accessible to all. Some of the technologies incorporated into law enforcement are listed here under:

- **Biometrics**– Biometrics is the measure of physical and behavioural characteristics and features of human body. Fingerprints have been used to identify suspects from a very long time which has evolved over the years with technological integration. Of late, the technique is extended to facial mapping, retina/iris recognition, hand geometry, DNA analysis, polygraph, voice patterns and much more. Though some of these are challenges to be unethical and violative of fundamental rights of individuals, it proves to be a testament in criminal investigation and law enforcement.
- **Surveillance and monitoring** – With advanced systems such as Global Positioning System, Cellular mapping, Integrated Space Cell and monitoring devices such as Closed-circuit television (CCTV), Automatic Number Plate Recognition (ANPR), body-worn system/cameras, Unmanned Aerial Vehicles (UAVs) are proving worthy to enhance the efficiency of control over crime prevention. With these systems and technologies, the

procedural aspects of crime investigation has been simplified and made easily accessible. Here are few examples:

- To pinpoint “crime hotspots” or places where crimes are most likely to occur, Delhi’s CMAPS (Crime Mapping Analytics and Predictive System) collects information every three minutes from satellites operated by the Indian Space Research Organization, historical crime data, and the “Dial 100” helpline.
- The information from the “Integrated People Information Hub” is used by the Hyderabad police to identify persons who are more inclined to conduct crimes; this hub comprises information such as family details, biometric details, passport details, address, and even bank transaction details.
- **Smart Policing Initiative-** The Smart Policing Initiative (SPI) is a collaborative effort among the Bureau of Justice Assistance (BJA), national training and technical assistance partners, state and local law enforcement agencies, and researchers. It is designed to assist agencies with identifying innovative and evidence-based solutions to effectively and efficiently tackle chronic crime problems in their jurisdictions. SPI is a BJA-sponsored initiative that supports law enforcement agencies in building evidence-based, data-driven law enforcement tactics and strategies that are effective, efficient, and economical. SPI represents a strategic approach that helps police agencies figure out what works in crime prevention and crime reduction initiatives.⁴

Five core Principle of SPI

- i. Performance Measurement and Research Partnerships: This principle is effective in analysing what works out and what does not work in decision making.
- ii. Strategic Targeting: It aims to create a proper framework of work plan to channelize the service to be made available everywhere
- iii. Making Better Use of Intelligence and Other Data and Information Systems: It emphasises on building capacities to collect and store data while utilizing the same for multiple purposes like development pragmatic strategies.
- iv. Managing and Sustaining Organizational Change: It blends sustainability with a new approach to tackle various complex challenges and establish law and order.

⁴ Smart Policing Initiative (SPI), <https://bjaojp.gov/program/smart-policing-initiative-spi/overview>, accessed on 10.09.2025.

- v. Outreach and Collaboration: It invites technological integration and incorporation of new age infrastructure to enhance the working and effect on the wider public.

To gather information on citizens' perceptions about the impact of the SMART policing initiative, the IPF Citizen Satisfaction Survey on SMART Policing, 2021, is a pioneering effort by Indian Police Foundation (IPF) to gauge public perceptions about the quality of policing in India and the level of public trust in the police. It would be possible for the police to use the insight to improve legitimacy, restore confidence, build trust and strive to progressively bring about a transformation in policing. The report is being shared in public so that citizens would exercise pressure on the police to improve the quality of policing. Above all, this exercise provides an opportunity for all players and stakeholders to work together to build heightened awareness and devise strategies to improve competencies and reinforce values, the two fundamental dimensions of SMART policing and public trust in the police.⁵

- **DIGITAL POLICE-** The Digital Police portal is a SMART Policing initiative of Ministry of Home Affairs as enunciated by Hon'ble Prime Minister, to provide services to citizens and aid efficient Police investigations. This portal is a platform for Citizens to file crime related complaints online and seek antecedent verification of prospective employees (including for domestic help, drivers etc.), tenants or for any other purpose. Citizens can also seek certification of their own antecedents.

The portal would also provide access to authorized persons to use National Database of crime records for the purpose of investigation, policy making, data analytics, research and providing citizen services. The portal consolidates data of current and past Crime occurrences across the country. This data has information pertaining to persons accused or convicted in criminal cases along with associated information such as property stolen/recovered, missing persons, recovered/unidentified dead bodies and so on, helpful to expedite Police investigations to solve crime as well as to provide antecedent verification services to citizens.

The portal also generates various thematic reports of trends of incidence of crime across the country to facilitate policy analysis and interventions. To illustrate, reports such as those pertaining to crime against women & children, societal trends of crimes, patterns of crime

⁵ IPF Smart Policing Survey, 2021, https://www.policefoundationindia.org/images/resources/pdf/IPF_Survey_Report_on_Indian_Police_2021.pdf, accessed on 10.09.2025.

involving groups belonging to a particular age or educational qualification and so on, crimes which are more prevalent in certain areas, can be generated from data in this portal.⁶

Services rendered under the Digital Police initiative

The digital police portal provides various services for citizens as well as police officials that are web based crime reporting and monitoring systems with advanced software programmes to ensure prompt services. For citizens we have the National Cyber Crime Reporting Portal, Central Citizen Services, National Crime Records Bureau and the option to register complaints, obtaining status of complaints and copies of FIR, details of accused, stolen property and issuance/ renewal of NOCs and so on through concerned states' official citizen services portal.

National Cyber Crime Reporting Portal⁷ is an initiative of Government of India to facilitate victims/ complainants to report cyber crime complaints online. This portal caters all types of cyber crime complaints including complaints pertaining to online Child Pornography (CP), Child Sexual Abuse Material (CSAM) or sexually explicit content such as Rape/Gang Rape (CP/RGR) content and other cyber crimes such as mobile crimes, online and social media crimes, online financial frauds, ransomware, hacking, cryptocurrency crimes and online cyber trafficking. The portal also provides an option of reporting an anonymous complaint for reporting online Child Pornography (CP) or sexually explicit content such as Rape/Gang Rape (RGR) content.

For police and other official use, services such as Crime and Criminal Tracking Network and Systems, Inter-operable Criminal Justice System, Integrated Monitoring of Terrorism (i-MOT), National Cybercrime Training Centre (Cy-Train), AI based search engines, National Database on Sexual Offenders, Human Trafficking offenders, Offenders of Foreign Origin, etc., to facilitate ease of tracing offenders, investigate and arrive at a report for cases registered. This provides a wider access to records and data for authorised personnel to take immediate action and serve the public.

- **E-Courts Mission Mode Project-** The e-Courts Project was conceptualized on the basis of the “National Policy and Action Plan for Implementation of Information and Communication Technology (ICT) in the Indian Judiciary – 2005” submitted by e-Committee, Supreme Court of India with a vision to transform the Indian Judiciary by ICT enablement of Courts.

⁶Digital Police, <https://digitalpolice.gov.in/>, accessed on 10.09.2025.

⁷ National Cyber Crime Reporting Portal, <https://cybercrime.gov.in/>, accessed on 10.09.2025.

E-committee is a body constituted by the Government of India in pursuance of a proposal received from Hon'ble the Chief Justice of India to constitute an e-Committee to assist him in formulating a National policy on computerization of Indian Judiciary and advice on technological communication and management related changes. The e-Courts Mission Mode Project is a Pan-India Project, monitored and funded by Department of Justice, Ministry of Law and Justice, Government of India for the District Courts across the country.⁸

The project envisages:

- To provide efficient & time-bound citizen centric services delivery as detailed in e-Court Project Litigant's Charter.
- To develop, install & implement decision support systems in courts.
- To automate the processes to provide transparency in accessibility of information to its stakeholders.
- To enhance judicial productivity, both qualitatively & quantitatively, to make the justice delivery system affordable, accessible, cost effective, predictable, reliable and transparent.

The E-committee, Supreme Court of India, also provides citizen centric services such as:

- i. Virtual Courts⁹ is a concept, aimed at eliminating the presence of litigant or lawyer in the court and for adjudication of cases on a virtual platform. The concept has been evolved in order to efficiently utilize court resources and to provide litigants with an effective avenue to settle petty disputes. Virtual Court can be administered by a Judge over a virtual electronic platform whose jurisdiction may extend to the entire State and function 24X7. Neither litigant nor Judge would have to physically visit a court for effective adjudication and resolution. Communication would only be in electronic form and sentencing and a further payment of fine or compensation would also be accomplished online. These courts may be used for disposal of cases where there may be proactive admission of guilt by the accused or proactive compliance of the cause by the defendant on receipt of the summons in electronic form. Such matters may be treated as disposed of after the payment of the fine. Since it is essential to firstly identify

⁸ e-Committee, Supreme Court of India, <https://ecommitteesci.gov.in/project/brief-overview-of-e-courts-project/>, accessed on 10.09.2025.

⁹ Virtual Courts, <http://vcourts.gov.in>, accessed on 10.09.2025.

the type of cases which can be effectively disposed of by Virtual Courts, presently and as part of the pilot project the following categories of cases have been found feasible to be tried in virtual courts:-

1. Offences under Motor Vehicle Act (Traffic Challan Cases)
 2. Petty Offences where summons can be issued under Section 206
- ii. Payment of e-court fees¹⁰: Service enabling online payment of court fee, fine, penalty and judicial deposits. The e-Payment portal is also integrated with state-specific vendors like SBI e-Pay, GRAS, e-GRAS, JeGRAS, Himkosh etc
 - iii. E-Filing system¹¹ enables electronic filing of legal papers. Using e-filing, cases (both civil and criminal) can be filed before the High Courts and District Courts that have adopted e-Filing systems. Introduction of e-Filing is aimed at promoting paperless filing and saving time and cost by adopting technological solutions to file cases before courts in India.
 - iv. SMS Pull and Push: For litigants who do not have internet connectivity case details can be got through the SMS Pull application by sending unique CNR number (Case Number Record) to 9766899899 through SMS. The format of the SMS is E-Courts to 9766899899. The case details will be automatically sent as a reply SMS to the user mobile. In SMS push facility case status is being sent automatically to registered Advocates and litigants through SMS by the CIS 3.2 software.
 - v. Automated E-mails: The CIS software is designed to automatically send emails to advocates and litigants with details of the status of cases, date of the next hearing, cause list, judgments and orders. The intended user has to register a user email on the CIS software. Emails are then sent to litigants, advocates, registered law enforcement agencies and government departments. The system is designed to generate daily notifications for cause lists and important events like next dates, transfer of case and disposal. It also facilitates the mailing of orders/judgments in a pdf format.

And also the services of High Court and lower subordinate courts throughout the country can be accessed conveniently through web portals and mobile applications to track case history, daily listing, status of cases and previous records as well. It is a central gateway to all data

¹⁰ eCourts Digital Payment, <http://pay.ecourts.gov.in>, accessed on 10.09.2025.

¹¹ e-Filing, <https://efiling.ecourts.gov.in/>, accessed on 10.09.2025.

relating to the courts and often clubs the various citizen centric services as above mentioned under a single portal or application.

Potential Opportunities and Challenges

- The digital arena is not confined within these technologies. Like how machines were invented to simplify mechanical workload, now we have artificial intelligence and other technologies to do the work on our behalf more swiftly and efficiently. Moreover the need for human intervention will be restricted to giving commands and monitoring the same and the rest will be taken care of. But it is also important to realise the potential risk at the other end elimination of which will render far reaching results.
- The convergence of technology and law enforcement adds a whole new dimension to the prevention, investigation and disposal of crimes. An idealistic approach in resolving cases and crime scenes is possible through proper utilization of the technological support. Imagine a case where a crime is being reported to the police or competent authority. Provided we have advanced surveillance systems, huge database of criminals and offenders alongside well trained police officers and other officials; it would be effortless to track the accused and put before the court for trial.
- There will be no need to intrude physically into premises or public places, instead a tracking devices and face recognition shall be used. Robotic cameras and speed trackers can easily identify the offending vehicles and report the same. With a strong information and communications database, it is possible to track criminals and arrest them wherever they are hidden or trying to escape. AI can be used to predict and forecast the scene to analyse the possible impact or the root cause of the issue. Moreover keeping track of records, collection of evidences and the powers of law enforcement department have been significantly empowered with enhanced technologies to serve the society in the best possible manner and ensure law and order is undisturbed. This list of technology and devices is never ending and keeps getting better and better over the years and we are responsible to update ourselves and adopt growing technologies into our systems in a prospectively.
- Nevertheless opportunities are booming increasingly which are rapidly caught up with and necessary action are made to execute the same. But the other dark side of the same is also to be considered to make things brighter, in order to eliminate the potential risks and channelize the flow of technology and to have proper check and control over the same. Let us prepare

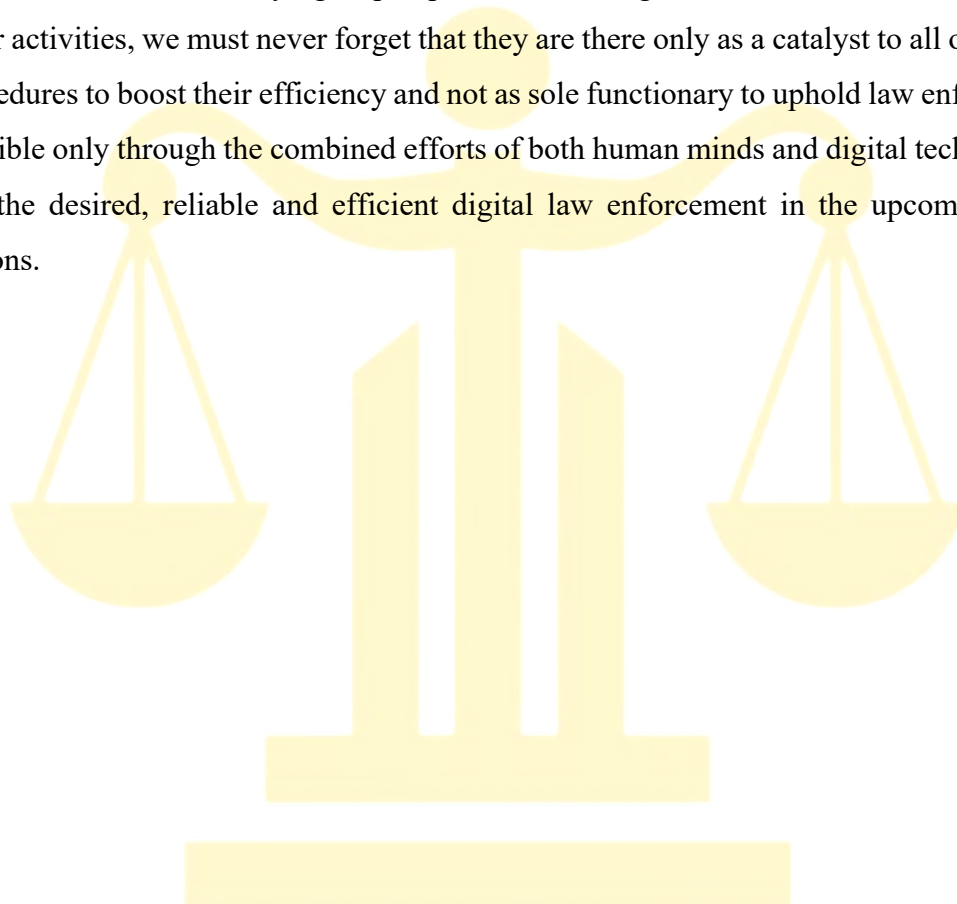
ourselves to tackle the challenges all the way in our quest to achieve digital law enforcement sustainably and efficiently.

- There is a need for a legal framework to govern the procedures of digital law enforcement to ensure transparency and accountability for the actions taken by the authorities. The said legislation must define advanced terminologies relating to the modern day technologies and govern their usage in accordance with the basic structure of the country. It can be made as an amendment to the existing Information Technology Act, 2000, as the same requires immediate action because the law is not up to date as the technology and the loopholes are increasing day by day. Cybercrimes are taking different forms and we are not well equipped with proper legislation to control the same. It is not sufficient to rely only on the judicial precedents in cases of areas where we lack legislative protection. We need to create advanced legislative frameworks to ensure we are ahead of technology and we who created the same are in no way lesser in potential than those manmade stuff.
- Information is the new age tool which can totally collapse the order the national if it is being compromised. Hence data protection must be given utmost priority similar to national security because the information stored electronically is very much vulnerable and cannot be left at stake for anything that matters. A step toward the same, the government of India has enacted the Digital Personal Data Protection Act, 2023, which is comprehensive in itself but the privacy concerns in the same if addressed, then it would be the one that we are expecting from the legislature for the future. Such futuristic legislations must be proposed in the legislature by the elected representatives and also by the academicians, researchers, and experts in the field to take cumulative action and bring in timely changes and protection.
- Speaking of privacy, the term is now becoming non-existent in the digital world and the State shall not deprive such rights under Article 21 of the Constitution of India except by procedures established by law. But to ensure the same, the duty of citizens to be cautious and vigilant in the virtual space is extremely crucial. The virtual space as said earlier is unregulated and is evolving rapidly; the chances of falling into vulnerabilities are high. Thus the obligation to create awareness and being aware is vested upon both the state as well as the citizens.
- Proper training, handling support and guidance must be given to the users to ensure it is utilised in the appropriate manner. New age technology might seem to be simple but due diligence need to be exercised in carrying out functions using the same. And also it is very much essential to device a defence technology to override the counter attacks and vulnerabilities. Threat in digital era may arise from any corner of the world and we must protect our systems with enhance

firewalls and encryption keys to stay away from risks. There shall be uniformity in execution and implementation of all technologies.

Conclusion

Technology in law enforcement is a double edged sword that has its own strengths and weaknesses. Upon its proper use, effortless results are guaranteed and if not the consequences are way worse. These digital practices are ideal for elimination of crime and control of law and order in the nation provided we use them wisely. All corrupt behaviours of humans can be avoided by machine based law enforcement thereby ensuring speedy and fair justice being delivered to citizens. While relying on prospective technologies and AI based search operations and other activities, we must never forget that they are there only as a catalyst to all our actions and procedures to boost their efficiency and not as sole functionary to uphold law enforcement. It is possible only through the combined efforts of both human minds and digital technology to achieve the desired, reliable and efficient digital law enforcement in the upcoming future generations.



References

- Bhushan Dattatraya Masne, “Transforming law enforcement for enhanced citizen services”, <https://www.tcs.com/what-we-do/industries/public-services/white-paper/technology-driven-law-enforcement-transformation>. accessed 10.09.2025.
- Siddharth Mahajan*, Rouchi Chaudhary, “Technological Evolution of Indian Policing from Traditional to SMART Technology” (DOI: 10.47857/irjms.2025.v06i03.04072) https://www.irjms.com/wp-content/uploads/2025/07/Manuscript_IRJMS_04072_WS.pdf. accessed on 10.09.2025.
- Ministry of Law and Justice press release, Digital Transformation of Justice: Integrating AI in India's Judiciary and Law Enforcement, <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2106239>. accessed on 10.09.2025.
- Ministry of Home Affairs press release, SMART POLICING INITIATIVES, <https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2115168>. accessed on 10.09.2025.
- Indian Police Foundation, IPF SMART POLICING SURVEY 2021, https://www.policefoundationindia.org/images/resources/pdf/IPF_Survey_Report_on_Indian_Police_2021.pdf. accessed on 10.09.2025.
- Digital Police, <https://digitalpolice.gov.in/>. accessed on 10.09.2025.
- e-Committee, Supreme Court of India, Information and Communication Technology (ICT) in the Indian Judiciary, <https://ecommitteesci.gov.in/>. accessed on 10.09.2025.