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FORGING A SUSTAINABLE FORENSIC ECOSYSTEM IN INDIA: CORPORATE TAX INCENTIVES AND BULK PROCUREMENT AS CATALYSTS FOR ATTRACTING INVESTMENTS

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Abstract
India's criminal justice system is hobbled by a chronic shortage of forensic capacity manifested in laboratory backlogs approaching 0.8 million cases, vacancy rates above 40%, and severe urban-rural inequities. This paper reframes those deficits as investment opportunities rather than fiscal burdens and advances a three-pronged solution: creating decentralized PPP-anchored forensic laboratories through Build-Operate-Transfer and joint-venture models; deploying targeted corporate-tax measures super-deductions for R&D, tax holidays, accelerated depreciation, and customs relief to attract private capital and spur domestic manufacture of advanced forensic equipment; and instituting a centralized bulk-procurement regime that consolidates national demand, standardizes technology, and drives down unit costs. Based on comparative evidence from the UK, United States, and India's own Passport Seva Programme, the study argues that the proposed architecture can eliminate DNA-level turnaround times, halve overall case backlogs within five years, and seed a competitive domestic forensic-technology sector. Fiscal models show that any upfront revenue shortfall from tax breaks is more than made up by stronger crime deterrence, faster case resolution, and fresh tax receipts from wider economic activity. By instituting a tightly governed PPP framework backed by NABL accreditation and a dedicated Central Procurement Office within the Home Affairs Ministry India can recast forensic science from a chronic bottleneck into a strategic growth driver, fortify due-process protections, speed up convictions, and rebuild public trust in its rule-of-law system.

Keywords

Forensic infrastructure; Public-Private Partnership (PPP); Corporate tax incentives; Bulk procurement; Criminal justice reform; Decentralisation; R&D super-deduction; India; Laboratory backlog; Evidence chain-of-custody

1. Introduction

Criminal Justice System of India has come a long way from where we have written and adopted our Constitution Post independence to the present day. With the advent of modern technology, the ways and means of committing crimes have also evolved over the period of time, specially over few decades. Consequently, India's criminal justice system faces multi-directional challenges that

impede the timely resolution of criminal cases. Country's limited forensic infrastructure is, by far one of the most significant hurdles, which struggles with consistently huge backlogs, insufficient manpower, and uneven distribution of facilities mostly limited to major cities.[1] This lacuna affects almost all aspects of the investigation and subsequent Judicial process, hindering timely and accurate outcomes. While efforts have been made to modernize, these initiatives have been intermittent and mostly underfunded, leaving enormous gaps, especially in rural and semi-urban regions.[2]

This paper explores the feasibility of building a robust and sustainable model, through innovative solutions, to overcome the challenges of Forensic Infrastructure in India and thereby support to deliver transparent, timely and equitable justice. This would eventually enhance the overall efficiency of Criminal Justice System in India.

2. Current Challenge

2.1 Forensic Backlogs and Institutional Bottlenecks

Despite modernization and increasing reliability on scientific evidence used in prosecutions, India's forensic laboratories remain overburdened and running with expert manpower shortage.[3] In 2021, forensic science laboratories (FSLs) across India collectively faced an estimated backlog of 0.7–0.8 million pending cases.[4] For example, Kerala's FSLs alone had **62,558** unresolved cases as of March 2024, a backlog that has more than doubled over the past decade. Some of the oldest pending cases date back to 1998, clearly indicating an enduring systemic failure of our Forensic machinery.[5]

One of the major factors is the lack of Manpower, especially the experts, this being a highly skilled science. A recent study shows that, nearly 40% of sanctioned positions for forensic scientists remain vacant across India, with some states reporting over 50% vacancy rates.[6] Reports indicates that India may require 90,000 new forensic professionals within the next decade to meet increasing demand. As compared to advanced nations which employ up to 200–500 forensic experts per million population, India's figure is mere 3.3 experts per million.

In absence of adequate and focused planning, the issue gets further aggravated by lack of sufficient funding the existing infrastructure. Studies indicate that the Forensic activities rarely exceed 1% of overall state police budgets.[7] Most of the Forensic Laboratories typically operate with outdated

[1]Sahu, Sadhna & Agarwal, Neha & Mahobiya, Kunal & Suchitra, & Mishra, Pradeep. (2024). *Establishment of forensic DNA technology in India: progress and future prospects*. Current Science. 126. 1424-1430. 10.18520/cs/v126/i12/1424-1430.

[2]K.P. Sai Kiran, *Forensic Labs Hit by Backlog Crisis*, Times of India (Thiruvananthapuram ed.), Oct. 7, 2024.

[3]*22 000 Reports Pending at FSL, Justice Gets Delayed*, Times of India (Delhi), Nov. 2023.

[4]Sahu et al., supra note 1, at 1428.

[5]Sai Kiran, supra note 2.

[6]Project 39A, *Forensic Science India Report: A Study of Forensic Science Laboratories (2013–2017)* 15–16. National Law University, Delhi 2023.

[7]*India Justice Report 2022: Budget & Infrastructure* 8 (Tata Trusts 2023).

technology, inadequate storage facilities and limited training resources. Citing Kerala's example, decaying samples, due to poor cold-storage, compromise the integrity of forensic analyses.[8] Such infrastructural shortfalls erode the quality and timeliness of evidence, further compounding judicial delays.

2.2 Disparities in availability of Forensic Services: Urban-Rural Regions

The uneven distribution of forensic services in the rural and urban India poses another critical weakness. In general, the major cities have better-equipped forensic laboratories, as compared to rural and semi-urban regions, which often rely on outdated facilities or may be no facility at all.[9] Many densely populated states house only a handful of FSLs, leading to significant delays in transporting samples. In addition to the logistical obstacles, specialized capabilities, like DNA profiling, are often available only in state capitals or central labs. Cases requiring sophisticated analysis are therefore trapped in a perpetual bureaucratic cycle that further stretches the turnaround times.[10]

2.3 Forensic Limitations: Impact on Legal Outcome

The new legal framework highlights the critical role of forensic evidence in strengthening the criminal justice system and thus considered as vital for improving the accuracy and dependability of criminal investigations and trials. The Bhartiya Nyaya Sanhita (BNS) and related laws like the Bharatiya Sakshya Adhiniyam (BSA) establish clear guidelines for its collection, preservation, and admissibility. For instance, under Section **176(3) of the BNS**, forensic evidence collection is mandatory for offenses punishable with seven or more years of imprisonment. Under the BNSS, forensic techniques are mandated to support investigations of serious crimes, ensuring that scientific evidence like DNA and digital data is rigorously preserved through strict chain of custody protocols. The BNS reinforces this mandate by integrating scientific-based offenses and enhancing expert testimonies, while imposing severe penalties for tampering with evidence. Meanwhile, the BSA broadens the scope of admissible forensic methods, particularly for digital evidence, and establishes clear guidelines for expert testimony, thus enhancing transparency in legal proceedings. Together, these statutes illustrate a transformative commitment to leveraging advanced forensic science in delivering just and efficient legal outcomes.

These stringent reforms, although, have clearly highlighted- **WHAT** is to be done but, the **HOW** part has still remained silent and unanswered. While the Forensic evidence increasingly serves as a decisive element in criminal trials, the overburdened labs are not able to support the progress. Consistent delays in obtaining reports cause undue postponements in investigations and trial, which in turn demoralize common man's faith in the Indian justice system.[11] Courts have repeatedly flagged forensic backlogs as a primary reason for delays in trials. This problem is especially more conspicuous in complex crimes, but not limited to, such as cybercrime, sexual

[8]Sai Kiran, supra note 2.
[9]Sahu et al., supra note 1, at 1428–29.
[10]*State of Maharashtra v. Chandrabhan Sudam Sanap*, (2019) 3 Bom. CR 123 (Bombay HC).
[11]*Bombay High Court Seeks Data on Pending Cases at Forensic Lab Over Last 5 Years*, India Today, Dec. 30, 2024.

assault and homicide, where technical evidence can be the key deciding factor for conviction or acquittal. In absence of adequate forensic reports, prosecutors are forced to rely on circumstantial or testimonial evidence, which are often prone to error.[12] The net effect is a stagnating conviction rate, with an estimated of about 50% as national average, a figure that partly reflects the reason as inadequate evidentiary support.[13] The exponential rise in white-collar offenses, cybercrimes and tech-savvy criminal networks make it evident that existing forensic capacities can no longer suffice.

3. Feasibility of Decentralisation: A Public-Private Partnerships(PPP) Model

3.1 Conceptual Framework of a PPP-Model to Enhance Forensic Infrastructure

To overcome the backlog and bring advanced forensic services closer to needy, there should be **Public-Private Partnership (PPP) models** that decentralize forensic facilities. In such frameworks, private entities, ranging from startups to established companies, may finance and operate new forensic labs, while the government agencies provide regulatory oversight and partial funding. One such example from other industry includes the Tata Consultancy Services (TCS) which is the service provider for the Passport Seva Programme (PSP), a public-private partnership with the Ministry of External Affairs (MEA) to improve passport service delivery, including setting up and managing Passport Seva Kendras (PSKs).[14] A similar, if not identical, model can be based on arrangements like **Build-Operate-Transfer (BOT)** procedure allow a private partner to set up the Forensic Laboratories across the country and handover the same to the government staff. Alternatively, **joint ventures** may allow both sectors to share capital investment and governance responsibilities. This could further be enhanced by Private Companies providing professional trainings to the government staff. Unlike full privatization, which can introduce quality risks and cost-cutting pressures, this hybrid model can rely on clear government oversight.[15] The labs may operate under rigorous accreditation processes, ensuring that evidence is collected, processed and reported as per the highest standards of legal protocols.

3.2 Regulatory Adjustments and Quality Assurance

Under current Indian statutes, Section 329 of the BNSS (erstwhile similar to Section 293 of The Code of Criminal Procedure, 1973) governs the use of reports prepared by designated Government scientific experts. It essentially states that, *"Any document purporting to be a report under the hand of a Government scientific expert to whom this section applies, upon any matter or thing duly submitted to him for examination or analysis and report in the course of any proceeding under this Sanhita, may be used as evidence in any inquiry, trial or other proceeding under this*

[12] *Project 39A*, supra note 6, at 16–17.
[13] *Gururaj Jamkhandi, India Will Need 90 000 Forensic Scientists in 9 Years: Amit Shah*, Times of India (Jan. 29, 2023).
[14] *Passport Seva*, Government of India, https://passportindia.gov.in/AppOnlineProject/online/knowPassportSeva (last visited Apr. 22, 2025).
[15] Kevin Lothridge, Richard Saferstein & Joe Buckle, *Forensic Science: Public or Private Enterprise?*, 65(3) *Gazette* 16, 16–17 (2003).

Sanhita."[16]

Further as per Sec 329(4)(g) of BNSS, which states that *"any other scientific expert specified or certified, by notification, by the State Government or the Central Government for this purpose*."[17] The scope defined in the new statute, also recognizes any other scientific expert, notified by the Central or State Government, however the act remains silent and does not explicitly specify that the expert to be a government or a private person.

For private laboratories' forensic reports to be treated as an admissible evidence, additional accreditation or statutory recognition may be incorporated to ensure quality assurance. Additionally "Anonymisation of source identifier could be used between the Collection body & processing body"

The **National Accreditation Board for Testing and Calibration Laboratories (NABL)** could expand its scope, applying standardized checks and inter-lab proficiency testing.[27]

International experiences illustrate both success stories and drawbacks. E.g United Kingdom's decision to close and privatize its Forensic Science Service yielded short-term cost savings but triggered warnings about quality compromise and market fragility.[18] In contrast, United States government agencies frequently outsource specific tasks (e.g., DNA backlog processing) to accredited private entities, thereby scaling capacity without forfeiting public standards. The National Sexual Assault Kit Initiative (SAKI) is a program established by the U.S. Department of Justice. While the Department of Justice (DOJ) oversees SAKI and provides funding and guidance, it often works in collaboration with state, local, and sometimes private forensic laboratories for testing and analysis. However, the program itself is not outsourced to a single private body; rather, it is a government-led initiative that partners with various entities including private labs to improve the processing of sexual assault kits.[19]

3.3 Advantages and Limitations of PPP-Based Decentralization

Developing the decentralised forensic services infrastructure through PPP-Model may potentially accelerate **turnaround times of forensic analysis**, which is critical for time-sensitive samples like DNA analysis.[20] It would also ensure that rural India gains local forensic infrastructure, bridging the urban-rural gap. Moreover, introduction of private partners in this system can bring in **cutting-**

[16]Bharatiya Nyaya Sanhita, 329(1), Bill No. 120 of 2023 (*India*).
[17]Bharatiya Nyaya Sanhita, 329(4)(g), Bill No. 120 of 2023 (*India*).
[18]Budowle et al., *The Demise of the United Kingdom's Forensic Science Service (FSS): Loss of World-Leading Engine of Innovation and Development in the Forensic Sciences*, 2(4) *Invest. Genet.* 1 (2011), https://doi.org/10.1186/2041-2223-2-4 (last visited Apr. 22, 2025).
[19]Debra Rog, Susan Chibnall & William Wells, *The Evaluation of the Bureau of Justice Assistance Sexual Assault Kit Initiative: Final Report*, Doc. No. 300099 (Feb. 2021).
[20]Sai Kiran, supra note 2.

edge technological solutions, backed up with efficient management structures which are often more agile than government-run facilities.[21]

However, the implementation of this model would require robust contract management and stringent SOPs to prevent evidence tampering or malpractice.[33] Additionally, flawless and consistent fundings requirements, intertwined by lengthy approvals, may pose another challenge since the private entities would expect timely revenue to run sustainably. This could be substantially modeled on a case-to-case basis or as an annual service payment from the government.[22] To ensure uniform standards across multiple labs would also require a Central Standardisation Authority, perhaps under the Directorate of Forensic Science Services (DFSS), to conduct audits and maintain highest level of technical protocols.[23]

Learnings from global frameworks reveals that, despite few transactional challenges, the merits of PPP-based decentralised forensic infrastructure model overweigh the demerits, when accompanied by strong regulatory frameworks and fiscal support.[24] Such models could be pivotal in overcoming India's large forensic backlog specially in the rural and sub-urban regions of India which remains largely under-served.

4. Corporate Tax Incentives as Catalysts for Forensic R&D and Investment

4.1 Targeted Tax Benefits for Forensic Innovation

The cost of research and development in the domain of forensic science is a costly affair owing to the need for advanced equipment and specialised expertise coupled with monopoly of handful players. These significant expenses are crucial for driving innovation and improving the accuracy of investigations. Tax benefits are powerful tools for shaping corporate behavior. For R&D investment, a **Weighted deductions or "super-deductions"**, as a tax discount, can be offered on the total tax liability which can significantly reduce the private sector's costs in developing novel forensic technologies.[25] By designating forensic R&D as a high-priority domain, similar to existing incentives for semi-conductor or renewable energy, India can lower the financial risk for new market entrants. Historically, India provided generous R&D deductions, up to **200%** in some sectors, although these have been scaled back in recent years.[26]

In view of the aforesaid merits of tax discount, exclusively for forensic R&D encourages startups and established firms equally to invest. This structure also supports "Make in India" vision and

[21]Sahu et al., supra note 1, at 1429.
[22]Lothridge et al., supra note 15, at 16–17.
[23]*Bombay High Court Seeks Data on Pending Cases at Forensic Lab Over Last 5 Years*, supra note 11.
[24]Lothridge et al., supra note 15.
[25]Aakanksha Kaushik, *The Effectiveness of Research and Development Tax Incentives in India: A Quasi-Experimental Approach*, 14(6) *Int'l J. Sys. Assurance Eng'g & Mgmt.* 2329, 2330 (2023).
[26]Id.

initiatives, increasing domestic manufacturing of sophisticated forensic equipment and consumables, a sector which currently is being dominated by handful of global suppliers.[27]

4.2 Tax Holidays, Accelerated Depreciation, and Customs Relief

In addition to R&D, these incentives can increase direct capital investment in forensic laboratories. Introduction of Tax Holidays and offering discounts for forensic labs based on PPP-Model, in their initial years would reduce burdens on the private entities venturing in this domain.[28] Accelerated depreciation on forensic equipment likewise curtails tax liabilities, aiding overall financial viability. Additionally, offering relief from customs duties or Goods and Services Tax (GST) for importing specialised forensic instruments lowers capital costs. [29] By optimising the tax structure, India can attract foreign firms to set up local production or assembly units, augmenting the supply of forensic tools.

4.3 Driving Competition and Encouraging Startups

When combined with PPP opportunities, financial incentives have the potential to discourage the **monopolistic environment** of sophisticated high-end forensic equipment. Startups like those already operating in cyber-forensics or document examination, would expand and new ventures could enter, provided they see a supportive ecosystem like tax breaks, guaranteed demand, government collaboration.[30]

Case studies from other sectors, including the Passport Services, pharmaceutical and IT industries, demonstrate how India leveraged tax incentives to support R&D and manufacturing clusters.[31] Adopting a similar, if not identical, approach for forensic services, may yield a more **self-reliant ecosystem** that not only meets domestic needs but may also exports to other nations modernising their investigative capabilities.

5. Bulk Procurement Strategies: Leveraging Scale for Cost and Quality

5.1 Aggregating Centralised Demand

Scattered purchase orders of individual Forensic Labs can be consolidated into a single Bulk Order for centralised and large-scale procurement contract. In the current system of procurement, each state level forensic lab has to float their respective tenders which are undoubtably small in volume which in turn reduces it's negotiating power and results in country's reduced buying power. [32] This further leaves loopholes for corruptions and imposes administrative burden at lower levels. A Centralised Procurement Office(CPO) body under the Union Home Ministry can consolidate the requirements from across the country through select Regional Offices, which may validate the orders placed from their respective Zones/Regional States, prior forwarding the same to the CPO.[33]

[27]Sahu et al., supra note 1, at 1430.
[28]Press Information Bureau, *Corporate Tax Rates Slashed to 22% for Domestic Companies and 15% for New Domestic Manufacturing Companies*, PIB Release ID 1586062 (Sept. 20, 2019).
[29]Kaushik, supra note 25.
[30]*Premier Non-Government Forensic Lab in India – About Us*, Truth Labs (2021), https://truthlabs.org (last visited Apr. 24, 2025).
[31]Ernst & Young, *Worldwide R&D Incentives Reference Guide 2023–24* 10–15, 40–42 (2024).
[32]*India Justice Report 2022*, supra note 7, at 9.
[33]Id.

e.g if 50 labs each require one new DNA sequencing machine, a single order for 55 machines (5 being in spare) collectively would significantly reduce per-unit costs. In addition, the large contracts can reduce the downtime and include better equipment life-cycle management) like AMC, extended warranties, expert training, periodic software updates etc) which individual labs often struggle to secure. [34]

5.2 Enhancing Technological Edge and Standardisation

A bulk approach promotes uniform technology standards. All labs using the same reagents, protocols, and instruments reduces variation in testing outcomes, while simplifying workforce training and maintenance. When different labs use similar setups, staff can be reassigned more flexibly, backlogs can be tackled more efficiently and courts can consistently count on reliable evidence quality across jurisdictions. Further a credible guarantee of large volume orders incentivizes manufacturers to cater specifically to India's forensic market. Suppliers may establish local assembly plants or develop region-specific features (e.g user interfaces in regional languages, enhancing portability for rural crime scenes), thus raising overall technological readiness.[35]

5.3 Bulk Outsourcing of Forensic Services

Bulk procurement strategies need not stop at equipment. Governments can contract private labs in bulk to clear substantial backlogs, particularly for specialised analyses like DNA or digital forensics.[36] This approach, which is already being used in few foreign jurisdictions, ensures economies of scale and consistent quality benchmarks through carefully defined contractual terms. However, successful implementation of this strategy requires seamless coordination among Central, State and local bodies to ensure smooth delegation of tasks. A well-defined project plan would avoid excessive dependency on a single private vendor partner . Distributing the specific tasks among several recognised providers may help reduce the risks associated with monopoly and disruptions related to supply chain or vendor failures.[37]

6. Policy and Economic Implications

6.1 Integrating PPP-Model, Taxation and Procurement Reforms

India should initiate policy reforms interfacing the PPP-based decentralisation, corporate tax incentives and centralised bulk procurement plan, to create an efficient and sustainable forensic ecosystem. The following key points could be taken into consideration:-

a) PPP legislation and accreditation standards would clarify private labs' legal standing under Indian evidence laws.

b) Focused tax incentives in Forensic R&D would attract private capital and accelerate innovation.

[34]*Crimes Against Women: 13 States to Get Forensic Labs, DNA Testing Facilities Under Nirbhaya Fund*, *New Indian Express*, Apr. 20, 2019.
[35]Sahu et al., supra note 1, at 1430.
[36]Rog et al., supra note 19.
[37]Id.

c) Centralised bulk procurement would ensure cost savings, standardisation, and guaranteed demand to encourage industry participation.

Such multi-dimensional approach requires institutional coordination, likely requiring an additional body under Forensic Science Infrastructure Authority which will strengthen its reachability. [38] This authority may be supported by bodies like the DFSS and National Accreditation Board, which could align policies at the central and state levels, channel funds, and oversee quality controls.

6.2 Fiscal Considerations

Adopting a more liberal tax incentives may although result in reducing near-term government revenues, however these expenditures may be offset by broader socioeconomic gains. If improved forensics raises conviction rates and deters crimes, the social and economic benefits from a safer environment outweigh the initial revenue foregone. Further the revenue deficit that may be accrued by giving the tax incentives, could be compensated after the cooling period, by extra-economic activity created post onboarding foreign OEMs and service providers.[39]

6.3 Building an Ecosystem of Innovation

Viewing forensic science as an "industry of national importance" parallels India's strategy in sectors like pharmaceuticals and IT, which combined tax breaks, special economic zones, and state-backed research institutions to become global powerhouses.[40] A similar integration between institutions like the National Forensic Sciences University and private firms can nurture skill development, produce indigenous products, and ultimately reduce import dependency. Partnerships might yield advanced solutions giving India a foothold in global forensic technology markets.

6.4 Strengthening Justice Delivery and Upholding Rights

One of the obvious merits of this model is an improved Criminal Justice System, which is currently under-optimised by a huge backlog of cases pending justice delivery due to delayed forensic outcomes. A fast paced and privately optimised forensic service system, aligned with Supreme Court directives on speedy justice would bolster constitutional rights.[41] Another merit lies in the fact that the innocent would not be penalised by wrongful convictions as a result of weak or unreliable and coerced confessions. The end result would be enhanced public trust on our Judicial process which would emerge when ruling given by the courts are based on clear and scientific grounds rather than protracted disputes or witness testimonies that degrade over time.

6.5 Navigating Risks and Ensuring Sustainability

Despite these merits, this aforesaid strategy is expected to face inevitable, but recoverable obstacles, both political and apolitical. The potential mismanagement of PPP Labs, as reflected in the UK's model, risk of private profit demand and legal challenges of data privacy and

[38] *Bombay High Court Seeks Data on Pending Cases at Forensic Lab Over Last 5 Years*, supra note 11.
[39] Press Information Bureau, supra note 28.
[40] Government of India, *National Biotech Development Strategy (2015–2020)*.
[41] *Hussainara Khatoon (No. 1) v. State of Bihar*, (1980) 1 SCC 81 (India).

constitutional rights to name a few. Addressing these concerns requires transparent PPP contracts, ongoing audits, and robust data-protection laws.[42]

Bulk procurement, for instance, demands precise forecasting of needs and disciplined compliance among participating states. Uniform technical specifications should be balanced with the diversity of local crime challenges. Policymakers must also guard against single-supplier dependencies by splitting large orders across multiple vendors who meet quality standards.

In the long run, a comprehensive ecosystem might emerge in the form of PPP labs aided by corporate tax incentives, consistently stocked and upgraded through bulk procurement, all functioning under a unified regulatory umbrella. This synergy can create a virtuous cycle as better forensics attract greater trust, reduce the case backlog, and encourage investors to fund further expansions. If effectively administered, India could transform from an under-resourced forensic landscape to a global leader in forensic technologies and services.

Conclusion

India's forensic system is struggling with backlogs, owing to a shortage of experts and underfunding. One such solution is to increase the number of facilities spread across India through public-private partnerships, which would increase capacity and ensure both urban and rural areas have access.

These changes, when further substantiated by tax incentives, would encourage private companies to invest in advanced R&D. This model could further be improvised by bulk purchasing to optimise costs and to standardise technology across the country. Enacting these changes will require new laws, strict oversight, and close collaboration among various government agencies.

Although offering tax breaks and other incentives might initially lower revenue, the long-term benefits, such as reduced crime rates, quicker trials, higher conviction rates, and the growth of a native forensic industry could be substantial. By treating forensic science as an investment rather than a cost, India can drive technological innovation, ease the burden on its legal system, and boost public confidence in its criminal justice process.

Realizing these objectives won’t be easy: poorly structured PPPs, weak oversight, or data-security failures could undermine reform efforts. Yet by combining well-calibrated economic incentives, robust regulations, and strategic procurement, India can transform its forensic infrastructure. This strategy will meet the demands of modern criminal investigations and elevate forensic science to a cornerstone of an effective justice system.

[42]Bharatiya Nyaya Sanhita, 173(4), Bill No. 120 of 2023 (India).