Chapter 7
Reconciling Privacy Rights With Digital Investigations:
Legal–Ethical Challenges in Cyber Forensics

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ABSTRACT

The advancement of cyber forensics—through AI-driven profiling, metadata analysis, and real-time surveillance—has enhanced digital investigations but raised significant legal and ethical concerns. This chapter explores the growing tension between state surveillance and individual privacy, focusing on the Indian legal framework, including the Justice K.S. Puttaswamy decision, and comparing it with global standards such as the GDPR, ECHR, and Budapest Convention. Key issues addressed include algorithmic bias, lack of consent, cross-border data sharing, and misuse of forensic tools against vulnerable groups. The chapter argues for a balanced, rights-based framework grounded in privacy-by-design, proportionality, and judicial oversight. It offers policy recommendations to ensure cyber forensic practices remain effective while upholding constitutional protections and international human rights norms.

DOI: 10.4018/979-8-3373-4898-8.ch007

1. INTRODUCTION

1.1 Background and Context

Global digitalization has caused a significant shift in crime detection and state security practices and worldwide intelligence society. Central to this change is cyber forensics software, and it is used to locate, preserve, examine, and display electronic evidence. There has been a change over the years of cyber forensics as a reactive investigative instrument to a proactive one aimed at continuous monitoring and interpretation of the online behavior of a person.One of the emerging trends is what is known as user-centric human threat intelligence, which prioritizes the online behavior of an individual. It does not just evaluate technological systems but evaluates metadata, browsing patterns, communication traces, and behavioral cues, which can be determined with the help of Artificial Intelligence to find potential threats (Lyon, 2014).

In line with the above development, most states have developed their own capacity to spy, by use of interception systems, spyware, biometric authentication, and combined data platforms. Face recognition systems, Central Monitoring System (CMS) and metadata-based surveillance are some of the tools that have led to the controversy of the extent of the state authority in cyberspace in India. In the world, predictive policing, algorithmic border screening and social scoring systems all exhibit the same type of tension between security demands and personal autonomy.

These technological innovations have been advancing at a higher pace compared to the legal and ethical institutions that monitor it. Consequently, digital inquiries are often done in a normative vacuum where issues of due process, informed consent, proportionality, data integrity, and privacy are not resolved. It is particularly acute in the democracies where constitutional values demand safeguarding of individual rights such as privacy and freedom of arbitrary action of the state. The question is not whether cyber-forensic tools are to be applied, but how they may be applied in line with principles of justice and governance (Zuboff, 2015).

This theme is closely connected with the overall theme of privacy, governance, and forensic accountability in this book. The growth of forensic surveillance technologies poses some basic questions regarding the way the states regulate digital evidence, the way the accountability of oversight institutions can be ensured, and the way the privacy of individuals in high-surveillance conditions may be preserved in any meaningful way. This intersection needs to be understood in order to formulate regulatory frameworks that will sustain security as well as constitutional values.

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