

# Chapter 14

## Ethical and Social Dimensions of 6G Deployment

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### ABSTRACT

*The chapter will examine smart cities, healthcare innovations, and remote work applications to assess both the opportunities and risks associated with widespread 6G adoption. A comprehensive ethical framework will be proposed to guide responsible deployment, focusing on core principles, stakeholder engagement, and continuous monitoring to ensure ethical compliance. The chapter concludes by emphasizing the need for a balanced approach to 6G implementation, where technological progress aligns with ethical integrity and social responsibility. Future research directions will be identified, highlighting the importance of interdisciplinary collaboration in shaping ethical benchmarks for emerging digital ecosystems.*

### ADVENT OF 6G TECHNOLOGY

The new face of technology can be seen as the sixth generation (6G) wireless network which promises advancement and transformation in integration, speed and connectivity regarding Artificial Intelligence (AI), augmented reality (AR) and

DOI: 10.4018/979-8-3373-2220-9.ch014

Internet of Things (IoT). The advent of sixth generation (6G) wireless networks represents a transformative leap in communication technology, promising unprecedented speed, ultra-low latency and intelligent connectivity. Expected to be deployed by the 2030s, 6G will integrate artificial intelligence (AI), edge computing and quantum communication, reshaping industries, economies and daily life. However, as with any technological revolution, the deployment of 6G raises critical ethical and social questions that must be addressed to ensure equitable and responsible development (Agarwal & Nanda, 2024).

Ethically, 6G introduces complex challenges surrounding privacy, surveillance and data security. With an explosion of interconnected devices and enhanced data collection capabilities, concerns about personal privacy intensify. Governments and corporations will have access to vast amounts of real-time information, raising fears of mass surveillance, algorithmic bias and the potential misuse of AI-driven decision-making. Ethical frameworks must be established to protect individuals from intrusive data practices while ensuring the benefits of enhanced connectivity are widely accessible (Jaiswal, 2022).

Socially, 6G deployment has the potential to either bridge or widen the digital divide. While it promises seamless connectivity in smart cities and urban centres, rural and underserved communities risk being left behind. The economic costs associated with developing and maintaining 6G infrastructure could deepen existing inequalities, limiting access to essential services such as education, healthcare, and employment. The labour market will undergo significant changes as automation and AI-driven processes become more dominant, potentially displacing jobs and demanding new skill sets from the workforce. Apart from connectivity 6G will also impact human interactions and societal structures. The integration of virtual and augmented reality along with hyper-connected environments could redefine how people work, communicate and engage with their surroundings. While such advancements promise increased efficiency and immersive experiences they may also lead to issues such as digital addiction, reduced human interaction and ethical dilemmas regarding AI-driven content manipulation (Osman et.al., 2025).

Given these profound ethical and social implications, it is crucial for policymakers, researchers and industry leaders to engage in proactive discussions about the responsible deployment of 6G. Regulatory frameworks, public-private partnerships and ethical guidelines must be developed to safeguard privacy, promote inclusivity and ensure that technological progress aligns with human values. This chapter explores the multifaceted ethical and social dimensions of 6G, providing a critical examination of the opportunities and challenges that lie ahead. The Present Chapter, titled as “Ethical and Social Dimensions of 6G Deployment” shall provide a critical analysis the multifaceted consequences and challenges of 6G technology and shall attempt to identify a roadmap for possible solutions to anticipated challenges.

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