Chapter 7
Regulatory and Policy Considerations for Large Language Models:
Frameworks, Implications, and Future Directions

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ABSTRACT

This chapter provides insights into the complex domain of regulatory and policy issues in artificial intelligence. It covers critical global aspects of AI regulation before diving into the thin line of innovation and ethics. First, the chapter reviews the most important international and global players and how they frame the regulatory context. Sources also present comparisons of the relevant regulatory authorities and their empowerment in the European Union, United States, and China. Further, the chapter discusses the critical aspect of the balance between innovation and ethics.

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The last aspect offers insights into different ethical frameworks and the challenges of responsible development of AI. Finally, the chapter outlines the most important case studies of national and international AI hearings and policies.

GLOBAL PERSPECTIVES ON AI REGULATION

Introduction to AI Regulation

Regulating AI technologies is essential due to various reasons supported by scholarly research. One primary reason is the ethical concerns raised by the collection, storage, and sharing of large datasets derived from AI technologies. These ethical questions en- compass governance, quality, safety, standards, privacy, and data ownership (Dwivedi et al. 2021; Gupta & Panigrahi, 2022). Transparency is another crucial aspect high- lighted in regulations, emphasizing the provision of information to stakeholders to enhance their understanding of AI systems and data throughout their lifecycle (Micheli, 2023). Additionally, policies for funding and regulating AI research often focus on con- cepts such as transparency, explicability, reliability, informed consent, accountability, and auditability of AI systems (Graziani et al., 2022).

Furthermore, the importance of a human-centric approach in AI regulation is emphasized in the European Commission's proposal for harmonized rules on artificial intelligence. This approach aims to ensure that AI technology is used in a manner that is safe, compliant with the law, and respects fundamental rights, instilling trust among users (Tzouganatou, 2021; Abd El-Latif et al. 2023). The multifaceted approach required to address the social, ethical, and policy issues of AI technology includes pro- viding correct information to the public, involving ethics and AI experts in research and public debate, and establishing consistent government policies or regulatory frame- works for AI technology (Ouchchy et al., 2020; Gupta et al., 2024).

Moreover, the need for AI certification regimes to emphasize enduring governance criteria, such as ethics training for AI developers, is highlighted to adapt to the evolv- ing nature of AI technology (Cihon et al., 2021; Gupta et al., 2024). Regulators are encouraged to establish a research agenda that addresses technical and methodologi- cal questions related to human-AI co-action for sustainable AI integration in society (Borsci et al., 2022; Chaklader et al., 2023). Additionally, guidelines promoting transparency in naming conventions, designs, and safety features of AI sys- tems are seen as foundational for regulating future AI-based functions (Murtaza et al., 2022).