

# Chapter 5

## Commercial Transactions in the Digital Era: Navigating the Legal Complexities of Algorithmic Decision-Making

David López Jiménez

 <https://orcid.org/0000-0002-7013-9556>

EAE Business School, Spain & UNIE Universidad, Spain

### ABSTRACT

*This chapter examines the legal and ethical challenges of integrating artificial intelligence (AI) and automated decision-making in commercial transactions. It explores how smart contracts, algorithmic liability, and personalized consumer services are transforming traditional concepts in civil and commercial law. Through a comparative law approach, the chapter analyzes the responses of different jurisdictions, including the European Union, the United States, and Asia, to these advancements. Key topics include redefining contractual obligations, introducing “algorithmic fault” in commercial liability, and advocating for dynamic consumer protections against discriminatory pricing. The chapter also proposes innovative mechanisms for dispute resolution, such as AI-assisted mediation and electronic courts, and introduces the concept of adaptive regulation to address rapid technological changes. By doing so, it seeks to promote a fair, transparent, and ethically aligned digital marketplace.*

### INTRODUCTION

In recent years, Artificial Intelligence (AI) has transformed the commercial landscape, introducing profound changes in how businesses operate, engage with customers, and manage contractual obligations. The deployment of AI-driven

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automated decision-making systems has accelerated business processes, enabled innovative services, and created new opportunities for growth. At the same time, these technologies have raised significant ethical and legal challenges that disrupt traditional notions of commerce and contract law (Ajunwa, 2020; Leal, 2022). Civil and commercial law, which has historically governed business relationships and obligations, now confronts the complex task of adapting to these rapid technological advances.

AI's impact on commerce is particularly evident in the growing use of automated processes for contract execution, market analysis, and consumer engagement. The advent of smart contracts—self-executing contracts with the terms of the agreement directly written into code—has revolutionized traditional contracting models, raising questions about how consent is formed, how contractual obligations are enforced, and what legal remedies are available when these automated systems fail or cause harm (Anderson, 2022; Miller, 2018). Automated decision-making systems also present novel scenarios of liability, as decisions are increasingly made without direct human intervention, challenging established legal principles such as fault, negligence, and diligence. Furthermore, the use of algorithms in personalizing prices and services introduces new forms of discrimination and consumer vulnerability, necessitating a reevaluation of consumer protection laws (Barocas & Barocas, 2016; Narayanan, 2023).

These technological shifts call for an updated legal framework that can address the complexities of algorithmic decision-making in commercial activities while promoting ethical practices and fair competition. This chapter aims to explore the legal frontiers of algorithmic decision-making in commerce, focusing on the intersection of smart contracts, algorithmic liability, consumer protection, and the evolution of civil and commercial law. By adopting a comparative law approach, the chapter will analyze how various jurisdictions, including the European Union, the United States, and Asian countries, are addressing the regulation of automated commercial transactions. It will also propose innovative legal mechanisms and adaptive regulatory frameworks designed to protect consumer rights, ensure fair competition, and foster technological progress responsibly (Ajunwa, 2020; Leal, 2022).

The incorporation of automated decision-making systems into commerce has raised a host of new legal challenges that cannot be adequately addressed by existing legal norms alone. Traditionally, commercial law has relied on well-defined concepts of consent, liability, and contractual obligations to regulate business transactions. However, the rise of AI has blurred these concepts, creating situations where contractual obligations are executed autonomously, often without explicit human oversight, and where liability becomes difficult to assign.

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