# Chapter 3
# Commercialisation of Scientific Innovation in India:
## Regulatory Aspects

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## ABSTRACT

*Industry 4.0 is a revolutionary transition characterized by more significant innovation and interconnectedness, with intellectual property (IP) playing a prominent role. Intangible assets such as copyrights, trademarks, patents, and trade secrets are critical for innovation, development, communication, and promotion. Monetizing IP is a strategic imperative that allows firms to translate IP assets into marketable goods or services, resulting in new income streams and strengthened market positions. Some nations have favourable legislation that encourages IP commercialization. However, local hurdles, mandated IP licensing, and licensing restrictions may all impede this process. This chapter educates inventors, researchers, and businesses on the value of intellectual property rights and how to commercialize them. Effective commercialization is critical for realizing IP's actual value and economic advantages.*

## 1. INTRODUCTION

Science and technology have become the engines of economic progress, hence the key to enhancing welfare and standard of living (Narvaez et al., 2021). Progress worldwide has been possible with the emergence of Industry 4.0, which signifies a

DOI: 10.4018/979-8-3693-7929-5.ch003

fundamental change in industries characterised by increased innovation and interconnectivity. Technological advancements in specific industries, such as medicines, rely significantly on scientific discoveries (Berdigaliyev & Aljofan, 2020). Fundamental knowledge generated through public investment in basic research has benefitted various players, including governments, companies, and populations (Laplane & Mazzucato, 2020). Meanwhile, the Commercialisation of scientific innovation, primarily driven by scientists capitalising on their discoveries, has increased its economic importance in modern societies (Battaglia et al., 2021). IP represents the essential aspects of the creative process, including the creation, development, communication, and promotion that set a product apart from its originator and protected by Law. Research and development, which initiates the journey from scientific invention to commercial success, influence how we seek and utilise research and development (Hindle & Yencken, J., 2004). Nevertheless, the monetisation of IP goes beyond simple legal requirements and becomes a crucial strategic necessity for businesses. Through transforming intellectual assets into marketable products or services, companies can access hitherto unexplored sources of income and strengthen their position in the market.

The development of legal rules in these areas has been mostly disregarded in critical writing. These concepts are often considered insufficient, even though much study in economics and law has shown how sophisticated legal reasoning can resolve complex problems. Regulatory bodies, ethics committees, and other institutions are under tremendous pressure in developing nations to put many socio-legal policies into place to guarantee that scientific and technological knowledge respects environmental and human rights norms. Ironically, the academic establishment has long acknowledged that the poor world may gain more than strict rules from the laidback protection of scientific and technical breakthroughs. (Boakye, 2020).

India, a rapidly growing economy, is working towards establishing itself as a leading knowledge-based economy. Government policies promoting innovation and commercialisation can be enhanced by acknowledging the diverse factors contributing to success in various industries and by addressing the numerous obstacles companies encounter during the innovation process, from inception to establishment (Bradley et al., 2021).

IP protection supports innovation and allows for the recovery of costs. It also promotes international trade and fairness within the competitive landscape (Kwon, 2020). Overall, patent systems contribute to societal progress and advancement. IP is fast emerging as a crucial national asset, having significant commercial value and competitiveness potential in the knowledge economy (Podra et al., 2020). Commercialising IP assets is strategic for business organisations and the nation (Virchenko et al., 2021). Since commercialisation is necessarily done through a legal, institutional, and moral framework, countries worldwide endeavour to establish an appropriate