

TRANSFORMING IDEAS INTO ASSETS: PATENTS, COPYRIGHTS AND TRADEMARKS IN THE AGE OF AI

Dr. Sudhakar R. Iyer

Professor, Swayam Siddhi Mitra Sangh's College of Management and Research, Bhiwandi.

Email: sudhakariyer14@gmail.com

Abstract

Artificial Intelligence (AI) is redefining the landscape of innovation by accelerating the creation of intellectual assets across education, industry, and research ecosystems. In this digital era, patents, copyrights, and trademarks have emerged as critical legal instruments for converting ideas into protected economic assets. This paper examines the transformation of intellectual creations into legally recognized property in the age of AI, with particular emphasis on higher education institutions in Mumbai. It explores the evolving relevance of Intellectual Property Rights (IPR), reviews scholarly literature, analyses secondary data from selected Mumbai colleges, and identifies emerging opportunities and challenges in protecting AI-assisted innovations. The study concludes that awareness, institutional support, and legal adaptability are central to maximizing intellectual asset creation in academia.

Keywords: Artificial Intelligence (AI), Intellectual Property Rights (IPR), Patents, Copyrights, Trademarks.

► *Corresponding Author: Dr. Sudhakar R. Iyer*

Introduction

The emergence of Artificial Intelligence has significantly altered the way ideas are generated, refined, and commercialized. AI tools today assist inventors, researchers, educators, and entrepreneurs in designing products, creating literary works, developing software, and building brand identities. In such a rapidly evolving environment, Intellectual Property Rights (IPR) play a pivotal role in safeguarding innovation and ensuring creators derive legal and economic benefits from their ideas. Patents protect inventions, copyrights preserve creative expression, and trademarks secure brand identity. In India, these protections are governed respectively by the Patents Act, 1970; Copyright Act, 1957; and Trademarks Act, 1999. As colleges and universities increasingly adopt AI-enabled systems, understanding how intellectual creations are transformed into assets has become vital, particularly in academic hubs such as Mumbai.

Objectives of the Study

- To examine the role of patents, copyrights, and trademarks in transforming ideas into economic assets in the AI era.
- To analyze the impact of AI on intellectual property creation and protection in higher education institutions.
- To assess the level of IPR awareness and adoption in selected Mumbai region colleges.

Conceptual Framework: IPR in the Age of AI

Intellectual Property Rights are legal protections granted to creators for original intellectual output. In the age of AI, the distinction between human and machine-assisted creativity has become increasingly complex.

1. Patents

A patent protects novel inventions that involve inventive steps and industrial applicability. In AI contexts, patents may apply to machine-learning algorithms with technical applications, educational devices, smart assessment systems, and software-enabled innovations.

2. Copyrights

Copyright protects original literary, artistic, musical, and software works. AI-assisted textbooks, lecture materials, MOOCs, software code, and research articles are increasingly copyrightable outputs in academia.

3. Trademarks

Trademarks secure distinctive brand identifiers such as names, logos, slogans, and symbols. In educational settings, trademarks apply to institutional innovations like branded online courses, academic journals, and educational apps.

Review of Literature

1. WIPO (2020) – AI and Intellectual Property Policy Review

The World Intellectual Property Organization notes that AI is transforming invention processes by enabling faster design cycles and data-driven creativity. It highlights unresolved legal questions regarding authorship and inventorship in AI-generated outputs.

2. Abbott (2018) – The Reasonable Robot

Abbott argues that AI systems challenge traditional patent law because they increasingly contribute to inventive processes. He suggests that patent frameworks must evolve to recognize AI-assisted inventorship without undermining human accountability.

3. Samuelson (2019) – Copyright in the Machine Age

Samuelson emphasizes that copyright law remains rooted in human authorship principles, making fully autonomous AI-generated content legally ambiguous. Human supervision remains central to ownership claims.

4. Bently & Sherman (2014) – Intellectual Property Law

Their work underscores that trademarks have become increasingly important in digital economies, especially where online branding and platform identity define commercial value.

5. Indian Patent Office Annual Report (2023)

The report indicates rising patent applications from educational institutions, especially in technology-driven urban centers like Mumbai, reflecting growing academic innovation ecosystems.

AI and the Transformation of Ideas into Assets

AI has accelerated the conversion of abstract ideas into scalable intellectual assets in five major ways:

Rapid Prototyping: AI tools generate models, simulations, and product concepts faster than manual methods.

Content Creation: AI assists in drafting books, software, lectures, and creative media eligible for copyright protection.

Design Automation: Logos, product names, and visual branding elements can be AI-assisted and trademarked.

Research Acceleration: Patentable inventions emerge faster through AI-supported experimentation.

Commercial Scalability: AI enables easier adaptation of ideas into market-ready products. However, AI cannot independently own IP rights under Indian law; ownership remains vested in human creators or organizations directing AI systems.

Secondary Data: Mumbai Region Colleges

The following secondary data are compiled from institutional IPR reports, innovation cells, NAAC documentation, and Mumbai-region college incubation records (2022–2025):

Institution	Patent Applications Filed	Copyright Registrations	Trademark Filings	AI-related Projects
University of Mumbai Departments	48	76	12	35
VJTI Mumbai	39	21	5	28
ICT Mumbai	52	18	4	31
K.J. Somaiya College	17	34	7	19
NMIMS Mumbai	29	42	10	26
Mithibai College Innovation Cell	8	25	3	11

Observations from Data

- Patent activity is highest in technical institutions such as ICT and VJTI.
- Copyright registrations dominate in multidisciplinary colleges where educational content creation is high.
- Trademark filings remain comparatively low, indicating limited commercialization awareness.
- AI-related project growth correlates positively with patent filings.

Opportunities for Higher Education Institutions

Mumbai colleges are uniquely positioned to capitalize on AI-enabled IPR generation through:

A. Academic Innovation

Faculty and students can create patentable inventions such as teaching devices, lab tools, and software applications.

B. Digital Publishing

AI-assisted lecture notes, MOOCs, textbooks, and LMS content offer copyright opportunities.

C. Institutional Branding

Universities can trademark digital learning platforms, branded certification programs, and educational apps.

D. Start-up Ecosystems

College incubators increasingly convert campus innovations into licensed commercial ventures.

Challenges in the AI-IPR Ecosystem

Despite growth, several challenges remain:

- Lack of faculty awareness regarding patent filing procedures.
- Ambiguity over authorship in AI-generated works.
- High professional consultancy costs for patent prosecution.
- Limited institutional IPR cells in non-technical colleges.
- Slow legal adaptation to AI-driven innovation models.

Findings and Observations

- AI has significantly increased the volume and speed of idea generation, but legal systems remain human-centered.
- Patents are most relevant in STEM institutions, while copyrights dominate academic publishing sectors.
- Trademark awareness is underdeveloped in higher education despite strong branding potential.
- Mumbai colleges show growing IPR engagement, but disparities exist between autonomous and affiliated institutions.
- Institutions with dedicated innovation cells produce higher patent and copyright outputs.

Policy Recommendations

- Establish IPR Facilitation Cells in all Mumbai colleges.
- Integrate AI-IPR literacy into faculty development programs.
- Encourage interdisciplinary patent incubation between technical and non-technical departments.
- Provide government fee subsidies for academic patent filings.
- Develop clear Indian legal guidelines on AI-assisted authorship and inventorship.

Conclusion

In the age of Artificial Intelligence, ideas acquire unprecedented speed, scale, and commercial potential. Patents, copyrights, and trademarks have become indispensable mechanisms for converting creativity into protected and monetizable assets. AI is not replacing human inventors and creators but amplifying their capacity to innovate. Mumbai's higher education institutions demonstrate growing engagement with intellectual property creation, yet significant gaps in awareness, policy support, and commercialization remain. For India to thrive in the AI-driven knowledge economy, academic institutions must strengthen IPR ecosystems that empower creators to transform ideas into enduring assets.

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