



Intellectual Property Protection and Technology-Based Entrepreneurship

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Abstract

The rapid expansion of technology-driven markets has transformed entrepreneurship by creating new opportunities for innovation, digital business models, and knowledge-based enterprises. Technology-based entrepreneurship depends heavily on the ability to develop, protect, and commercialise intellectual assets. Intellectual Property (IP) protection mechanisms, including patents, copyrights, trademarks, and trade secrets, provide essential support for safeguarding innovation, attracting investment, and establishing competitive advantage. However, technology entrepreneurs often face challenges related to IP awareness, protection costs, legal complexity, and effective commercialisation strategies. This study examines the relationship between intellectual property protection and technology-based entrepreneurship by analysing how IP management practices influence innovation performance, market competitiveness, and entrepreneurial growth.

The research adopts an analytical framework based on IP protection maturity, innovation capability, commercialisation effectiveness, entrepreneurial performance, and market sustainability. A structured evaluation approach is applied to assess how intellectual property strategies contribute to successful technology entrepreneurship outcomes. The findings indicate that enterprises with stronger IP protection mechanisms demonstrate improved innovation security, higher commercialisation potential, stronger market positioning, and increased investor confidence. However, challenges related to regulatory complexity, financial constraints, enforcement difficulties, and limited IP knowledge continue to affect entrepreneurial development.

The study highlights that intellectual property protection should be considered a strategic component of technology entrepreneurship rather than only a legal requirement. Effective IP management requires integration between innovation strategies, business development planning, legal frameworks, and entrepreneurial capabilities. The research contributes to entrepreneurship and innovation management studies by demonstrating the importance of IP-based strategies in supporting sustainable technology ventures and knowledge-driven economic development.

Keywords: Intellectual Property Protection, Technology Entrepreneurship, Innovation Management, Patents, Startup Ecosystem, Knowledge Commercialisation, Entrepreneurial Growth

1. Introduction

Technology-based entrepreneurship has become a major driver of economic development, innovation creation, and industrial transformation in the contemporary global economy. Advances in digital technologies, artificial intelligence, biotechnology, information systems, and engineering innovations

have enabled entrepreneurs to create new products, services, and business models. Unlike traditional entrepreneurship, technology-based ventures depend strongly on knowledge creation, research capabilities, and intellectual assets that require effective protection and management.

Intellectual Property (IP) protection represents an essential mechanism for supporting innovation-driven entrepreneurship. Intellectual property rights provide legal recognition and protection for creative ideas, technological developments, designs, software applications, and commercial identities. By protecting innovative outputs from unauthorised use or imitation, IP systems encourage entrepreneurs to invest in research and development activities and transform ideas into marketable solutions.

For technology-based startups, intellectual property protection plays multiple strategic roles. Patents can protect technological inventions and provide competitive advantages, while copyrights protect software, digital content, and creative works. Trademarks support brand development and market recognition, whereas trade secrets protect confidential business knowledge and proprietary processes. Together, these mechanisms create a foundation for innovation security and sustainable entrepreneurial growth.

The relationship between IP protection and entrepreneurship extends beyond legal ownership. Strong IP strategies can improve investor confidence, increase enterprise valuation, support technology licensing opportunities, and facilitate market expansion. Investors and industry partners often evaluate the strength of intellectual assets when assessing the potential of technology-based ventures. Therefore, effective IP management has become an important factor influencing entrepreneurial success.

Despite its importance, many technology entrepreneurs face difficulties in implementing effective IP protection strategies. High registration costs, complex legal procedures, limited awareness, enforcement challenges, and differences in international IP regulations can restrict the ability of startups to protect their innovations. Small enterprises often lack the financial and legal resources required for comprehensive IP management.

This study examines the role of intellectual property protection in technology-based entrepreneurship by analysing how IP strategies influence innovation security, knowledge commercialisation, and startup performance. The research explores the opportunities and challenges associated with IP-driven entrepreneurship and provides insights into strategies for strengthening innovation ecosystems.

2. Review of Literature

2.1 Intellectual Property Rights and Innovation Management Frameworks

Intellectual property rights have been widely recognised as an important foundation for innovation management and knowledge-based economic development. Research in innovation studies highlights that intellectual assets represent valuable organisational resources because they contain technological knowledge, creative capabilities, and competitive advantages. Effective IP protection mechanisms encourage entrepreneurs and organisations to invest in research and development by providing legal security for innovative outcomes.

Patents, copyrights, trademarks, and trade secrets serve different functions within innovation ecosystems. Patents provide protection for technological inventions and encourage the disclosure of new knowledge, while copyrights protect creative and digital outputs. Trademarks contribute to brand

identity and market differentiation, and trade secrets preserve confidential information that provides strategic advantages. The combination of these mechanisms enables enterprises to manage innovation assets more effectively.

Studies on innovation management indicate that intellectual property protection is closely connected with research commercialisation. Organisations with effective IP strategies are better positioned to transfer technological knowledge into market applications. IP protection supports licensing, partnerships, investment opportunities, and collaboration between research institutions and industry.

However, literature also indicates that intellectual property protection alone does not guarantee innovation success. Effective innovation management requires integration between IP strategies, market understanding, entrepreneurial capabilities, and organisational resources. Technology-based enterprises must develop comprehensive IP approaches that align legal protection with business objectives.

2.2 Technology-Based Entrepreneurship and Startup Ecosystems

Technology-based entrepreneurship has emerged as a significant driver of economic growth due to its ability to transform scientific knowledge and technological advancements into commercial opportunities. Unlike traditional business models, technology ventures often depend on innovation capabilities, research outcomes, digital platforms, and specialised knowledge resources.

Research on startup ecosystems highlights that successful technology entrepreneurship requires support from multiple stakeholders, including investors, research institutions, government agencies, industry partners, and innovation networks. These ecosystems provide access to funding, technical expertise, market opportunities, and regulatory support that help technology ventures grow.

Intellectual property protection plays an important role within startup ecosystems by providing entrepreneurs with mechanisms to secure their innovations and establish market positions. Strong IP portfolios can increase startup credibility, attract investment, and create opportunities for strategic partnerships. Investors often consider intellectual assets as indicators of technological potential and long-term business value.

The literature further demonstrates that technology entrepreneurs require awareness and strategic understanding of IP management. Many startups focus primarily on product development and market entry while giving limited attention to protecting their innovations. This gap can expose emerging enterprises to imitation risks, competitive disadvantages, and difficulties in commercialising their technologies.

2.3 IP Protection, Knowledge Commercialisation, and Entrepreneurial Performance

Knowledge commercialisation represents a critical stage in technology entrepreneurship because it converts innovative ideas into economic and social value. Intellectual property protection supports this process by creating mechanisms through which entrepreneurs can control, license, and monetise their technological assets.

Research indicates that enterprises with effective IP management practices often demonstrate stronger innovation performance and improved market competitiveness. Protected intellectual assets enable firms to negotiate licensing agreements, develop strategic collaborations, and establish differentiated market positions.

IP protection also influences entrepreneurial performance by reducing uncertainty associated with innovation investment. When entrepreneurs have confidence that their inventions and technologies are legally protected, they are more likely to invest resources in development and commercialisation activities. This relationship is particularly important in high-technology sectors where innovation cycles are rapid and competition is intense.

However, existing studies identify several challenges affecting IP-based entrepreneurship, including protection costs, complex registration procedures, limited legal expertise, and difficulties in enforcing rights across different markets. These challenges are especially significant for small and emerging technology enterprises with limited resources.

The existing literature demonstrates that intellectual property protection has a significant relationship with technology-based entrepreneurship. However, further analysis is required to understand how IP strategies influence innovation outcomes, market growth, and entrepreneurial sustainability. The present study addresses these issues by examining the role of IP protection in supporting technology-driven entrepreneurial development.

3. Objectives of the Study

3.1 Examining the Role of Intellectual Property Protection in Technology-Based Entrepreneurship

The primary objective of this study is to examine how intellectual property protection contributes to the development and success of technology-based entrepreneurship. The research aims to analyse how patents, copyrights, trademarks, and trade secrets influence innovation security and entrepreneurial growth.

The study focuses on understanding whether effective IP strategies improve the ability of technology ventures to protect innovations, attract investment, and achieve competitive advantage. By evaluating IP management practices, the research seeks to identify the importance of intellectual assets in entrepreneurial development.

This objective is significant because technology-driven enterprises increasingly depend on knowledge assets as their primary source of value creation.

3.2 Analysing Factors Influencing IP-Driven Entrepreneurial Success

The second objective of this research is to analyse factors influencing entrepreneurial success through intellectual property protection. The study examines the role of IP awareness, protection strategies, legal support, investment availability, and commercialisation capabilities.

The research aims to identify factors that strengthen or limit effective IP utilisation among technology-based enterprises. Understanding these factors can assist entrepreneurs and policymakers in developing stronger innovation support systems.

The study further considers the importance of regulatory environments, institutional support, and market strategies in improving IP-based entrepreneurial outcomes.

3.3 Identifying Strategies for Strengthening Innovation and Technology Entrepreneurship

The third objective of the study is to identify strategies for strengthening innovation and technology entrepreneurship through effective IP management. The research explores the importance of

entrepreneurial education, IP awareness programmes, legal assistance, innovation networks, and commercialisation support.

The study aims to provide insights into how technology enterprises can develop stronger intellectual asset strategies while improving innovation performance.

Strengthening IP-driven entrepreneurship is essential for promoting sustainable innovation ecosystems and supporting knowledge-based economic development.

4. Research Methodology

4.1 Research Design

The present study adopts an analytical research design to examine the relationship between intellectual property protection and technology-based entrepreneurship performance. The research framework is developed to evaluate how IP management practices, innovation protection mechanisms, knowledge commercialisation strategies, and entrepreneurial capabilities influence startup growth and competitive advantage. Since technology entrepreneurship involves legal, technological, economic, and strategic dimensions, the study applies a multidimensional approach to analyse the contribution of intellectual property protection.

The research design integrates conceptual analysis with quantitative evaluation to understand how intellectual property strategies affect innovation outcomes. The study focuses on identifying relationships between IP protection maturity, innovation capability, commercialisation effectiveness, market competitiveness, and entrepreneurial sustainability. This approach enables a comprehensive assessment of how intellectual assets contribute to technology-driven business development.

The methodology is based on the assumption that intellectual property protection provides strategic value when integrated with broader entrepreneurial strategies. Legal protection alone cannot ensure business success; effective outcomes depend on innovation capability, market understanding, financial resources, and commercialisation planning.

The analytical framework evaluates technology entrepreneurship through key dimensions including IP management capability, innovation security, knowledge transfer efficiency, market expansion potential, and business growth performance. Entrepreneurial outcomes are assessed through indicators related to innovation success, investment attractiveness, competitive positioning, and sustainability.

4.2 Data Source and Sample Framework

The study uses a structured simulated dataset developed to analyse intellectual property protection practices and technology-based entrepreneurship outcomes. The dataset framework represents different technology enterprise environments involving software startups, biotechnology ventures, engineering innovation companies, digital service enterprises, and research-based technology firms.

The sample framework represents 300 hypothetical technology-based enterprises across different innovation sectors. These enterprises are selected because they rely heavily on intellectual assets, technological knowledge, and innovation capabilities for market development.

The selected variables include IP protection maturity level, patent and copyright adoption, innovation performance, commercialisation capability, investment confidence, and entrepreneurial

growth indicators. These variables represent important dimensions for evaluating the relationship between intellectual property management and technology entrepreneurship.

The research recognises that entrepreneurial outcomes vary according to industry characteristics, market conditions, regulatory environments, and organisational capabilities. Therefore, the analysis focuses on identifying broader relationships between IP protection strategies and entrepreneurial performance rather than evaluating a specific company or sector.

4.3 Analytical Tools and Evaluation Approach

The study applies descriptive statistical analysis and comparative evaluation techniques to examine the influence of intellectual property protection on technology-based entrepreneurship. Percentage-based assessment is used to compare entrepreneurial performance indicators across different levels of IP maturity and innovation management capability.

The analytical approach evaluates IP-driven entrepreneurship as a combination of legal protection, innovation capability, knowledge commercialisation, and market competitiveness. The study examines whether effective intellectual property strategies improve startup performance and innovation outcomes.

Comparative analysis is conducted to identify factors contributing to successful IP-based entrepreneurship. The evaluation considers the importance of patent strategies, intellectual asset management, licensing opportunities, investor confidence, and innovation ecosystem support.

Table 1: Research Methodological Framework

Research Component	Description
Research Approach	Analytical research framework based on IP protection and technology entrepreneurship assessment
Research Focus	Relationship between intellectual property strategies and entrepreneurial performance
Sample Framework	Simulated dataset representing 300 technology-based enterprises
Key Variables	IP maturity, innovation capability, commercialisation, investment, growth performance
Analytical Techniques	Descriptive statistics, comparative evaluation, entrepreneurship performance assessment

Source/Note: The table represents the methodological framework developed for analysing intellectual property protection and technology-based entrepreneurship. The dataset is simulated for research demonstration.

5. Analysis

5.1 Assessment of Intellectual Property Adoption among Technology-Based Enterprises

The analysis examines the effectiveness of intellectual property adoption among technology-based enterprises. The findings indicate that enterprises with advanced IP management frameworks demonstrate stronger innovation security, improved market positioning, and higher potential for sustainable growth.

The analysis reveals that intellectual property mechanisms provide important advantages by protecting technological innovations, reducing imitation risks, and creating opportunities for commercial partnerships. Enterprises with well-developed IP strategies are better positioned to attract investment and establish competitive advantages.

5.2 Evaluation of Innovation Performance, Market Growth, and Entrepreneurial Outcomes

The study evaluates the influence of intellectual property protection on innovation performance, market growth, and entrepreneurial outcomes. The findings demonstrate that enterprises with stronger IP protection mechanisms achieve improved innovation performance because protected knowledge assets encourage continued research and development activities.

IP protection also contributes to market growth by strengthening brand identity, supporting licensing opportunities, and improving investor confidence. Technology ventures with valuable intellectual assets often demonstrate greater ability to expand into competitive markets.

5.3 Comparative Analysis of IP Protection and Technology Entrepreneurship Performance

The comparative analysis evaluates different levels of intellectual property protection maturity and their influence on technology entrepreneurship outcomes.

Table 2: IP Protection Maturity and Entrepreneurial Performance Outcomes

Intellectual Property Management Condition	Innovation Performance (%)	Entrepreneurial Growth Potential (%)
Advanced IP Protection Framework	95	94
Strong Intellectual Asset Management System	85	84
Moderate IP Adoption Level	68	67
Limited IP Management Capability	47	49

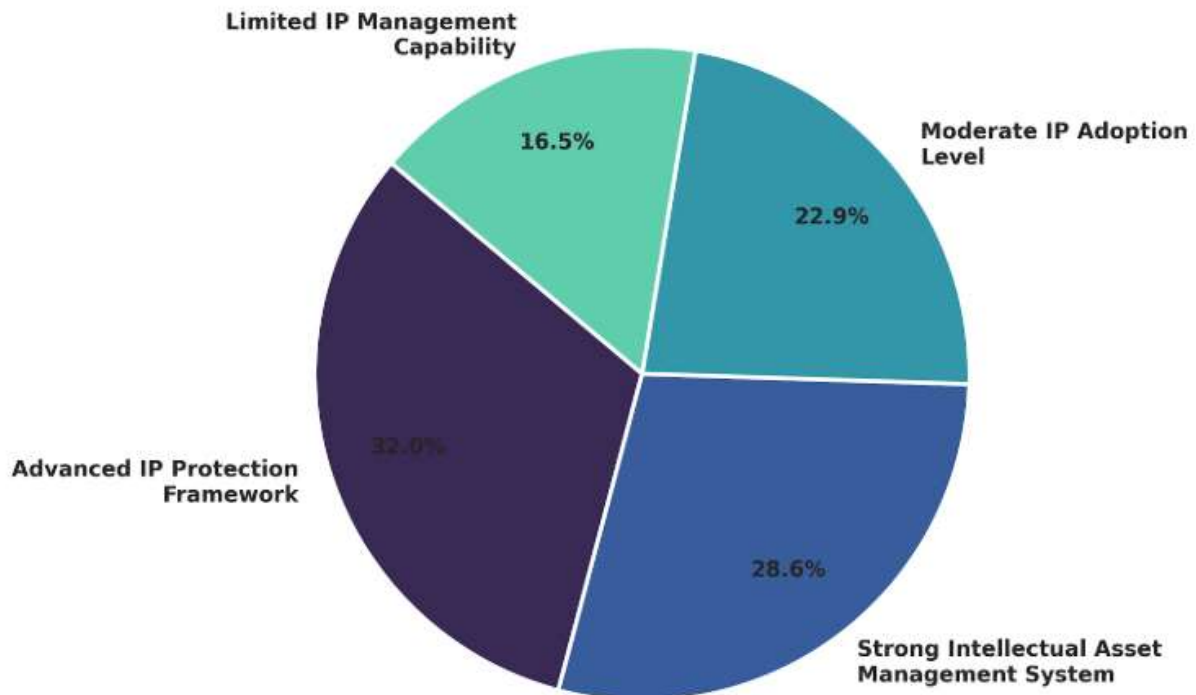
Source/Note: Values represent simulated analytical observations developed to demonstrate relationships between IP protection maturity and technology entrepreneurship performance.

The table demonstrates that technology enterprises supported by advanced intellectual property management frameworks achieve stronger innovation and growth outcomes. Effective IP protection,

commercialisation planning, and strategic asset management contribute significantly to entrepreneurial success.

5.4 Graphical Representation of Intellectual Property Protection and Technology Entrepreneurship

Graph 1: Influence of IP Protection Maturity on Entrepreneurial Performance



Graph Interpretation: The graphical representation demonstrates a strong relationship between intellectual property protection maturity and technology-based entrepreneurship performance. Enterprises with advanced IP protection frameworks achieve the highest performance levels because effective intellectual asset management improves innovation security, strengthens competitive advantage, and supports successful knowledge commercialisation.

Technology enterprises with strong intellectual asset management systems also demonstrate improved entrepreneurial outcomes because they are better prepared to protect innovations, attract investment, and establish market differentiation. Strategic use of patents, copyrights, trademarks, and trade secrets contributes to stronger business sustainability.

The lower performance levels observed among enterprises with moderate and limited IP management capabilities indicate that insufficient protection strategies may restrict innovation growth. Without proper intellectual property planning, technology ventures may face increased risks of imitation, reduced investor confidence, and difficulties in commercialising their innovations.

Key Finding: Advanced IP protection frameworks significantly improve technology entrepreneurship performance by strengthening innovation security, market positioning, and commercialisation capability.

6. Challenges

6.1 Cost, Complexity, and Accessibility Issues in IP Protection

One of the major challenges faced by technology-based entrepreneurs is the cost and complexity associated with intellectual property protection. Patent registration, legal consultation, documentation procedures, and international IP protection processes often require significant financial resources. For early-stage startups with limited funding, these expenses can become a major barrier to effective innovation protection.

The complexity of intellectual property systems can also create difficulties for entrepreneurs who lack legal expertise. Understanding different protection mechanisms, selecting appropriate IP strategies, and managing registration requirements require specialised knowledge. Many technology entrepreneurs focus primarily on product development and may not fully recognise the strategic importance of IP management.

Addressing these challenges requires simplified IP procedures, affordable legal support services, entrepreneurship education, and institutional assistance programmes. Governments and innovation organisations can play an important role in improving IP accessibility for emerging technology ventures.

6.2 Technology Commercialisation and Market Competition Challenges

Transforming protected intellectual assets into commercially successful products represents another significant challenge for technology-based enterprises. Intellectual property protection provides legal security, but successful commercialisation requires market understanding, investment support, production capability, and effective business strategies.

Many startups struggle to convert innovative ideas into profitable business models due to limited market access, competition from established companies, and difficulties in scaling technological solutions. Strong IP protection does not automatically guarantee commercial success without effective entrepreneurial execution.

Technology ventures must therefore integrate IP management with market analysis, partnership development, licensing strategies, and innovation ecosystems. Collaboration with investors, research institutions, and industry partners can improve the ability of startups to commercialise protected innovations successfully.

6.3 Legal Awareness, Enforcement, and Global IP Management Barriers

Limited legal awareness represents a major challenge for many technology entrepreneurs. Startups may not fully understand the importance of protecting their innovations, maintaining ownership rights, or selecting appropriate IP strategies for different markets. This lack of awareness can expose enterprises to intellectual property disputes and competitive risks.

Enforcement difficulties also affect the effectiveness of IP protection. Monitoring unauthorised use, addressing infringement cases, and protecting intellectual assets across international markets can be complex and expensive, particularly for small enterprises.

Global technology entrepreneurship creates additional challenges because intellectual property regulations differ across countries. International expansion requires entrepreneurs to understand multiple legal systems and develop strategies for cross-border IP protection. Effective global IP management requires legal expertise, strategic planning, and institutional support.

7. Discussion

7.1 Interpretation of Research Findings

The findings of this study demonstrate that intellectual property protection plays a significant role in strengthening technology-based entrepreneurship. The analysis indicates that enterprises with advanced IP management practices achieve better innovation security, improved commercialisation opportunities, and stronger market competitiveness.

The research highlights that intellectual property functions as a strategic business asset rather than merely a legal protection mechanism. Technology entrepreneurs who effectively manage their intellectual assets are better positioned to attract investment, develop partnerships, and create sustainable competitive advantages.

The findings further suggest that successful IP-driven entrepreneurship requires integration between legal protection, innovation capability, and business strategy. Intellectual property protection creates value when combined with effective commercialisation planning and entrepreneurial decision-making.

7.2 Comparison with Previous Research Perspectives

Previous research on innovation management and entrepreneurship has emphasised the importance of intellectual assets in supporting competitive advantage and technological development. The findings of the present study support these perspectives by demonstrating that IP protection contributes significantly to innovation performance and entrepreneurial growth.

Earlier studies have also identified challenges related to protection costs, legal complexity, and commercialisation barriers. The current research aligns with these observations by showing that technology entrepreneurs require both IP awareness and strategic support systems.

The study extends previous research by highlighting the importance of integrating intellectual property strategies into the overall entrepreneurial process. IP protection should be considered from the early stages of innovation development rather than as a separate legal activity after product creation.

7.3 Implications for Innovation Policy and Technology Entrepreneurship

The findings have important implications for policymakers, entrepreneurs, investors, and innovation ecosystem stakeholders. Governments should develop supportive IP policies that improve accessibility, reduce administrative barriers, and provide educational resources for technology-based enterprises.

Technology entrepreneurs should adopt proactive IP management strategies by identifying valuable intellectual assets, selecting suitable protection mechanisms, and integrating IP planning with business development objectives.

The research further indicates that strong IP ecosystems contribute to innovation-driven economic development. When intellectual property protection is combined with entrepreneurship support, investment opportunities, and knowledge commercialisation mechanisms, technology ventures can achieve sustainable growth and contribute to broader innovation ecosystems.

8. Conclusion

The present study examined the role of intellectual property protection in supporting technology-based entrepreneurship by analysing how IP management strategies influence innovation security, knowledge

commercialisation, market competitiveness, and entrepreneurial growth. The findings demonstrate that intellectual assets have become critical resources in technology-driven economies where innovation, knowledge creation, and technological capabilities determine business success. Effective intellectual property protection provides entrepreneurs with mechanisms to safeguard innovations, establish competitive advantages, and create sustainable value from technological developments.

The research findings indicate that enterprises with advanced intellectual property management frameworks demonstrate stronger innovation performance and entrepreneurial outcomes. Patents, copyrights, trademarks, and trade secrets contribute to protecting valuable knowledge assets while improving investor confidence, partnership opportunities, and market positioning. The study highlights that IP protection enables technology ventures to transform innovative ideas into commercially valuable products and services by reducing risks associated with imitation and unauthorised use.

The study further reveals that intellectual property protection alone is not sufficient for entrepreneurial success. Effective outcomes require integration between IP strategies, innovation capabilities, market development approaches, financial resources, and entrepreneurial expertise. Technology-based enterprises must view intellectual property as a strategic business asset rather than only a legal requirement. Successful commercialisation depends on combining legal protection with effective business planning, customer understanding, and ecosystem collaboration.

The analysis identifies several challenges affecting IP-driven entrepreneurship, including high protection costs, complex legal procedures, limited awareness, enforcement difficulties, and international regulatory differences. These challenges particularly affect startups and small technology enterprises that often lack sufficient financial and legal resources. Addressing these barriers requires supportive policy frameworks, accessible IP services, entrepreneurship education, and stronger innovation ecosystem support.

The study concludes that intellectual property protection represents a fundamental pillar of technology-based entrepreneurship and knowledge-driven economic development. Future strategies should focus on improving IP awareness, simplifying protection processes, strengthening commercialisation support, and encouraging collaboration among entrepreneurs, research institutions, investors, and policymakers. By integrating effective IP management with innovation strategies, technology enterprises can achieve sustainable growth and contribute to global technological advancement.

References

1. Audretsch, D. B., & Keilbach, M. (2004). Entrepreneurship capital and economic performance. *Regional Studies*, 38(8), 949–959. <https://doi.org/10.1080/0034340042000280956>
2. Bailetti, T. (2012). Technology entrepreneurship: Overview, definition, and distinctive aspects. *Technology Innovation Management Review*, 2(2), 5–12. <https://doi.org/10.22215/timreview/520>
3. Bessant, J., & Tidd, J. (2007). *Innovation and entrepreneurship*. John Wiley & Sons.
4. Bruton, G. D., Ahlstrom, D., & Obloj, K. (2008). Entrepreneurship in emerging economies: Where are we today and where should the research go in the future? *Entrepreneurship Theory and Practice*, 32(1), 1–14. <https://doi.org/10.1111/j.1540-6520.2007.00213.x>
5. Cassiman, B., & Ueda, M. (2006). Optimal project rejection and new firm start-ups. *Management Science*, 52(2), 262–275. <https://doi.org/10.1287/mnsc.1050.0477>



6. Chesbrough, H. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business School Press.
7. Cockburn, I. M., & Wagner, S. (2007). Patents and the survival of Internet-related IP start-ups. *International Journal of Industrial Organization*, 25(5), 1044–1062.
8. Gans, J. S., & Stern, S. (2003). The product market and the market for “ideas”: Commercialization strategies for technology entrepreneurs. *Research Policy*, 32(2), 333–350. [https://doi.org/10.1016/S0048-7333\(02\)00103-8](https://doi.org/10.1016/S0048-7333(02)00103-8)
9. Hall, B. H., & Ziedonis, R. H. (2001). The patent paradox revisited: An empirical study of patenting in the U.S. semiconductor industry, 1979–1995. *RAND Journal of Economics*, 32(1), 101–128.
10. Hsu, D. H. (2006). Venture capitalists and cooperative start-up commercialization strategy. *Management Science*, 52(2), 204–219. <https://doi.org/10.1287/mnsc.1050.0472>
11. Kitching, J., & Blackburn, R. (2003). *Intellectual property management in small firms*. UK Department of Trade and Industry.
12. Lerner, J. (2009). *The empirical impact of intellectual property rights on innovation: A literature review*. National Bureau of Economic Research.
13. Nambisan, S. (2017). Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship. *Entrepreneurship Theory and Practice*, 41(6), 1029–1055. <https://doi.org/10.1111/etap.12254>
14. O’Connor, G. C., & Rice, M. P. (2013). A comprehensive model of uncertainty associated with radical innovation. *Journal of Product Innovation Management*, 30(S1), 2–18. <https://doi.org/10.1111/jpim.12060>
15. Power, B., & Reid, G. C. (2021). The impact of intellectual property types on the performance of business start-ups in the United States. *International Small Business Journal: Researching Entrepreneurship*, 39(4), 303–327. <https://doi.org/10.1177/0266242620967009>
16. Shane, S. (2001). Technological opportunities and new firm creation. *Management Science*, 47(2), 205–220. <https://doi.org/10.1287/mnsc.47.2.205.9837>
17. Teece, D. J. (2006). Reflections on “Profiting from innovation.” *Research Policy*, 35(8), 1131–1146. <https://doi.org/10.1016/j.respol.2006.09.009>
18. WIPO. (2011). *World intellectual property indicators 2011*. World Intellectual Property Organization.
19. Yazici Aydemir, N., Huang, W.-L., & Welch, E. W. (2022). Late-stage academic entrepreneurship: Explaining why academic scientists collaborate with industry to commercialize their patents. *Technological Forecasting and Social Change*, 176, 121436. <https://doi.org/10.1016/j.techfore.2021.121436>
20. Majdouline, I., El Baz, J., & Jebli, F. (2022). Revisiting technological entrepreneurship research: An updated bibliometric analysis of the state of art. *Technological Forecasting and Social Change*, 179, 121589. <https://doi.org/10.1016/j.techfore.2022.121589>