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◦ 국제대학원인 RSIS는 동 분야에서 세계적인 수준으로 인정받고 있는 교육기관이자, 아시아 지역 이슈에 강한 글로벌 씽크탱크로 우수한 연구인력 및 네트워크, 인프라 보유

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1. Introduction

In the dynamic and rapidly evolving landscape of Southeast Asia, the burgeoning digital economy and intricate global value chains (GVCs) underscore the pivotal role of intellectual property (IP) as a cornerstone of innovation, economic growth, and regional integration. With a population exceeding 688 million and a robust trajectory of economic development, Southeast Asia stands at the crossroads of tradition and modernity, where the fusion of diverse cultural heritages with cutting-edge innovation paints a vibrant tableau of potential and progress.

As nations in this region navigate the complexities of digital transformation and deeper integration into GVCs, the imperative for robust intellectual property rights (IPRs) frameworks becomes increasingly pronounced. These frameworks are not only instrumental in safeguarding the ingenuity and investments of creators—from scientists and artists to digital innovators—but also in ensuring that the fruits of innovation are equitably shared, thus fostering a conducive environment for sustained economic dynamism and competitive edge in the global marketplace.

This research delves into the multifaceted landscape of IPRs in Southeast Asia, examining the nuanced interplay between IP enforcement, digital economic growth, and GVC participation. It highlights the critical importance of aligning domestic IPR regimes with international standards to facilitate technology transfer, attract foreign investment, and stimulate local innovation. By doing this, it illuminates the obstacles and prospects awaiting ASEAN member

nations, specifically in adjusting to the requirements of the digital age and utilizing IP to propel regional economic progress.

By offering a comprehensive overview of the current state of IPRs in key Southeast Asian countries, this study aims to provide insightful policy recommendations that resonate with the needs of a region poised for a future where knowledge, creativity, and innovation are paramount.

This examination aims to add to the discussion on the significance of IP in fostering sustainable development and economic resilience. Additionally, it seeks to lay the groundwork for policies that achieve a harmonious equilibrium between safeguarding, fostering innovation, and ensuring accessibility. This research takes into consideration Korea's innovation ecosystem and economic interests, with the goal of bolstering regional economic development and accruing economic benefits for Korea.

2. Literature Review

2.1 GVCs and FDI

Comprehending contemporary international production networks hinges on understanding Global Value Chains (GVCs), which cover the entirety of the production journey for goods or services. This journey spans from design and raw material processing to manufacturing and market services for end consumers. Broadly defined, GVCs entail production activities spanning across several nations, integrating intermediate inputs sourced from diverse origins.

The measurement of GVCs is challenging due to data limitations. However, improved data availability, such as international input-output databases like IDE-JETRO, OECD TiVA, EORA, and WIOD, has facilitated analysis. Studies utilizing these databases have revealed significant associations between inward FDI and GVC participation. UNCTAD[1] found a strong positive relationship between inward FDI stock growth and GVC participation growth across 187 countries, indicating that countries with larger FDI relative to their GDP exhibit higher GVC participation rates.

Van der Marel[2] conducted pairwise correlation analysis using OECD TiVA data, discovering a positive impact of GDP per capita on GVC participation. Conversely, factors such as market size, FDI restrictions, and regulatory barriers negatively affect backward participation. Kowalski et al.[3] focused on developing countries, revealing that structural factors and trade policy reforms influence GVC participation.

Further research by Buelens and Tirpak[4] confirmed a positive association between bilateral FDI stock and both gross bilateral trade and the bilateral import content of exports, indicating the role of foreign investors in shaping export structures and international

1) UNCTAD. 2013. "Global Value Chains and Development: Investment and Value-added Trade in the Global Economy". New York and Geneva: United Nations Conference on Trade and Development.

2) Van der Marel, E. 2015. "Positioning on the Global Value Chain Map: Where Do You Want to Be? Journal of World Trade 49, no. 6: 915-49.

3) Kowalski, P, J.L. Gonzalez, A. Ragoussis, and C. Ugarte' 2015. "Participation of Developing Countries in Global Value Chains: Implications for Trade and Trade-Related Policies". OECD Trade Policy Papers, No. 179. Paris: OECD Publishing.

4) Buelens, C, and M. Tirpak. 2017. "Reading the Footprints: How Foreign Investors Shape Countries' Participation in Global Value Chains". Comparative Economic Studies 59, no. 4: 561-84

production networks. Additionally, Wang and Chen[5] showed that outward foreign direct investment (FDI) facilitates increase participation in global value chains (GVCs), especially in countries with lower levels of total factor productivity (TFP).

2.2 IPRs and GVC

The concept of innovation, particularly in relation to the creation of knowledge, has long been regarded as crucial for economic development. Arrow[6] emphasized that innovation, if not adequately protected from imitation, could deter innovators from further efforts. Thus, intellectual property rights (IPR), such as patents, play a pivotal role in providing innovators with the incentive to innovate by ensuring they can reap the benefits of their efforts.

The optimal duration and scope of patent protection have been subjects of extensive debate. While longer patent terms may encourage innovation, excessive protection may lead to monopolistic practices detrimental to consumer welfare. Nordhaus[7] suggested that patent terms should be limited to balance innovation incentives and consumer interests. Similarly, Gallini[8] argued for wide patent scopes to deter imitation, while others like Maurer and Scotchmer[9] cautioned against overly broad patents stifling innovation.

5) Wang, Y, and S. Chen. 2020. "Heterogeneous Spillover Effects of Outward FDI on Global Value Chain Participation". Panoeconomicus 67, no. 5: 607-26.

6) Arrow, K. (1962). Economic welfare and the allocation of resources for invention. The rate and direction of inventive activity: Economic and social factors. Princeton, NJ: Princeton University Press.

7) Nordhaus,W. D. (1969). An economic theory of technological change. The American Economic Review, 59, 18–28.

8) Gallini, N. T. (1992). Patent policy and costly imitation. The Rand Journal of Economics, 23, 52–63.

9) Maurer, S. M., & Scotchmer, S. (2002). The independent invention defence in intellectual property. Economica, 69, 535–547.

In the context of globalization, the introduction of IPR into trade models, particularly in North-South trade frameworks, has highlighted conflicting interests between developed and developing countries. Glass and Saggi[10] found that strict IPR protection in Southern countries could harm both Northern and Southern interests. However, Branstetter et al.[11] suggested that strengthening IPR protection could lead to increased FDI and global innovation.

The concept of GVCs, introduced by Porter[12], has gained prominence in understanding international production networks. Despite the vital role of IPR in shaping GVC dynamics, it has been relatively understudied. Exceptions include Bolatto et al.[13], who found that the strength of IPR protection influences enterprise decisions on outsourcing and vertical integration within GVCs. However, existing frameworks for analyzing international production segmentation may not fully capture the complexities of developing countries' realities.[14] As such, there is a need for further research to explore the nuanced interactions between IPR, GVCs, and economic development.

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10) Glass, A. J., & Saggi, K. (2002). Intellectual property rights and foreign direct investment. Journal of International Economics, 56, 387–410.

11) Branstetter, L., Fisman, R., Foley, C. F., & Saggi, K. (2007). Intellectual property rights, imitation, and foreign direct investment: Theory and evidence. NBER Working Paper No. 13033.

12) Porter, M. E. (1985). Creating and sustaining superior performance. New York, NY: Free Press.

13) Bolatto, S., Naghavi, A., Ottaviano, G. I., & ZajcKejžar, K. (2017). Intangible assets and the organization of global supply chains. University of Bologna, Department of Economics Working Paper No. 1105.

14) Antràs, P., & Rossi-Hansberg, E. (2009). Organizations and trade. Annual Review of Economics, 1, 43–64.

2.3 IPR and FDI

The relationship between intellectual property protection and foreign direct investment (FDI) has been extensively explored by scholars, primarily at the national level. Numerous studies have demonstrated that robust intellectual property protection plays a significant role in attracting FDI, thus contributing to a country's innovation and economic growth. For instance, Falk and Peng[15] conducted a comprehensive analysis using data from 1200 cities across 80 countries, employing the Difference-in-Differences (DID) method to examine the impact of intellectual property systems on FDI inflows. Their findings revealed national heterogeneity in the relationship, with varying effects observed across different countries.

Similarly, Leahy and Naghavi[16] investigated the influence of intellectual property protection in developing countries on investment decisions by developed nations. They found that well-established intellectual property regimes in developing countries can lead to the localization of high-tech production through joint ventures, benefiting both developed and developing economies.

Additionally, Yi and Naghavi[17] argued that less developed countries should implement stricter intellectual property protection policies to

15) Falk, M., & Peng, F. (2018). Impact of the intellectual property tax regime on FDI in R&D activities at the City level. Review of Policy Research, 35(5), 733–749. https://doi-org.remotexs.ntu.edu.sg/10.1111/ropr.12296

16) Leahy, D., & Naghavi, A. (2010). Intellectual property rights and entry into a foreign market: FDI versus joint ventures. Review of International Economics, 18(4), 633–649. https://doi-org.remotexs.ntu.edu.sg/10.1111/j.1467-9396.2010.00901.x

17) Yi, X., & Naghavi, A. (2015). Intellectual property rights, FDI, and technological development. The Journal of International Trade & Economic Development, 26(4), 410–424. https://doi-org.remotexs.ntu.edu.sg/10.1080/09638199.20

attract FDI, facilitating technology transfer and promoting technological progress.

Contrary to the prevailing view, some scholars have suggested that intellectual property rights (IPRs) alone may not be sufficient to incentivize FDI, as other factors may play a more significant role in transnational corporations' investment decisions. For example, Maskus[18] and Pi & Song[19] highlighted the importance of various external factors that influence FDI decisions, such as market conditions, regulatory environment, and infrastructure.

Glauco et al.[20] utilized patent enforcement and intellectual property indices to investigate the impact of IPR on FDI and outward foreign direct investment (OFDI). Their research unveiled that the level of national intellectual property protection has minimal direct influence on FDI, underscoring the necessity to take into account a broader spectrum of factors that shape investment decisions.

2.4 Methodological Considerations and Research Gaps

Despite the significant body of literature on intellectual property

18) Maskus, K. E. (1998). The role of intellectual property rights in encouraging foreign direct investment and technology transfer. Duke Journal of Comparative & International law, 9, 109.

19) Pi, J., & Song, D. (2020). The threshold effect of factor Price distortion on technological content of exports: Evidence from China. China & World Economy, 28, 51–77. https://doi-org.remotexs.ntu.edu.sg/10.1111/cwe.12355

20) Glauco, D. V., Alexiou, C., Trachanas, E., & Luo, Y. (2021). Does intellectual property rights protection affect UK and US outward FDI and earnings from FDI? A sectoral analysis. Journal of Economics Studies, 49, 1387–1421. https://doi-org.remotexs.ntu.edu.sg/10.1108/JES-09-2021-0462

rights, FDI, and their interplay, several research gaps and methodological considerations persist. While existing studies have primarily focused on national-level analyses, there is a need to explore the individual differences between regions, taking into account the stage of economic development of each country. Additionally, the use of proxy variables, such as intellectual property protection indices, may introduce measurement bias, highlighting the importance of developing more objective measurement methods.

Furthermore, methodological approaches, such as the Ordinary Least Squares (OLS)[21] and Difference-in-Differences (DID)[22] models, have been commonly employed to evaluate intellectual property policies. However, these methods have limitations, including endogeneity issues and potential research biases. Hence, it becomes imperative to embrace alternative research methodologies, like the instrumental variable method and robustness tests, to ensure the attainment of more dependable and resilient conclusions.[23]

21) Ordinary Least Squares (OLS) is a statistical method used in regression analysis to estimate the parameters of a linear regression model. It works by minimizing the sum of the squared differences between the observed and predicted values of the dependent variable. OLS is widely used due to its simplicity and ease of implementation.

22) Difference-in-Differences (DID) is a statistical methodology used to ascertain causality, particularly useful in measuring the impact of natural experiments or policy changes. DID compares the differences between two or more groups or conditions, analyzing changes between treatment and control groups. This method is commonly used with time-series data, where the treatment group includes the group subjected to the treatment or intervention, while the control group does not. DID separates treatment effects by interactions between time and groups, helping to mitigate the influence of external factors.

23) Qian, X., Sun, M., Pan, M., Zou, W., & Li, G. (2023). Intellectual property rights policy and foreign direct investment: A quasi-natural experiment from China. Managerial and Decision Economics, 44(4), 2378–2392. https://doi.org/10.1002/mde.3823

3. The Role of Intellectual Property Rights

In today's rapidly evolving digital landscape, intellectual property (IP) and intellectual property rights (IPR) have emerged as critical drivers of economic growth, innovation, and competitiveness. This section delves into the multifaceted importance of IP and IPR, the challenges in balancing various stakeholders' interests, and the global implications for fostering innovation and facilitating international trade, with a particular focus on the ASEAN region.

3.1 Balancing Innovation Incentives and Societal Welfare

Firstly, it is imperative to acknowledge the pivotal role that IP and IPR play in incentivizing innovation. As intangible assets of human intellect, IP represents the culmination of creative and inventive endeavors. IPR, in turn, serve as rewards for these innovative achievements, providing creators and inventors with temporary monopoly power over their creations. This mechanism encourages investment in R&D, driving technological progress and fostering a culture of innovation. However, the challenge lies in striking a delicate balance between protecting the interests of IP owners and promoting broader societal welfare.

Indeed, the debate surrounding IPR protection revolves around this delicate balance. While robust protection measures are necessary to safeguard the interests of IP owners and encourage continued innovation, overly stringent regulations can stifle competition, hinder knowledge spillover, and impede technological progress. Conversely,

weak protection may lead to the proliferation of imitation products, undermining the incentives for original creators and inhibiting further innovation. Therefore, crafting effective IPR laws involves carefully balancing the short-term advantages of market exclusivity with the long-term benefits to society.

Moreover, the globalized nature of modern economies underscores the importance of IPR protection in facilitating international trade and fostering economic growth. With digitalization driving increased intellectual property intensity in trade, countries are compelled to enhance their IPR regimes to remain competitive in the global marketplace. Developed nations, keen to stimulate innovative activities and support technological advancement, advocate for robust IPR standards to protect their intellectual capital. Conversely, developing countries, especially those in the ASEAN region, perceive IPR protection as a tool to attract foreign investment, integrate into global value chains (GVCs), and adopt advanced technologies.

ASEAN, with its growing importance in global trade and production networks, stands at the nexus of these dynamics. The region's adherence to international agreements containing robust IPR standards is essential for businesses seeking to access or establish a foothold in GVCs. However, achieving this requires concerted domestic and international efforts to strengthen IPR protection mechanisms while ensuring that they facilitate technology adoption and stimulate innovation.

In conclusion, IPRs play a pivotal role in stimulating innovation and nurturing economic growth in the digital era. Effective mechanisms

for protecting IPR must delicately balance the dual objectives of incentivizing innovation and advancing broader societal welfare. Within the context of ASEAN, bolstering IPR protection holds critical significance for the region's successful integration into global value chains and sustained economic advancement. Therefore, policymakers must prioritize initiatives aimed at fortifying IPR regimes while nurturing an environment conducive to innovation and knowledge exchange. It is only through such concerted endeavors that nations can fully leverage the transformative power of IP to fuel sustainable growth and prosperity in the 21st century.

3.2 IPRs in Global Trade and Economics

In exploring the role of intellectual property (IP) within the trade, investment, and services nexus of the global economy, it becomes evident that IP plays a crucial role in facilitating economic specialization, innovation, and international trade. Historically, since the days of Adam Smith and David Ricardo, international trade has been recognized as a mechanism for mutual welfare gains through the international division of labor. Advanced economies tend to specialize in technology-intensive activities, while less developed economies often export labor-intensive goods, creating a global landscape of economic specialization. This process has been further facilitated by technological progress, leading to the so-called first unbundling of globalization.

The significance of intellectual property rights (IPR) in global value chains (GVCs) becomes apparent with the emergence of the second unbundling of globalization, driven by the information revolution.

This phase witnessed the fragmentation and offshoring of production processes, both vertically and horizontally, resulting in an intensive network of international trade and investment. The IP system plays a pivotal role in promoting international technology transfer and follow-on innovation within this framework. Developing countries, initially constrained by limited capital and technology, can participate in GVCs by specializing in labor-intensive activities and gradually upgrading their capabilities.[24)]

As production becomes increasingly fragmented and globalized, IP transfer accompanies offshoring activities, with IP owners sharing know-how with external partners. Effective IPR protection is crucial in this context, ensuring that intellectual assets are valued and protected within businesses' balance sheets. Moreover, enhancing IPR protection can improve the investment environment, attracting foreign investment and facilitating technology diffusion, thus contributing to the development of both technology-rich and technology-scarce countries.

However, IPR protection remains a contentious issue in international trade negotiations, with exporting countries advocating for more protective IP provisions to incentivize further innovation. Conversely, importing countries seek terms that allow for technology substitution and incremental innovation. Striking a balance between protective and flexible IPR regimes is essential to avoid hindering global technological progress while ensuring fair incentives for innovators.

24) Baldwin, R.E. (2011), '21st Century Regionalism: Filling the Gap between 21st Century Trade and 20th Century Trade Rules', *WTO ERSD Working Paper*, ERSD-2011-08.

The digital revolution further amplifies the importance of IPR protection, as digitalization accelerates the flow of data and information across borders, intensifying cross-border technology transfer and innovation. A well-functioning IP protection system is crucial in facilitating knowledge spillover among inventors and endorsing cross-border innovation in GVCs.[25]

The growing importance of IP is reflected in the increasing number of IP filing activities worldwide, particularly in Asia. With China surpassing the United States as the top filer of international patent applications, the global landscape of IP protection continues to evolve rapidly, underscoring the critical role of IPR in fostering innovation and economic growth in the 21st century global economy.

3.3 MNCs in GVCs: Regulation and Value Distribution

The notion of Global Value Chains (GVCs) encapsulates the diverse array of activities that businesses undertake to take a product or service from its creation to its ultimate consumption by end-users. GVCs emerged in the mid-1980s, signifying a profound transformation in global manufacturing and production methods. This evolution was primarily propelled by two key factors, as identified by Baldwin in 2013: firstly, the revolution in information and communications technology, which enabled the coordination of intricate activities across vast distances, and secondly, the substantial wage differentials between developed and developing nations, which rendered the division of labor across geographical borders economically feasible.[26]

25) Baldwin, R.E. (2016), *The Great Convergence: Information Technology and the New Globalization*. Cambridge, MA: Belknap.

GVCs epitomize the trend towards more specialized and geographically dispersed production processes. A key strategy within GVCs, particularly for multinational corporations (MNCs), is to relocate labor-intensive segments of production to regions with lower labor costs. This strategic relocation has historically led to the movement of manufacturing hubs from countries like Japan and Korea in the 1960s to places like Singapore, Taiwan, Hong Kong, and more recently, to China and Southeast Asian nations.

Recent scholarly focus on GVCs has shifted towards understanding how value is distributed across different stages of the value chain. Research by Timmer et al. in 2014 on 560 GVCs between 1995 and 2008 highlighted a consistent pattern of value addition, often depicted as a U-shaped or 'smiling curve'. This curve illustrates that the highest value is captured at the R&D and marketing stages of production, typically controlled by MNCs, while the assembly stages, often located in developing countries, capture the least value.[27] The control exerted by MNCs over the value distribution within GVCs is further reinforced through intellectual property rights (IPR), which protect their innovations and market access, and through contractual agreements with original equipment manufacturers (OEMs) for production.

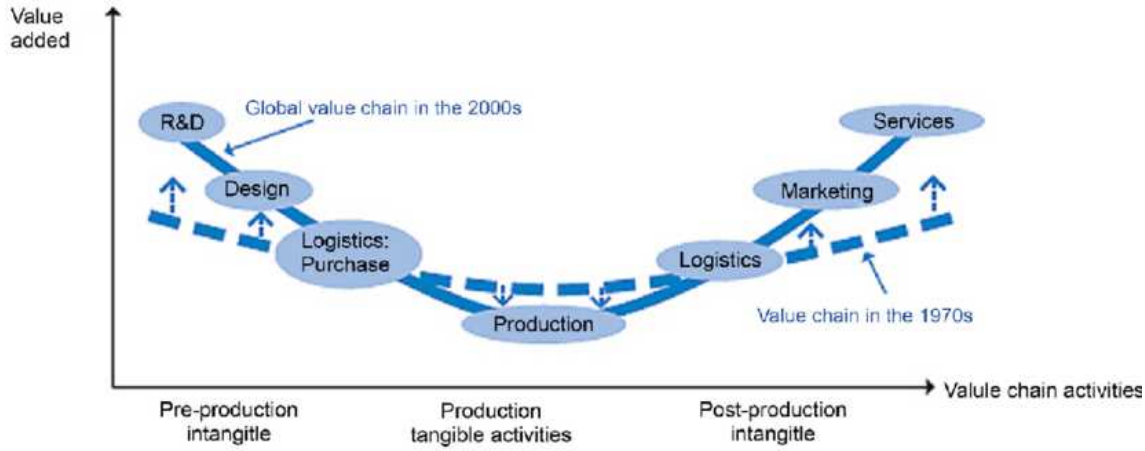
The 'smiling curve' phenomenon is exemplified by companies like Apple, where a significant portion of the profits is allocated to product development and branding, despite the actual assembly of

26) Baldwin, R. (2013), 'Global Supply Chains: Why They Emerged, Why They Matter, and Where They are Going', in D.K. Elms and P. Low (eds.), *Global Value Chains in a Changing World*. Geneva: WTO Publications, pp. 13–60.

27) Timmer, M.P., A. Erumban, B. Los, R. Stehrer and G. de Vries (2014), 'Slicing Up Global Value Chains', *The Journal of Economic Perspectives*, 28(2), pp. 99–118.

products being carried out in countries like China. This distribution of value underscores a broader trend within GVCs where the share of value-added attributed to low-skilled workers in emerging economies has been on the decline.[28)]

<The smiling curve value distribution along the global value chain>



source: Interconnected Economics Benefiting for Global Value Chains. OECD2013

The regulation of GVCs raises questions beyond economic considerations, delving into the mechanisms of control and governance within these complex networks. Traditionally, states have been viewed as the primary regulators of economic activities. However, within the context of GVCs, MNCs emerge as key regulatory actors, particularly through the enforcement of IP laws. The power dynamics within GVCs often place MNCs in a dominant position, enabling them to dictate terms and conditions to their suppliers, typically located in lower-value stages of the value chain.

The protection and enforcement of intellectual property play a crucial role in maintaining the distribution of value within GVCs. MNCs leverage IP laws to secure exclusive rights over their

28) Kraemer, K., G. Linden and J. Dedrick (2011), 'Capturing Value in Global Networks: Apple's iPad and iPhone', https://pdfs.semanticscholar.org/9cb5/262a46e-7c9131de43433b7c5f9b65386f8e2.pdf (accessed 22 January 2019).

innovations, thereby ensuring their bargaining power and profit margins. The global push for higher IP protection standards, as evidenced by agreements like the TRIPS Agreement, can be attributed to the lobbying efforts of MNCs, particularly those based in the US, aimed at safeguarding their interests within GVCs.[29]

In conclusion, the dynamics of GVCs highlight the intricate interplay between technological advancements, economic strategies, and regulatory frameworks. The role of MNCs as both participants and regulators within GVCs underscores the complex power relations that influence the distribution of value across global production networks. For countries and firms looking to navigate or improve their positions within GVCs, understanding these regulatory mechanisms and the strategic use of IPR is crucial.

3.4 Global IPR Landscape: Agreements and Economics

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) stands as the bedrock of international intellectual property (IP) law, setting forth minimum standards for IP protection worldwide since its establishment in 1994. It aims to balance the interests of IP producers and consumers, fostering an environment conducive to technology transfers and innovation. TRIPS, binding for all World Trade Organization (WTO) members, does not seek to homogenize national IP laws but sets a foundational standard for IP regulation related to international trade. It mandates that countries must provide both national treatment and most-favoured-nation treatment, with non-compliance potentially leading to dispute

29) Sell, S. (2011), 'TRIPS Was Never Enough: Vertical Forum Shifting, FTAS, ACTA, and TTP', *Journal of Intellectual Property Law*, 18(2), p. 447.

resolution within the WTO framework.

TRIPS is integral to WTO membership, requiring adherence to the Berne Convention and offering extended transition periods for least-developed countries. This is particularly beneficial for such countries in promoting technological innovation and ensuring the dissemination of technology, aligning with the needs of developing nations to have technology transfer as a crucial aspect of IP protection agreements. The ASEAN region regards TRIPS as a benchmark for its IP protection system, with the agreement providing safeguards and flexibilities for latecomer countries to advance public interest objectives within the IP legal framework. This allows nations like Cambodia, Laos, and Myanmar additional time to develop a robust technological infrastructure.[30)]

Parallelly, the World Intellectual Property Organization (WIPO) administers various treaties to protect IP globally, including the WIPO Copyright Treaty (WCT) and WIPO Performances and Phonograms Treaty (WPPT), known as the "Internet treaties". These came into effect in 2002, adapting IP rights to the digital age and balancing the rights of IP owners with public interest, while protecting against the circumvention of technological measures and unauthorized alteration of ownership information.[31)]

Despite these multilateral efforts, the rapid pace of digital transformation and global value chains (GVCs) necessitates higher IP standards and enforcement. This has led to a proliferation of bilateral and regional agreements that complement the multilateral framework, often driven by advanced economies like the US, the

30) WTO (2015), *Understanding the WTO*. Geneva: WTO.

31) WIPO (2003), *The WIPO Internet Treaties*. Geneva: WIPO.

European Union, and Japan, which advocate for stringent global IP norms. The US, in particular, as a major exporter of IP-intensive goods and services, has a vested interest in robust IP protection to maintain its competitive edge in knowledge-intensive sectors. Domestically, the US boasts one of the strictest IP regimes, which translates into its international advocacy for strong IP enforcement, often through bilateral and plurilateral agreements. This approach not only supports the US economy by creating job opportunities and fostering innovation but also sets a precedent for high-standard IP governance globally.[32)]

3.5 ASEAN: From 'Flying-Geese' to GVCs

The transformation of ASEAN from the traditional 'flying-geese' model to a complex, multi-layered network of regional production sharing, often referred to as the second unbundling, marks a significant shift towards intensive intra-regional trade and investment since the 1980s. This evolution has positioned the region as a crucial hub in global value chains (GVCs), enhancing economic ties both within Asia and globally, and earning the moniker 'Factory Asia'.[33)]

Despite the economic integration and interdependence, Intellectual Property Rights (IPR) protection remains a developmental challenge

32) Chen, L., S. Urata, J. Nakagawa, and M. Ambashi (2018), 'Introduction: Mega FTAs in the 21st Century Global Trade Governance', in L. Chen, S. Urata, J. Nakagawa, and M. Ambashi (eds.), *Emerging Global Trade Governance: Mega Free Trade Agreements and Implications for ASEAN*. New York, NY: Routledge, pp. 1–11.

33) Chen, L. and P. Intal (2017), 'ASEAN Foreign Trade, Investment, and Integration in Comparative Perspective', in P. Intal and L. Chen (eds.), *ASEAN @ 50: ASEAN and Member States: Transformation and Integration*. Jakarta: ERIA, pp. 34–61.

for many ASEAN member states. However, there has been a continued emphasis on enhancing IP governance, with Singapore (84.94%) and Malaysia (53.44%) consistently leading the region by maintaining their standings above the 50% benchmark in the IPR protection index, as reported by the US Chamber of Commerce in 2023.[34] This sustained high level of IPR protection is crucial for fostering innovation and attracting foreign investment, especially in a region characterized by a significant number of non-resident IP applications, which indicates a high reliance on foreign knowledge and technology.

The ASEAN region's commitment to enhancing IPR protection is further evidenced by its adherence to international treaties and agreements. All ASEAN countries, except Myanmar, are parties to key global IP agreements such as the Berne Convention and the Patent Cooperation Treaty. Moreover, the adoption of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) by four ASEAN member states (Brunei Darussalam, Malaysia, Singapore, and Viet Nam) represents a significant step towards stronger IPR enforcement. The CPTPP, building upon the TRIPS Agreement and other treaties, aims to set a transparent and predictable standard for IP protection in the Asia-Pacific, with its IP chapter (Chapter 18) setting out provisions that exceed the requirements of TRIPS ('TRIPS-plus').

The Regional Comprehensive Economic Partnership (RCEP), encompassing all ASEAN member states, also addresses IPR, building on the TRIPS Agreement and reinforcing the commitment

34) US Chamber of Commerce Global Innovation Policy Center, (2023), *International IP Index 2023 Eleventh Edition*

to modern, comprehensive, and mutually beneficial IP standards across Asia. Both the CPTPP and RCEP highlight the challenges posed by digitalisation to IPR enforcement, with specific provisions aimed at ensuring effective action against infringement in the digital environment.

<Participation of ASEAN Member States in Key WIPO-Administered Treaties and Major Trade Agreements (CPTPP and RCEP)>

State	Berne Convention	Paris Convention	Patent Cooperation Treaty (PCT)	Madrid System	WIPO Copyright Treaty (WCT)	CPTPP	RCEP
Brunei	O	O	O	O	O	O	O
Cambodia	O	O	O	O	O	X	O
Indonesia	O	O	O	O	O	X	O
Laos	O	O	O	O	X	X	O
Malaysia	O	O	O	O	O	O	O
Myanmar	X	O	X	X	X	X	O
Philippines	O	O	O	O	O	X	O
Singapore	O	O	O	O	O	O	O
Thailand	O	O	O	O	O	X	O
Vietnam	O	O	O	O	O	O	O

Since 2000, ASEAN member states have collectively participated in an extensive network of trade agreements, engaging in nearly 300 Free Trade Agreements (FTAs)[35], with a substantial number of these agreements featuring dedicated chapters on Intellectual Property Rights (IPR). Singapore stands out in the region, having consistently included specific IPR chapters within its FTAs, highlighting ASEAN's commitment to safeguarding and managing intellectual property as part of its economic integration efforts.

35) ASIA REGIONAL INTEGRATION CENTER. Retrieved from https://aric.adb.org/fta-country

In conclusion, the ASEAN region's evolution in production sharing and economic integration has been accompanied by a growing focus on strengthening IPR protection. Through adherence to international treaties, participation in agreements like the CPTPP and RCEP, and the negotiation of bilateral FTAs with robust IP provisions, ASEAN member states are working towards enhancing their IP regimes. This is crucial for encouraging foreign technology transfer, fostering innovation, and supporting the region's continued growth and integration into the global economy.

3.6 Strengthening IPRs in ASEAN: Digital Economy and GVCs

In the modern economic landscape, shaped by digitalization and global value chains (GVCs), the significance of intellectual property (IP) has surged. As nations transition into digital economies, the enforcement and protection of intellectual property rights (IPR) become pivotal. ASEAN member states are urged to view IPR protection not merely as a policy element but as a fundamental entry requirement for participation in GVCs. The risk of exclusion from these chains looms large for countries without robust IP regimes, especially as many Asian countries have ascended to middle- or high-income statuses with burgeoning capacities for domestic innovation. It is in their long-term economic interest to promulgate high-standard IPR regulations that foster local innovation and safeguard the rights of creators.

The ASEAN Framework Agreement on Intellectual Property Cooperation, endorsed by the economic ministers during the Fifth ASEAN Summit, and the establishment of the Working Group on

Intellectual Property Cooperation in 1995, represent significant milestones in fostering a unified regional approach to IPR. These endeavors have laid the groundwork for a robust institutional framework facilitating collaboration within the region. However, to keep pace with the rapid expansion of GVCs and the complexities introduced by digitalization, ASEAN needs to further enhance its IPR standards through additional policy efforts.

Post the conclusion of pivotal agreements such as the CPTPP and RCEP, the imperative for ASEAN member states is to implement these agreements diligently. This necessitates domestic adjustments or reforms to fulfill the commitments made. Such a transition could be particularly challenging for countries with nascent legal systems and lower public awareness of IPR.

The establishment of a robust IP regime should be a cornerstone of a country's legal framework. The effectiveness of an IPR system should be gauged by its ability to spur local creation and innovation. A country must consider IP issues when formulating investment, competition, industrial, foreign, and education policies. It is the public's awareness and support for IP protection that will ultimately determine the success of these efforts. Without public buy-in, even the strongest government sanctions against IPR violations may prove insufficient.

Partnerships between the public and private sectors are essential to raise IP awareness and understanding. While the TRIPS Agreement and WIPO treaties remain foundational in the 21st-century governance of economic activities, the continuous evolution of

digitalization and GVCs introduces new challenges for IPR protection. Local IP regimes must at least align with the standards of multilateral agreements and aspire to higher standards, keeping in mind domestic social tolerance and the transitional costs, which may result in short-term economic losses.

For developing countries, initiatives that leverage the 'shared' nature of the digital economy, such as mechanisms for rights holders to voluntarily donate or license patents, are welcomed. However, such initiatives must operate on principles of equality and voluntariness, ensuring that innovators are not coerced into technology transfer.

International IPR agreements must be binding and enforceable, with transparent and predictable rule implementation. A practical dispute settlement mechanism is indispensable to ensure compliance. Additionally, given the strong economic interdependence within "Factory Asia," regional cooperation in strengthening IPR protection should complement national efforts, leading to mutual benefits.

In essence, innovation is intrinsically linked to IP issues. In many ASEAN member states, the scarcity of qualified human capital is a bottleneck for invention and local innovation, which also impacts the effectiveness of IPR protection. Education and training policies must, therefore, align with innovation strategies and IPR policies. For latecomer countries like Cambodia, Lao PDR, and Myanmar, technical assistance programs outlined in the RCEP IP chapter's annex are crucial for capacity building, emphasizing the need for deeper regional cooperation.

Looking to the future, the seismic shifts brought about by digitalization and GVCs necessitate that ASEAN and its member states remain well-prepared for further disruptions. As global IPR rules are still in flux, ASEAN must actively engage in global rule-making to ensure their interests are represented. Should the market's proactive engagement lag, ASEAN leaders are tasked with politically advancing these processes, balancing the protection of inventors' rights with the need to maintain dynamic market competition and the potential for long-term innovation.

4. IP Cooperation in ASEAN

4.1 Overview

Over the past four decades, intellectual property (IP) has emerged as a vital asset, with ideas and innovation serving as the new currency of the day. Intellectual Property, encompassing patents, copyrights, trademarks, and other intangible creations of the human mind, plays a crucial role in economic development by fostering wealth creation for creative and entrepreneurial individuals. Effective management of Intellectual Property not only increases revenue streams for businesses but also enhances shareholder value, protects technological innovations, strengthens brand recognition, and boosts competitive advantage in the global marketplace.

In the context of the ASEAN Economic Community (AEC), IP is integral to achieving national and regional socio-economic development goals. Regional cooperation in IP began with the

ASEAN Framework Agreement on Intellectual Property Cooperation signed in 1995. This agreement aimed to promote cooperation among ASEAN Member States (AMS)[36] in intellectual property rights, including administration, enforcement, and protection. The ASEAN Working Group on Intellectual Property Cooperation (AWGIPC) was subsequently established in 1996 to implement cooperative activities, supported by various sub-committees focusing on trademarks, patents, enforcement, and capacity building.

The AWGIPC's objectives include accelerating IP asset creation, enhancing regional IP frameworks and institutions, promoting IP dialogues, and strengthening human and institutional capabilities in IP-related matters. Progress has been made in recent years through initiatives such as work-sharing arrangements, regional IP databases, and common examination guidelines. The ASEAN IPR Action Plan 2016-2025[37] outlines strategic goals to develop a more robust IP system, enhance regional IP platforms, foster an expanded and inclusive IP ecosystem, and improve mechanisms for asset creation and commercialization.

Implementation of the action plan involves initiatives ranging from improving patent and trademark services to promoting IP awareness among Micro, Small, and Medium Enterprises (MSMEs) and the creative sectors. Additionally, the ASEAN Digital Integration Framework Action Plan (DIFAP) 2019-2025[38] and ASEAN Plan of

36) ASEAN Member States include Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

37) ASEAN Intellectual Property Rights Action Plan 2016-2025: Meeting the Challenges of "One Vision, One Identity, One Community" through Intellectual Property. (n.d.). Retrieved from https://www.aseanip.org/docs/default-source/content/asean-ipr-action-plan-2016-2025-(for-public-use).pdf?sfvrsn=ee6b6141_1

38) ASEAN Digital Integration Framework Action Plan (DIFAP) 2019–2025. (2019). Retrieved from

Action of Science & Technology, 2016-2025[39] provide further strategies to enhance IP enforcement in the digital environment and support creativity and entrepreneurship.

Overall, Intellectual Property is recognized as a cornerstone of economic development in the ASEAN region, with ongoing efforts to strengthen IP systems, infrastructure, and mechanisms to foster innovation, creativity, and competitiveness.

4.2 Priority Initiatives

The ASEAN Working Group on Intellectual Property Cooperation (AWGIPC) collaborates closely with various IP institutions, development partners, and private sectors to develop and implement initiatives aimed at advancing the strategic goals outlined in the ASEAN Intellectual Property Rights Action Plans. These partners include IP Australia, European Patent Office, European IP Office, Japan Patent Office, Korean IP Office, IP Office of New Zealand, China National IP Administration, United States Patent and Trademark Office, World IP Organisation, ASEAN IP Association, Business Action to Stop Counterfeiting and Piracy (BASCAP) under the International Chamber of Commerce, and the International Trademark Association.[40]

These initiatives aim to strengthen IP systems, promote awareness, and enhance cooperation in the ASEAN region, contributing to economic development and innovation.

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39)https://asean.org/our-communities/economic-community/asean-science-technology-and-innovation/key-documents/

40)https://asean.org/our-communities/economic-community/competitive-innovative-and-inclusive-economic-region/intellectual-property-rights/

<Key Initiatives of the ASEAN IPRs Action Plan by Year[41)]>

2015	Conduct IP Diagnostic of AMS IP System to ascertain issues and the extent of their impact on delivery of IP Services
2016	Trademark and Design Diagnostics for all AMS
	Revamped ASEAN IP Portal
2017	Accession to Madrid Protocol
	Publication of the Common Guidelines on Substantive Examination of Trademarks
	Website for MSMEs on IP Awareness and Training
2018	Accession to Madrid Protocol
	Website for MSMEs on IP Awareness and Training
	Publication of the Common Guidelines on Industrial Design Examination
	Creative ASEAN – Furniture Design Competition
2019	Adopt a prioritised approach for ASEAN Patent Examination Co-operation (ASPEC) requests filed for technologies supporting ASEAN Innovation
	Finalise the feasibility study on the ASEAN IP Academy
	Finalise the Handbook on IP Enforcement Rules and Regulations.
	Accession to the Madrid Protocol by remaining AMS (Malaysia in 2019; Myanmar beyond 2019)
2020	Complete the Viability Analysis on an ASEAN TM Registration System
	Produce the initial draft of ASEAN Common Guidelines on Patent Examination
	Complete the Guidelines on Geographical Indications (GI) Registrations and protection mechanism of GIs in AMS and the impact study of ASEAN GI registration in the ASEAN region
2021	Establish a virtual platform for an ASEAN IP Academy
	Complete the study on the Quality Management System of the AMS in relation to Patent Processes
	Complete the comparative study on GRTKTCE
	Complete the draft of ASEAN Common Guidelines on Patent Examination

41) https://asean.org/wp-content/uploads/2018/02/AECC18-ASEAN-DIFAP_Endorsed.pdf

4.3 ASEAN IPR Action Plan: Implementation

The ASEAN Working Group on Intellectual Property Cooperation (AWGIPC) plays a crucial role in implementing the ASEAN Intellectual Property Rights Action Plan (AIPRAP), with the cooperation of various stakeholders such as academia, businesses, and dialogue partners. Given the significance of Intellectual Property in ASEAN's economic integration, the implementation of AIPRAP 2025 remains a top priority.

Established in 1996, the AWGIPC functions as a specialized body tasked with managing IP concerns throughout the region, consisting of the IP offices from ASEAN Member States. To efficiently execute the objectives outlined in the AIPRAP 2025 (ASEAN Intellectual Property Rights Action Plan 2025), the AWGIPC has instituted task force units or sub-committees, each dedicated to particular domains:

· Task Force on Trademarks (TMTF): Established in 2014, TMTF focuses on delivering regional initiatives related to trademarks. This includes feasibility studies on establishing a regional trademark registration system and updating the ASEAN Common Guidelines on Substantive Trademark Examination.

· ASEAN Task Force on Patent Examination Cooperation (ASPEC): Established in 2011, ASPEC is dedicated to delivering priority regional initiatives on patents. Notable achievements include the launch of the Patent Cooperation Treaty-ASPEC (PCT-ASPEC) and ASPEC Acceleration for Industry 4.0 Infrastructure and Manufacturing (ASPEC-AIM).

· ASEAN Network of IP Enforcement Experts (ANIEE): Formed in 2017, ANIEE comprises enforcement experts from ASEAN Member States dedicated to enforcing IP laws and digital protection, as outlined in AIPRAP 2025.

· ASEAN Intellectual Property Academy Working Group: Established in 2020, this group aims to establish the ASEAN IP Academy, a key priority deliverable for 2021, and reports progress to the AWGIPC.

Traditionally, the AWGIPC holds three sectoral meetings per year, typically in March, July, and November, while other task force groups may have fewer meetings. Presently chaired by Deputy Director General Dr. Le Ngoc Lam from The National Office of Intellectual Property of Vietnam, the AWGIPC continues to lead efforts to enhance intellectual property cooperation within ASEAN.[42)]

4.4 Limitations and Implications

4.4.1 Limitations

In examining ASEAN's efforts to boost its innovativeness and subsequent economic and social development, several significant limitations emerge. Notably, except for Singapore, R&D funding across ASEAN countries remains markedly low.

42) Retrieved from https://asean.org/our-communities/economic-community/competitive-innovative-and-inclusive-economic-region/intellectual-property-rights/

This discrepancy highlights a fundamental challenge within the region, where even nations like the Philippines, which pioneered the implementation of the National Innovation System (NIS) in the late 2000s, and Indonesia, which is approaching efficiency frontiers, struggle to achieve high innovation efficiency. Surprisingly, Singapore's advanced NIS implementation and development status do not shield it from the broader region's innovation efficiency issues, revealing a systemic underperformance in leveraging innovation investments.

<R&D Expenditures in ASEAN Member States>[43]

Country (Year)	GERD (in local currency)	R&D Ratio (GERD as % of GDP)	GERD per Capita
Brunei (2004)	4,925	0.04	17.30
Cambodia (2002)	8,357,010	0.05	0.50
Indonesia (2009)	4,671,354,585	0.04	3.50
Lao PDR (2002)	6,560,000	0.04	0.50
Malaysia (2006)	3,646,700	0.63	80.10
Myanmar (2002)	9,122,008	0.16	0.16
Philippines (2007)	7,566,360	0.11	3.90
Singapore (2009)	7,128,096	2.26	1,431.40
Thailand (2009)	18,225,253	0.21	16.70
Vietnam (2002)	1,032,560,900	0.19	3.10

Source: UNESCO Institute for Statistics

The observed mismatch between R&D investments and innovative outcomes in ASEAN points to a deeper issue of limited innovative capacities across the region. This discrepancy underscores the need

43) STUDY ON THE STATE OF S&T DEVELOPMENT IN ASEAN, (2017).Retrieved from https://asean.org/wp-content/uploads/2017/10/01-Study-on-the-State-of-S_T-Development-in-ASEAN-Vol-1-ASEAN-State.pdf

for a strategic increase in R&D expenditure to nurture an environment conducive to innovation-led growth. Nonetheless, the broad nature of these observations complicates the formulation of targeted NIS development recommendations for individual countries, necessitating a nuanced approach that considers each country's unique development trajectory, economic structure, and the innovation input-output time lag.

4.4.2 Policy Implications

Given the constraints outlined, it becomes increasingly imperative for ASEAN to develop a nuanced and comprehensive strategy to bridge the innovation efficiency gap. This strategy must extend beyond traditional measures, such as patent filings and research infrastructure, to encompass a broader spectrum of innovation metrics. These metrics should not only evaluate inputs like knowledge stocks but also assess tangible outcomes of innovation. Presently, there is a disproportionate focus on input-based indicators, which overlook the essential aspect of their economic impact, a more accurate gauge of innovation success.

To effectively tackle these challenges, ASEAN nations are urged to escalate their investments in research and development (R&D) and devise robust frameworks for translating innovation inputs into tangible economic benefits. This endeavor may entail fostering stronger public-private partnerships, fortifying intellectual property rights frameworks, and fostering greater engagement of the private sector in the innovation ecosystem. Furthermore, there is a pressing need to harmonize national innovation policies within the ASEAN

region to create a cohesive and synergistic approach to innovation, thus optimizing the collective potential of member states.

In addition to these efforts, South Korea stands poised to play a pivotal role in supporting ASEAN's innovation agenda. Leveraging its expertise and experience as a global innovation leader, South Korea can facilitate knowledge exchange programs and collaborative research initiatives with ASEAN countries. Furthermore, South Korea can provide financial incentives and capacity-building support to encourage collaboration and accelerate the development and adoption of innovative solutions within the ASEAN region. By leveraging its strengths and fostering closer ties with ASEAN nations, South Korea can significantly contribute to advancing the regional innovation ecosystem, fostering mutual growth, and prosperity for all involved parties.

5. Digital Economy and IP Evolution in Southeast Asia

5.1. Singapore

5.1.1 Overview

Singapore stands as a compelling case study for a project focused on understanding the factors influencing the status of intellectual property (IP) in emerging markets across Southeast Asia. Notably, Singapore's trajectory mirrors the theory asserting that a robust IP framework fosters economic prosperity. In 1965, upon gaining independence, Singapore's per capita Gross National Income (GNI)

was a modest US$529, predominantly reliant on entrepôt trade[44] and British military presence. At the time, the nation lacked substantial physical and IP infrastructure. Presently, Singapore has transformed into a highly industrialized state, boasting a GNI per capita of US$ $67,200 in 2022[45], earning it the designation of a "high-income country" by the World Bank—akin to established First World nations. On the IP front, Singapore's legal protective measures surpass TRIPS (Trade-Related Aspects of Intellectual Property Rights) standards.

This chapter thoroughly examines the progression of Singapore's intellectual property (IP) laws, outlining the policy motives behind amendments during three critical phases of economic growth: (1) 1965-1989 (Transition to an Industrialized Economy); (2) 1990-1999 (Shift toward a Globalized Economy); and (3) 2000 and Beyond (Progressing into a Knowledge-Based Economy). Furthermore, it delves into the enforcement of IP rights, going beyond legal provisions to evaluate their real-world implementation.

The chapter also offers a concise overview of cultural, political, educational, and scientific elements contributing to Singapore's robust IP infrastructure. Notably, Singapore distinguishes itself from other Southeast Asian countries and East Asian “Tigers” such as South Korea, as its rapid technological advancement and industrialization hinge significantly on Multinational Corporations (MNCs) rather than indigenous enterprises.[46]

44) Entrepôt trade, also known as re-export trade, involves the importation of goods into a country without significant processing, followed by their re-export to another destination. It typically occurs in strategic locations like ports or free trade zones and plays a crucial role in facilitating global commerce.

45) the World Bank. GNI per capita, Atlas method (current US$) - Singapore. https://data.worldbank.org/indicator/NY.GNP.PCAP.CD?locations=SG

In summary, the chapter briefly considers whether Singapore's robust IP infrastructure may potentially hinder innovation within local firms. Additionally, it offers insights into the utilization of a strong IP framework to attract foreign direct investment (FDI) to a nation.

5.1.2 IPR Evolution

5.1.2.1 1965-1989 (Transition to an Industrialized Economy)

Singapore's post-independence economic journey, starting in 1965, was fraught with challenges. With limited resources and a small population, the nation faced a decline in entrepôt trade, lost key markets, and anticipated the departure of the British Army, resulting in a spike in unemployment rates to 14%. To counter this, Singapore adopted an export-oriented industrialization strategy, actively seeking foreign investors in both low and high-tech industries. By the late 1970s, unemployment was resolved, but a tight labor market emerged, necessitating a shift towards higher value-added activities in the 1980s.

During this initial industrialization phase (1965-late 1970s), intellectual property (IP) played a minor role, with low-tech industries rarely engaging with IP beyond trademarks. The Multinational Corporations (MNCs), driving higher-tech sectors, were not yet focused on IP. The existing IP framework inherited from British rule encompassed copyright, patent, design, and trademark

46) Wong, P. K. (2001). From leveraging multinational corporations to fostering technopreneurship: The changing role of S&T policy in Singapore. International Journal of Technology Management, 22, 539.

protection, supplemented by common-law actions for trade secrets.

Singapore's IP landscape began evolving in the mid-1980s, aligning with its emphasis on higher technology industries, notably software. Policy-makers acknowledged the necessity for robust copyright laws to stimulate creativity and support the software sector, encompassing satellite broadcasting, sound and video recording, computer science, cable television, and photocopying. Additionally, international pressure, notably from the United States, played a significant role in driving the overhaul of copyright legislation. Consequently, in 1987, Singapore enacted the Copyright Act, which not only adheres to international standards but also addresses specific national requirements.[47)]

Singapore's enactment of the Copyright Act on January 26, 1987, in response to pressure from the United States, yielded significant results. This legislation, which remains in effect today, not only aligns with international copyright standards but also includes provisions tailored to Singapore's specific needs. For instance, it allows for parallel imports to ensure accessibility to lower-priced legitimate editions of books. Additionally, the Copyright Act of 1987 extended protection to computer programs as literary works and incorporated regulations to safeguard American works, as part of an agreement with the United States that resulted in an enhanced Generalized System of Preferences (GSP) package for Singapore.

Despite initially benefiting from this enhanced GSP package, Singapore faced a setback when it was informed of its graduation

47) HANSARD. (1986, May 5). The Second Reading of the Copyright Bill (Vol. 48, pp. 11-12).

from GSP status by the United States in 1989.[48] However, rather than dwell on this development, Singapore adopted a resilient approach, focusing on enhancing competitiveness and diversifying its markets. This response was driven not only by external factors such as the GSP status but also by internal considerations, as Singapore recognized the importance of a robust copyright regime in its domestic context.[49]

During Singapore's 25-year industrialization period, a total of 14,596 patent applications and 107,289 trademark applications were submitted. Notably, the Second Industrial Revolution phase (1980-1989) saw the highest activity, with 59% of patent applications and 56% of trademark applications filed during this decade, indicating the economy's maturity.[50]

In summary, Singapore's dynamic economic policies, coupled with strategic shifts in IP focus, played a pivotal role in its transformation from a struggling nation to a high-income economy, demonstrating the intricate interplay between economic development and intellectual property.

5.1.2.2 1990-1999 (Shift toward a Globalized Economy)

In the late 1980s, Singapore faced escalating competition from

48) United States General Accounting Office. (1994). Assessment of the Generalized System of Preferences Program (pp.63-64). https://www.gao.gov/assets/ggd-95-9.pdf

49) Barton, J. (2004), "Patents and the Transfer of Technology to Developing Countries", in Patents, Innovation and Economic Performance: OECD Conference Proceedings, OECD Publishing, Paris, https://doi.org/10.1787/9789264015272-24-en.

50) Intellectual Property Office of Singapore. https://www.ipos.gov.sg/

neighboring developing nations. By 1992, China had surpassed ASEAN's share in total foreign direct investment (FDI) and emerged as Asia's leading FDI recipient. To address this, Singapore's economic strategy for the 1990s aimed to bolster both the service and manufacturing sectors, enhance technological capabilities, and establish a robust global presence.

Central to this strategy was the conviction that a strong IP framework, particularly an efficient patent system, was indispensable. However, the existing patent registration system, established under the colonial-era Registration of U.K. Patent Act 1937, was viewed as costly, complicated, and burdensome. In response, the Ministry of Law launched a review in 1990, guided by advice from the World Intellectual Property Organization (WIPO). Subsequently, in 1994, the new Patents Act was enacted, drawing inspiration from the U.K. Patents Act 1977 but incorporating several notable differences. For example, Singapore explicitly allowed parallel imports and did not restrict the patenting of animal or plant varieties or biological processes, except for microbiological ones. While this decision presented ethical complexities, its goal was to stimulate research in biotechnology and related fields.

Singapore implemented a "self-examination" mechanism for patent registration, demonstrating an inventive method of handling intellectual property within a small yet extensively globalized economy. In this system, the Intellectual Property Office of Singapore (IPOS) does not conduct in-depth examinations of patent applications. Instead, it relies on search and examination reports from specified foreign patent offices or international organizations accredited under the Patent Cooperation Treaty (PCT). This

approach enables Singapore to seamlessly align with the global patent framework without the substantial investment necessary to establish an autonomous search and examination infrastructure.

This strategic decision is closely aligned with Singapore's wider economic strategy, which is to engage actively with the global economy and position itself as a hub for innovation and intellectual property management in Asia. By acceding to key international agreements like the PCT, the Budapest Treaty, and the Paris Convention, Singapore ensures that its patent system is compatible with international standards, which is attractive to multinational corporations and enhances the country's reputation as a secure and predictable place for investment in innovation.

The move towards reliance on established foreign patent authorities for assessing patent applications underscores Singapore's pragmatic approach to leveraging international systems to its advantage, facilitating its integration into the global market and reinforcing its position as a gateway for international business in the region.

With the General Agreement on Tariffs and Trade (GATT) negotiations conclusion in the late 1990s, Singapore's WTO entry in 1995 and adherence to TRIPS standards marked a pivotal moment. Significant revisions to IP laws ensued between 1995 and 2000 to meet TRIPS obligations. Noteworthy amendments included broadening patent eligibility by removing restrictions on certain subjects, enacting new trademark and geographical indications acts, extending copyright protection, and introducing regulations for layout designs of integrated circuits.

Additionally, Singapore adjusted IP laws in the 1990s to address public and industry needs, and keep pace with technological advancements. Amendments aimed to rectify issues surrounding parallel imports, remove restrictions on commercial entities in "fair dealing" defense, introduce a more accessible design registration system, and address copyright concerns in the online environment. IP practice in Singapore experienced substantial growth in the 1990s, with a 720% increase in average annual patent applications compared to the preceding 25 years.[51)]

5.1.2.3 2000 and Beyond (Progressing into a Knowledge-Based Economy)

In 1995, Singapore achieved "high-income country" status, boasting a GNI per capita of US$24,520. The strategies of the 1990s propelled Singapore's manufacturing sector, particularly in biotechnology, catalyzing substantial growth. However, regional competition heightened and to sustain competitiveness, Singapore's present economic agenda places paramount importance on transitioning into a "knowledge-based, innovation-driven economy." This involves further advancements in the manufacturing sector, with a focus on research-intensive pursuits and the expansion of digital media.[52)]

Moreover, Singapore recognizes the pivotal role of bolstering external relations. This supplements its support for the World Trade

51) Intellectual Property Office of Singapore. https://www.ipos.gov.sg/

52) Ministry of Trade and Industry Singapore. (2018). Economic Contributions of Singapore's Creative Industries. Retrieved from https://www.culturenet.cz/coKmv4d994Swax/uploads/2018/08/Economic-Contributions-of-Singapore´s-Creative-Industries.pdf

Organization (WTO) with bilateral Free Trade Agreements (FTAs). Among these, the U.S.-Singapore FTA, inked in May 2003, holds special significance from an intellectual property (IP) perspective. This agreement incorporates IP protection standards that surpass those delineated in the TRIPS Agreement and even more recent international IP treaties. Notable examples include provisions regarding the parallel importation of pharmaceuticals, the "Bolar" exception for generic drug testing, and extensions to patent terms. Additionally, it extends copyright duration and introduces stringent anti-circumvention measures and enforcement provisions, closely aligning with U.S. IP laws.[53]

Singapore's engagement with the U.S.-Singapore Free Trade Agreement demonstrates its proactive approach to fostering a knowledge-based economy, emphasizing intellectual property as a key component. The country's policy on the parallel importation of pharmaceuticals reflects a nuanced position in the international dialogue, aiming to balance the protection of IP rights with the need to make essential medicines accessible and affordable in developing nations. This approach is part of Singapore's strategic economic planning and reflects its broader commitment to playing a constructive role in addressing global health challenges while promoting innovation.

Following the FTA's signing, Singapore made adjustments to its IP laws in 2004-2005 to fulfill FTA obligations and accommodate technological advancements. These changes also aimed to maintain a balanced approach to copyright, transitioning to a broader

53) Abbott, F. M. (2005). Toward a New Era of Objective Assessment in the Field of TRIPS and Variable Geometry for the Preservation of Multilateralism. Journal of International Economic Law, 8(1), 77–100. https://doi.org/10.1093/jielaw/jgi005

"open-ended" model akin to the American "fair use"[54] defense from the British "fair dealing"[55] model.[56]

This adjustment signifies a deliberate shift towards a more adaptable legal framework, one that is better equipped to respond to the evolving landscape of technology and the varied applications of copyrighted materials. By embracing a more open-ended model of fair dealing, Singapore is taking a forward-thinking step towards fostering a copyright regime that not only encourages innovation but also remains flexible enough to accommodate unforeseen uses of intellectual property.

Simultaneously, the evolution of Singapore's patent system complements this flexible approach to intellectual property management. With the progressive phase-out of the "foreign route" or "self-examination" system, Singapore is transitioning away from relying on selected foreign patent offices for substantive examination results. Since January 1, 2020, this change has been gradually

54) The American model of fair use does not limit the purposes for which copyrighted material can be used without authorization. Instead, it provides a non-exhaustive list of factors to be considered in determining whether a particular use is fair. These factors include the purpose and character of the use (including whether it's commercial or educational), the nature of the copyrighted work, the amount and substantiality of the portion used in relation to the copyrighted work as a whole, and the effect of the use on the potential market for or value of the copyrighted work. This model offers greater leeway for new and unforeseen uses of copyrighted materials, fostering innovation and adaptation to new technologies and societal needs.

55) The British model of fair dealing is a more restrictive approach to copyright exceptions. It specifies limited purposes for which copyrighted material can be used without the permission of the copyright owner. These purposes typically include research or private study, criticism or review, and reporting of current events. The main characteristic of this model is its specificity and the clear boundaries it sets, which provide a relatively predictable legal environment for both copyright owners and users.

56) Ng-Loy, Wee Loon. (2006). Restoring the Balance in IP Law. In Teo, K. S. (Ed.), Developments in Singapore Law between 2001 and 2005. Singapore Academy of Law.

implemented, affecting first filings, divisional applications, or convention-type applications, as well as PCT national phase applications with a priority claim or first filings without a priority claim.[57)]

Applicants are now presented with the choice of the "domestic route,"[58)] which involves a combined search and examination carried out within Singapore, or the "mixed route," where examination is based on a suitable foreign search report. Despite the local route's higher costs, it offers a comprehensive examination option available in all cases. The mixed route may be more economical, especially when existing foreign search results can be utilized, yet it may incur additional costs if new prior arts are discovered.

This change is indicative of Singapore's commitment to aligning its examination procedures more closely with its patentability criteria, ensuring that the patent system remains robust and reflective of the country's innovation-driven goals. It underscores the need for applicants to engage proactively with their patent applications and make strategic decisions early in the examination process.

5.1.2.4 Singapore IP Strategy 2030

In a forward-looking stride, the Singaporean government unveiled the "Singapore IP Strategy 2030" (SIPS 2030) on World Intellectual Property Day in April 2021. This visionary 10-year plan is designed

57) Tips for handling substantive examination in Singapore. (2021). Spruson & Ferguson.
58) https://www.ipos.gov.sg/about-ip/patents/how-to-register/domestic-route

to solidify Singapore's status as a global powerhouse for intangible assets (IA) and intellectual property (IP). At its core, SIPS 2030 aspires to draw high-value transactions in the realm of IA and IP, recognizing that these intangible assets now constitute a staggering 54% of the total value of global assets.

SIPS 2030 comprises a multifaceted approach, encompassing several pivotal initiatives. One key focus lies in harnessing the potential of Big Data. This entails the development of a cutting-edge IA/IP framework, which involves critical reforms to facilitate innovative uses of large-scale data, such as computational data analysis. This shift opens doors to transformative applications like text and data mining, data analytics, and machine learning.

Additionally, the strategy places a significant emphasis on the promotion of Artificial Intelligence (AI) technologies. Collaboration with industry leaders is underway at the Intellectual Property Office of Singapore (IPOS) to bolster the local IA/IP regime. This includes plans for the introduction of a next-generation IP filing system, anticipated to enhance accessibility and efficiency for innovators and enterprises alike.

Recognizing the globalized nature of the economy, SIPS 2030 aims to fortify Singapore's IP connections with both ASEAN and the broader world markets. Notable efforts include Patent Prosecution Highway arrangements with major IP markets, streamlining the patent prosecution process and expediting patent grants.

SIPS 2030 aims to position Singapore as a global hub for resolving international intellectual property (IP) disputes. Notably, amendments to both the Arbitration Act and the International Arbitration Act have recently clarified that IP disputes can be subject to arbitration in Singapore. In a further effort to bolster expertise in IP dispute resolution, the Intellectual Property Office of Singapore (IPOS) is considering the development of specialized IP courses. These courses, offered in collaboration with esteemed training providers such as the Singapore Institute of Arbitrators and the Singapore Mediation Centre, would empower professionals to contribute to the existing pool of IP dispute resolution experts.

Additionally, IPOS is working towards establishing a pool of highly qualified IP expert witnesses. The IP bench in Singapore has also received a boost through strategic appointments of experts in IP and technology to the High Court. This move not only strengthens the expertise available in Singapore's judiciary but also reinforces its reputation as a go-to destination for the arbitration of international IP disputes.

Furthermore, SIPS 2030 strategically emphasizes enhancing business growth by leveraging Intellectual Assets (IA) and Intellectual Property (IP) effectively. A key initiative within this strategy is the development of "IP Grow," an innovative online platform. This digital resource is designed to support enterprises by offering guidance on IA/IP-related challenges and facilitating connections with specialized service providers. Essentially, "IP Grow" acts as a bridge, linking businesses to a network of IP experts and resources, thereby empowering them with the tools and knowledge necessary to navigate the complex landscape of intellectual property and to

harness their intellectual assets for sustainable growth and competitive advantage.

Lastly, Singapore is making significant strides in establishing a comprehensive system for assessing the value of Intellectual Assets (IA) and Intellectual Property (IP). This initiative aims to increase transparency and improve how IA and IP are reported, which in turn will make it easier for businesses to secure funding and engage in transactions involving these assets. To achieve this, Singapore plans to introduce clear guidelines for disclosing IA/IP information and to set up a panel of international experts dedicated to IA/IP valuation. This move is designed to better recognize and leverage the intellectual capital of businesses, thereby facilitating their growth and innovation in the global marketplace.[59)]

In conclusion, SIPS 2030 heralds a new era for Singapore, envisioning a future where the nation stands as a global leader in technology, innovation, and enterprise within the ASEAN region. While specific details of the reforms are yet to be fully outlined, their anticipated impact on Singapore's economic landscape is nothing short of transformative. This forward-looking strategy is poised to shape the future of intangible assets and intellectual property in Singapore and beyond.

5.1.3 Enforcement Advances

In recent years, Singapore has made substantial progress in

59) Singapore IP Strategy (SIPS) 2030 Report.
https://www.ipos.gov.sg/manage-ip/singapore-ip-strategy-2030

fortifying its intellectual property (IP) enforcement framework. Notably, the United States had previously raised concerns about perceived lapses in IP piracy enforcement within Singapore. These concerns encompassed issues like the widespread availability of pirated optical disks and a perceived reliance on IP right owners to shoulder the primary burden of investigation and prosecution.[60]

In response to these apprehensions, Singapore took proactive measures to bolster its IP enforcement mechanisms. In 2000, the creation of the IP Rights Branch within the Specialised Crime Division marked a pivotal step. Tasked with conducting targeted raids against retail vendors of pirated works, this unit underscored Singapore's commitment to combatting IP infringement.

A pivotal transformation occurred in 2001 when the Intellectual Property Office of Singapore (IPOS) was restructured into a statutory board. Beyond its traditional role in patent and trademark registration, IPOS assumed a critical role in policy formulation, legal reforms, and public awareness campaigns pertaining to IP rights.

The establishment of the dedicated IP Court within the Supreme Court in 2002 represented a significant milestone. This specialized court plays a crucial role in adjudicating complex IP cases, ensuring that legal proceedings are overseen by judges with expertise in intellectual property law.

Singapore has adopted a rigorous stance on sentencing for IP

60) UNITED STATES TRADE REPRESENTATIVE (USTR), 2000 SPECIAL 301 REPORT 28 (2000).

counterfeiting offenses. Notably, former Chief Justice Yong Yung How emphasized custodial sentences as the norm, particularly for cases involving substantial quantities of infringing articles. This approach aligns with the government's commitment to position Singapore as a regional intellectual property hub.

In 2005, Singapore introduced legislation criminalizing "significant and willful" infringements of copyright. This legal framework has been actively utilized to prosecute businesses for unlicensed software usage and individuals for unauthorized distribution of copyrighted digital content.

In Singapore, the inclination towards using alternative dispute resolution (ADR) methods like mediation and arbitration for settling disputes, particularly in intellectual property matters, aligns with the broader cultural and societal values prevalent in Asia. This preference for ADR reflects a harmonious blend of traditional Asian values with the pragmatic needs of a highly industrialized economy. The recent legal reforms, such as the introduction of the new Supreme Court of Judicature (Intellectual Property) Rules 2022, further facilitate this approach by providing a structured and cost-effective framework for IP litigation, with options like the "Simplified Process for Certain Intellectual Property Claims." This not only underscores Singapore's commitment to efficient dispute resolution but also embodies the Asian emphasis on consensus and reconciliation over adversarial legal battles. The comprehensive IP services offered by legal professionals in Singapore, covering both contentious and non-contentious aspects, further support this balanced approach, ensuring that the resolution of disputes is in keeping with both the legal and cultural ethos of the region.[61)]

5.1.4 Digital Economy

In 2022, Singapore's digital economy experienced a significant growth, contributing over 17% to its Gross Domestic Product (GDP), an increase from the 13% recorded in 2017. This growth amounted to S$106 billion (around $77.5 billion USD), up from S$58 billion in 2017. The digital economy's expansion is attributed to the information and communications sector and the widespread digitalization across various industries.

The information and communications sector played a pivotal role in this growth, offering essential services such as telecommunications, IT consultancy, cloud computing, and software development. This sector's growth was propelled by the increased adoption of digital technologies among businesses, leading to a significant expansion of the tech workforce.

Key sub-sectors like gaming, online services, and e-commerce were major growth drivers within the information and communications sector, benefitting from the heightened digital adoption during the Covid-19 pandemic. Additionally, other sectors saw considerable growth from digitalization, particularly finance and insurance, wholesale trade, and manufacturing, contributing to the economy's digital contribution rising from 8.7% in 2017 to 11.9% in 2022. This growth outstripped the overall GDP growth, highlighting the digital economy's robustness.

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61) Resolving your IP dispute under Singapore's "Simplified Process" for IP litigation. (2023). Law Business Research.

Business adoption of digital technologies surged from 74% in 2018 to 94% in 2022, leading to an increase in tech jobs from approximately 155,500 in 2017 to 201,100 in 2022. In Singapore, where social shopping is a cultural activity, the digital economy's rise is especially significant.

The Singaporean government is committed to further enhancing the digital economy and cultivating a skilled tech workforce, as evidenced by strategic investments and initiatives aimed at boosting digital capabilities among businesses and workers. Deputy Prime Minister Lawrence Wong has announced an investment of SG$200 million over the coming years for projects in this area.[62)]

5.1.5 Success Factors

Singapore's significant position within specific global value chains (GVCs) highlights the critical role of an efficient intellectual property (IP) protection system in enticing multinational corporations across diverse industries. Positioned strategically in Asia, Singapore has effectively drawn in numerous multinational enterprises to establish operations within its borders. Remarkably, by 2023, the city-state housed regional headquarters for approximately 4,200 multinational companies, underscoring its reputation as a favored destination within the international business arena.[63)]

62) Singapore Economic Development Board(https://www.edb.gov.sg/) and Infocomm Media Development Authority(https://www.imda.gov.sg/business)

63) More multinationals are picking Singapore over Hong Kong for Asian headquarters. (2024). The Business Times.

Among these multinational companies are over 60 multinational medical technology firms, which have chosen Singapore as a base for regional headquarters, manufacturing, and research and development (R&D) activities. These corporations capitalize on Singapore's prowess in design and engineering, its extensive network of automation suppliers, and its rigorous quality assurance standards to produce premium medical products. Furthermore, Singapore accommodates 50 regional headquarters of top-tier medical technology firms, employing the nation as a strategic base to execute their 'Asia strategy' and penetrate further into the region.

In addition to the medical technology sector, Singapore has also proven attractive to companies in other industries. For instance, Qualcomm, a global leader in the wireless telecommunications industry, has chosen Singapore as the location for its patent holdings, drawn by tax incentives and the country's conducive environment for research and development. Qualcomm's presence in Singapore extends to joint ventures with other corporations, highlighting the country's significance as a hub for technology innovation.[64)]

The recent relocation of Dyson's global headquarters to Singapore further exemplifies the strategic significance of the country in GVCs. Dyson's decision underscores the growing importance of Asia in its growth strategy and signifies a shift in resource allocation along GVCs.[65)] Overall, Singapore's ability to attract and retain multinational companies across various industries underscores the

64) Qualcomm and TDK Announce Launch of Joint Venture. (2017). https://www.qualcomm.com/news/releases/2017/02/qualcomm-and-tdk-announce-launch-joint-venture

65) Dyson to move head office to Singapore. (2019). BBC.

critical role of an effective IP protection system in fostering economic growth and competitiveness within GVCs.

Singapore's approach to intellectual property (IP) protection stands as a model of efficiency, intricately woven into the fabric of the nation's stable cultural and political environment. Rooted in a steadfast dedication to the rule of law and characterized by an almost negligible tolerance for corruption, Singapore's measures are particularly vital as the digital and software industries continue to burgeon. One of the most noteworthy strategies employed by Singapore is its rigorous implementation of site-blocking measures, aimed at safeguarding the rights of content creators.

The robust framework established by Singapore not only serves to invigorate the economy but also erects a formidable barrier against regional piracy. By consistently maintaining online infringement rates well below the 40% threshold, Singapore sets a commendable example for other nations grappling with similar challenges in the realm of intellectual property protection.[66)]

The continuity of governance under the People's Action Party (PAP) since 1965 has been instrumental in fostering an environment conducive to strategic, long-term IP planning. This political constancy, coupled with a significant parliamentary majority, ensures swift and effective legislative processes, enhancing both statutory and common-law IP protections.

66) Asia Pacific consumer surveys show benefits of effective site blocking. (2023). https://piracymonitor.org/asia-pacific-consumer-surveys-show-benefits-of-effective-site-blocking-avia-cap/

In Singapore, education holds paramount importance, characterized by compulsory six-year primary education with a bilingual curriculum. The nation boasts a literacy rate of 97.13% as of 2020[67], underlining its educational success. Home to prestigious universities like the National University of Singapore and Nanyang Technological University, Singapore emphasizes research, industry collaboration, and entrepreneurship in higher education, contributing significantly to its global educational reputation.

Underpinning these academic achievements is the Agency for Science, Technology, and Research (A*STAR), which orchestrates public sector research and development (R&D), seamlessly blending educational excellence with commercial innovation. ASTAR fosters a unique synergy between academic research and market-driven innovation, playing a critical role in advancing scientific discovery and technological innovation to ensure that research outcomes have practical applications and contribute to Singapore's economic development. Moreover, A*STAR facilitates collaborations between research institutions and industry partners, enhancing Singapore's position as a global innovation hub.[68]

5.1.6 Summary

Singapore's dynamic intellectual property (IP) framework stands as a cornerstone of the nation's economic advancement, bolstered by the government's recognition of its pivotal role. The immediate economic gains witnessed after the adoption of a First World level of IP

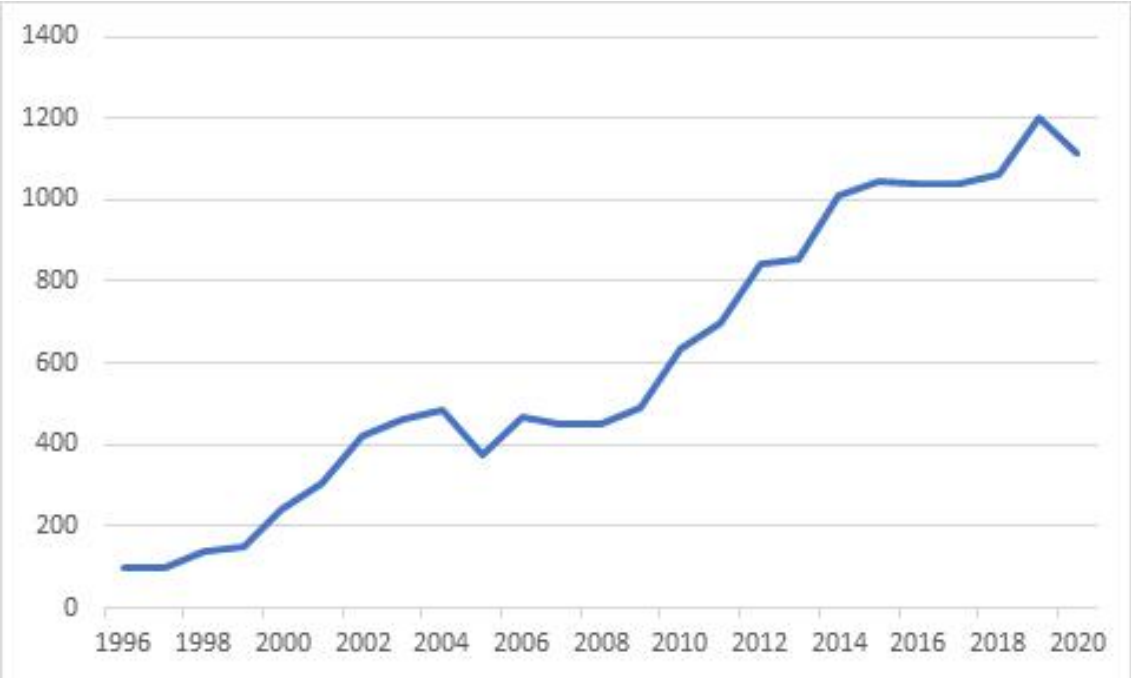
67) https://www.macrotrends.net/countries/SGP/singapore/literacy-rate

68) AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH (A*STAR). https://www.a-star.edu.sg/

protection underscore the significance attributed to this aspect, attracting key players across various industries. However, it is vital to recognize that while a robust IP infrastructure is essential, it is not the sole driver of foreign direct investment (FDI). Singapore's esteemed education system, cosmopolitan environment, and pro-business policies also wield significant influence in attracting investment and fostering innovation.

Contrary to the assumption that robust IP rights may disproportionately benefit multinational corporations (MNCs) over local enterprises, Singapore's IP regime has not impeded the progress of technology by indigenous firms. An analysis tracking U.S. Granted Patents Originating in Singapore reveals a notable upswing in Singapore-related USPTO patents since 1996, indicating a substantial increase in innovative activity within the nation's borders.

<U.S. Granted Patents: Total Patents Originating in Singapore>



source : https://fred.stlouisfed.org/series/PATENT4NSGTOTAL#

In light of these developments, developing Asian countries, particularly those in ASEAN, need to strategically consider their IP policies within global value chains (GVCs) to enhance their long-term competitiveness. Drawing from Singapore's example, strategies could include investing in education and training for IP specialists, maintaining a functional and corruption-free legal system, aligning statutory laws with regional and global standards, and fostering governance transparency and stability. Manufacturing activities remain crucial for generating employment and urbanization, even as countries transition towards smart manufacturing, as evidenced by Singapore's ongoing efforts to adapt to changing industrial landscapes.

5.2. Malaysia

5.2.1 Overview

The realm of intellectual property (IP) plays a pivotal role in shaping Malaysia's innovation landscape and economic progress. In recent years, Malaysia has emerged as a proactive player in the global IP arena, implementing a range of policy initiatives, establishing a comprehensive enforcement framework, and actively engaging in international IP agreements and Free Trade Agreements (FTAs). This multifaceted approach underscores Malaysia's commitment to fostering a conducive environment for creativity, innovation, and economic growth.

This comprehensive exploration delves into three key facets of Malaysia's IP landscape. Firstly, we will examine the policy initiatives undertaken by the Malaysian government to fortify the nation's IP ecosystem. These initiatives span a wide spectrum, from incentivizing innovation to nurturing a culture of respect for intellectual property rights. Secondly, we will delve into Malaysia's robust IP enforcement system, which encompasses legal frameworks, regulatory bodies, and enforcement mechanisms designed to safeguard the rights of creators and innovators. Finally, we will analyze Malaysia's active participation in international IP agreements and FTAs, highlighting the nation's commitment to aligning with global best practices and facilitating cross-border collaboration.

This endeavor aims to provide a comprehensive overview of Malaysia's IP landscape, shedding light on the policies, systems, and international engagements that collectively contribute to the nation's dynamic and evolving IP ecosystem. Through this exploration, valuable insights are gained into the measures that Malaysia has put in place to stimulate innovation, protect IP rights, and actively participate in the global knowledge economy.

5.2.2 IPR Evolution

The historical evolution of intellectual property (IP) protection in Malaysia is a tale that stretches back to the colonial era, beginning with the introduction of English law through the Second Charter of Justice in 1826 in the Straits Settlements of Penang, Singapore, and Malacca. This early period saw the theoretical application of English patent and copyright law, which was later supplemented by Indian

legislation. However, evidence suggests that these protections were rarely, if ever, invoked during this time.

The first significant steps towards localized IP legislation came with the Inventions Ordinance of 1871, followed by gradual developments in trademark and copyright protections, culminating in more comprehensive legislations by the early 20th century. The Federated and Unfederated Malay States, along with the protectorates of North Borneo and Sarawak, experienced a slower and less complete reception of IP principles, often relying on the re-registration of UK rights.

The post-World War II period marked a new chapter with the formation of the Federation of Malaya, leading to the unification of various regional IP laws under the new Trade Marks Ordinance of 1950. Independence in 1957 and the subsequent formation of Malaysia in 1963, which included Sarawak and Sabah, introduced further complexities in the IP legal framework due to differing historical legislations.[69)]

The late 20th and early 21st centuries saw significant reforms aimed at standardizing and enhancing IP protection in Malaysia. The introduction of the Trade Marks Act of 1976 centralized trademark registration, and subsequent amendments aligned Malaysian laws with international standards, particularly the TRIPS Agreement. The Patents Act of 1983, along with its amendments, established a unified patent protection system, extending the protection period and incorporating provisions for utility models and PCT applications.

69) Khaw, L. Tee. (1994). Copyright law in Malaysia. Butterworths Asia.

Copyright legislation also underwent substantial revisions, with the 1969 Act being replaced in 1987 and further amended to comply with international conventions and address digital copyright issues. Additionally, new laws were introduced to protect industrial designs, integrated circuits, geographical indications, and plant varieties, completing Malaysia's legal framework for IP.

In a pivotal move in 2007, the Malaysian government announced the National Intellectual Property Policy (NIPP) and the establishment of specialized IP courts, underlining its commitment to fostering an IP-based knowledge economy. The NIPP aims to integrate IP into national economic policies, support technology transfer, promote effective IP management, and position Malaysia as a leading IP hub. This comprehensive strategy involves enhancing IP protection standards, promoting commercialization, developing IP management capabilities, and raising public awareness.[70]

In summary, Malaysia's IP protection system has evolved from a fragmented colonial legacy to a unified and sophisticated legal framework, reflecting the country's commitment to leveraging IP for economic development and innovation. The ongoing efforts to align with international standards and the strategic focus on IP as an economic driver signify Malaysia's ambition to establish itself as a prominent player in the global IP landscape.

5.2.3 Enforcement Advances

70) Gee, L. H. (2010). A study of the historical development of the Malaysian patent system.

The Malaysian government has established various agencies to translate its aspirations into concrete policies, assistance programs, and standards. These include the Ministry of Domestic Trade and Cost of Living (KPDN)[71], the Intellectual Property Corporation of Malaysia (MyIPO)[72], and the National Intellectual Property Policy (NIPP)[73].

KPDN has taken steps to strengthen Malaysia's enforcement regime regarding intellectual property rights (IPR), such as cooperating with rights holders, training prosecutors for specialized IPR courts, and forming a Special Anti-Piracy Taskforce.

MyIPO, established in 2003, regulates IP-related matters and has introduced online registration and IP courts. DHIN was introduced to leverage IP for economic and social prosperity, leading to the establishment of agencies like MyIPO and Intellectual Asset Management, focusing on IP creation, protection, and commercialization.

Responsibility for IPR is shared among multiple ministries and agencies, including the Ministry of Communication and Multimedia Malaysia, Malaysian Administration Modernisation and Management Planning Unit, Ministry of Home Affairs, supported by the Royal Malaysia Police and MyIPO.

The digitalization of the economy began with the establishment of the Malaysia Digital Economy Corporation (MDEC)[74] in 1996,

71) https://www.kpdn.gov.my//?option=com_content&view=article&id=126&Itemid=209&lang=en

72) https://www.myipo.gov.my/en/home/

73) https://www.kpdn.gov.my/en/corporate-info/policy

formerly known as the Multimedia Development Corporation. MDEC advises the government on legislation, policies, and investments related to local technology firms and oversees the development of Cyberjaya, Malaysia's science park modeled after Silicon Valley.

In 1996, MDEC also established the Multimedia Super Corridor (MSC)[75] to manage digital development, offering incentives to firms with MSC status, including exemptions from local ownership rules, recruitment of foreign knowledge employees, tax breaks, and research and development grants. MDEC's main objective is to promote the digital economy and entrepreneurship, attract foreign investors, support local tech talents, and create a digital-friendly environment. The MSC, initiated by MDEC, aims to stimulate and manage digital advancement in Malaysia, offering benefits to businesses located within the area.

5.2.4 International Standards and Agreements

Malaysia's commitment to protecting intellectual property rights (IPR) is evident through its adherence to international standards and active participation in global agreements. The country's IP laws, including the Copyright Act of 1987, are designed to align with the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement, and Malaysia's legal framework is periodically reviewed by the TRIPS Council to ensure compliance. This demonstrates

74) https://mdec.my/

75) The Multimedia Super Corridor (MSC) has been renamed to Malaysia Digital (MD) as part of an initiative by the Government of Malaysia through the Malaysia Digital Economy Corporation (MDEC) in 2022 to further promote and enhance the nation's digital economy.

Malaysia's dedication to fostering an environment that respects and protects the intellectual property of both local and foreign investors.

At the international level, Malaysia has reinforced its commitment to IPR protection by being a member of the World Intellectual Property Organization (WIPO) and acceding to significant treaties such as the Paris Convention, the Berne Convention, and the TRIPS Agreement. The amendments made to the Copyright Act in December 2011, aimed at addressing issues like internet service provider liabilities and unauthorized recording in theaters, further illustrate Malaysia's efforts to comply with international standards, specifically the WIPO Copyright Treaty and the WIPO Performance and Phonogram Treaty, to which Malaysia acceded in September 2012.

In the realm of broader trade agreements, Malaysia's engagement in international trade agreements such as the Trans-Pacific Partnership Agreement (TPPA) and its successor, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), underscores its active role in shaping global discussions on Intellectual Property Rights (IPR), with a notable focus on the pharmaceutical sector and copyright regulations.

However, the CPTPP's IPR stipulations, particularly concerning pharmaceuticals, have sparked debate. Analysts suggest that these provisions might allow pharmaceutical firms to escalate trade values through increased drug prices, potentially hindering the availability of generic drugs and impacting Malaysia's healthcare standards negatively. Moreover, a significant portion of the CPTPP's IPR

provisions appear to be predominantly influenced by US preferences, raising questions about their applicability and benefit to the other member nations, including Malaysia. While Article 18 of the CPTPP delineates copyright regulations, much of its framework is reflective of Malaysia's existing Copyright Act, albeit with some exceptions regarding suspended rights. This overlap has fueled discussions on the necessity and practicality of adopting a universal standard via the CPTPP, especially when Malaysia's own legislation already offers a thorough framework for copyright protection.

Moreover, the adoption of stringent criminal copyright provisions within the TPPA, influenced by the Anti-Counterfeiting Trade Agreement, has raised concerns regarding the extent of criminal liability. There are apprehensions that these provisions could encompass actions not motivated by commercial gain but still significantly affect the interests of copyright holders. This shift towards a stricter approach to copyright infringement poses broader implications for Malaysia's legal landscape, particularly concerning the requirement of mens rea (the intention or knowledge of wrongdoing) and the interpretation of activities conducted on a 'commercial scale'.[76)]

Apart from IPR issues, the TPP's investor–state dispute settlement provisions pose another challenge for Malaysia, potentially allowing foreign companies to sue the government for policy changes that affect their profits. This could undermine national laws and the judiciary, affecting public welfare-oriented state-owned enterprises (SOEs) by prohibiting non-commercial assistance, which is crucial

76) Abdul Ghani Azmi I.M., G.H. Heng, S.T. Pek, and P.S. Cheng (2018), 'Trans-Pacific Partnership Agreement Minus One and Enhanced Criminal Penalty for Online Copyright Piracy: Malaysia's Options', *Journal of World Trade*, 52(3), pp.461–477.

for many SMEs that form the backbone of Malaysia's economy.[77]

In summary, while Malaysia's commitment to IPR protection and participation in international agreements like the CPTPP reflects its integration into the global economy, there are significant considerations and potential implications for the country's legal and economic landscape. The ongoing debate and uncertainty surrounding Malaysia's ratification of the CPTPP, as indicated by government officials, highlight the complexity of balancing international commitments with national interests and the protection of local industries and public welfare.

5.2.5 Digital Economy

5.2.5.1 overview

Malaysia has undergone significant economic transformation from its agrarian and commodity-based roots to a diversified and resilient economy. Historically, the country transitioned towards fostering new industries, leading to reduced income inequality and increased participation of indigenous groups in the modern economy. Government policies promoting export-oriented industrialization, particularly in manufacturing and the production of microelectronics, along with the export of key commodities like tin, rubber, palm oil, and crude oil, contributed to sustained economic growth. The robust

77) Jaipragas, B. (2019), 'Malaysia Won't Be Pressured into CPTPP: Trade Minister Darell Leiking', *This Week in Asia*, https://www.scmp.com/week-asia/politics/article/2182574/malaysia-wont-be-pressured-cptpp-trade-minister-darell-leiking (accessed 5 January 2019).

domestic demand and employment rates further propelled this growth, with Malaysia emerging as a major exporter of electrical and electronic products.

Despite facing challenges such as the Asian financial crisis in 1998 and the global financial crisis in 2008, Malaysia remained resilient through proactive macroeconomic policies and a strengthened financial sector. This resilience, coupled with active participation in global value chains (GVCs), particularly in the final stages of production, enhanced Malaysia's role in regional and international trade networks. The country's efforts to diversify its economy have yielded numerous benefits, including increased growth, job opportunities, access to global markets, and technology transfer.[78)]

5.2.5.2 Industry 4.0 and Digital Transformation

Looking ahead, Malaysia is strategically positioning itself to achieve high-income status by harnessing the transformative potential of Industry 4.0 and embracing digitalization across its economy. Through its ambitious National Policy on Industry 4.0, known as Industry4WRD, Malaysia is catalyzing a profound digital transformation in its manufacturing sector and connected services. This initiative enjoys extensive government support, empowering businesses, both domestic and foreign, to embrace cutting-edge technologies such as cloud computing, artificial intelligence (AI), Internet of Things (IoT), robotics, and machine learning.

78) Han, L.M. and T.B. Hwa (2017), 'Global Value Chains and the Drivers of Exports in Malaysia', *BNM Quarterly Bulletin*, second quarter, pp. 18–20.

Recognizing the pivotal role of digitalization in sustaining economic growth and enhancing living standards amid escalating costs, Malaysia is committed to equipping its workforce with the requisite skills for the digital age. Industry4WRD strives to attain four key objectives: fostering growth in manufacturing GDP, bolstering national productivity, fostering the creation of skilled employment opportunities, and elevating the nation's innovation capabilities and global competitiveness. Led by the Malaysian Investment Development Authority (MIDA), this initiative extends grants to small and medium-sized enterprises (SMEs) to support their integration of Industry 4.0 technologies and processes.

One notable success story exemplifying the impact of Industry4WRD is Comcorde Medical Sdn. Bhd., a medical device manufacturer. Leveraging the program's support, Comcorde Medical significantly improved its production efficiency through automation and data-driven decision-making, ultimately enhancing its competitiveness in the global market.

By nurturing a digitally savvy workforce, Malaysia aims to unlock new opportunities and drive innovation, thereby accelerating its journey towards becoming a developed nation within the next decade. As Malaysia embraces technological advancements and capitalizes on the opportunities presented by digital transformation, the country's future prospects are poised for continued growth and prosperity. Through collaboration with MIDA and other stakeholders, Malaysian manufacturers are well-positioned to scale their operations, drive growth, and future-proof their businesses in an increasingly digital landscape.[79)]

79) Malaysia accelerates tech transformation with industry4WRD. (2023). Reuters.

5.2.5.3 Challenges in Malaysia's IP Landscape for a Sustainable Digital Economy

Malaysia, in its journey towards becoming a knowledge-based economy, faces multifaceted challenges in the realm of IPRs. These challenges not only affect the creative industries but also have broader implications for all sectors reliant on intellectual property for differentiation and competitiveness.

Awareness and Understanding

A significant hurdle in the effective utilization and protection of IPR in Malaysia is the pervasive lack of awareness and understanding among stakeholders, particularly within Small and Medium Enterprises (SMEs). The digital economy's rapid evolution, marked by the blurring lines between traditional and digital content, demands a robust comprehension of IPR's scope and significance. However, the intricate nature of IP laws and the perceived esotericism of IP systems deter many from engaging with these rights fully. This gap in knowledge and awareness undermines the potential for IP to be leveraged as a strategic business asset, essential for fostering innovation and securing a competitive edge in the global market.[80)]

Procedural Complexities

The complexities and time-consuming nature of IP registration and enforcement procedures further exacerbate the challenges faced by

80) Harris, H., K.A. Aziz, and M. Norhisham (2012) 'Success Strategies of SMEs in the Creative Sector in Malaysia: A Case Study of Les Copaque', *International Journal of Management Practice*, 5(3), pp. 287–299.

stakeholders. For many SMEs, the perceived bureaucratic hurdles and associated costs of IP protection are daunting, leading to a reluctance to engage with the IP system. This reluctance is often compounded by a lack of tailored legal and financial support mechanisms, making IP protection seem inaccessible to those who stand to benefit most from it.[81)]

Financial Constraints

The innovation lifecycle, from conception to commercialization, is fraught with financial challenges, particularly for SMEs and startups. The cost of IP registration, coupled with the need for substantial investment in research and development (R&D), places a considerable strain on limited resources. Moreover, the difficulties in securing financial assistance from both governmental and private sectors further hinder the capacity of these enterprises to innovate and protect their inventions, designs, and creative works.[82)]

Ignorance of IPR's Value

The underestimation of IPR's value as a strategic business tool is a critical issue. Many enterprises fail to recognize that effectively managed and protected IP can generate significant revenue streams, enhance market position, and attract investment. Without adequate protection, innovations and creative works are vulnerable to exploitation, eroding the potential for economic return and growth.

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81) Gee, H.L., I.M. Abdul Ghani Azmi and A.R. Alavi (2007), 'Impact of the Intellectual Property System on Economic Growth: Fact-Finding Surveys and Analysis in the Asian Region, Country Report – Malaysia', *WIPO-UNU Joint Research Project*, Geneva: WIPO-UNU.

82) Md Nor, N.G., A.B. Bhuiyan, J. Said, and S.S. Alam (2016), 'Innovation Barriers and Risks for Food Processing SMEs in Malaysia: A Logistic Regression Analysis', *Geografia-Malaysian Journal of Society and Space*, 12(2), pp. 167–178.

Counterfeiting and Piracy

The pervasive issue of counterfeiting and piracy represents a significant threat to the integrity of the IP system. The proliferation of pirated software, counterfeit goods, and unauthorized digital content undermines the rights of creators and inventors, with far-reaching consequences for the economy and society. Addressing this challenge requires concerted efforts from both public and private sectors to enforce IP rights, raise awareness, and cultivate respect for intellectual property.[83)]

In conclusion, while Malaysia has made considerable strides in developing its IPR framework, ongoing challenges persist. Addressing these challenges necessitates a holistic approach that encompasses education, streamlined procedures, financial support, and robust enforcement mechanisms. By refocusing on the broader spectrum of IPR and its integral role in the digital economy, Malaysia can harness the full potential of intellectual property to drive innovation, economic growth, and cultural enrichment, ensuring a sustainable future in the global knowledge economy.

5.2.6 Summary

In wrapping up the discourse on Malaysia's Intellectual Property Rights (IPR) landscape, it's evident that the nation has made significant strides in bolstering its IPR framework. This progress is crucial in nurturing the burgeoning creative industry, which is increasingly becoming a vital contributor to Malaysia's economy,

83) Sukarmijan, S. and O. Sapong (2014), 'The Importance of Intellectual Property for SMEs: Challenges and Moving Forward', *UMK Procedia*, 1, pp. 74–81.

especially in the digital era. The rise in creative innovations and the industry's potential for economic enhancement underscore the importance of robust IP protection mechanisms.

However, challenges such as the prevalence of pirated and counterfeit products, online piracy, and book piracy persistently hamper the growth of this sector. To mitigate these issues, enhanced enforcement and coordination among key governmental agencies, the Royal Malaysian Police, and the Customs Authority, are imperative. Such collaborative efforts are essential in addressing the multifaceted nature of copyright infringements in the digital age.

Moreover, the cultivation of a highly skilled talent pool is crucial in facilitating the compliance and registration processes for IPR, particularly for Small and Medium Enterprises (SMEs). By providing expert advice on registration, licensing, and enforcement, this initiative could significantly diminish the uncertainties surrounding IPR protection and encourage more robust compliance.

Social media emerges as a powerful tool in elevating social awareness about the significance of IPR protection. By leveraging platforms like Facebook, Twitter and YouTube, Malaysia can embark on widespread educational campaigns to illuminate the public on the detriments of copyright infringement and piracy, drawing parallels to the anti-piracy advertisements prevalent in cinemas.

On the international front, Malaysia's contemplation over the ratification of the CPTPP reflects the need for a delicate balance

between domestic laws and international commitments. While the CPTPP's IPR provisions largely mirror Malaysia's existing copyright laws, concerns over sovereignty and the heavy influence of American copyright laws necessitate a cautious approach. Ensuring that Malaysia's legal framework retains its autonomy while aligning with global standards is a nuanced endeavor that requires thoughtful consideration.

In summary, the trajectory of Malaysia's creative industry is promising, bolstered by an increasing interest and significant contributions to the economy. Yet, the path to harnessing the full potential of this sector is fraught with obstacles, primarily stemming from infringement and piracy issues. Governmental support, coupled with strategic initiatives to enhance enforcement, raise awareness, and navigate the complexities of international agreements, will be pivotal in safeguarding and propelling the growth of Malaysia's creative industry in the digital economy era. The journey ahead, while challenging, holds the promise of a vibrant, innovative, and economically thriving creative sector in Malaysia.

5.3 Indonesia

5.3.1 Overview

In the evolving landscape of the global economy, the digital revolution has brought forth unprecedented changes, reshaping industries, markets, and the very fabric of intellectual property

rights (IPR) frameworks worldwide. This transformation is particularly pronounced in developing nations, where traditional approaches to IPR are being challenged and redefined by the rapid advancement of digital technologies. Indonesia, as a vibrant emerging market, stands at the forefront of this transition, grappling with the complexities of aligning its IPR regime with the demands of the digital age while also adhering to international norms and agreements.

This section delves into the intricate interplay between the digital economy and IPR in Indonesia, examining how the digitalization of creative and innovative outputs is reshaping IPR protection. It highlights Indonesia's journey from a historical perspective where IPR was not a central focus, influenced by cultural attitudes towards knowledge sharing, towards a more robust and internationally compliant IPR framework. Through this narrative, we explore the challenges Indonesia faces in balancing the protection of intellectual property with fostering innovation and access to digital content, and how the government's policy responses are shaping the future of the creative economy in the digital era.

As we navigate through these discussions, we aim to provide a comprehensive understanding of the dynamic relationship between digital advancements and IPR protection in Indonesia, offering insights into the broader implications for developing countries in the global IPR ecosystem.

5.3.2 IPR Evolution

The historical development of IP protection in Indonesia is deeply rooted in its colonial past under Dutch rule, beginning notably in 1844 with the extension of an 1817 Dutch Act that provided exclusive rights to inventions and artistic improvements to the Netherlands East Indies, now Indonesia. This early legislation was short-lived, repealed in the late 19th century, but laid the groundwork for subsequent IP laws, including trademark provisions introduced in 1871 and a comprehensive Trade Marks Act established in 1885, later amended in 1888 to align with the Paris Convention.

The early 20th century witnessed additional progressions in IP regulations with the implementation of the Dutch Patents Act of 1910, which was extended to the colony, and the establishment of copyright protection in 1912. Furthermore, the Dutch accession to the Berne Convention in 1913 indicated a dedication to upholding international IP standards. However, despite these advancements, the colonial IP laws of the Dutch encountered challenges during Indonesia's struggle for independence following World War II, particularly regarding the applicability of international treaties such as the Paris and Berne Conventions. This ambiguity resulted in uncertainties that persisted well into the 1970s.

After declaring independence in 1945 and gaining formal recognition in 1949, Indonesia grappled with the legacy of Dutch IP laws, maintaining most but facing issues particularly with patent protection due to the necessity of substantive examination in the Netherlands. This led to the introduction of a provisional

registration system in 1953 until a new Patents Act could be enacted. Copyright and trademark laws from the colonial era continued to be relevant, with the latter undergoing significant reforms in the 1980s and 1990s to adapt to Indonesia's economic growth and the global IP landscape, including the shift towards registration-based trademark ownership and enhanced protection for well-known trademarks.[84)]

In the late 20th and early 21st centuries, Indonesia underwent significant reform and international harmonization efforts concerning its IP laws. The nation re-joined the Berne Convention and ratified several crucial WIPO treaties in 1997. Subsequently, between 2000 and 2002, Indonesia underwent a comprehensive overhaul of its IP legislation. This period saw the introduction of new laws encompassing various IP rights, such as plant variety protection, trade secrets, industrial designs, and integrated circuits. Additionally, there were substantial revisions made to existing patent, trademark, and copyright laws. These reforms not only modernized Indonesia's IP framework but also aimed to align it with international standards and agreements, such as the TRIPS Agreement, and address previous uncertainties regarding international treaty applicability and IP protection periods.[85)]

This detailed evolution of IP protection in Indonesia highlights the complex interplay between colonial legacy, national sovereignty, economic development, and international commitments in shaping the country's IP legal framework.

84) Antons, C. (2000). Intellectual Property Law in Indonesia (Vol. 2). Kluwer Law International.

85) Antons, C. (2008). Copyright Law Reform and the Information Society in Indonesia. In B. Fitzgerald et al. (Eds.), Copyright Law, Digital Content and the Internet in the Asia-Pacific (pp. 235-255). Sydney University Press.

5.3.3 Policy Landscape

Following its independence, Indonesia has navigated a complex legal landscape, marked by its pluralistic approach to accommodate the diverse legal needs of its multiethnic population. The nation has engaged in ongoing debates regarding the role of Islamic law and adat (customary law) within its national legal framework. The move towards administrative decentralization in the late 1990s has further highlighted regional identities and legal traditions, fostering national unity principles such as Bhinneka Tunggal Ika (unity in diversity) and Pancasila[86] (the five guiding principles).

However, the legal system's reputation was significantly tarnished during the "New Order" era under President Suharto, despite the period being characterized by notable development and openness to foreign investment. The era was marred by corruption, collusion, and nepotism, leading to a concerted focus in the post-Suharto reform era (reformasi) on law reform and combating corruption within the judiciary and government sectors. Efforts have been made to enhance transparency and improve the judiciary's performance, with the Commercial Court showing reasonable consistency in handling cases, particularly in less politically sensitive areas like intellectual property (IP).

Economically, the "New Order" government, initiated in the late 1960s, fostered laws to stimulate both foreign and domestic

86) Pancasila, the foundational philosophy of Indonesia, encapsulates five guiding principles crucial to the nation's identity: monotheism, humanitarianism, national unity, democracy, and social justice. Established by Sukarno in 1945, it aims to harmonize Indonesia's diverse cultural and religious landscape, promoting tolerance and moderation.

investments, capitalizing on Indonesia's status as a significant OPEC member with substantial oil and gas revenues. However, a strong sentiment of economic nationalism prevailed, especially from 1974 to 1982, characterized by strict regulations such as mandatory joint ventures and a minimum requirement of 51% Indonesian equity participation[87]. Foreign investors faced restrictions in various sectors, including retail, media, and public infrastructure.

The economic policy shifted in the mid-1980s with the collapse of oil and gas prices, leading to a gradual opening and liberalization of the economy. Notably, the transition from a priority list to a negative list in 1988 significantly liberalized investment policies, allowing investments in previously restricted sectors. The 1994 regulations further eased restrictions, facilitating 100% foreign ownership in certain sectors and removing minimum investment requirements, among other liberal measures.

Despite these reforms, the Asian Financial Crisis in the late 1990s severely impacted Indonesia, resulting in significant FDI outflows. The recovery was slow, with FDI only returning to positive figures from 2004 onwards. Observers have attributed the sluggish recovery to various factors, including legal uncertainties, security issues, and challenges associated with decentralization.[88] Despite these challenges, Indonesia's GDP has shown an upward trend since the

87) The policy of "mandatory joint ventures and a minimum requirement of 51% Indonesian equity participation" refers to regulations in Indonesia that necessitated foreign investors to enter into joint ventures with Indonesian companies, ensuring at least 51% of the venture's equity was held by the Indonesian party. This approach aimed to foster local involvement, control, and benefits from foreign investments.

88) Wie, T. K. (2005). The Major Channels of International Technology Transfer to Indonesia: An Assessment. Journal of the Asia Pacific Economy, 10(2), 214–236. https://doi.org/10.1080/13547860500071493

early 2000s, with the IMF predicting continued growth. However, Indonesia faces several urgent challenges, including addressing infrastructure deficiencies, rising food and fuel prices, and managing a rapidly growing population, to sustain its economic progress.

5.3.4 Enforcement Advances

In Indonesia, the oversight of Intellectual Property Rights (IPR), with the exception of plant variety protection managed by the Ministry of Agriculture, is predominantly the responsibility of the Ministry of Law and Human Rights. This structure is somewhat distinctive compared to other ASEAN countries and developing regions where IPR administration is commonly associated with ministries focused on trade, commerce, and industry.

Within the Indonesian Ministry of Law and Human Rights, the Directorate General of Intellectual Property is charged with the protection of IPR. This body encompasses various directorates each dedicated to a specific type of IPR, such as copyright, patents, industrial designs, trademarks, and geographical indications. This organization underscores the Indonesian government's view of IPR primarily as a legal issue, with a focus on compliance and law enforcement, rather than as a tool to foster creativity and innovation.

The Indonesian Agency for the Creative Economy (BEKRAF), established by President Joko Widodo in 2015, aims to unlock the potential of Indonesia's creative sectors. Its mission is to create a supportive environment for creative businesses, focusing on research,

funding, marketing, IP rights, and intergovernmental collaboration. BEKRAF works closely with various government agencies to integrate support for the creative economy, striving to make it a cornerstone of Indonesia's economy.

BEKRAF drives the creative economy with initiatives that streamline regulations, improve investment avenues, and enhance skill sets. The agency facilitates global exposure for filmmakers, connects music professionals with new talent, and encourages youth in software development. It also aids fashion and craft sectors with trend research, financial grants for new designers, and international market access.

Central to BEKRAF's strategy is the emphasis on Intellectual Property (IP) to elevate the value of creative works and ensure their commercial success. Despite the hurdles of counterfeiting and piracy, BEKRAF is dedicated to raising IP awareness and enforcement through educational efforts.

Looking ahead, BEKRAF envisions a thriving creative economy as a key part of Indonesia's economic fabric, driven by cultural diversity and effective IP management. The agency motivates creators to protect their work with IP rights and adapt to the changing business landscape. BEKRAF's goals include promoting the creative economy for broader opportunities and positioning Indonesia as a significant player on the global creative stage by 2030.[89]

89) https://www.wipo.int/wipo_magazine/en/2019/05/article_0003.html

5.3.5 Digital Creative Economy

5.3.5.1 The Creative Economy and Technological Transformation

The creative economy stands as a pivotal force in the modern economic landscape, driven by innovation and the global spread of creative products. Seminal contributions by Howkins[90] and Markusen[91] have laid the groundwork for understanding how the creative economy propels economic growth, fosters employment, and enriches quality of life. The advent of the digital era has further expanded the creative economy, introducing sectors like digital content, gaming, and animation, significantly influenced by technological advancements and evolving consumer preferences.

Globalization has facilitated the reach of creative products beyond national borders, sparking dialogues on cultural diversity and the intricacies of protecting intellectual property rights in a connected world. The role of technology, especially digital platforms, has been transformative, democratizing the creative sector, altering traditional distribution channels, and reshaping labor models. The emergence of the gig economy within the creative industries epitomizes the profound changes brought about by technological advancements, highlighting a shift towards more flexible and decentralized work arrangements.

5.3.5.2 Enhancing Innovation in Indonesia's Creative Economy through Governmental Support

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90) Howkins, J. (2001). The Creative Economy: How People Make Money from Ideas. Allen Lane.

91) Markusen, A., Wassall, G. H., DeNatale, D., & Cohen, R. (2008). Defining the Creative Economy: Industry and Occupational Approaches. Economic Development Quarterly, 22(1), 24–45. https://doi.org/10.1177/0891242407311862

Innovation serves as the cornerstone of the creative economy, significantly bolstered by proactive government intervention. The "national systems of innovation"[92] framework highlights the crucial collaborative dynamics among government bodies, industries, academic institutions, and research organizations in fostering an innovation-friendly ecosystem. Globally, governments adopt strategic measures to stimulate innovation, which includes the development of policies, enhancement of infrastructure, and promotion of synergies between the public and private sectors.

In the Indonesian context, Indonesia's Creative Economy Plan draws significant inspiration from the UK's concept of creative industries, emphasizing innovation and the protection of intellectual property within "innovative" creative sectors. This approach also incorporates "traditional cultural industries," highlighting the blend of modern innovation with Indonesia's rich cultural heritage.[93] The nation's commitment to fostering the creative economy is evident through its support for initiatives like the Bali Agenda for Creative Economy and its active role in international platforms, including its participation in the United Nations General Assembly, which designated 2021 as the Year of the Creative Economy for Sustainable Development.

Indonesia's creative economy encompasses 16 sub-sectors including fashion, culinary arts, crafts, film, and music. By 2017, this sector had already contributed more than 7% to the GDP and provided

92) Initially introduced by Bengt-Åke Lundvall in the 1980s and expanded upon by others like Richard R. Nelson and Chris Freeman, this concept emphasizes the critical role of government in establishing supportive policies and environments that bolster the nation's capacity for innovation and its competitive edge in the global marketplace.

93) F.Z. Fahmi; S. Koster; J. van Dijk The location of creative industries in a developing country: The case of Indonesia., 2016, 59,pp. 66-79.

employment for roughly 15.9 million individuals. A significant asset for Indonesia's creative economy is its rich cultural diversity and a large young demographic, with an expected 180 million young individuals entering the workforce by 2030. This demographic is actively engaging in creative ventures, leading to a rise in startups, creative content, and related events.

Notably, the fashion industry stands out for its rich heritage in batik craftsmanship alongside the fresh perspectives of modern designers. Similarly, the film, music, and gaming sectors are experiencing substantial growth, marked by the global acclaim of Indonesian cinema. This burgeoning creative landscape showcases the country's unique blend of traditional artistry and contemporary innovation.[94]

However, the development of Indonesia's creative economy faces challenges, including those related to automation, digitization, and the need for workforce training and upskilling. The nation, in its capacity as the MIKTA Countries Coordinator, has engaged with global partners to address these issues and explore the creative economy's potential in achieving the Sustainable Development Goals (SDGs). Key areas of focus include gender equality, regional disparities in creative economic growth, knowledge sharing, and the integration of creative industries into national development plans. The convergence of traditional and digital creative industries presents both opportunities for innovation and regulatory challenges that need to be navigated carefully.[95]

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94) https://www.wipo.int/wipo_magazine/en/2019/05/article_0003.html

95) Bustamante Duarte, A. M., Pfeffer, K., Indriansyah, N. R., Bhuana, A. A. D. C., Aritenang, A. F., Nurman, A., Zul Fahmi, F., Ramdan, D., Iskandar, Z. S., & Madureira, M. (2022). Creative industries in Indonesia: a socio-spatial exploration of three

In summary, Indonesia's strategic efforts in promoting the creative economy reflect a balanced integration of traditional cultural heritage with innovative creative sectors, aimed at driving sustainable economic growth and development. Despite facing several challenges, the nation's active engagement in global discussions and initiatives underscores its commitment to harnessing the creative economy's potential as a catalyst for progress and development.

5.3.6 Summary

The historical perspective on IP protection in Indonesia, traditionally not prioritized due to a cultural emphasis on the communal sharing of knowledge, has indeed influenced its approach to IPR policy and adaptation to international norms. This context has shaped the country's response to international agreements and the enforcement of IP laws.

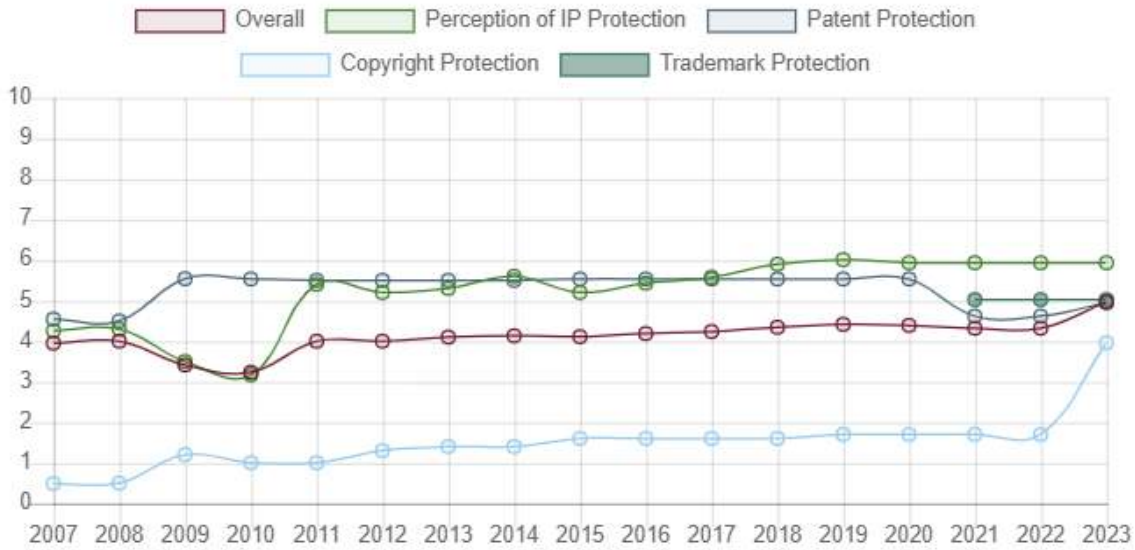
With the advent of the RCEP and other international frameworks, Indonesia has been working to align its IP laws with global standards. The country's legal framework for IP rights is generally in compliance with international standards. Laws in key areas such as copyrights, patents, and trademarks have been updated to reflect these standards.

However, despite a relatively well-developed legal framework, Indonesia faces challenges in effectively enforcing IP rights. Issues like widespread online piracy, counterfeiting, and high numbers of bad faith trademark registrations by local companies remain

kampongs in Bandung. Creative Industries Journal, ahead-of-print(ahead-of-print), 1–29. https://doi.org/10.1080/17510694.2022.2077557

prevalent. The U.S. Trade Representative has called for Indonesia to develop a more robust IP enforcement effort, highlighting the need for deterrent-level penalties for IP infringement.

<Indonesia's IPRs Index *by* Property Rights Alliance[96)]>



Recent legislative efforts, such as the Omnibus Law on Job Creation passed in 2020, aim to address some of these challenges. This law includes amendments to improve trademark registration processes and patent application wait times, indicating a move towards stronger IP protection and enforcement.[97)]

Indonesia's development policy, influenced by historical and cultural factors, has traditionally focused on growth, distribution, and stability, with IP protection not being a central concern. This historical approach is reflected in the country's ongoing efforts to balance economic development with the equitable distribution of resources.

96) https://www.internationalpropertyrightsindex.org/country/indonesia

97)https://www.oecd-ilibrary.org/sites/2e464f9e-en/index.html?itemId=/content/component/2e464f9e-en

To refocus IPR protection in a way that fosters both innovation and equitable access, comprehensive reforms are essential. These reforms should extend beyond the traditional confines of the Ministry of Law and Human Rights to encompass a broader coalition of stakeholders, including other government ministries, the private sector, and civil society. By fostering a collaborative approach to IPR management, Indonesia can cultivate an environment where intellectual property serves as a catalyst for creative and technological advancement, rather than a barrier.

Ultimately, the goal should be to create a dynamic and sustainable IPR ecosystem that not only safeguards creators' rights but also promotes a culture of innovation and accessibility. This requires a commitment to ongoing dialogue, policy innovation, and adaptive legal frameworks that can respond to the rapid changes characteristic of the digital economy. Through such efforts, developing countries can harness the full potential of their creative economies, contributing to a more vibrant, diverse, and equitable global intellectual property landscape.

5.4 Vietnam

5.4.1 Overview

In a world increasingly shaped by globalization and rapid technological advancements, Vietnam stands at a crucial crossroads, poised to enhance its engagement within Global Value Chains

(GVCs) and to seize opportunities in the fast-evolving digital economy. This section aims to unravel the complex landscape that Vietnamese local enterprises navigate, identifying both the obstacles that hamper their seamless integration into the global marketplace and the digital sphere, and the potential pathways to overcome these challenges. Central to this discourse is the pivotal role of Intellectual Property (IP) rights enforcement, a key factor in nurturing innovation, ensuring equitable competition, and fostering international confidence.

As Vietnam charts its path forward, aligning its strategic initiatives with global norms and best practices emerges as a guiding principle. This section proposes a set of comprehensive policy recommendations, inspired by global exemplars yet tailored to Vietnam's distinctive landscape. By integrating insights across various domains, it endeavors to sketch a strategic blueprint for Vietnam's enhanced participation in GVCs and the digital economy, marking a pivotal stride toward unlocking its global potential.

5.4.2 IPR Evolution

Vietnam's Intellectual Property (IP) legal framework has undergone significant evolution, reflecting its strategic commitment to align with international standards amidst economic transformations. The journey commenced in the 1980s with foundational regulations, such as the Rules on Technical Innovations and Inventions and the Rules on Trademarks, laying the groundwork for a robust IP system. This era was marked by a focus on collective benefits, characteristic of socialist ideologies prevalent at the time.

As Vietnam transitioned towards a market-oriented economy, the IP laws evolved to recognize intellectual values as private property, a notable shift exemplified by the Ordinance on Protection of Industrial Property Rights in 1989, which introduced the Exclusive Right Patent. This change underscored the growing emphasis on individual rights and innovation.[98)]

The Civil Code of 1995 further integrated IP provisions, paving the way for Vietnam to adhere to international treaties, including the TRIPS Agreement. This period also witnessed the expansion of the IP landscape with decrees on trade secrets, commercial names, and geographical indications, among others, enhancing the legal infrastructure for IP protection.[99)]

The enactment of the Law on Intellectual Property in 2005, and its amendment in 2009, represented Vietnam's commitment to international IP standards and IP rights enforcement. The legal framework was further refined in response to the Comprehensive Progressive Agreement for Trans-Pacific Partnership (CPTPP) in 2019, albeit with some provisions exceeding CPTPP requirements.

Vietnam's active participation in international agreements, such as the ASEAN Framework on Intellectual Property Cooperation and the TRIPS Agreement, alongside its engagement in Free Trade

98) Le, V. A. (2023). Soviet Legacy of Vietnam's Intellectual Property Law: Big Brother is (No Longer) Watching You. Asian Journal of Comparative Law, 1–28. doi:10.1017/asjcl.2023.31

99) Tran, K. (2015). The history of intellectual property law of vietnam, 1945-1994. ProQuest Dissertations Publishing.

Agreements (FTAs) like the CPTPP and the European Union-Vietnam Free Trade Agreement (EVFTA), demonstrates its commitment to maintaining a competitive edge in the global IP landscape.

The Decree No. 65/2023/ND-CP, issued in 2023, introduced specific updates, notably detailing the handling of security-sensitive inventions. It expands the scope of scrutiny beyond conventional defense-related inventions to include a wide range of technical fields that might impact national security or defense. This ensures that the disclosure of such inventions through patent applications does not jeopardize national security. Inventions identified as having potential national defense and security implications may face restrictions on overseas patent filings. This approach underscores Vietnam's commitment to safeguarding national security while fostering innovation within controlled parameters.[100)]

These legislative developments and policy initiatives illustrate Vietnam's strategic vision for its IP regime, highlighting the protection of IP rights, fostering innovation, and complying with international obligations. This approach not only supports sustainable economic growth but also positions Vietnam as a proactive participant in the global IP ecosystem.

5.4.3 Enforcement Advances

The National Office of Intellectual Property (NOIP) and the

100) https://kenfoxlaw.com/10-key-points-from-vietnams-new-ip-decree-no-65-2023-nd-cp

Copyright Office of Vietnam (COV) play distinct yet complementary roles in the enforcement of intellectual property rights in Vietnam, interacting with various enforcement authorities to ensure comprehensive IP protection.

The NOIP, under the Ministry of Science and Technology, is the primary coordinator for industrial property rights, handling the registration and administration of industrial designs, trademarks, and other related rights. It also conducts basic legal appraisals to resolve IP disputes, making its role crucial not just in the registration but also in the enforcement phase. Particularly in complex patent cases, enforcement authorities like the Inspectorate of the Ministry of Science and Technology have started to seek expert opinions from the NOIP alongside other agencies to make informed decisions, demonstrating the NOIP's increasing involvement in enforcement processes.

The COV, on the other hand, administers copyright and related rights. While the enforcement of these rights often involves various authorities, such as the Inspectorate of the Ministry of Culture, Sports and Tourism for copyright infringements, the COV's role in registration and administration of copyrights is pivotal in establishing the legal basis for such enforcement actions.[101)]

Following this, in Vietnam, the representation in Intellectual Property (IP) proceedings involves two main types of professionals: industrial property agents and lawyers. Industrial property agents, certified by the National Office of Intellectual Property (NOIP), are exclusively entitled to represent industrial property owners in

101) https://irglobal.com/article/a-guide-to-intellectual-property-in-vietnam/

proceedings before the NOIP. Similarly, author's right agents, authorized by the Copyright Office of Vietnam (COV), are the only professionals who can represent authors' right owners in registration proceedings before the COV. Lawyers, on the other hand, are the only professionals who can represent IP owners in court proceedings.

IP agent is no longer compulsory in IP proceedings in Vietnam. This change comes as part of the amendments made to Vietnam's Law on Intellectual Property in 2022, which came into effect on January 1, 2023. The amended law has relaxed some of the previous requirements for providing IP representation services. Specifically, it now requires that there must be at least one individual holding a certificate for practicing IP representation services in each IP representation service organization, but it does not make representation by an IP agent compulsory for all IP proceedings. This change is expected to have a significant impact, particularly benefiting local law firms, as it simplifies the process for lawyers to become trademark agents, thereby potentially increasing the number of trademark agents and IP representation service organizations in Vietnam.[102)]

In Vietnam, addressing IP infringements often involves administrative actions due to their direct and fast resolution. These actions are typically initiated by the rights holder but can also be commenced by authorities if they independently identify violations. The outcomes for infringers may include confiscation of goods, imposition of fines, and in certain scenarios, revocation of business licenses.

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102) Vietnam's Amended IP Law Changes Requirements for IP Agents. (2023). Tilleke & Gibbins.

Civil litigation is another available remedy against IP infringements, recommended for its thoroughness in protecting IP rights. However, these proceedings are noted for their complexity and length, usually extending from 12 to 30 months. Differing from administrative actions, civil litigation has the potential to award damages to the rights holder. The absence of a specialized judiciary for IP disputes in Vietnam means such cases are heard by provincial-level economic courts or district-level courts, depending on the specific nature of the dispute.[103)]

Additionally, recent developments in patent litigation have highlighted the increasing role of opinions from the National Office of Intellectual Property (NOIP) in case handling. Enforcement authorities have begun seeking expert opinions from NOIP alongside those from the Vietnam Intellectual Property Research Institute(VIPRI), a quasi-governmental agency, particularly in complex or high-profile patent cases. This trend towards requiring multiple expert opinions may prolong the resolution time for cases but also puts the rights holder in a stronger position when both opinions affirm the infringement.[104)]

5.4.4 Export Dynamics

Vietnam has demonstrated a remarkable trajectory of economic growth, consistently achieving a GDP growth rate of at least 5%

103) https://rouse.com/insights/news/2021/vietnam-ip-litigation-enforcement-guide

104) Vietnam: A Year of Changes in IP Enforcement. (2016). https://www.tilleke.com/insights/vietnam-year-changes-ip-enforcement/

annually since 2010, with a notable peak at 6.8% in 2017. This sustained growth has significantly transformed Vietnam from one of the world's poorest countries into a middle-income nation. The remarkable increase in GDP per capita from barely $230 in 1985 to over $2,343 in 2017 highlights the dramatic improvement in living standards over the past few decades. When adjusted for purchasing power parity, the GDP per capita stands even higher, reflecting the real purchasing power of Vietnamese citizens and the overall improvement in economic well-being.[105]This economic success is a testament to Vietnam's effective economic policies, integration into the global economy, and ability to attract foreign investment, which have collectively spurred development and raised income levels.

Analysis of Vietnam's export composition reveals a shift towards more sophisticated products over time. Nguyen et al. noted a decline in the share of agricultural, forestry, and fishery products in total exports, while machinery and electronics experienced a substantial increase, accounting for over 35% of exports by 2015. This trend indicates a move towards higher value-added and technology-intensive products in Vietnam's export structure.[106]

Despite these positive developments, challenges remain, particularly in terms of domestic technological capacity and reliance on foreign direct investment (FDI) for high-tech exports. Key high-tech export products, such as electronics and machinery, are predominantly produced by FDI enterprises, with domestic firms focusing on

105) The story of Viet Nam's economic miracle. (2018). https://www.weforum.org/agenda/2018/09/how-vietnam-became-an-economic-miracle/#:~:text=URL%3A%20https%3A%2F%2Fwww.weforum.org%2Fagenda%2F2018%2F09%2Fhow

106) Nguyen, D.A., T.T. Vo and T.N.T. Do (2018), 'Vietnam's Exports after Joining the WTO', Manuscript for Economic Research Institute for ASEAN and East Asia.

lower-technology goods. This dynamic highlights the limited technology transfer from FDI to domestic firms and underscores the need for improved intellectual property (IP) protection to encourage domestic participation in technology-intensive value chains.[107)]

The interaction between local firms and their international counterparts within the high-tech sector is significantly hampered by the ineffective enforcement of intellectual property (IP) laws. These challenges not only impede the transfer of technology from foreign entities to local ones but also restrict the growth potential of the latter. Given the high-tech industry's dependence on imported technology and components, there is an urgent need for policy initiatives aimed at fostering domestic innovation and more effectively integrating local firms into the upper echelons of global value chains.

One illustrative example is the cautious approach adopted by large international corporations to mitigate the risk of IP theft by local employees, driven by the weak enforcement of IP laws. This cautious stance limits the depth of technological training provided to local staff, thereby narrowing the pathway for technology transfer through the movement of labor.[108)] This challenge is particularly acute in the electronics sector, where companies are extremely protective of their proprietary technologies. Such firms are hesitant to allow skilled workers to move to competitor companies, fearing the unauthorized spread of sensitive information and the potential breach of their intellectual property rights.

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107) Ministry of Planning and Investment (2018), An Assessment of Suppliers of Inputs for Foreign-Invested Firms in Cities, Provinces Directly under the Central Government

108) Nguyen, T. T. A. (2005). Impact of FDI on economic growth in Vietnam. Science and Techniques Publishing House.

Moreover, the electronics sector faces a significant challenge from the proliferation of counterfeit products, like batteries and chargers, which not only violate IP rights but also expose consumers to risks such as device damage and potential hazards.[109] The complexity of regulating the influx of IP-infringing goods is further compounded by unclear regulatory guidelines and the lack of penalties for exporting goods that violate IP rights. This regulatory vacuum and the subsequent weak enforcement further dilute the effectiveness of IP laws, undermining the efforts of companies and individuals to protect their innovations and brand value.

To tackle these issues, a comprehensive strategy is needed, encompassing the strengthening of IP legislation, improving the capabilities of customs and enforcement bodies, and promoting collaboration between local and international firms to forge stronger connections. Such initiatives would not only enhance IP protection but also empower local firms to improve their technological capabilities, climb the value chain, and make more substantial contributions to the innovation and growth of the high-tech sector.

5.4.5 Summary

Drawing upon the detailed analysis and policy recommendations presented, it is evident that for Vietnam to successfully integrate its local enterprises into Global Value Chains (GVCs) and embrace the digital economy, a multifaceted approach is imperative. The cornerstone of this strategy lies in the rigorous enforcement of

109) Over 11,200 fake Samsung chargers seized in Hanoi. (2022). VietnamPlus

Intellectual Property (IP) regulations, harmonized with international best practices. This endeavor is crucial not only for safeguarding innovations but also for building international confidence in Vietnam's IP policies, particularly with key partners like the EU and the US.

Equally important is the tailored support for Small and Medium-sized Enterprises (SMEs), which are pivotal to Vietnam's economic fabric and its aspirations within GVCs. By alleviating the financial and administrative burdens associated with IP processes, and by learning from successful models, Vietnam can foster a more conducive environment for SMEs to thrive, innovate, and compete on the global stage.

Moreover, fostering a culture of IP compliance and protection among Vietnamese SMEs is paramount. This not only involves raising awareness but also adopting a patient approach to enforcement, which together will nurture a robust culture of IP respect and adherence.

To remain agile in a rapidly evolving technological landscape, Vietnam's IP regulations must be flexible yet robust, capable of fostering innovation while ensuring fair competition. This necessitates significant reforms within the IP office to adapt to technological advances and the changing needs of a digital economy.

Lastly, the importance of reliable and comprehensive IP-related statistics cannot be overstated. By enhancing data collection and

analysis, particularly regarding the costs associated with IP processes, Vietnam can refine its policy-making, thereby increasing the transparency and credibility of its IP system.

In conclusion, Vietnam stands at a crossroads, with the potential to significantly elevate its position within GVCs and the digital economy. Achieving this ambition requires a concerted effort across multiple domains, underpinned by a strong commitment to IP enforcement, SME support, and continuous adaptation to the global economic landscape. By implementing these strategic recommendations, Vietnam can look forward to a future marked by innovation, growth, and enhanced integration into the global market.

6. Conclusion

This report delves into the interplay between digital transformation in Southeast Asia, Global Value Chain (GVC) integration, and the evolution of Intellectual Property (IP) frameworks, positioning this region as an optimal collaborative sphere for leveraging South Korea's advanced digital and IP capabilities. The swift digitalization and active GVC engagement in Southeast Asia offer a platform for mutual advancement, innovation, and partnership. By sharing its sophisticated IP frameworks and digital technologies, South Korea can strategically influence the regional IP landscape to favor its enterprises, positioning itself advantageously in the formulation of global digital norms.

The Korean Wave's surge in popularity has heightened interest in Korean culture and products, presenting dual facets of opportunity and challenge. The digital era has expedited the spread of counterfeit goods and the use of deceptive trademarks, escalating IP infringement risks for Korean businesses. This scenario underscores the urgent need for a robust foreign IP protection strategy that aligns with the enhanced brand value of Korean enterprises.

Addressing these challenges necessitates a multi-faceted approach, including collaborative monitoring and enforcement initiatives between the Korean Intellectual Property Office and the authorities of Southeast Asian nations, IP awareness campaigns, bolstered support and certification for Korean businesses, and enhancements to legal and regulatory frameworks.

The establishment of IP DESKs worldwide marks significant progress in addressing the IP challenges faced by Korean exporters. However, to cultivate a resilient and stable IP protection system, further measures are essential. Deploying specialized personnel, such as the Technology and Trademark Police, to regions vulnerable to IP infringement could improve responsiveness and foster local collaborations. This strategy offers a more dynamic and effective approach to protecting the IP rights of Korean enterprises abroad.

Furthermore, the shift towards online IP infringements necessitates a reevaluation of traditional enforcement tactics. For instance, despite Singapore's robust IP environment, a noticeable decline in enforcement actions(from 316 cases in 2004 to 61 cases in 2022) suggests a pivot towards digitized enforcement strategies.

Conversely, Korea's reliance on conventional enforcement methods persists despite its technological and IP infrastructural prowess, with a focus predominantly on counterfeit luxury goods. This trend is similarly observed in online counterfeit monitoring initiatives.

Prioritizing enforcement actions against luxury counterfeit goods may inadvertently favor global corporations over domestic enterprises, particularly when many Korean companies confront IP challenges in regions like Southeast Asia. This calls for a strategic overhaul of enforcement mechanisms, taking into account the digital transformation and the ascending brand value of domestic companies.

Innovative digital enforcement strategies, such as adopting AI-driven algorithms for detecting and monitoring IP infringements, coupled with intensified international enforcement collaborations, could significantly bolster IP protection for Korean businesses. Exploring local enforcement collaborations in exchange for sharing knowledge of Korea's advanced IP system is also worth considering.

The increasing recognition of industrial technology as a national security concern within IP protection frameworks is highlighted by Vietnam's introduction of Decree No. 65/2023/ND-CP. This legislative update strengthens Vietnam's IP system in the face of rapid technological advancements and growing security imperatives. Notably, the decree broadens the scope of security evaluations for patent applications, which were previously centered on military technologies, to include a broader spectrum of industrial technologies. This ensures rigorous national oversight of patent

applications involving technologies critical to national industrial security. This strategic move not only addresses security vulnerabilities but also demonstrates a commitment to fostering domestic technological innovation and preventing the unauthorized export of essential technologies.

In Korea, the increasing leakage of vital technologies underscores the limitations of the existing legal framework, particularly highlighted by Patent Law Article 41's focus on military technology, which hampers the effective deterrence of core technology leakage. Drawing insights from Vietnam's legislative updates and Japan's patent application non-disclosure practices could guide Korea towards more effective technology outflow prevention measures.

Crucially, the establishment of an IP protection strategy must consider the intrinsic link between IP and Foreign Direct Investment (FDI), aiming to position Korea as an attractive investment locale and foster sustainable economic growth. This necessitates integrating considerations of Korea's industrial structure, competitive edge, and growth potential into the IP strategy from the outset. The overarching goal of IP protection should extend beyond mere rights strengthening to encompass the sustainable development of Korea's economy, signifying the need for a strategic, economy-wide approach to IP protection. Hence, the IP strategy should be tailored to Korea's economic context and objectives, enhancing Korea's global competitiveness and attractiveness to investors. Such a strategic orientation is pivotal for securing Korea's long-term economic growth and development.

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