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EDITORS' NOTE

Dear Readers,

We proudly present the sixth edition of Volume 5 of Intellectualis, with the theme '**From Ideas to Impact: IP & Economics**'. In this edition, we have covered contemporary topics under the broad theme of economics, trade & commerce and their intrinsic relationship with different fields of IP. Our members have also contributed to topics such as the economics of innovation, economic spheres & IP ecosystems in India and other jurisdictions. Others have written pieces on aspects that have not been covered sufficiently in the existing literature, such as IP & knowledge transfer, technology transfer and pharmaceuticals in order to set a standard in economic research. Furthermore, our committee persons have contributed to the discourse by holistically looking at larger economic policy issues such as whether there is an inequity present which disallows 'poorer' creators to enforce copyright protection measures, establishing a global network between GI & economics and rent-seeking problems in IP.

We hope that you take the time to read what our e-newsletter has to offer. We would like to extend our gratitude to the student body of School of Law, CHRIST (Deemed to be University) for their overwhelming response to the newsletter. This edition would not be possible without all our committee members, especially those in the Research and/or Editorial sub-team. We would also like to thank our Faculty Coordinator Dr. Avishek Chakraborty for constantly supporting us and guiding us through the drafting of this newsletter.

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Solving Rent-Seeking Problems in the 21st Century

Introduction

In a world motivated by self-interest, the system of intellectual property furthers social value fuelled by the very self-interest of the innovators through properly organised markets. The system of intellectual property rights increases the value of the innovation at the hands of the innovator, thereby making it a well sought after prize. The private interest of the innovator to reap the benefits of protected intellectual property drives him to engage in socially valuable behaviour of innovating. Whenever there is the involvement of an incentive, there is always a chance of over-incentivising an activity to the point where the socially beneficial behaviour is diluted and what remains is the pure self-interest of the innovator. One outcome of over-incentivising the innovator is the rent-seeking problem. If a person wields enormous power, resulting in its abuse. That is why it is said, “***With great power comes great responsibility***”. Thus, there is a need to enforce such responsibility that lies in the hands of the innovator.

Rent-Seeking in IPR

Rent-seeking is a concept that describes the behaviour of individuals or groups who seek to gain economic advantages by manipulating the political or legal systems rather than by creating new value or wealth. In the context of intellectual property rights (IPR), rent-seeking refers to actions of individuals or firms that try to secure exclusive rights to certain ideas, inventions, or creative works in order to extract monopoly rents, rather than

- Sudekshana Venkatesan & Ananya Singh

using IPR as a means to promote innovation, creativity, and social welfare¹. The rent-seeking effects of IPR have been a subject of extensive research and debate in recent years, since the use of patents, copyrights, and other forms of IPR has grown rapidly in many sectors of the economy, particularly in the high-tech and pharmaceutical industries. While some argue that IPRs are essential for stimulating innovation and promoting economic growth, others point out that IPRs can also have negative effects, such as limiting competition, raising prices, reducing access to essential goods and services, and stifling further innovation. One of the main rent-seeking effects of IPR is ***the creation of barriers to entry that can prevent new competitors from entering a market and challenging the incumbent firms that hold IPR***². This is particularly true in the case of patents, which can grant exclusive rights to use, manufacture, and sell a particular product or process for a limited period. While patents are intended to encourage innovation by providing incentives for inventors to disclose their ideas and invest in R&D, they can also be used to create monopolies that allow firms to charge high prices and limit consumer choice. This can lead to market inefficiencies, reduced innovation, and reduced social welfare, as the benefits of innovation are captured by a few firms rather than being shared among society as a whole. Another rent-seeking effect of IPR is ***the use of litigation as a means to extract economic rents from competitors or infringers***³. This is particularly true in the case of

patents, which can be used to sue competitors or other firms for infringement, even if the patents are weak or of dubious quality. Litigation can be costly and time-consuming and can divert resources away from R&D and other productive activities, leading to further inefficiencies and reduced innovation. Moreover, the threat of litigation can deter firms from entering a market or developing new products, leading to reduced competition and further market distortions. Another effect is *strategic patenting, whereby firms acquire large portfolios of patents not to promote innovation but rather to deter competitors from entering a market or challenging existing patents*⁴. This can create a "patent thicket" that makes it difficult for new firms to enter a market or develop new products, even if they have innovative ideas or technologies. Strategic patenting can also lead to "patent trolling," whereby firms acquire patents not to develop or commercialize new products but to sue other firms for infringement or to extract licensing fees from them. This can further distort markets, reduce competition and can also discourage innovation by diverting resources away from R&D and other productive activity. Finally, the rent-seeking effects of IPRs can also be seen in the way they *affect access to essential goods and services, such as medicines, educational materials, and scientific research*⁵. While IPRs are intended to promote innovation and reward creators and inventors, they can also limit access to these essential goods and services, particularly in developing countries or for marginalized populations. This can lead to serious health, social, and economic consequences, as the benefits of

innovation are captured by a few firms or individuals rather than being shared more widely. Overall, the rent-seeking effects of IPR are a complex and multifaceted phenomenon that requires careful consideration and analysis. While IPRs are undoubtedly important for promoting innovation and economic growth, they can also have negative consequences if not used.

Case Laws

One mode of rent-seeking is through opportunistic lawsuits. Even though the chances of success may be fragile, the IPR holders may seek to bully the defendants who cannot afford an entire litigation into entering a settlement. This is enabled due to the information asymmetry between the parties because the defendant does not have a way to know whether the case is a strong one or a weak one⁶.

- *Walker Process Equipment Inc. v. Food Machinery & Chemical Corp*⁷

Food Machinery concealed the fact of public use for more than one year before the patent application was filed. This makes any infringement suit they file a weak one. However, the defendant had no way of knowing this. Nevertheless, in this case, Walker Inc. Uncovered the information and successfully defeated Food Machinery's attempt to bluff Walker out of the market. If Walker was unable to uncover this information, then Food Machinery would likely have capitalised on a patent obtained by misrepresentation⁸.

- *S. Industries Inc. v. Centra 2000 Inc*⁹.

Opportunistic trademark suits were filed by S Industries. In this case, the 7th Circuit found the suit to be devoid of merit and oppressive. In lieu of the opportunistic suit, the Court affirmed the award of

attorneys fees to the defendant because trademark claims were meritless and because of dilatory tactics.

It can be seen how rent-seeking by the IPR holder has been tackled by the Courts and how the decision to award attorney fees to the defendant can effectively disincentivise further opportunistic suits.

Solutions:

- ***Contraction of certain IP rights¹⁰ and stricter standards:***

The chance of socially harmful rent-seeking is directly proportional to the duration of the IPR. The longer the duration, longer is the time frame to the innovator to engage in rent-seeking. A direct solution is to reduce the duration of the protection. Through such ex-post (i.e. after granting protection) measures can address the problem of rent-seeking, without an initial system of IP with fortified legislation, such measures alone cannot do the deed.

While the IP system is adequately fortified, attention is to be paid to demarcate the scope and extent of the right granted by the particular IP. This can do away with social costs in the form of litigation based on speculations of the opportunistic IPR holders.

- ***Reduce the risk of acquisition of invalid IP rights and construct procedural and substantive measures that mitigate harm from lawsuits based on vague or invalid rights***

In the case of *Walker Process Equipment Inc. v. Food Machinery & Chemical Corp*¹¹ it can be seen how the grant of a patent without looking into the

fact that it had been in public use for one year prior to the grant could have led to an innocent defendant being exploited by the opportunistic rent-seeking plaintiff.

- ***Vigilance on the part of Judges in using their discretion for granting preliminary injunctions***

Judges' vigilance is an important ex-post factor which can control rent-seeking behaviour. For this, they must be adequately equipped with the law applicable and the industry where the IP operates.

- ***Awarding attorney fees to defendants in opportunistic and anti-competitive cases***

As held in the case of *S. Industries Inc. v. Centra 2000 Inc.*¹² the award of attorney fees was adopted as a measure to disincentivise rent-seeking behaviour through opportunistic lawsuits.

- ***Better examination at the PTO¹³***

As mentioned above, though ex-post factors may help, ex-ante regulation is also vital in controlling rent-seeking behaviour. This cannot, however, tackle opportunistic lawsuits claiming passing-off.

- ***Minimising the value of the property to the owner***

While incentivising the innovator, it is also necessary to ensure that he is not over-incentivised. Incentives are what drive the innovator towards socially beneficial behaviour. However, if presented with unlimited incentives, then social welfare is diluted and the rent-seeking problem arises. Additionally, just like in the market for any other goods, in order to increase turnover, there is a chance of limiting the distribution and the

resultant use of the IP¹⁴. Just like how Courts determine the value of royalty as a means of rewarding the innovator when the IP is licensed, the same way, a **one-time reward system** can help in limiting the potential reward to owners while also ensuring that the innovator is sufficiently incentivised.

- **Ensure the independence of the regulatory agency**

Since monopoly rights follow IPR in most cases, a dominant player's influence over the political landscape can never be denied. The regulatory agency is eventually captured by the regulated industry and thereby dilutes its primary goal of imposing public interest on the industry and ends up enabling collusion and monopolistic behaviour in the industry. Therefore ensuring an independent regulatory agency becomes just as important. This is because even if there is a well-made law, in the absence of a prompt agency, the object of the law will be defeated. Though the Competition Commission of India (CCI) can handle anti-competitive cases, the constitution of officers is equipped to handle IP matters. This can be possible through a **tie-up between the CCI and the Intellectual Property Appellate Boards** so that the problem of rent-seeking can be effectively handled¹⁵.

Conclusion:

What was intended to be a system of government regulation to promote socially valuable behaviour fuelled by innovators' self-interest turned out to unintentionally promote socially harmful rent-seeking. There is an urgent need to tackle the rent-seeking problem with respect to Intellectual

Property Rights, and the solutions presented above can come a long way in tackling the issue.

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Analysing Novartis A.G. v. Union of India from an Economic Lens

Aaliya Aleem

Introduction

Intellectual Property Rights are essential rights granted to the creator of something, which grants the person or organization immense power. Be it any form of IPR, all of them have their own bundle of rights to be granted to the creator. In the present case also, which was a case of patent infringement, the same bundle of rights was in conflict, when it was alleged that the defendants have violated the rights of the petitioner. The present article deals with the analysis of this case.

Facts of the Case

In 1997, a pharmaceutical company from Switzerland, Novartis, submitted a patent application for their cancer medication Glivec. It treats patients with gastrointestinal stromal

tumours and chronic myeloid leukaemia. The company claims that it invented the drug's beta crystal salt form, known as imatinib mesylate.¹ It is a life-saving medication that has been granted patent protection in around 35 nations across the globe. In those days, India had not granted agrochemicals and pharmaceutical products a patent. In 2005, the country changed its patent law and began granting patents on various pharmaceutical drugs. This was due to the implementation of the TRIPS agreement of the World Trade Organization. Then, in 2006, the Madras Patent Office rejected Novartis' request for a patent on the medicine Glivec, saying that the product did not significantly improve upon its previously patented, non-Indian form in terms of

therapeutic efficacy. A known chemical may only be copyrighted if its new forms demonstrate “improved efficacy,” according to Section 3(d) of the Indian Patents (Amendment) Act, 2005, which served as the foundation for the aforementioned decision. Since the medicine Glivec did not exhibit any improved efficacy, the Patent Office deemed it ineligible for patenting under Section 3(d) of the 2005 Act. Novartis filed two writ petitions in May 2006 before the High Court of Madras, one under Article 226 of the Indian Constitution, challenging the Madras Patent Office’s decision to deny its request for a patent and the other arguing that Section 3(d) of the Indian Patents Act is not compliant with TRIPS and is ambiguous, unclear, and in breach of Article 14 of the Constitution. The Madras High Court denied Novartis’ Writ Petitions on the grounds that it lacked the authority to assess whether a domestic statute violated an international treaty, and so could not evaluate whether Section 3(d) conformed with TRIPS. Regarding Section 3(d), the Amending Act’s goals were to combat evergreening and to make it simpler for residents to obtain life-saving medications. As a result, it cannot be regarded as ambiguous and arbitrary. The new phase of litigation started in the Intellectual Property Appellate Board (IPAB), which is an appellate body of patent controllers. The beta crystalline version of imatinib mesylate was deemed to be novel and innovative by the IPAB, but the agency declined to provide a patent to Novartis’ medication since it was covered under Section 3(d) of the Statute. Novartis challenged the said

order by filing a Special Leave Petition before the Supreme Court.

Legal Analysis

Beta crystalline imatinib mesylate, the focus of Novartis’ patent application, was said to be based on two distinct patentable discoveries, according to Novartis, which was the decision to use the imatinib mesylate salt rather than the original ingredient imatinib and the creation of imatinib mesylate’s unique beta crystalline form. The Supreme Court found that because the claims already covered imatinib mesylate for the original drug imatinib, it lacked innovation. . The Court made its decision based on a plethora of research studies that explain imatinib’s anti-tumour capabilities in both its free base and salt form, imatinib mesylate. Moreover, Novartis had asserted that the imatinib patent covered rights to the salt mesylate during patent infringement hearings in Europe. The Court ruled that a patent holder cannot allege a limited perspective of an established intellectual property in a context of assessing the uniqueness of a salt derivative while simultaneously asserting a wide perspective of the same invention in the context of infringement lawsuits. So, the teachings relevant to the innovation test are defined by the original patent claims’ extent. The Court agreed with the IPAB that the original patent claims did not cover the beta crystalline form of imatinib mesylate for imatinib. .² The beta crystalline form was innovative, but the Court determined that it did not satisfy the standard of improved efficacy under Section 3(d) of the Patents Act and did not consequently represent any eligible “innovation”. The Court understood

“efficacy” to mean therapeutic efficacy under Section 3(d). The Court made the observation that Novartis should have demonstrated the increased therapeutic efficacy of the beta crystalline structure over the drug that came before it, that is, imatinib mesylate, in this context. Instead, Novartis merely contrasted the beta crystalline form with imatinib in its free base form. As a result, the Supreme Court determined that the patent application lacked the requirements to satisfy Section 3(d) and held that the Patent Office’s judgment was accurate.

Economic Analysis

IPAB examined the Patent Controller’s rejection of the Glivec patent while the Madras High Court heard arguments from Novartis on the validity and TRIPS compliance of section 3(d) and the IPAB. The High Court and the IPAB rendered decisions that were detrimental to Novartis. The Madras High Court, on the other hand, merely concluded that the TRIPS on January 1, 1995, the TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement and the WTO (World Trade Organization) were both established. The TRIPS Agreement is, by its scope, the most comprehensive global instrument on intellectual property rights. Developed countries promoted the pact as a way to bolster intellectual property rights. But, the developing world was concerned that the stricter patent regulations under TRIPS would increase costs and discourage the generic pharmaceutical business. India initially rejected TRIPS, as were many other developing countries. Yet, India was to alter its domestic intellectual property rules in order to abide by the agreement since it is a WTO member. The Patents

(Amendment) Act of 2005, which extended complete patent protection to pharmaceutical products, brought India into line with TRIPS. This Amendment has been the subject of debate in recent years. Even though India amended its laws to comply with TRIPS’ requirements, criticism and concern about the influence of pharmaceutical patents on domestic drug costs forced the Indian government to maintain lawful methods for balancing innovation subsidies against the social consequences of pharmaceutical product patents. Section 3(d) of the Patents (Amendment) Act of 2005 is a key tool the Indian government can use to “restrict the extent of product patent protection.” In essence, Section 3(d) establishes a stricter standard for securing patents. Pharmaceutical companies must prove that fresh iterations of their products are “therapeutically more helpful than prior ones on which patents had expired” before introducing them. India is able to prohibit “evergreening” through section 3(d), which detractors refer to as a “typical abusive patent practice” in which pharmaceutical companies try to prolong patent protection by incorporating slight modifications to already approved products. When Novartis first tried to obtain a patent for their synthesis of the chemical imatinib in 1993, it ran into difficulties with the Indian patent system. But, according to Novartis, the chemical can only be given to cancer patients as imatinib mesylate. The resulting medication, Glivec, is currently protected by patents in forty different nations. Novartis submitted a patent application for Glivec in India after the WTO was established and TRIPS was passed in 1995. The

Glivec patent was denied in January 2006 by the Madras Patent Office on the grounds that it was “an unpatentable alteration of an existing chemical, imatinib.” The Patent Office concluded that Glivec had not demonstrated “novelty and invention,” as required by section 3(d) of the 2005 Act, in addition to greater efficacy. Novartis replied by filing a petition with the Madras High Court in May 2006, claiming that the Controller General of Patents “erred in rejecting the Gleevec patent application, that Section 3(d) was not consistent with TRIPS, and that Section 3(d) was vague, ambiguous, and in violation of Article 14 of the Constitution of India because it was discriminatory against Novartis.” Complaints of this nature come under WTO. The Indian Supreme Court then received a protest from Novartis. Following suit, the Indian Supreme Court issued a verdict on April 1, 2013, reiterating earlier court decisions that Novartis had failed to prove Glivec’s improved or superior efficacy in line with section 3(d). To reach a conclusion, the Court did not see it necessary to provide a clear, concise definition of “increased therapeutic efficacy.” The Supreme Court further stated that its decision in the Novartis case should not be interpreted as outright banning all patents for incremental developments of chemical and medicinal substances.

Does Section 3(d) of The Patents (Amendment) Act of 2005 Violate TRIPS Agreement?

The main claim made by Novartis was that section 3(d) of the Patents Act does not adhere to TRIPS. The TRIPS Agreement’s Article 27 states that “Patents will be accessible for all innovations,

whether they are commodities or techniques, but they should be innovative, comprise an original step, and be suitable for commercial application.” A lot of the terms used in TRIPS, like “inventive step,” have no specified meanings. This is good news for WTO members like India. As seen by the requirement in section 3(d) that a pharmaceutical product must show “improvement of the known efficacy” in order to be patented, article 27’s liberal interpretation of phrases like “inventive step” has allowed India to create its own standards for patentability. Although lacking the authority to make final decisions in such cases, the Supreme Court underlined similar points in its consideration of the TRIPS compatibility of Indian patent laws in *Novartis AG v. Union of India*. Although it looks like India’s patent legislation will be able to withstand Novartis’s TRIPS challenge if it does make it to the WTO, there is still some ambiguity.

Conclusion

The Hon’ble Supreme Court’s 2013 ruling prevents the ever-greening of copyrighted products and provides assistance to individuals who do not have access to these life-saving medications because these pharmaceutical companies offer these medications at extremely high prices, making them expensive for the everyday consumer. In its ruling, the Supreme Court stated that India is a developing nation and that the lives of about one billion individuals rely on the accessibility of medicines at a lower cost. So, the Supreme Court’s decision to forbid the liberal approach to patent granting and to only give patents to actual ideas rather than spurious ones is warranted.

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Analysing Hoffman-Roche v. Cipla From An Economic Angle**Devrata Siddhartha Morarka & Melissa Joseph****Facts**

- The controversy arose in the Delhi High Court about the Roche medicine "Erlotinib," which Roche marketed as TARCEVA.
- The substance marketed under erlotinib hydrochloride is crucial for Roche and Cipla.
- After confirming that it had been granted a patent for "Erlotinib," Roche started distributing the medication under the trade name TARCEVA in February 2007.
- It was noted in January 2008 that Cipla intends to release a nonexclusive variety of "Erlotinib." As a result, Roche filed an infringement claim against Cipla.
- Roche assured that Cipla had violated Patent No. 774, also known as "Erlotinib Hydrochloride," to which Roche owns a license.
- As the Fair court believed stopping Cipla's manufacture would be against the public interest, Roche lost the lawsuit.
- The comfort balance was in Cipla's favour.
- Regarding the claim, the Division Bench upheld the decision but focused more on their dissatisfaction with Roche for failing to establish an obvious infringement case.
- Roche's SLP in opposition to the decision was also rejected.
- The proceedings subsequently returned to the sole arbitrator for the preliminary on immediate relief; the designated authority delivered the decision, and Roche could not sufficiently show that Cipla's manufacturing of Erlocip infringed on its patent IN774.
- The matter was brought before the Division Bench for Roche.

Legal Analysis

The court analysed the validity of Roche's patent for erlotinib hydrochloride by considering the three main criteria of patentability: novelty, inventive step, and industrial applicability. The court found that Roche's patent met all three criteria, which allowed them to claim exclusive rights over the drug and prevent others from manufacturing or

selling generic versions. The court also considered whether Cipla's generic version of Tarceva infringed on Roche's patent. To determine infringement, the court examined the claims of Roche's patent and compared them to the product being challenged. The court found that Cipla's product fell within the scope of Roche's patent claims, which constituted infringement. Cipla argued that the high price of Roche's drug made it inaccessible to many Indian patients and that allowing them to sell a generic version would increase access to affordable medicines. However, the court held that it was not within their purview to set drug prices and that patent protection was necessary to incentivize innovation and research in the pharmaceutical industry. The case involved balancing the patent holder's rights with those of the public interest in access to affordable medicines. The court recognized the importance of intellectual property rights for innovation and research but also acknowledged the need to balance these rights with the interests of public health and access to affordable medicines.

Economic Analysis

Roche has maintained throughout the legal dispute that Erlotinib Hydrochloride is the active ingredient in Erlotinib, whereas Cipla said that the chemical in question is Polymorph B of Erlotinib Hydrochloride. The right to public health states that any person in dire need of medicine or treatment shall be granted without suffering financial hardship. This is a right not being strictly followed since the whole case was about the selling of a similar drug at a lower price. The reason why the court gave Cipla the win was because of

economic reasons. They didn't want any public access. Cipla manufactured the drug at one-third the price, hence would be much more affordable to the Indian citizens. Hoffman Roche is a company that originates in Basel, Switzerland, and hence is an abroad company. Thus the conversion of foreign currency to Indian rupees is drastic for everyone. Foreign companies usually do not want to expand to India because most Indian citizens cannot afford such drugs. Since a company's primary aim is profits and to make money, it would not be a sensible move for the latter to move to India and waste resources to expand to India. Cipla wanted to sell it at an economically viable price for the people in India. This is where TRIPS played its part in the case. At a time when India was about to sign the TRIPs agreement, this case emerged. Cipla argued with the following statement; Cipla contended that the patent was hit by Section 3(d) of the Patents Act, 1970, as 'Erlotinib' was a subsidiary of a known patent, 'Quinazoline'. They affirmed that Roche had not demonstrated "any superior viability of the said drug."

The judgment of the case clarifies the following:

1. While considering and granting patent applications, the public benefit will be of the first importance. The therapy for treating malignant growth would not have been available for several patents due to the high cost of the medications had the Regulator of Patents in New Delhi not granted Roche the patent.
2. Patent laws in India encourage creativity but do not grant outright rights; instead,

they contribute a restrictive right that encourages further research and development and the hunt for improved medical treatments.

This case highlighted how India adopted an IP system reflecting the WTO's core values while saving a plan to prevent "Evergreening" by making expensive medicines available at nominal prices through encouraging market competition.

Conclusion

This case was a significant legal precedent in intellectual property rights and patent law. It established the criteria for determining patentability, infringement, and the balance

between intellectual property rights and the public interest in access to affordable medicines. The court's decision recognized the importance of patent protection for incentivising innovation and research in the pharmaceutical industry while also acknowledging the need to balance these rights with the interests of public health and access to affordable medicines. The case also highlighted the importance of protecting intellectual property rights in India, particularly in the pharmaceutical sector, which significantly contributes to the country's economy. The decision, in this case, set an important legal precedent for future cases involving patent disputes in India and reaffirmed the country's commitment to protecting intellectual property rights.

Case Analysis: Natco Pharma v. Bayer Corporation

Prarrthana Gopi & Thomas Alex

Introduction

Natco Pharma v. Bayer Corporation is a landmark case that deals with the issue of compulsory licensing of patented drugs under Indian patent law. The case arose when Natco Pharma, an Indian generic drug manufacturer, sought a compulsory license to produce a generic version of Bayer Corporation's patented drug, Sorafenib Tosylate, used to treat kidney and liver cancer. Under Section 84, any person interested in working on a patented invention can apply for a compulsory license if the patent holder has refused to grant a license on reasonable terms or if the patent holder has not made the invention available to the public at a

reasonable price. In addition, a compulsory license can be granted if the patented invention is not being worked in India. In this case, Natco Pharma argued that Bayer's price for Sorafenib Tosylate was too high, making it inaccessible to most patients, and that Bayer had not made sufficient efforts to make the drug available in India.¹

Crucial Issues

- *The issue of reasonable requirements is a crucial aspect of intellectual property law* - particularly in the context of pharmaceutical patents. The court's decision in the case mentioned highlights

the importance of considering the accessibility and affordability of life-saving drugs for patients. Patent applicants and seekers should focus on the public impact of their inventions and the accessibility of their products to a vast number of patients. This approach is in line with the court's emphasis on public perspectives, as evidenced by the *Novartis AG v. Union of India* case.² However, the definition of "reasonable requirements" remains ambiguous and subjective, making it difficult to determine what constitutes a reasonable requirement in each case. Patent applicants and seekers must be mindful of this and consider the accessibility and affordability of their products to the public. Overall, the issue of reasonable requirements is a critical consideration in patent law, particularly in the context of life-saving drugs. It is essential to balance protecting intellectual property rights and ensuring equitable access to essential medicines for the public.

- ***The issue of defining a "reasonable price" for patented drugs*** – As mentioned, the term has not been defined by any legislation, making it a subjective matter that requires balancing the interests of the public and the patent holder. The court's decision also emphasizes the need to consider the affordability of the drug to patients across the country, taking into account their income levels and expenses incurred due to their medical conditions. In

contrast, Bayer argued that "reasonable price" should be looked at, from both the public's and the patent holder's perspectives. However, the court prioritized public benefit in its decision, which is in line with previous cases like *Cipla Ltd. v. Hoffmann-La Roche Ltd. & Anr.* In the short term, the court's decision is likely to increase the availability and affordability of cheaper, locally produced generic medications, therefore benefiting smaller pharmaceutical businesses. However, the long-term outcomes of the ruling are uncertain and may change in the future. It is essential to balance protecting intellectual property rights and ensuring equitable access to essential medicines for the public.

- ***The third ground on which the Compulsory License was granted*** - was that the patented innovation was not being developed in India, which is a requirement under S. 84(1)(c) of the amended Patent Act, 1970. The court drew a connection between S. 84(1)(c) and S. 83(b), which deals with the concept of "working" on patented inventions in India. According to S. 83(b), patents are not granted merely to provide monopolies on the importation of patented goods.³ Bayer argued that "working" encompasses commercial work and that it is not necessary for the patented product to be made in India. However, the court rejected this argument and held that the intention behind the legislation requires

the patented innovation to be manufactured in India, which Bayer had failed to meet. This ruling raises some ambiguity about the burden of proof on the patentee to prove that it cannot meet the requirement of locally producing the patented innovation. The court's decision places this burden on the patentee, generating uncertainty about how the court will evaluate such evidence. In summary, the court's decision on granting the Compulsory License reinforces the importance of manufacturing the patented innovation in India, in line with the country's policy of encouraging local production and innovation. After a lengthy legal battle, the Indian Patent Office granted Natco Pharma a compulsory license in March 2012, allowing it to produce and sell a generic Sorafenib Tosylate at a much lower price. Bayer challenged the decision, but the Intellectual Property Appellate Board (IPAB) upheld the grant of the compulsory license in 2013. The case has significant implications for the pharmaceutical industry and public health. On the one hand, it highlights the importance of balancing the interests of patent holders with the need for access to affordable medicines. Compulsory licensing provisions in patent law enable governments to ensure that essential medicines are available to their citizens at affordable prices, particularly in developing countries where healthcare costs are often prohibitive. On the other

hand, the case has sparked a debate on the extent to which intellectual property rights should be protected. Critics of the decision argue that it undermines the value of patents and may discourage companies from investing in the research and development of new drugs. Moreover, it may result in a reduction in innovation and access to new drugs in the future.

Conclusion

The historical context of compulsory licensing in India dates back to the late 19th century with the enactment of Act V of 1888. However, it was not until the Indian Patents Act of 1970 that significant changes were introduced, including provisions for the compulsory licensing of patents. Despite being on the books for decades, compulsory licensing had never been invoked until *Natco v. Bayer*. The case is a significant legal milestone in Indian patent law and serves as a precedent for the compulsory licensing of patented drugs. It highlights the importance of balancing the protection of intellectual property rights and ensuring access to affordable medicines, particularly in developing countries. In this case, the global community eagerly anticipated the decision as it had the potential to set a precedent for future cases. While the IPAB's decision in *Natco v. Bayer* changed the landscape of compulsory licensing, it failed to provide comprehensive guidance on broader principles for the future.⁴ Ultimately, the decision reinforces the notion that patents should not be used to prevent access to essential medicines and that public health should be given priority in cases where it conflicts with intellectual property rights.

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IP and Technology Transfer: Setting A Research Standard For Developing Countries

- **Amisha Sharma**

Introduction

Intellectual Property (IP) is the legal framework that governs the rights of inventors and creators over their innovations and creations. Technology transfer has become an essential aspect of IP in recent years, particularly for developing countries seeking to enhance their economic growth and development. Technology transfer involves the transfer of technological innovations from one entity to another, intending to promote economic growth and development. This article will examine the role of IP in technology transfer and set a research standard for developing countries.

The Role of IP in Technology Transfer

Intellectual Property (IP) is a crucial factor in technology transfer. IP provides the legal framework that governs the rights of inventors and creators over their innovations and creations. IP rights, such as patents, copyrights, and trademarks, give inventors and creators exclusive rights to use, sell and license their inventions and products.

These exclusive rights incentivize inventors and creators to invest time and resources in developing new technologies and innovations.¹ Technology transfer involves the transfer of technological innovations from one entity to another. This can be done in several ways, including licensing, joint ventures, and technology transfer agreements. In the case of licensing, the inventor or creator grants permission to another entity to use, sell, and license their invention or creation. Joint ventures involve two or more entities coming together to develop and market a new technology. Technology transfer agreements involve transferring technology from one entity to another in exchange for payment or other considerations.²

The Importance of Technology Transfer for Developing Countries

Technology transfer is essential for developing countries seeking to enhance their economic growth and development. Technology transfer can help developing countries acquire new

technologies and innovations, which they can use to develop new products and services. This can create new industries and markets, which can help create jobs and increase economic growth.³ In addition, technology transfer can help developing countries enhance their existing industries and technologies. By acquiring new technologies and innovations, developing countries can improve their products and services, making them more competitive in the global marketplace. This can help increase exports and foreign investment, further boosting economic growth.

Setting a Research Standard for Developing Countries

While technology transfer can be a powerful tool for promoting economic growth and development, several challenges must be addressed to maximize its benefits. One of the critical challenges is the need for more research and development (R&D) capacity in many developing countries.

Developing countries often need more resources and expertise to create new technologies and innovations. This can make it difficult for them to acquire new technologies and inventions through technology transfer. To address this challenge, developing countries must invest in R&D capacity building.⁴ R&D capacity building involves developing the skills and knowledge needed for research and development. This can be done through various means, including training programs, research partnerships, and collaborations with universities and research institutions. In addition, developing countries must invest in developing their IP systems. This can

include the establishment of patent offices, the development of IP laws and regulations, and the training of IP professionals. Developing their IP systems allows developing countries to protect their innovations and creations better and participate in technology transfer agreements.

Foreign Trade and Intellectual Property

A critical pathway for the spread of technology is through international trade. The effectiveness of patent strength affects the pricing structure of traded items and gives distributors and sellers of goods and services a competitive edge. Companies should promote the export of patented products to international markets with robust intellectual property rights protection to boost their sales and profitability. Also, it strengthens its position in the market, which lowers the sales of rival products. In such markets, copying is expensive and time-consuming. Also, the extent to which a nation supports international commerce depends on its level of development and capacity for imitation.⁵ Trade flows are less responsive to IPR protection since most high-tech products are challenging to copy. As a result, most high-tech companies favour foreign direct investment (FDI) and licencing and are least impacted by IPR protection. Imports of high-tech and low-tech goods may be encouraged, and foreign companies may be able to increase their trade volumes thanks to enhanced IPR protection.⁶

FDI and IPR

In low-tech industries, FDI is less important and varies between sectors. IPR protection is of secondary concern for businesses considering

investments in developing nations like China and Brazil that see significant foreign capital inflows. Foreign companies tend to open R&D facilities in countries with higher intellectual property protection while opening sales and distribution facilities in nations with less robust intellectual property protection. Businesses with high-tech or technologically intensive products engage in FDI because the advantages of technology can be used globally and across national borders.⁷ However, the choice to allow foreign direct investment is influenced by the size of the market, the ease with which resources are accessible, the availability of skilled labour, the opportunities presented by the market, and the cost of production. IPR protection for sectors like chemicals and pharmaceuticals is of the utmost importance compared to other businesses. When technology needs to be transported across borders but may only be used in the host country, FDI is a crucial route source. On the other hand, it may result in benefits that trickle down to local businesses. Reverse engineering may make it simpler for domestic companies to copy the product. Most businesses with complicated technologies and distinctive goods prefer FDI over licencing because of the significant costs involved.⁸

IPR and Regulation

A licence might grant the right to produce or manufacture the good within a specific territory in exchange for a price, a royalty, or a profit-sharing arrangement. As opposed to other routes like foreign direct investment, companies that make low-tech items use licencing. Greater IPR protection can lower licencing fees and give the

licensee more market power. In addition, it prevents market innovation—consequently, licencing benefits from IPR protection.⁹

Foreign Patenting and IPR

Foreign patenting and the spread of technology are encouraged by more robust IPR protection in emerging nations. In contrast to large countries, it positively affects open economies or medium countries. The advantages of international patenting in underdeveloped nations go far beyond access to industrialised and sizable markets. Yet, because it relies on the market structure of the country, it is challenging to quantify whether foreign patenting promotes or restrains growth in the specific country.¹⁰

Conclusion

Technology transfer can be a powerful tool for promoting economic growth and development in developing countries. However, to maximise its benefits, developing countries must address the challenges posed by their need for R&D capacity and IP systems. By investing in R&D capacity building and growing their IP systems, developing countries can better participate in technology transfer agreements and acquire new technologies and innovations. This can help to create new industries and markets, boost economic growth, and ultimately enhance the well-being of their citizens.

Future Roadmap

IPR protection provides incentives for innovators to innovate and promotes long-term growth. Depending on the length of the market leader and

the difficulty of copying technological aspects, there may be some incentives for innovation in the absence of IPR protection. On the other hand, excessive IPR protection might impede the spread of information and slow innovation. Only developed and emerging nations with the ability to innovate and establish can conduct research and development. Developing countries should have weak intellectual property rights for the diffusion of technology. Greater intellectual property rights might hinder domestic innovation and shift profits to foreign entities, decreasing domestic economic production. Technology and products with a high technological content cross international borders in the globalised economy. Because they are easily copied or replicated in the marketplace, weak IPR can prevent foreign companies from marketing their products. To sell their products and services, multinational companies invest extensively in R&D while urging the national government to tighten the IPR framework. Patents, in particular, contribute to increased innovation and the spread of technology. IPR protection enables businesses to do R&D and recover related expenses from promoting innovation. IPR is essential for facilitating technology transfer across borders and promoting innovation. Greater intellectual property rights depend, among other things, on how well a nation can absorb innovation and progress. Its effects are also influenced by a country's openness to foreign commerce, with favourable results in more open economies. R&D spending and patent applications can indicate a nation's innovation ability. However, this depends on the level of openness of the nation and factor endowments. The

IPR regime can be strengthened, boosting national and open economies' growth rates. Greater IPR protection can also aid in lowering competition by reducing copying and promoting innovation in the local market. It limits the spread of technology, resulting in reduced output and higher costs. The relationship between IPR and growth is linear since IPRs always affect commerce, which results in higher trade flows for high-tech or patent-sensitive businesses.

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The Role of Intellectual Property in Economic Development

Maria Robin

Introduction

Intellectual property rights are the rights given to persons over the creations of their minds. In recent times, intellectual property and the rights associated with it are gaining popularity. IP has a great impact on the economy of a country. It can both positively and negatively affect a country's economic growth and development. This article aims to critically analyze the role of intellectual property in economic development. Intellectual property rights aim to protect the interests of the creator of the property. The creator has the right to decide the value of his/her property and can sell the same.¹ This encourages other people to come up with their own innovations and ideas. Conversely, if intellectual property rights are not strictly enforced, people will tend to copy the ideas of others, and it will lead to a stagnant economy.

Critical Analysis

In a knowledge-driven economy, intellectual property rights are fundamental in business decisions. New products and brands appear almost daily as a result of human creativity and innovation. India has a variety of laws governing IP. This includes The Copyrights Act, 1957, The Trade Marks Act, 1999, The Patents Act, 1970, The Design Act, 2000, etc. A stronger system for protecting intellectual property could either enhance or limit economic growth, in theory.² It is important to understand the role of intellectual property and the rights relating to the same from both positive as well as negative lenses. While we all understand how strict enforcement of IPR can create a scope for economic development, it is important to realize that this same principle can backfire as well. The creators of the property can easily exploit the rights and can charge very high

amounts, causing a monopoly in the market. Monopoly in the market is derogatory for both consumers as well as economy. Consumers are left with limited options or choices. Further, the lack of competition affects the quality of products and services, which eventually causes the downfall of the economy. Creators of IP, most of the times, are profit-oriented and try to maximize their financial gains. This, along with the monopoly they exercise, lets them charge more from the consumers. Hence, increased IP protection causes increased financial benefits. We also need to understand that stronger IPR does not necessarily mean increased creativity. When the protection is strengthened, the consumers of the intellectual property are made to pay more, exacerbated by the monopoly we discussed above thereby causing a decline in the demand for the same. This is further worsened by the wait time for the consumers until the copyrighted works are made available in the public domain. Thus, the theory that strengthening IPR creates creativity works only on those people who are encouraged and motivated in creative activity for, let's say, financial profits.³ It is also difficult to test the relationship between creativity and IPR because there is no set measure of creativity since it is highly subjective. It is, therefore, difficult to link IP to measures of economic growth like PCI, GDP, etc. We can see around us that most of the small and medium companies/brands do not understand the value of intellectual property or are not aware of the systems in place for the protection of their innovations. It is extremely important that they become aware of all this in order to convert their ideas and creativity into real-time assets of

their companies with a high market value for the same. This will give them additional profit, which eventually leads to economic development.⁴ In order to implement this whole process, the companies will have to first identify the intellectual property assets such as patents, copyright, trademark, etc. Once this is done, it is important to analyze the nature of the assets, which can range from outright ownership to a simple license that might have the potential for development in the future. A possible risk that can occur in the strict implementation of IPR is that there can be higher chances of conflict of the ideas of a company with a third party. In my opinion, this can be mitigated by making all employers of a company sign a confidentiality agreement. To sum up, proper intellectual property rights can improve the effectiveness and competitiveness of a company. IPR requires companies to commercialize their inventions which gives scope for a large degree of sustainable growth leading to economic growth. It is quite impractical to keep an innovation/idea a secret for too long. Especially when there are other people who are working towards the same goal.⁵ It is reasonable to assume that they might also arrive at the same idea, although there is an imitation lag here. Imitation lag refers to the difference in the time between the introduction of a product in a country and when the producers of another country start producing it. Many times, intellectual property will be the most important asset that a company possesses. Even when the company itself is at a loss, the value of the intellectual property would be its only source of continuing profit. In a way, IPRs limits the diffusion of knowledge in society. It

prevents other people from using this knowledge. However, if properly incentivized, IPR can play a positive role in spreading knowledge. Other companies or firms, though might not directly copy from the ideas of the original company, might be able to develop on the existing mass of knowledge. IPR also helps in spreading knowledge between two economies as well by increasing international trade of goods and services. When the companies do not have strong protection in terms of their intellectual property, they will be reluctant to invest abroad which might include a vast transfer of proprietor knowledge. Stronger IPRs will highly benefit developing countries by way of increasing the inward flow of technology.⁶ Better technology will encourage local innovation and further helps bridge the gap between themselves and developed countries. However, stronger IPRs are not a guarantee of development. It must be combined with various other factors which influence the development of an economy. There are many economies wherein people earn profit from copying ideas/ goods. Once these economies decide to strengthen their IPRs, these people will have to look for alternative employment. Hence, it poses a risk of unemployment which will affect the growth of an economy.

Conclusion

Intellectual property rights are becoming increasingly important in current times. Economic theories tell us that IP can play either a positive or a negative role in the growth and development of an economy. In India, there are multiple laws governing intellectual property rights.⁷ India is also

part of several treaties and conventions. Intellectual property can be effective in terms of resolving many failures in the market system in relation to information/ idea creation and dissemination of the same. We must not forget that IP and economic development are interdependent. As discussed in the article, IP plays a huge role in deciding the direction of economic growth. Further, economic growth also leads to the development of IP. It can be concluded that IP has more benefits with respect to the development of the economy, provided it is aided with the right incentives.

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IP and its Economic Applications: Re-Looking at Novartis AG v. Union of India

- Sreejith Narayan Bose

Facts

The case concerned a patent application filed by Novartis AG for its cancer drug, Glivec. Novartis had obtained patents for Glivec in several countries, including the United States, but its application for a patent in India was rejected by the Indian Patent Office in 2006. Novartis challenged the decision, arguing that the Indian Patent Act, which did not allow for the patenting of minor modifications to existing drugs, was unconstitutional and violated international intellectual property laws.

Issue

The primary issue, in this case, was the interpretation and application of the Indian Patent

Act and the role of intellectual property in promoting innovation and access to medicine.

Law

The relevant laws, in this case, were the Indian Patent Act, which governs the grant and enforcement of patents in India, and international intellectual property treaties and conventions, which set forth standards and principles for the protection of intellectual property rights.

Analysis

Novartis argued that the Indian Patent Act was unconstitutional because it prevented the patenting of minor modifications to existing drugs, which was necessary to incentivize innovation and

investment in developing new drugs. Novartis claimed that the Indian Patent Act's strict interpretation of what constitutes an inventive step would discourage companies from investing in research and development in India, leading to decreased innovation. The Indian government and various public health groups, on the other hand, argued that the Indian Patent Act was necessary to promote access to affordable medicine, particularly in developing countries where many people cannot afford expensive branded drugs. They argued that a strict interpretation of the Indian Patent Act was needed to ensure that companies could not obtain patents for minor modifications to existing drugs that did not significantly improve existing treatment. This, in turn, would prevent companies from monopolizing the market and charging exorbitant prices for essential medicines. Thus, the main arguments of Novartis were centered around the need for strong IP protections to incentivize innovation and investment. At the same time, the government and public health groups emphasized the importance of promoting access to affordable medicine, particularly in developing countries. The case raised important questions about the balance between protecting intellectual property rights and access to essential medicines. On the one hand,

strong IP protection is essential to incentivize innovation and investment in new drugs and technologies. On the other hand, overly strong IP protections can lead to high drug prices and limited access to essential medicines, particularly in developing countries. Ultimately, the Indian Supreme Court sided with the government and public health groups, ruling that the Indian Patent Act was constitutional and that Novartis was not entitled to a patent for Glivec. The Court held that the drug did not significantly improve existing treatments and that minor patenting modification to existing drugs would stifle innovation and harm public health.

Conclusion

The Novartis case highlights the importance of intellectual property in promoting innovation and access to essential medicines. The case raised important questions about the balance between protecting IP rights and access to affordable medicine, particularly in developing countries. Ultimately, the Indian Supreme Court's decision to uphold the Indian Patent Act was seen as a victory for public health advocates and a sign of India's commitment to promoting access to affordable medicine.

IPR and its Application in the Global Economy

Karan Mathias

Introduction

In today's global economy, intellectual property rights (IPRs) are a top priority for researchers,

commercial organisations, and policy authorities. IPRs are more vital than ever since the value of information and immaterial goods in the global

economy is still growing. Policymakers are now considering ways to modify the current systems of IPR to consider the evolving environment in light of the various fields that are seeing rapid technological advancement. Intellectual property tends to differ in its importance in various countries' economic activities. The main factors that tend to differentiate one country from the next are, first, the total amount of resources that a government may allot towards the creation of an intellectual asset of some form and second, the amount of protected information that is found to be used in consumption and usage by these countries. IPR systems in developing nations frequently encourage information dissemination through low-cost copying of Western goods and technologies. This policy attitude implies that indigenous innovation and invention potential must still be sufficiently established to merit protection. Therefore, even at modest levels of economic development, insufficient IPRS could inhibit technological change. This is mainly because many inventions and new products are targeted at regional markets and could gain from domestic protection through various intellectual protection tools such as patents, utility models, and trade secrets.¹

Issues Hindering the Furtherance of IPR

The progressive advantages nations gain from IPRs rely on their capacity to create and adopt novel innovations and goods.² Three issues are essential to progress in this situation. First, high levels of educational achievement and sizable allocations of human capital will help boost one's capacity to adapt to new technology for regional industrial

purposes. Secondly, how effectively local businesses perform in Research and innovation is a critical factor in efficiency when incorporating foreign innovations. This finding emphasises the significance of creating a solid technology policy to encourage technical progress in domestic businesses. Promoting research joint ventures, technology demonstration projects, information sharing through conferences, and strengthened connections between public research institutes and enterprises are a few such programmes.³ Third, it's crucial for nations to support the growth of their financial markets, which helps control the large risks associated with technological advancement.

Benefits of IPRs

Intellectual property rights help boost job opportunities, competition and consumer rights around the globe, which further helps boost the global economy. Indeed, intellectual property (IP) can increase employment prospects globally. Intellectual property (IP) refers to the legal protections afforded to mental works, including patents, trademarks, copyrights, and trade secrets. New ideas, products, and services can be and protected using these rights, stimulating economic growth and opening up job opportunities. IP can increase employment prospects by encouraging innovation. People and businesses are more inclined to devote time, money, and resources to creating new goods and services when they are confident that intellectual property rights will safeguard their creative ideas. New firms and sectors may be developed as a result, which may result in more employment possibilities. Additionally, IP may support businesses as they

expand globally. When a company has substantial IP rights, it can sell or license its intellectual property to other nations, aiding the business's ability to grow internationally. This may result in new employment possibilities both domestically and overseas. The protection of jobs is another benefit of IP rights enforcement. Still, this protection is not absolute in nature, such as in cases where technology and innovation substitute people's jobs.⁴ The industries and companies that depend on protecting these rights may suffer from counterfeiting and intellectual property infringement. Businesses and governments can protect jobs in these sectors and stop losses to their economies by upholding IP rights. Intellectual property can increase job prospects by encouraging innovation, easing global expansion, and safeguarding jobs.⁵

Influence on the Economy

IPRs could be a critical factor in boosting the global industry's competitiveness. IPRs, such as patents, trademarks, copyrights, and trade secrets legally protect the new goods, methods, and designs that businesses create. Companies can profit from their R&D efforts thanks to this form of protection, which also gives them an edge over market rivals by prohibiting competitors from stealing their discoveries. This will, in turn, force competitors to develop new and improved ideas and technologies to remain relevant. Particularly, patents are frequently viewed as a significant factor in driving competitiveness since they give businesses an enforced monopoly over their ideas for a certain amount of time. This enables companies to recover their R&D expenses and get a return on investment

while preventing rivals from launching comparable items. In addition to fostering competition, trademarks help businesses increase customer brand identification and loyalty. This can give companies an edge in the market by assisting consumers to remember and recognise their products more quickly. IPR can be useful for businesses wanting to maintain their competitiveness in the global market.⁶ Companies may produce a return on investment, increase brand recognition and loyalty, and stay one step ahead of their market rivals by safeguarding their unique goods, processes, and designs.

Conclusion

A few ways by which Intellectual property right is seen to help and protect consumers of products and services worldwide is, firstly, by preventing the manufacture and sale of counterfeit products that may harm and confuse consumers. By protecting trademarks, patents, and copyrights, IPRs prevent counterfeiters from copying products and falsely labelling them with the name of a well-known brand or company. This helps ensure that consumers receive genuine and safe products. By providing inventors, creators, and businesses with exclusive rights to their inventions and creations, IPRs give them the incentive to invest in research and development. This can lead to new products that benefit consumers by improving their quality of life. IPRs also help ensure access to information by protecting the rights of authors, publishers, and creators.⁷ This encourages the creation and dissemination of information and knowledge, which benefits consumers by providing them with access to valuable resources and expertise.

Intellectual property rights can help protect international consumers by promoting fair competition, encouraging innovation, preventing counterfeit products, and ensuring access to information.

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Analyzing Perspectives on Economic Justifications for "Optimal Term" of IP Protection

Shreya Sampathkumar

Preliminary Determinants of the “Optimal Term”

The “incomplete appropriability” of knowledge has always been a baseline justification for protecting intellectual property (IP).¹ IP rights, which nurture knowledge creation through research and development, have been one of the best solutions to problems created by the nature of knowledge in that it enhances “appropriability”. However, IP rights, in increasing the market power of owners, distort the pace of knowledge consumption. The enforcement of IP rights

essentially constitutes a perpetual tug-of-war between creators and consumers, mediated by the law. This tussle is the main determinant of what factor decides which goal of IP protection (dissemination v. creation) is to be prioritized. The longer the term of protection and the stronger the protection is, greater the likelihood that the system prioritizes dissemination. The above reasoning serves as a premise to justify the confluence of economics with copyright and patent laws. Industrial designs and trademarks have a different basis of protection - more-incentive based, relying

on the principle to recoup reputational investments than to foster innovation and creativity. Trade secret law bolsters the patent system in giving innovators a chance to allow a certain degree of monopoly without the strict requirements that ensure patentability, as long as they commit to trade secrecy.

What is at Stake?

Modern competition and industrial IP law focus on the promotion of economic efficiency, whose metric is typically based on the consumers' net profits and benefits. Why are costs and benefits discounted? The net benefit must be collated with research and development investment flows in the determinable future to come up with a number that reflects the investment's up-front costs. Nevertheless, the choice of appropriate discounting rate is a slippery slope and tends to change the contours of social policy relating to the terms of protection for different IP forms and licensing. IP protection strives to generate incentives to broaden the gap between the value of created and used IP and the social cost of its creation, which includes the cost of running the system. Firstly, private producers, who have the incentive to innovate or invest in innovation only if they foresee a substantially equal return. How is it ensured that these producers have the right incentive? The answer is that it depends on their ability to obtain returns on at least a fraction of the value that consumers derive from the works. If a cap is placed on the ability of potential innovators to capture this value, their incentive to invest in what would be considered an optimal amount of innovation would be severely curtailed. Another consideration is the

cost of innovative activity. The extent to which work is derived is a strong determinant of minimizing the cost of innovative activity. Consider copyright law, wherein limits are placed in providing creators of works with the right to make "derivative works", which increases the costs to subsequent creators. Like in patent administration, competition in ownership and innovation concerning a patent can result in an overuse of resources to obtain the benefits that accrue in acquiring patent rights to a product or process. The combination of the money and power through resources dispensed by a firm to acquire the same patent is vast compared to the expenditure of a single form, and could result in socially suboptimal outcomes.

Other provisions lower subsequent costs of innovating, such as copyright registration and compulsory disclosure to obtain a patent. This information could serve to be useful for potential authors and innovators to find ways to cut down on transaction costs, which include search costs. Copyright law refuses protection to anything that can be boiled down to emulate a factual matrix, namely, concept, principle, system, process, idea, or discovery, and patent protection is denied for basic laws of nature, abstract ideas and natural phenomena despite the expenditure on their discovery. If the licensing market took off without a hitch, the imposition of restrictions would be fruitless since subsequent creators would be able to procure licenses to prior works efficiently. However, information asymmetry concerns regarding transactions and market power that

accumulated with early creators justify the restrictions imposed on the nature of protectable subject matter. Another problem arises in determining whether the current system of IP has managed to balance the interests of the creation and dissemination of IP. Incentive drives resource allocation towards the production of the public good, that is knowledge. However, if this knowledge is not used efficiently, the system would be rendered a burden than a system without incentive to create, but dissemination is prioritized. What should the appropriate duration of protection be? What should its scope be? Take the case of the optimal duration of patent protection - there is an implicit trade-off between health and monopoly. Before one concludes that incentive fosters creative activity, one must observe the extent to which this principle applies in practice. Lower the dependence of innovation on invested resources and reward projections, the more stranded the possibility of granting stronger rights to creators.

Developed v. The Developing World

As principles of international law have iterated multiple times, the disparity between the “Global North” and the “Global South ” is not merely due to the widely-acknowledged resource gap but also the knowledge gap. Certain concerns that the TRIPS Agreement has rendered information access more cumbersome and as a consequence, chips away at the gap between the developed and the developing world, thereby broadening the knowledge gap. What about the effect of TRIPS on medicine and medical technology? As the pandemic highlighted areas of immediate concern in this respect, restrictions on access to the basic

medication have placed them far beyond the reach of the developing world. Perhaps it is time for TRIPS to reconsider its choices of the optimal term of protection of select forms of IP, which, if turned towards dissemination than monopolization, could do greater good than harm. Compulsory licensing, although a commendable tool, is still slightly rough at its edges and does not appear to prioritize what is really important. What is important to be noted is that IP is created and not discovered, which means that if rights are too broadly defined, they are likely to generate skyrocketing rents that overutilize resources to create almost priceless IP whose ownership will be vested in a single individual or entity. Through caps on the duration of protection, its value to its owner is significantly reduced, which also cuts down on rent-seeking behaviour. Despite these concerns, discounting to present value renders the difference in the IP creator’s value between a sixty year term and a seventy-five year term would be noticeably less because a Rupee’s value not to be received for sixty years or seventy-five years is negligible. This limitation is also owing to the effect of IP rights in limiting the distribution and use of protected material. The price of the protected material borne by the consumer pushes other consumers who want to purchase the same material to other products that may have higher societal production costs, causing an efficiency loss. For instance, designer luxury brands price their items at a cost that groups individual behaviour into two categories, namely, those who can afford it, and thus buy it, and those who want to buy it, but cannot and thus turn to cheaper alternatives. A hidden cost in this

transaction is the latter group's resorting to fast fashion, which has such a vast damaging impact on the environment that the loss incurred by luxury brands in pricing their items lower will be outweighed by the loss caused to the world as a whole as a result of environmental damage. The calculation of the optimal duration of protection to relatively offset these undesirable circumstances without compromising appears to be directly influenced by lobby group pressure. Since this pressure is largely from the supply side, and often represented by the Global North, there is an almost regular phenomenon of an increased length of IP protection duration. Two areas of exploration arise from this understanding: the definition of the ambit of social optimality of current IP protection standards and the varying national circumstances that determine the robustness of the country's IP system. Would the established standards for a developed country work the same in a developing country?

Conclusion

Another issue arises in the form of complexities in using "innovation" as a metric, which renders the relationship between amendments to the term of IP protection and its effect on innovation output. There are, however, ways to analyze this connection in alternative ways, such as considering the economic value of a protected work that is close to expiration to alter its protection duration. For copyright, the custom is to refer to the percentage of books in demand by counting the number of prints if the work is literary and the demand for broadcast (a movie, for instance) or adaptations of an older piece of protected content. The core

understanding is that if commercial value ceases to exist before the expiration of its copyright protection, there lies no value in continuing to protect such works. Due to a dearth in evidence to verify demand elasticity for copyrighted works, and the lack of powerful lobby groups that vvy for demand, the most recent extensions of the term of copyright protection are owed solely to the supply side. It does not help that the data concerning the same is outdated and pertains to forms of copyrighted works that are no longer in substantial use as of today.

The Digital Age: The Way Forward

Globalization has been propelled by the digital revolution, which has, in turn, amalgamated technology and the law - bringing out an era of challenge for existing IPR regimes. Deciding the scope of terms of IP protection is possibly going to be affected by the development of stronger global networks and newer digital environments, like the Metaverse, a popular and famous example. Based on current literature on the issue, it appears that the needle tilts in favor of a less stringent regime of IP protection because of the proliferation of digital copying in multiple manners. This problem demands that trade secrets and data protection be given more space in the arena to supplement and enforce the concepts that intellectual property stands to embody, namely, dissemination and creation.

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Economic and Legal Challenges in IP

- Swaroopa Parthasarathi

Introduction

Intellectual property is a pervasive subject prevalent in every field; because innovation is common to all sectors, IP is a natural consequence of it. Although a very rapidly developing field, it is prone to many challenges from every aspect. In this article, the economic and legal aspects along with the associated repercussions will be elucidated.

The Economic Approach to IP

Intellectual Property starts with economics.¹ As absurd as this statement might sound, there is a hidden economic approach to this. Breaking this down to its simplest form, IP laws at their very raw and natural state is an attempt to fix the failure to obtain knowledge in the market. There is a growing demand for knowledge, but the price people are

willing to pay for it is much less or even zero. As human beings, we all have preferences; things we want and don't want. We also respond to incentives. A market is a forum where we purchase goods and exchange services with others to satisfy our needs and wants. There is a price that needs to be paid for everything, including our wants and needs and there is a limit to how much the other person can supply. In this context, the good we want is knowledge, and since typical markets discourage the creation of new knowledge, IP remedies this market failure by allowing the creation of knowledge. The cost of innovation is high, the acquiring cost is low, and the usage cost is almost null.² In economic terms, information is

classified as a public good prone to the free rider problem and the tragedy of commons. This essentially means is that, it is a good available to everyone in equal amounts and people will use other people's inventions and knowledge for free without paying. The tragedy of commons is such that a public good is open to all and is over and misused by people. Knowledge has no boundaries and thus is susceptible to be used by people in the manner that they want. If only you know the information, it is of value only to you; but if everyone gets to know it is valuable to society. There is a considerable loophole prevalent in this particular scenario. Take the case of software which is distributed over the internet, the costs of actually providing the IP to consumers are low, and the variable and hence marginal costs are close to zero.³ Now, when the fixed costs constitute a high percentage of total costs, a price equal to marginal cost is likely to cover total costs if the former is rising at a rapid level. However, a price greater than the marginal cost is needed to allow the producer of the intellectual property to recover the fixed costs. Marginal cost pricing will increase access to existing intellectual property but reduce the incentive to create it.

Solutions to the Economic Problem

A solution to this problem would be to reward these creators for their work financially, and give others limited access to their work, the owner's authorisation is required before obtaining or using that particular piece of information. In this way, the creator is rewarded for his work, and at the same time, he cannot completely stop people from accessing his creation.

Legal Challenges in IP

Although intellectual property law has a set of legislations governing it, like any other law, it has its drawbacks, and within the field, there are many challenges present. The most common intellectual property rights problem is preventing the Patent Evergreening Prevention so that any person/company cannot patent by making minor changes to something forever. Section 3(d) in the Indian Patent Act is one of the most significant issues with intellectual property rights⁴. Let us take the example of the pharmaceutical industry, wherein medicine companies patent drugs produced by them. Now, once patented, the license is valid for 17 years. Let us rewind time a bit and go back to the Covid-19 pandemic; a situation that shook the globe and the whole world was at stake. In such a situation, medicines are the need of the hour, and they must be produced internationally on a large scale. At that moment, will people care about patents and giving away their rights? Obtaining a patent and license to sell drugs is a challenging task, which then leads us to question the legislation in itself. The key to successfully implementing IP laws lies in the balance that needs to be struck. For example, traditional knowledge, especially in the field of medicine is like a gold mine⁵. The government needs to protect traditional knowledge from being patented by multinational corporations. Practically speaking, IP infringement doesn't hurt anyone, yet the consequences are dire if violated.⁶ In a sense, IP rights also restrict competition which is absolutely necessary for the rapid-paced world that we live in. Another question that comes into the picture is to what extent do we protect these creators without

restricting competition and innovative competition?

Conclusion

All of these questions are dangling in mid - air concerning the viability and practicality of certain aspects of IP and economics. Not every solution can be exploited and used to its maximum in its raw form. They have their drawbacks as well, and if implemented, can only be partially executed or can be put to practice in such a manner that only the positive aspects are handpicked and used.

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IP and Pharmaceuticals: Scope in Economic Research

- Preemal D'Souza

Introduction

The 18th century saw the advent of modern medicine. Due to the industrial revolution, there was a capital increase, leading to investment in research and development. One such area was medicine; with infectious diseases like typhus, cholera and tuberculosis spreading like wildfire, these medicines saved lives. Thus, the pharmaceutical industry gained immense prominence and was highly commercialized, leading to many ethical and economic issues. This article addresses the various legal and economic barriers to pharma industries while briefly discussing the 1994 agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and the ethical issues relating to affordable medicines. Medical research requires large

amounts of financial and technological resources. In order to reward and incentivize research and development, intellectual property rights play a significant role. Pharma companies can now file for patents under the TRIPS agreement, which gives exclusive rights for companies to file for technology-related patents. However, an issue regarding affordable medicines arises. Through these patents, companies can quickly establish a monopoly in the market, often keeping the prices of these medicines high. These expensive medicines are not affordable to ordinary people in India. Thus, giving rise to ethical issues.

International Agreements

The TRIPS is a World Trade Organisation (WTO) agreement that acknowledges that Intellectual Property Rights (IPRs) are private matters but lays

down a minimum standard of IPRs that each member nation must follow. Before the TRIPS agreement, the only agreement dealing with international trade was the General Agreement on Tariffs and Trade, also known as the GATT. The TRIPS agreement was enacted on 1st January 1995 and was amended on 6th December 2005. India was part of the drafting process. However, today it risks being excluded from this agreement due to a temporary waiver given to pharma companies during the pandemic. The TRIPS Agreement covers various intellectual property areas like geographical indications, industrial designs, patents, trademarks, and confidential information. It provides guidelines on the duration of copyright holdings and the nature of protection offered to different categories of intellectual property. It also lists the remedies for said IP violations, and the procedure complainants must follow. This agreement has a considerable role to play in the pharma industry, as it recognizes and rewards research and innovation. Through the available guidelines, pharma companies can file for patents on new drugs and treatments (inventions), valid for a minimum of 20 years.

Research and Development (R&D)

Patents are awarded to pharmaceutical companies either on specific drugs (Products) or processes. These patents prevent unauthorized individuals from using the patented technology and from producing, using, selling, or importing a product derived directly through the patented process. These patents help the company maintain a monopoly over the market, through which they make a profit as a return on the investment in research. However, as the technology is kept

private, it curbs further research and development in the industry. Each patent is given for at least 20 years, if not more. This causes a significant barrier to the development of potentially life-saving technology.

Setting Price for 'Drugs' – Problems Involved

Companies might also abuse these patents by setting the price of the said drug extremely high, which desperate people, having no other choice, give in to and buy. These drugs can be the sole drugs which can cure certain diseases, and without a regulating body looking after their prices, it will give rise to ethical and economic problems. This phenomenon is often observed in drugs relating to cancer and other chronic, life-threatening diseases. When the patents expire, and generic substitutes are made, these drugs are no longer considered 'the standard of care.' A solution to this can be government subsidies and price ceilings. This will ensure that the companies are still rewarded while making the treatments more accessible to the general public.

Conclusion

Patent reforms are the need of the hour to improve accessibility of medicines to the general public. The current patent protections are too long, and companies often abuse them by filing multiple patents on the same product. There is immense scope for research in this area, from ascertaining a reduced period of patent protection to fixing the right price ceiling for each drug. There also needs to be faster approval of generic or biosimilar medicines, which will ensure easy access. Another area that needs to be looked into is the incentivization of drugs. Doctors usually receive an

incentive to prescribe expensive drugs. This is harmful to the patients and should be stopped by giving equal pay regardless of the treatments prescribed. Equal access to treatment is a basic human right, but the current intellectual property laws facilitate large profit-minded companies to capitalize on the healthcare industry. With the fast-paced development of technology, research, especially in the pharmaceutical industry, should not be kept secret for an extended period of time. A fine line must be drawn between economics and ethics. Laws must be framed in such a way that both the companies and the society benefits from science.

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Economic Spheres and IP Ecosystems

Introduction

Economic spheres refer to the different sectors or areas of the economy that produce, distribute, and consume goods and services. These can be classified into various categories, such as agriculture, manufacturing, services, and technology. Economic Spheres can be defined as the types of organization or group of organizations that interact in a certain area (e.g., industrial districts, cities). Economic Spheres are often seen as a form of spatial concentration (e.g., urban areas vs. rural areas). They can also be used to measure economic activity within a region or nation. Each society has a variety of spheres that work together to create an overall system of society. This can be

- Janet Treesa & Harthik Roy

in the form of government, academia, business, and labour organizations. On the other hand, IP ecosystems can be defined as a network of stakeholders that interact with each other to create and benefit from intellectual property (IP). An ecosystem can be created to protect an invention or an idea from being infringed. This may include universities, hospitals, laboratories, inventors, and many others. An IP (intellectual property) ecosystem refers to the network of organizations, individuals, and institutions involved in the creation, protection, and commercialization of intellectual property. This can include patents, trademarks, copyrights, and trade secrets. The IP

ecosystem is critical for innovation and the development of new products and technologies. The benefit that IP ecosystems have is that they allow for innovation within the economy and help to grow businesses and industries.¹

Traversing IP Ecosystems

This means that an IP ecosystem can bring about economic growth. However, when discussing IP ecosystems, it is important to define the type of IP and ecosystem being discussed. For example, IP ecosystems are often discussed in the context of IP or patent protection, but they can also include such topics as regulatory and government affairs. The main distinction between these two types of ecosystems is that they focus on the protection and transfer of knowledge. It is important to note that Economic Spheres and IP Ecosystems are not mutually exclusive, as they can often overlap. For example, a university may have an economic sphere that is relevant to its economic development. Similarly, a company may have an IP ecosystem with members who are all in the same industry. However, these two concepts are distinct, and each has its own unique set of interactions and functions. The relationship between economic spheres and IP ecosystems is complex and interdependent. For example, the technology sector relies heavily on the protection and licensing of IP to drive innovation and growth. Similarly, the pharmaceutical industry invests heavily in research and development to create new drugs, which are protected by patents.

Trademark Dilution

One of the most well-known instances involving the protection of well-known trademarks in India was *Daimler Benz Aktiengesellschaft & Anr v. Hybo Hindustan*. The Plaintiff in this case was a Mercedes Benz automaker, and the defendant was utilizing the BENZ mark to market its underwear. The court acknowledged the plaintiff's logo as a well-known trademark in its decision and prohibited the defendant from using the contested mark by stating that there was no justification for the defendant to use the name "Benz," which is connected to one of the world's best-engineered cars and enjoys international goodwill. In a different case, *Rolex SA v. Alex Jewellery Pvt. Ltd. & Ors.*,² the plaintiff sued the defendants for selling fake jewellery using the trade name "Rolex," which is connected to the plaintiff. The defendant using the same name for dealing in fake jewellery would cause confusion in the minds of the general public and possibly lead them to believe that the products are those of the plaintiff company, according to the court, which determined that the plaintiff's trademark was a well-known trademark. The general public using watches recognises the trade name Rolex. As a result, the court issued an order prohibiting the defendants from using the trade name Rolex.³ It is important for policymakers and business leaders to understand the relationship between Economic Spheres and IP Ecosystems, as this knowledge can help to promote innovation and economic growth.⁴ It is also important to note that there are several different types of IP relevant to the economic spheres discussed in this article. Some examples include patents, trademarks, copyrights, and trade secrets. Each of these has its own unique

characteristics and different functions that it performs within an economy. Hence, it is important for policymakers to understand which types of IP are most beneficial for an economy, as well as the different ways in which an IP ecosystem can be created and maintained to foster innovation and economic growth.⁵

Conclusion

There is a clear distinction between the economic spheres and the IP Ecosystems discussed in this article. Economic Spheres are about the role of a company in society. They are focused on the company's social responsibilities, such as community involvement and environmental protection. IP Ecosystems are focused on the commercial aspects of a company. Some argue that the current IP system can create barriers to innovation and restrict access to knowledge and technology, particularly in developing countries. This can limit the ability of businesses and individuals to participate fully in the global economy. Overall, the relationship between economic spheres and IP ecosystems is a critical issue for policymakers, businesses, and individuals alike. Balancing the need for innovation and growth with the need for open access to knowledge and technology is a complex challenge that requires ongoing dialogue and collaboration. Both Economic Spheres and IP Ecosystems are important for promoting economic growth, but they serve different functions.

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The Impact of Patent Law on the Indian Economy

- Manushri Bhat

Introduction

Patent law is the body of laws that govern the granting of patents, a form of intellectual property. Patents are granted to inventors as a reward for their discoveries and inventions. The purpose of patent laws is to encourage innovation by giving inventors exclusive rights to their creations for a limited period, thus allowing them to profit from their inventions. At the same time, they are still new and valuable. In India, the first patent law was enacted in 1970 with the Patents Act 1970.¹ This Act provided for patents for inventions and designs. It also created a register of patents that interested parties could search for. However, this law did not protect foreign companies who wished to commercialize their patented products in India.

2005 Amendment to the Patent Act

The Patents (Amendment) Act, 2005² was passed by parliament on May 5th, 2005, and came into force on September 1st, 2005. This amendment allowed partial grant of patents on pharmaceutical products based on clinical trials conducted outside India if these trials were conducted under good manufacturing practices (GMP). It also extended protection to new uses of known chemical compounds but only if they were discovered after 1995; this meant that any compound discovered before 1995 could not be patented under this provision unless it had been used before 1995 as well as after 1995 for another purpose other than it has intended one, e.g., if someone discovered an antihistamine drug but never used it as such then he would not be able to patent its use against allergies even though he invented it first!

Impact of Patent Law on the Indian Economy

Patent law is essential for innovation and investment in research and development (R&D). It also fosters competition, which is vital for the growth of any economy. Patent laws encourage innovation by providing legal protection to new ideas, processes, and novel or inventive products. This encourages inventors to disclose their inventions as they know they will be protected from being copied by others who may have access to similar information but did not disclose their invention.

Advantages of Patent Law in India

Patent law is a legal framework that protects the intellectual property rights of inventors. It gives the inventor the right to make, sell and use his invention for a limited period. Patent law helps protect inventors' interests and encourages them to innovate by providing them with an incentive for their efforts. This results in new products being developed faster than would otherwise be possible without patent protection, thereby contributing to economic growth. Further, Strong patent protection is an important factor in attracting foreign investment as it provides investors with a sense of security that their intellectual property will be protected. This, in turn, leads to an increase in technology transfer and knowledge spillovers, leading to higher productivity and economic growth.

Challenges of Patent Law in India

The Patents Act, of 1970 governs the patent law in India. The patent registration process can be lengthy, with an average period of 2 years being reported. This is because inventors and businesses need more awareness about the benefits of registering their inventions and inadequate enforcement mechanisms at various levels, such as local courts and police stations. Adding to this, strong patent protection can limit access to technology, particularly for developing countries that lack the resources to develop their own technology. This can hinder their economic growth and lead to a widening of the technology gap between developed and developing countries.³ Further, patent thickets can create barriers to innovation by hindering the ability of firms to access and use existing technology. This can lead to a reduction in competition and the creation of monopolies, which can stifle innovation and economic growth.

Recent Developments in Patent Law

in the past few years, there have been some significant developments in patent law that are likely to positively impact the growth of the Indian economy. The first is the Patent Prosecution Highway (PPH)⁴, which allows applicants to file one application at one office and obtain patents in multiple countries by paying only one set of fees. This initiative was launched to reduce the cost and time spent on international patent filing. The second development is the Patent Facilitation Centre (PFC)⁵ which offers online services, including the filing of applications, searching and examination of patent documents as well as maintenance activities like renewal, etc., at a lower

cost than what would otherwise be charged by individual offices or agents who provide such services individually on a case-to-case basis.⁶ In addition, there is also the National IPR Policy released by (DIPP) under the Ministry of Commerce & Industry, Government of India⁷, which aims at providing adequate protection for innovations while encouraging competition through a balanced intellectual property rights regime.

Impact of Patent Law on Indian Startups

Indian startups are a significant driver of economic growth in India. They have created thousands of jobs and contributed significantly to the economy through innovation. However, patent law has yet to keep pace with this rapid technological change, resulting in several challenges faced by startups trying to protect their intellectual property (IP). Patent protection is essential because it incentivizes innovation by allowing inventors or developers who develop new products or processes that meet specific criteria under patent law protection against others who would copy those inventions without permission or authorization from the original inventor/developer. This can help prevent others from stealing ideas and using them without permission which could lead to a loss of revenue due to competition from other companies copying your idea without having invested any resources into developing it themselves.

Conclusion

Patent law is an essential legal framework that regulates intellectual property protection. It protects an inventor or creator by granting him/her

a limited monopoly on their inventions. This allows them to profit from their creations without sharing them with others, thus encouraging societal innovation. Patent laws play a vital role in ensuring that India's economy continues to grow and prosper, as they incentivize innovation and creativity among entrepreneurs who want to develop new products or services but would otherwise be unable to do so due to lack of funding or resources needed for research and development (R&D).

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The Economics of Innovation

- Neha Srikanth & Diya Naveen

What is the Economics of Innovation?

Together with the study of technology, knowledge, and entrepreneurship, the economics of innovation is a relatively young field of economics that focuses on (somewhat unsurprisingly) innovation. It seeks to comprehend the sources of new ideas and how to propose policies that would promote the emergence of novel thought processes. The economics of innovation is becoming increasingly important as many countries transition from an industrial model of production to a knowledge-based economy. Innovation economics is a

relatively new area, but it has gained much attention over the past several years. The focus is on innovation and entrepreneurship in this young and expanding area of applied and experimental economics and economic theory. It includes applying any kind of innovation, particularly technological. In traditional economics, using new technology for the customer's benefit means "into economic use." Still, it can also relate to innovation and experimental economics, which refers to recent advancements in economic research that might be regarded as innovative. Economist Joseph

Schumpeter first suggested the idea of an innovation economy in his 1942 book *Capitalism, Socialism, and Democracy*.

The Rise of Innovation Economics

Between Cantillon's *Essai* in 1755 and Karl Marx's *Das Kapital* in 1894—which is also regarded as the time when economics as a subject was born—the entrepreneur first appears in economic philosophy. At the time, this body of work was referred to as Political Economy (PE), reflecting the broad political nature of economics as a result of the Industrial Revolution, which brought about structural change and led to significant shifts in income distribution away from the landed aristocracy while the new industrial capitalists reaped financial rewards based on significant worker exploitation. In this environment, the provision of income results from a task carried out by the production-related components. While the rent paid to landowners and the wages paid to employees are separate, the returns on capital are less exact. The business could be considered the source of profit, but what does it mean exactly? Since managers are just highly paid employees, ordinary management in an enterprise can be reduced to labor provisioning. The "pure" surplus attributed to innovation buried in uncertainty can be considered the residue left after all this economic function provisioning. In his book *'The Wealth of Nations'*, Alfred Smith talked mainly about innovation as economic progress. He named three specialization-related advancements—worker dexterity, time savings, and mechanized machine invention—that led to much higher productivity. In addition, Charles Babbage extends

the Smithian innovation exposition to the requirement for systemic coordination through the "mental division of labor" in *On the Economics of Machines and Manufactures*. The latter issue is not a "once-off" but rather a persistent aspect of the business discipline known as human resources management. The management style of human resources is infamous for creating Fordist hierarchical "scientific management" through mass production. The last two components work together to create a path for economic expansion by expanding production size. This route offers the initial components of a framework for the economics of innovation. The creative businessperson can be easily identified as the economic agent introducing these process innovation mechanisms in the face of uncertainty. This approach is unmistakably based on dynamic economics, in which time is vital because changes breed uncertainty but also because progress—whether positive or negative—occurs, leading to economic transformation and advancement. Karl Marx views the social organization of work under specialization in the early years of the Industrial Revolution as a response to the initial mercantilist interest in extending profit-making opportunities in his three volumes of *Das Kapital*, starting from the same innovation perspective as Adam Smith. Yet, as the Industrial Revolution continued into the 19th century, Marx noticed the limits to the scope of specialization, which led to a sector that produced capital goods machines and interindustry links. Technological innovation results from the validation of such devices by capital accumulation. This second stage of innovation, which Marx refers

to as "expanding reproduction," enables capitalism to expand continuously. The social relations of production, which appear in conflict over the division of money between capitalists and workers, endanger this expansion. This struggle threatens corporate profitability and makes capitalism unstable, which manifests in business cycles. Micha Kalecki thoroughly explains this Marxist cyclical contradiction in the context of monopoly capital in the 20th century, which will be covered later in this paper. This strategy emphasizes the dynamics of innovation economics once more. Marx was the first to define the entrepreneur in the reproduction framework of the modern business management theorist view of the entrepreneur as the 'first mover advantage' by which innovative startup enterprises introduce an innovation. This is a highly exemplary depiction of the limits to first-mover advantage even with contemporary brand awareness, despite the focus being on process innovation rather than the modern product innovation story. Additionally, it backs up empirical research that indicates the initial business owners who take the startup risk in the face of a severe recession's high degree of uncertainty are likely to fail. This explains the numerous "false starts" that occur during troughs and the number of startup failures on the road to recovery. Because of this, entrepreneurs are more likely to fail if they make significant changes to the company's organizational structure and technical landscape. Towards the end of the PE era, the critical and realist innovation economics route began to emerge.

Role of Intellectual Property in Innovation Economics

The various types of intellectual property, including patents, copyrights, trademarks, and other comparable legal rights, were historically seen as state favors or safeguards of natural or moral rights. Yet, IP rights are now acknowledged as a crucial economic tool, or an "intellectual currency," that significantly supports research and development (R&D), invention, and innovation. IPR encourages innovation by providing the legal and financial framework for market-based incentives and rewards that pay for research and development, support the promotion and distribution of the innovations thus developed in the form of products, services, and processes in the market, and promote cultural expression and diversity. Making technologies more accessible through the mechanism of licensing and raising society's general state of knowledge through research and development is also a crucial role of intellectual property in terms of economies of innovation.

Challenges of Economics of Innovation

1. Reticence to take action in a state of uncertainty - Most businesses need action. People frequently put off making any attempts to address these concerns, only to learn later that someone else had profited from a creative solution.
2. "Seeking safety in the herd" by copying what other businesses are doing. Many companies have tried to adopt

contemporary trends in a façade or publicity gimmick while maintaining their basic business practices.

3. Absence of a precise vision results in competing products; businesses create new products to meet customers' demands looking for cutting-edge and sustainable solutions, but these products compete with the firms' current products. The entire supply chain and business vision become muddled and burdened.

It is insufficient to successfully embrace the Innovation Economy using a unidirectional approach, such as switching to digitalization alone, which must integrate innovation into the plan. To pursue innovation, successfully and as a priority, it is crucial to rethink the organizational structure of a corporation at all levels.

Conclusion

Innovation has historically been the main force behind economic expansion. Our productivity has increased as a result of innovation. Increased economic output in relation to the population directly raises productivity and living standards.

Interplay Between Geographical Indication and Economics – Establishing A Global Framework

Samrudh P

Introduction

Geographical Indications (GI) are the protection or status given to certain entities that are associated with a particular place or origin; this can also be

The public and commercial sectors have invested significantly in innovation in recent decades. One would have anticipated that this investment would have paid off in the form of increased well-being and living standards. Despite a sharp increase in R&D and other innovation-related activities during the 1970s, technological advancements have yet to lead to the sustained productivity boom witnessed in past industrial revolutions. Innovation's capacity to spur future growth. Hope is also seen in the distance. Some experts believe the world is on the verge of a new innovation-driven period of high productivity growth due to rapid advancements in biology, energy, and information and communication technology (ICT).

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from the production techniques, species and varieties of that specific region, landscape and climate. GIs are also known as the 'sleeping beauty of the intellectual property world.'¹ Although

they've been around for a while, they not only protect consumer interests but also ameliorate in bettering rural and underdeveloped areas, as it provides them with an asset for the preservation of heritage and originality.² The place of origin is considered a quality signal. Furthermore, quality assurance is a surety for the product's serviceability. It is implemented for the reduction of information asymmetry from an economic perspective. Market Access and differentiation are mainly the two factors that drive rural enterprises, according to a study conducted by the Organisation for Economic Co-operation and Development (OECD) 1995.³

GI as an Asset

Paragraph 19 of the Doha Ministerial Declaration focuses on biological diversity, protection of traditional knowledge (TK) and Folklore. In recent years, TK and Traditional Cultural Expressions (TCE) have gained significant recognition as the issues related to the same are also exponentially rising. Crafts and Handicrafts are also regarded as TCEs, as per the Bangui Agreement 1977, which also further played a role in establishing of the African Organisation of Intellectual Property. Similarly, Darjeeling tea and Mysore sandalwood oil are well-recognised traditional Indian goods that receive the protection of geographical indication under the Geographical indications of Goods (Registration and Protection) Act of 1999. These entities are protected with the help of a public right vested with a public register, overseen by the Controller General of Patents, Designs and Trade Marks of India.⁴ Sec. 18 (1) of the Act makes it so that the product only receives protection for 10

years without renewal. However, after this period, renewal is necessary to claim protection.⁵ Sec. 1(1)(e) states that a GI concerning any goods means an indication which identifies such goods as agricultural goods, natural goods or manufactured goods. Then it proceeds to call these goods, ergo explicitly permitting the registration as a GI.⁶

Economic Justification

Information Asymmetry:

To minimise information asymmetry and to increase the reputation of the good by doing the same. OECD (2000) stated in their study that a consumer cannot identify the authentic interest in the market without any experience of previous touch with the intricacies in identifying a product. This is precisely why the inability to determine the interests and differentiate them brings in the requirement of a validation that promotes this. Similar to the Problem of Lemons by George Akerlof, which spoke mainly about the information asymmetry in the used car market, the same was also concluded that it could be balanced or minimised by providing trustworthy validation on certain better goods in the same market, thus elevating its status, which ergo differentiates it and facilitates the consumer and saves consumer research and experience, which is the primary goal of a GI in the first place.⁷ Except for the factors mentioned above, the most fundamental of them is the rural development that comes with the protection of GI. Assessing the weightage such products and their availability has on rural development, an approach that focuses on biodiversity and TK needs to be taken. And India, as a developing nation needs to consider the

context and the limitations of large businesses. Seeking rent when monopolies are established tends to take a turn towards the south. Nevertheless, the pros of it outnumber the limitations as such. And overall, rural development is a fortunate by-product of following the previous factors of market access and information asymmetry.⁸ In the Indian market, Geographical Indication (GI) has the potential to provide significant economic benefits to local producers and communities. India has a rich cultural heritage and a diverse range of traditional products that can benefit from GI protection. Some Indian products that have been granted GI protection include Darjeeling tea, Basmati rice, Kanchipuram silk sarees, and Alphonso mangoes. By protecting the name and reputation of these products, GI can help create a unique selling proposition, leading to increased demand and higher prices for the product. This can help to generate income for local producers and communities and promote economic growth in the region.⁹ Moreover, GI can also help promote sustainable development by encouraging traditional and environmentally-friendly production methods. This can help to preserve local ecosystems and biodiversity and promote the sustainable use of natural resources. In addition, GI can also help to create employment opportunities, particularly in rural areas, where many traditional products are produced. This can help reduce poverty and improve these communities' living standards.. Overall, GI has the potential to provide significant economic benefits to local producers and communities in India while also promoting sustainable development and preserving cultural

heritage and traditional knowledge associated with a particular product.¹⁰

Cases Concerning GI and Economics

Several notable legal cases in India have been related to the economics of Geographical Indication (GI) protection. Here are a few examples:

1. The Darjeeling Tea case: In 2004, the Darjeeling Tea Association filed a lawsuit against a company selling tea under the name "Darjeeling" without proper authorization. The case resulted in a ruling in favour of the Darjeeling Tea Association, and the company was ordered to stop using the name "Darjeeling" on its tea products. This case established the importance of protecting GI rights in India and helped to raise awareness about the economic benefits of GI protection.
2. The Basmati Rice case: In 1997, the Agricultural and Processed Food Products Export Development Authority (APEDA) filed a lawsuit against a US-based company selling rice under the name "Texmati," which was similar to the Basmati rice produced in India. The case resulted in a ruling that recognized the unique characteristics of Basmati rice and granted GI protection to the name "Basmati." This ruling helped protect the reputation and market value of Basmati rice, a significant export commodity for India.
3. The Kanchipuram Silk Sarees case: In 2005, the Handloom Silk Sarees

Manufacturers Association filed a lawsuit against a company selling sarees under the name "Kanchipuram Silk Sarees" without proper authorization. The case resulted in a ruling that recognized the importance of protecting the GI rights of traditional products and granted GI protection to Kanchipuram Silk Sarees. This ruling helped promote the region's economic development and protect the livelihoods of local weavers.

These legal cases demonstrate the importance of protecting the GI rights of traditional products in India and highlight the economic benefits of doing so. By protecting these products' unique characteristics and reputation, GI protection can help promote economic growth, generate income for local communities, and preserve cultural heritage.

Conclusion

The European Union (EU) has a robust system of GI protection, which provides legal protection for over 3,000 products, including wines, cheeses, and meats. The EU system requires that products meet specific criteria to qualify for GI protection, such as being produced, processed, or prepared in a specific geographical area. In India, the Geographical Indications of Goods (Registration and Protection) Act 1999, provides for the registration and protection of GI rights. The Act is modelled after the TRIPS agreement. It provides legal protection for products that are associated with a specific geographical origin and possess

qualities or characteristics that are essentially due to that origin. Overall, while there is no single global framework for economics and GI protection, several international agreements and organizations promote the use of GI protection and provide guidance on its implementation. Countries worldwide are increasingly recognizing the economic benefits of GI protection and are working to establish legal frameworks to protect traditional products and promote sustainable development.

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The Dimensions of Monopoly in The Face of IP

Anjali Saran

Introduction

The interface between Intellectual Property rights (IPR) and Competition Law makes one of the most important viewpoints to safeguard aggressiveness. The privileges safeguarded under IPR protect the item from being taken by any adversary and make duplicates available to purchase on the lookout. The maker of an item or any thought, so far as that is concerned, should have their item safeguarded no matter what. This security will be given by the arrangements of Intellectual Property law and with regards to the market, Competition laws will guarantee that there is outright fair competition.¹ IPR permits purchasers to choose between contending businesspeople and the labour and products they sell. Consequently, IP is intrinsically favourable to cutthroat competition as it guarantees the insurance of separated, immaterial business resources. Without IP, less productive makers and specialist organizations would attempt to bait clients by duplicating the labour and products of additional proficient contenders. The last option would bring about a loss in motivation to improve or offer new items and administration. Society in general would lose. Yet, IP possibly plays out that pivotal job of guaranteeing competition when it safeguards veritable contrasts. Therefore, it is not a

new idea that whenever a product or service or anything for that matter, is granted IP protection, it gains a Monopoly in the market for the duration of the IP. While a Monopoly in IP can have several advantages, it also has certain drawbacks.

Advantages of a Monopoly

A Monopoly has lots of advantages from an Economics point of view. However, from an IP point of view, it also has several advantages. These include Innovative work wherein organizations partake in a supernormal benefit. The organization can contribute to this benefit by subsidizing high capital exploration tasks to carry more imaginative items to the market. The fruitful examination will give the organization higher benefits in the long haul. The organization benefiting from it can go for Further Development Advancement. Often drug organizations put vigorously into creating new medication as a result of the imposing business model freedoms they get with licenses. Due to licenses, the drug organizations have the sureness of getting results gets back to cover the underlying capital contributed. This sort of advancement will help society. Practically every one of the drug organizations contributes an enormous piece of the supernormal benefit in innovative work to make

new medications, which another firm cannot do.² Constant advancement to Help the general public is another benefit companies get from IP monopoly. Organizations that advantage from syndication power are thought of as best and dynamic. A large number of these organizations make consistent improvements to carry more items to the purchasers for an extremely minimal price -- for instance, Google benefits from specific syndication in the web search tool industry. Google is constantly working on its foundation to inspire the client experience step by step. Another benefit is that of global intensity. If a firm has a homegrown syndication, it enjoys an extraordinary benefit to growing its business globally. The organization can put more in the global market with the great benefits they procure in the homegrown market. The disadvantages of a monopoly, from an IPR perspective, include less advancement and item improvement as monopolist firms will not be propelled to enhance item improvement since there is no rivalry. This will be an impediment for shoppers since a similar degree of involvement will go on over the long haul.

IPR and Competition Law

The innate struggle between IPR and Competition Laws is how IPR looks to give security and impose a business model to the maker of an item though; competition Laws try to give fair and free contest by wiping out any cartels or syndications on the lookout. The IPRs are not oppressive of predominant position, but rather unexpectedly likewise shape a genuine upper situation on the lookout. The innate strain between the freedoms might be killed in the event that they fill in intrinsic

needs on the lookout. The Laws surely have a typical target of making a fair commercial centre, yet in addition, they involve various methodologies and viewpoints to the equivalent. They really do have an unavoidable pressure between them, yet as far as the legislation marks their signature on the lookout and the legislators should make such regulations that are not in the negation of one another.³ It is also significant to note that IPR laws do not follow the rules formulated for competition Laws. On account of *US v Microsoft*, the use of the Per Se Rule was dismissed.⁴ The Per Se Rule is a standard expressing that if a specific improvement is straightforwardly noticeable as unlawful, it should be considered unlawful. The standard was not applied to IPR in the above case. Thus, it could be found that this was taken as an exemption from the overall competition laws. Hence, a conflict does exist between the two laws.

Conclusion

It tends to be inferred that IPR is a right while in actuality, competition law is a controlling body which makes the guidelines with respect to the creation, supply, conveyance and capacity of merchandise and so on to be performed by the undertaking while at the same time working the market. IPR is intended to be some advantage given to the maker of any item or creator of any content to utilize it for a predefined period.⁵ Apparently, these two regulations are going against in nature. However, they are not as we find from the above, concentrate on that both the regulations are strengthening one another, and one comes into the image when one is abused. Competition law attempts to offer client-wide assortments and

brings harmony between the rights of the maker and the clients by expanding benefits with a quality item at reasonable costs. IPR likewise permits the producer to get the award for the sole making of the item, which thusly will help people in general at large. The syndication position presented by the IPR is, by all appearances, not abusing the opposition approaches but, rather, an abuse of the position can be disregarding the arrangements.

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Economics of Copyright: Do 'Poorer' Creators Get Due Recognition?

Joanna Jacob

Introduction

Intellectual Property Rights are known for giving immense rights to their creators. A question may arise here that do *poorer* creators get due recognition. This is what the subject of this article is that centers around the theory of recognition of certain category of creators, *vis-à-vis* their economic status. This is a customary precept which was established to enforce the protection of one's innovative and creative ideas as intellectual property laws; much like it suggests, it was legislated primarily to protect individuals' creative

interests and works. It was possible to help individuals innovate, develop, strategize and stimulate their expressions into the world through new mediums. That is how the laws of copyright, trademarks, and patents came into existence. One of the primary reasons for enacting such laws was to educate society and, most importantly, creators about their intellectual property rights - so that it would forbid them from making choices that could risk their creative authority and interests. Also, so that their creations could be well protected within safe, reliable and effective laws, in such a manner,

IP ensures that any individual's artistic works, dramatic works, literary works, musical works, etc., would be authentic and could not be copied or altered from thereon. Now concerning how the world operates, in terms of the society's economic structure, people's contributions, consumption of resources, chains of demand and supply, the rise of inventions and technology, providing people with more opportunities, and some being deprived of those in the meantime, and so much more; all this has one point of commonality in the world's balance of human sustenance - economics, as Tyler Cowen would quote: *"Economics is everywhere, and understanding economics can help you make better decisions and lead a happier life."*¹ Economics is simply a part of our everyday lives. Whether it's how we go about with our lives each day or how our choices affect our routines and our lives eventually, the way governments function and administer policies, how businesses operate, etc., are all reliant on economics and how economic theories and concepts are amalgamated into every possible sphere of our society. And in big or small ways, even the law requires it as much as it requires the law. And so, within the sphere of intellectual property, economics has vast influence, and many of the concepts that IPR deals with have elements of economics that sort of level with its fundamental principles.²

The Relevance and Subsistence of Economics in IPR

All intellectual property laws have different functions, and regardless of what each kind of law promises to provide, all of it has methods of implementation and governance of its laws. Its

application is also wholly reliant on the issue that has emerged; the identification of what kind it is in order to interpret the issues that have arisen and how they must be fixed is what is normally dealt with. Although that is, what is often overlooked is the matter's specificities in terms of its laws' applications and how it came to such a point. These are the instances where little details make up the central part of its eventuality. IPR protects the rights of creators and innovators, and through the application of economic concepts, all of this has substance over its existence - it would help with the development of these technologies and ideas, which could also further benefit societies in growing economies around the world, spurring innovation and growth. One of the significant advantages of IPR in any economy is that it offers incentives for innovations; incentives could be of any form. Initially, it would help with further development of the intellectual work, product/commodity by finding or implementing ways to commercialize it in the global marketplace through modes of business and trade, further enhancing its prevalence through investing in its research and development, and providing opportunities for new businesses and operations to emerge based on these inventions.³

The Economics of Copyright

In terms of simple interpretation, the economics of copyright is vague, which makes it open to many possible approaches to its application. For any given work that is copyright protected, its owner possesses certain economic rights, which are the exclusive rights that allow them to decide how they want their work to be used and protected and even

prevent others from using it without having any permission or legal rights. As per the copyright laws, owners of the works are granted exclusive rights, which allow the copyright owners to have the exclusive right to control the translation of a work into another language, the adaptation of a work into another form, the communication of a work, the recording of a work, and the public performance of a work also allow third parties to use those works. It establishes that the work created is the exclusive authority of the particular author or artist.⁴ Therefore, they have the exclusive rights to reproduce, communicate, distribute, assign or alienate their work for economic or personal gain. They also have the exclusive right to exploit their work commercially, and if anyone infringes the copyright owner's rights, they would be held liable.

Due Remuneration to the Copyright Holders

It is shown to us that the absence of clear regulations about royalties is the crucial problem that has caused such conditions in the first place after establishing the numerous components that contribute to a gap in the laws governing royalties to artists and comprehending the uncertainties. However, copyright rules have effectively governed the matter, with the exception of situations where it necessitates specific measures. This has evolved into why deserving talents get lost along the way and fail to gain recognition. Not only that, but their effort also needs to receive the proper credit. Yet, specific provisions in the current rules allow them to investigate the situation and resolve any persistent problems. Fundamentally, royalties are a mechanism for inventors, creators, owners of

intellectual property, or landowners to profit from their holdings. Royalties are recurring payments that come in the form of contracts or licenses that specify the conditions under which a third party may utilize another person's property. The three main types of intellectual property are copyrights, patents, and trademarks. Royalties can be generated on various assets, including books, music, minerals, and franchises. While some royalty agreements are for a specific time, others provide for perpetual payments.⁵ The quantity of compensation for authors and performers may also depend on several other things. These elements combine to create a theoretical framework used to analyse the information gleaned from the legal review and survey of creators such as artists, performers and authors. The theoretical framework was created to be broadly applicable to all different kinds of artists, authors and performers from all major creative fields and all different member states. As a result, it has been made simpler. This section provides an overview of the method used to determine the amount of compensation that authors and performers receive and identifies the major factors that affect it, including expectations regarding the worth of the work, bargaining power, contractual expectations or norms, and the applicable legal framework. Copyright is meant to safeguard the financial interests of creators by making it against the law to duplicate without paying a license fee. Nonetheless, whether copying is legal or not, it nevertheless happens. As a result, we are in a scenario where copyright legislation is shown to be insufficient for its declared goal, namely that of providing recompense and

incentives for creativity. Consequently, the desire to understand the extent to which copyright law fails as a mechanism for securing recompense and the necessary incentives for invention underlies our interest in how infringement affects legal sales.⁶ We can see a clear imbalance in terms of the bargaining and negotiating power ‘richer’ people or powerful conglomerates have in terms of being able to enforce their copyright. Authors tend to have two mental attitudes. When they are creating the art, they tend to expect a more liberal attitude towards protection. However, after getting protection, they employ a much stricter attitude towards others even creating work slightly similar to them. Copyright doesn’t require registration, so as soon as production companies or music labels create a work, they tend to aggressively pursue litigation for trivial allegations of ‘infringement’, example: Saregama’s *de minimis* case. In contrast, they use their highly expensive in-house legal team to suppress any claims of infringement, whether it be the dispute between *T-Series* and *Ritwiz* or the writer who claimed *Dharma* stole their *Jug Jugg Jeeyo* script.

Conclusion

The horizons and scope of creative works being expressed to the world have dramatically widened. People around the globe can now also create content online thanks to the creator economy. Anyone may post their work on different platforms and profit from it. Nonetheless, celebrity status still has advantages simply because it tends to give artists more influence and, consequently, more money. Despite the fact that new artists are developing and established artists are continuing to

work, there is plenty of evidence to suggest that economic harm is occurring.

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Intellectual Property and Knowledge Transfer: Challenges and Opportunities

Kandalam Abhisvara

Introduction

Intellectual property (IP) is a key asset in the knowledge economy. It encompasses a wide range of intangible creations of the human mind, such as inventions, literary and artistic works, and symbols, names, and images used in commerce.¹ Knowledge transfer, on the other hand, refers to the movement of information, technology, know-how, and expertise between different actors, such as researchers, universities, industry, and government institutions.² Intellectual property plays a crucial role in facilitating knowledge transfer between different actors. IP protection encourages innovation and investment in research and development by providing legal recognition and protection for the economic value of intangible assets. In turn, this incentivizes researchers, universities, and industries to share their knowledge and collaborate on research projects.

Channels of Knowledge Transfer

Knowledge transfer can occur through various channels, both formal and informal. Formal channels of knowledge transfer include licensing, technology transfer agreements, research collaborations, and joint ventures. These agreements can be complex and require careful consideration of intellectual property ownership, liability, and commercialization of research results. Informal channels of knowledge transfer include publications, academic conferences, and personal contacts. These channels play a significant

role in disseminating information and fostering collaboration between researchers and industry professionals. In some cases, informal channels of knowledge transfer may be more effective than formal channels due to the speed and flexibility of the process.

The Challenge of Uniformity, Ownership and Control

Intellectual property protection is not uniform across jurisdictions, which can create challenges for international knowledge transfer. For example, some countries may have more stringent requirements for patentability, which can affect the commercialization of research results. Similarly, differences in copyright laws can impact the transfer of educational materials and academic publications. Intellectual property laws are enforced at the national level, and each country has its own laws and regulations. This means that researchers and businesses must navigate different legal systems to protect and exploit their intellectual property assets. The lack of uniformity in intellectual property laws across jurisdictions can create challenges for international knowledge transfer, especially for small and medium-sized enterprises (SMEs) that may lack the resources to navigate complex legal systems. To address these challenges many countries have entered into international agreements to harmonize their intellectual property laws. For example, the World Trade Organization's Agreement on Trade-Related

Aspects of Intellectual Property Rights (TRIPS) sets minimum standards for intellectual property protection that all WTO members must comply with. Similarly, the WIPO-administered Patent Cooperation Treaty (PCT) provides a unified procedure for filing patent applications in multiple countries. International knowledge transfer also raises questions about intellectual property ownership and control. When researchers collaborate across borders, it can be challenging to determine who owns the intellectual property that arises from the collaboration. This issue can be addressed through careful planning and the use of legal agreements that outline intellectual property ownership and licensing arrangements. Joint ventures and collaborations can also be a valuable way to transfer knowledge and expertise between organizations in different countries.

Knowledge Transfer and Technology Transfer

Knowledge transfer and technology transfer are related concepts. While knowledge transfer is a broader term that encompasses the transfer of any type of knowledge, technology transfer specifically refers to the transfer of technological innovations.³ For instance, a knowledge transfer agreement may include clauses that specify how the knowledge shared between organizations can be used, who owns the intellectual property created during the collaboration, and how the intellectual property can be licensed or sold. Similarly, a technology transfer agreement may include clauses that govern the use, ownership, and licensing of the intellectual property being transferred. Technology transfer typically involves the licensing or sale of

intellectual property from a research institution or organization to a commercial enterprise for commercialization. For example, a university may license a patented technology to a startup company, which then develops and markets a product based on the technology. Intellectual property is a critical component of technology transfer because it ensures that the technology being transferred is protected and that the creators of the technology are appropriately compensated. The primary goal of technology transfer is to bridge the gap between scientific discoveries and their practical applications. Research institutions, universities, and other organizations invest considerable time and resources in research and development to create new products, processes, and services. However, these institutions often lack the expertise, infrastructure, or funding necessary to commercialize their discoveries. Technology transfer offices play a crucial role in facilitating the transfer of technology by licensing or selling intellectual property to commercial enterprises or entrepreneurs who can bring the technology to the market. Technology transfer can also impact intellectual property in various ways. One of the main impacts of technological transfer on intellectual property is that it can lead to the creation of new intellectual property. For example, when a research institution licenses its technology to a commercial enterprise, the commercial enterprise may develop new innovations based on the licensed technology. These new innovations may be eligible for new patents or other forms of intellectual property protection. Another impact of technology transfer on intellectual property is that

it can also lead to the transfer of existing intellectual property. For example, when two companies merge or collaborate on a research project, they may transfer or license their intellectual property to each other. This can result in the cross-licensing of intellectual property, where both parties have access to each other's patents or other forms of intellectual property. Technological transfer can also create challenges and opportunities for enforcement by increasing awareness and education about intellectual property rights. Technology transfer offices, for example, can educate researchers and entrepreneurs about the importance of protecting their intellectual property and provide them with the tools and resources necessary to do so.

Conclusion

Intellectual property and knowledge transfer are critical components of the global knowledge economy. The transfer of knowledge and technology across borders can drive innovation, economic growth, and social development. Intellectual property protection plays a crucial role in facilitating knowledge transfer by providing

legal recognition and protection for intangible assets. However, the lack of uniformity in intellectual property laws across jurisdictions can create challenges for international knowledge transfer. It is essential to carefully consider the legal framework for intellectual property protection when engaging in international knowledge transfer to ensure the efficient and effective transfer of knowledge and technology.

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Analyzing the Relationship Among Economics, IP and Pharmaceuticals

- Shreya Jagadish

Introduction

Intellectual property (IP) is an essential component of the pharmaceutical industry, as it provides legal protection for innovative products and processes developed by pharmaceutical companies. This

protection enables pharmaceutical companies to recover the significant costs of researching and developing new drugs and therapies, and incentivizes them to invest in further research and development. As a result, economic research on the

scope of IP and pharmaceutical research is crucial for understanding the industry's incentives and barriers to innovation and developing policies that promote innovation while ensuring access to medicines for all. In recent years, much economic research has focused on the intersection of IP and the pharmaceutical industry.

The Impact of IP Protection on Innovation in the Pharmaceutical Industry

Investigating the relationship between IP protection and industry innovation is a critical area of economic research on IP and pharmaceutical research. This study can examine how different types of intellectual property protection, such as patents, trademarks, and copyrights, affect pharmaceutical companies' incentives to invest in R&D and develop new drugs. One challenge in this area of research is determining the appropriate balance between providing adequate incentives for innovation and ensuring continued access to essential medicines.¹ One of the main arguments in favour of pharmaceutical IP protection is that it encourages innovation. Pharmaceutical companies invest billions of dollars in research and development to develop new drugs and must find a way to recoup these costs. IP protection allows companies to charge higher prices for their products and prevent competitors from copying their innovations. Economic research has provided some support for this argument. Studies have found that more robust patent protection is associated with increased innovation in the pharmaceutical industry. One recent study published in the Journal of International Economics found that stronger patent protection increased R&D investment by

pharmaceutical firms, leading to increased innovation and improved patient outcomes. The study also found that this effect was more significant for innovative drugs with high expected profitability. However, there are also concerns that IP protection may stifle innovation in the pharmaceutical industry. Some argue that the high cost of bringing a new drug to market and the potential for patent litigation may discourage smaller companies and startups from entering the market. Additionally, some argue that the focus on patent protection may lead to a lack of investment in areas less amenable to patent protection, such as research into neglected diseases.

The Impact of IP Protection on Prices

Another vital area of economic research on IP and pharmaceutical research is determining how IP protection affects pharmaceutical product prices. This area can examine how IP protection allows pharmaceutical companies to charge higher product fees and how this affects consumer access. According to one study published in the Journal of Health Economics, patent protection significantly impacted drug prices, increasing them by an average of 36%. The study also discovered that this effect was more substantial for drugs with extended patent protection periods and drugs without therapeutic alternatives. However, other research has shown that intellectual property protection can lower prices over time as generic competitors enter the market after patent protection expires.²

The Role of Intellectual Property in International Trade and The Impact of Alternative IP Models

Economic IP research and pharmaceutical research can look into how IP protection affects the international pharmaceutical trade. Such research can investigate the impact of various intellectual property regimes on the competitiveness of pharmaceutical companies in multiple countries and how this affects the distribution of benefits and costs between countries. According to one study published in the Journal of International Trade and Economic Development, stronger patent protection in developed countries resulted in increased R&D investment by pharmaceutical firms in those countries. It also resulted in higher drug prices in developing countries. The study concluded that a more balanced intellectual property regime that considers the needs of both developed and developing countries was required to ensure that access to essential medicines was not compromised.³ Finally, economic research on intellectual property and pharmaceutical research can examine the impact of alternative intellectual property models, such as open-source drug development or prize systems, on pharmaceutical innovation and access to medicines. This research can explore the potential benefits and drawbacks of these alternative models versus traditional patent-based IP models. According to one study published in the Journal of Law and Economics, prize systems that reward innovation based on the value of a drug rather than the length of patent protection could encourage pharmaceutical firms to focus on developing cures for neglected diseases and reduce

drug costs. However, the study cautioned that prize systems might lead to lower overall levels of R&D investment because firms may have different incentives to invest in long-term research projects.

Conclusion

The intersection of intellectual property and the pharmaceutical industry is a complex area that has sparked much economic research. Economic research on its scope is critical for understanding the incentives and barriers to innovation in the pharmaceutical industry and developing policies that promote innovation while ensuring universal access to medicines.

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The Role of TRIPS and IPR in Economic Development

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Introduction

Intellectual property rights (IPR) are the legal rights granted to creators of intellectual works. These rights allow creators to protect their original works from unauthorised use, allowing them to benefit from their work. The administrative, regulatory, and judicial systems to safeguard IPR are well-established in India. Trademarks, copyrights, patents, and geographical product indications are all covered by intellectual property rights.¹ Intellectual property rights significantly impact the development of a nation. Every country has a separate system of intellectual property law. The vigorous enforcement of IPR rights affects economic growth in many developed nations. IPR encourages innovation, which boosts the economy. Today, innovation is the source of all businesses worldwide. IPR regulations are recognised as being important in the modern day. In today's world, innovation and brand identity have become important. The goodwill associated with the name is quite valuable. Intellectual property rights significantly impact a country's ability to prosper economically.²

Roles of IPR in Economic Growth

IP assets are groups of intellectual properties, such as trade secrets, patents, trademarks, copyrighted works, industrial designs, etc., that have been carefully chosen for their commercial value because they can increase the value and financial return of innovations, products, and services, IP assets have economic worth. Furthermore,

innovation and creativity are essential for economic growth. IPR incentivizes individuals and businesses to invest their time and resources in research and development activities, which creates new products, services, and technologies. IPR also provides creators with the means to protect their work from unauthorised use, giving them the exclusive right to benefit from their work. This encourages further innovation, as creators are assured financial rewards for their efforts.³ IPR also stimulates investment in R&D activities. Investors often hesitate to invest in innovative products and processes, as they are uncertain of the expected returns. IPR assures investors that they will receive financial rewards if their investments are successful. This encourages investment in innovative products and processes, significantly boosting economic growth. IPR also safeguards the interests of both creators and investors. Creators, for example, can protect their work from being copied without permission. Investors, meanwhile, can be assured that their investments will not be misappropriated, as IPR prevents unauthorised use of their work. This encourages creators and investors to engage in innovative activities that benefit economic growth.⁴ IP licensing can also assist businesses in becoming more cost-effective by either reducing prices or obtaining access to products. Universities now employ IP assets to fund their budgets and to support ongoing research and education.

Even small and medium-sized businesses use IP efficiently on a global scale. There is a growing

opportunity for original research and development in emerging nations, which can help companies enter into technology transfer agreements, encourage joint partnerships, and expand into new regional markets. IP assets maximise corporate valuation in merger and acquisition scenarios. IP assets like trademarks, patents, and copyrights add significantly to the actual and perceived value when companies merge. Finally, IPR can also benefit the economy as a whole. A robust IPR regime encourages innovation, leading to economic benefits such as increased productivity, new job opportunities, and increased exports. IPR also enables creators to benefit from their work, promoting economic growth by incentivizing innovation.⁵

TRIPS Agreement in Economic Development

Trade-Related Aspects of Intellectual Property Rights (TRIPS), a component of the global system for protecting intellectual property rights, have been agreed upon by the newly integrated World Trade Organization (WTO) system. According to the agreement, all WTO members are expected to adopt high intellectual property rights protection standards and enact these standards. One of the key multilateral trade agreements of the WTO, the TRIPS Agreement, has a new and crucial role to play in the growth of the global economy.⁶ Like many other industrialised nations, the US is a staunch advocate of IPR and TRIPS, pointing to the agreement's potential to foster long-term economic development and prosperity. Industrialised nations gain from greater commerce, foreign direct investment (FDI), and the invention and diffusion

of new technologies, while underdeveloped nations gain from the same factors. TRIPS thus offer advantages to all participants.⁷

Conclusion

The current IPR systems alone are insufficient to promote efficient technology change. In order to maximise the potential for IPR to increase dynamic competition, they must instead be a part of a comprehensive and well-coordinated set of complementing policies. These policies include enhancing the development of human capital and skill sets, encouraging flexibility in company structure, assuring fierce domestic competition, and creating a fair, non-discriminatory, and efficient competitive environment.

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