

RE-DEFINING THE IPR MARKETS: AN ECONOMIC ANALYSIS

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Abstract

The fields of Intellectual Property are very wide and far more extensive which cover the entire economy both at national as well as international level in a globalized world. The future of the nations and also the level of economic development would, no doubt, depend on efficient production of intellectual property which needs to be protected by law. Intellectual Property is a category of intangible rights protecting commercially valuable product of the human creation and intellect. It is a generic name for patents, copyright, trademarks, design rights, trade secrets and other like rights recognized and protected by specific legislations not only in India, but in the developed and developing countries of the world today, especially after globalization due to the fact that the modern world is moving towards a knowledge based economy. Intellectual property is, thus, an intangible right exercisable and asserted in respect of a material or tangible work. When we look at the definition of Intellectual Property Rights, it generally refers to the creativity of human being and the persons holding intellectual property rights can enjoy monopoly over their creativity or products through different IPR laws. Monopoly mostly covers protection and commercialization; but only in the initial stage during coverage of protection. The persons and legal entities holding IP rights may reduce production and sales generating higher monopoly prices for the consumers. Monopoly and competition are two important market forces acting through demand and supply. But the question is whether competition in the IPR market is completely absent as is found in actual situations where the majority of real markets are competitive in nature. Furthermore, in the IPR market we very often find different offences committed. What is the mechanism or why are these offences committed? Sometimes, we fail to understand them. This paper is an answer to the aforementioned questions utilizing a few principles of economics.

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Key Words: Intellectual Property, Intellectual Property Rights, Monopoly and Opportunity Costs.

1. Introduction

IPR markets, in fact and in reality, are very complex phenomena, though law and relevant legislations have made it simple, simply specifying and assigning it to be a legal Monopoly. But from practical use and marketing point of view, completely a new situation is faced, which is apparent when supply and demand factors are taken into account in the market place apart from the aspects of legal Monopoly which generally protects the original innovators and authors in terms of patent or copyright. This implies that there is a need to develop a new perspective in IPR marketing, where the elements, monopoly and competition exist.

Prior to justification made in this context, let's have some ideas about the Intellectual Property (IP). Justice Posner in *Rockwell Graphic Systems, Inc. v. DEV Industries*¹ observed: "The future of the nation depends in no small part on the efficiency of industry, and the efficiency of industry depends in no small part on the protection of intellectual property." Intellectual Property is a category of intangible rights protecting commercially valuable product of the human brain and intellect. It is a generic name for patents, copyrights, trademarks, design rights, trade secrets and other like rights recognized and protected by specific legislations not only in India, but in almost all the developed and developing countries of the world today, especially after globalization due to the fact that the modern world is moving towards a knowledge based economy. Intellectual property is, thus, an intangible right exercisable and asserted in respect of a material or tangible work. In *Gramophone Company of India Ltd. v. Birendra Bahadur Pandey*², the Supreme Court has also observed that intellectual properties are the brainchild of the authors, the fruits of labour and therefore considered to be their property.

When we look at the definition of Intellectual Property Rights (IPR), it generally refers to the creativity of human being and the persons holding intellectual property rights

¹ 925 F.2d 174, 180 (7th Cir. 1991).

² AIR 1984 SC 667.

can enjoy monopoly over their creativity or products through different IPR laws. Monopoly as we know mostly covers protection at individual level, but not at the commercialization level in the market places. Marketing the output is, no doubt, a different strategy, even for the legal monopoly holder. The persons both natural and juristic like Companies holding intellectual property rights may reduce production and sales generating higher monopoly prices for the consumers.

Market power and competition are two important forces found operating in market situations through demand and supply. The market power is the ability to influence the market, in particular to influence the price. In a market with perfect competition, firms do not have market power, they face stiff competition. At the other extreme is the monopoly which has strong market power and faces no competition. The majority of real markets are competitive, but the competition is not as fierce as in the case of perfect competition, since in these markets, firms have some market power; but the power is not as strong as in the case of monopoly. Such markets are neither perfect competition nor monopoly, but can be characterized as monopolistic competition.

The main objective of this study is to make a critical study on determination of IPR markets besides giving a look on the crime market and the forces operating behind governing these market conditions so far infringements of intellectual property rights are concerned. Analysis of these market situations from economic point of view as to how the IP crimes are committed with their immediate impact on the consumers as well as on economic development of a country. The study is based on the idea that principles of economics of market policy can be applied equally to analyze IPR market conditions including the crime market relating to IPR theft or in other words, infringements of Intellectual property rights. The scope of this study is, though limited, may be extended to study the complex criminal phenomena to be applied in developing proper concepts for the purpose of explanations of criminal philosophy relating to infringements of intellectual property rights. If we do become able to find out the root causes of infringements of such rights caused by way of counterfeiting and piracy constituting a crime market in an economy which may affect both the producers and consumers differently, then we can

improve our existing situations. The interests and rights of producers of original works or products are, no doubt, protected by statutes; but so far the question of infringements of IPR of original works of the producers is concerned, law is still found to be inefficient as it does not stand directly to be a bar in the path of the economic development of the country for which it accords sanctions and grants patents to *process patents* and recognize within limits the use of *reverse engineering* in the production system or in other words, in the manufacturing process of goods and services, with a view to promote fair competition instead of pure monopoly. Therefore, the study has kept wide scope open for further study. The concept of this study is based on certain basic assumptions without which it would not be possible. The principal assumptions are:

- i. The Intellectual Property Rights violators (the criminals) are rational in their behaviour and non-rationality is an exception.
- ii. They are assumed to influence the market operations and their tastes and preferences have a direct impact on it i.e., the demand and supply.
- iii. They always aim at maximizing their benefits over costs of Intellectual Property Rights violations (the crimes) committed by them.
- iv. The Intellectual Property Rights violators, i.e., the criminals are always selective as regards commission of crimes and are influenced by choices or preferences between crimes.
- v. They are guided by the principle of Marginal Benefits and Costs or by their equality.
- vi. The principle of *ceteris paribus*, i.e., other things remaining same is being taken into account while violating IP Rights, or in other words committing crimes.
- vii. The Supply Curve of crime of an industry is generally upward-sloping from left to right. It may be perfectly elastic and perfectly inelastic or vertical for individual criminals or firms depending on conditions.
- viii. The Demand Curve of crime is generally downward-sloping from left to right. It may be perfectly elastic and perfectly inelastic or horizontal for individual criminals or firms depending on conditions.

- ix. The price–effect, income–effect and substitution–effect and their impacts on crimes and criminals are well considered.

2. Conceptual Understanding of IPR and Opportunity Cost

Intellectual Property is the creation of human mind, human intellect and hence called “intellectual property.”³ Random House Webster’s Unabridged Dictionary defines the term ‘Intellectual Property’ as “Property that results from original creative thought, as patents, copyright material, and trademarks.”⁴ According to Black’s Law Dictionary,⁵ “Intellectual Property is a category of intangible rights protecting commercially value products of the human intellect.” Though intangible in nature, law accords property status to these rights.⁶ As we have seen, the writers, inventors and artists transform ideas into tangible property. When this property qualifies under law, the creator is granted certain rights. For example, the author of a book can prevent others from copying it. Similarly, the owner of a patented invention can prevent others from making, using, or selling the device under the patent. Intellectual property law, thus, covers copyrights, patents, trademarks, and trade secrets as well as related areas of law such as the right of publicity, unfair competition, false advertising, fine arts law, and protection of semiconductor chips. All these disciplines recognize property that is created by the human mind.⁷

“Intellectual Property Rights” or IPR is a generic name for patents, copyrights, trademarks, design rights, trade secrets and other like rights. A comprehensive definition of the term ‘Intellectual Property’ is contained in art. 2 (viii) of WIPO⁸ Convention, 1967 which defines ‘intellectual property’ as including ‘the rights relating to literary, artistic and scientific works, performances and performing artists, phonograms and broadcasts, inventions in all fields of human endeavor, scientific discoveries, industrial designs,

³ B. L. Wadehra, *Law Relating to Intellectual Property* 15 (Universal Law Publishing Co, New Delhi, 2016).

⁴ *Ibid.*

⁵ B. A. Garner, *Black’s Law Dictionary* (Thomson West, USA, 8th ed., 2004).

⁶ D. F. Mulla, H.R. Khanna, *et. al.*, *Mulla on the Transfer of Property Act, 1882* 56 (N. M. Tripathi Pvt. Ltd., Bombay, 1995).

⁷ Richard Stim, *Intellectual Property- Patents, Trademarks, and Copyrights* 12 (Cengage Learning India Pvt. Ltd., Delhi, 2008).

⁸ World Intellectual Property Organization, “Convention Establishing the World Intellectual Property Organization”, available at: <https://wipolex.wipo.int/en/text/283833> (last visited on May 25, 2022).

trademarks, service marks and commercial names and designations, protection against unfair competition, and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields.⁹ For example, a patent is a form of intellectual property right granted and protected by law. Similarly, a copyright in a work is also an intellectual property right. Thus, Intellectual Property Rights is a special genre of rights which protect the results of intellectual and creative labor or endeavor of the human minds.

IPR thus provides a monopoly or rather a limited monopoly right. Monopoly is a form of market structure extensively prevails in capitalist economies of the world including that of India. Monopoly is said to exist when one firm is the sole producer or seller of a product which has no close substitutes.¹⁰ Thus, there must be a single producer or seller of a product if there is to be monopoly. This single producer may be in the form of an individual owner or a single partnership or a joint stock company. There must be one firm in the field, if there is to be monopoly. ‘Mono’ means one and ‘Poly means seller.’ Thus, monopoly means one seller or one producer. Monopoly therefore, implies absence of all competition as because there are no close substitutes for the product the firm is producing and supplied to the market. The monopolist has the power or control over the price of its product or output. Prof. Bober rightly remarks, “the privilege of being the only seller of a product does not by itself make one a monopolist in the sense of possessing the power to set the price. As the one seller, he may be a king without a crown.”¹¹

Therefore, if there is to be monopoly, the cross elasticity between the product of the monopolist and the product of any other producer must be very small. Cross elasticity of demand shows a change in the demand for a good as a result of change in the price of another good. Thus, under monopoly other firms for one reason or another are prohibited to enter the monopolist’s industry which means that barriers to the entry of firms are so strong that prevent entry of all firms except one which is already in the market. Thus, for existence of monopoly, three conditions are necessary:

⁹ Feroz Ali Khader, *The Law of Patents – With Special Focus on Pharmaceuticals in India* 1 (LexisNexis Butterworths, Wadhwa Nagpur, 2009).

¹⁰ H. L. Ahuja, *Advanced Economic Theory* 539 (S. Chand & Company Pvt. Ltd., New Delhi, 1981).

¹¹ M.M. Bober, *Intermediate Price and Income Theory* 237 (W. W. Norton, New York, 1962).

- i. There is a single producer or seller of a product.
- ii. There are no close substitutes for the product.
- iii. Strong barriers to the entry into the existing industry.

2.1. Opportunity Costs

The economists generally use the term “Opportunity Cost” to indicate what must be given up to obtain something that is desired or expected. The fundamental principle of economics is that every choice has an opportunity cost. For example, if you choose to spend 5 hours in copying a page of a book, you must give up 5 hours’ time in investing in some original works in the same way that if you choose to marry one person, you must give up the opportunity to marry anyone else. The idea lying behind is that the cost of one item is the loss of opportunity to do or consume something else. Thus, Opportunity cost of a resource means the value of the next- highest valued alternative use of that resource. In short, it is the value of the next best alternative.

Opportunity costs are calculated as follows:

$$\text{Opportunity Cost} = \text{FO} - \text{CO}$$

Where FO stands for return on the best foregone option or option not chosen and CO for return on the chosen option.

While choosing options, people inevitably face trade-offs in which they have to give up things they desire to get other things they desire more. In many cases, recognizing the opportunity cost can alter personal behaviour or can have direct impact on economic activity or decision – making. Such costs are not only in consumer decisions; but also in production decisions, capital allocation, time management and lifestyle choices.

Opportunity costs, thus, represent the benefits an individual, investor or a business misses out when choosing one alternative over another. Understanding the potential missed opportunities foregone by choosing one investment over another allows for better or more profitable decision-making. You must assess the relative risk of each option in addition to its potential returns.

3. Defining Intellectual Property Crime

The relevant question here is to know what an intellectual crime is. An Intellectual Property crime is committed when someone manufactures, sells or distributes counterfeit or pirated goods, such as patents, trademarks, industrial designs or literary and artistic works for commercial gains. Thus, when someone uses an intellectual property right without the authorization of its owner, the IP crime is committed. Counterfeiting and piracy are the terms primarily used to describe a range of illicit activities related to intellectual property right infringement. Most counterfeit goods infringe a trademark which means that a good is produced without the authorization of its right holder. Piracy refers to the illegal use of literary and artistic works protected by copyrights. In short, IP crime is nothing, but any breach of intellectual property rights. The manufacture, importation, sale and distribution of goods which falsely carry the trademark of a genuine brand without permission and for gain or loss to another, simply called counterfeiting. An unauthorized copying, use, reproduction, distribution of materials protected by intellectual property rights fall within piracy resulting IP crime.

In order to understand the market situations intensively, it is also necessary to know the basic characteristics of Intellectual Property. First, ownership of intellectual property is similar to the ownership of other forms of property. The owner of intellectual property has also the right to exclude others from infringing or taking the property away without consent or authority granted by him. The intellectual property owner can license, sell or will the patent, copyright or trademark. Being the creation of human mind, intellect and labor, intellectual property is like a hidden property and is adjudged to be an important means of accumulating tangible wealth. Intellectual properties and intangible assets jointly form the most important driving force not only of national, but also of the world economy. Intellectual property is usually divided into two categories:

- i. Industrial property;
- ii. Copyrights and neighbouring rights.

The industrial properties are Patents, Trademarks, Industrial designs, Layout design and geographical indications etc. whereas the copyright and neighbouring rights are

Writings, Musical Works, Dramatic works, Audio-visual works, Paintings and drawings, Sculptures, Photographic Works, Architectural works, sound recordings, Performance of musicians, actors and singers, and broadcasts etc.¹²

Copyrights, trademarks, designs and patents are intangible personal properties which can be owned and dealt with. Salmond, in his classic work on jurisprudence also said that in modern law every man owns that which he creates. The immaterial product of a man's brain may be as valuable as his land or his goods. The law, therefore, gives him a proprietary right in it, and the unauthorized use of it by other persons is a violation of his ownership. He also enumerates some traditional intellectual properties, patents, copyright, trademarks and trade names.¹³ The rights of intellectual property are created and protected by statutes. An invention may relate to a new product or an improvement of an existing product or a new process of manufacturing of existing or new product. These immaterial products arise out of human brain and they must be treated as valuable as his lands or goods. It includes anything that would result from the human intellect.¹⁴ IPR is not a single right, but a bundle of rights which can exist and be exploited independently. They are essentially negative rights which stop others from exploiting, say in case of copyright, the work of the author for their own benefit without the consent or license of the author. In other words, they stop pirates, counterfeiters, imitators and even in some cases the third parties who have independently reached the same ideas, from exploiting them without the license of the right-owner. At the same time, another important aspect of intellectual property which cannot be over-looked is that they also confer on the right-holder some positive entitlements or economic rights. For example, under section 14 of the Copyright Act, 1957 the rights conferred on a copyright owner are economic rights; because the exploitation of the work by the author by exercising these rights may bring economic benefit. The author may exploit the work himself or license others to exploit any one or more of the rights for a

¹² *Supra* note 3 at 16.

¹³ P. J. Fitzgerald (ed.) *Salmond on Jurisprudence* 422- 423 (Universal Law Publishing Co. Pvt. Ltd., New Delhi, 2010).

¹⁴ Jeremy Phillips, "Introduction to Intellectual Property Law," 46(1) *The Cambridge Law Journal* 190-191 (1986).

consideration which may be in the form of royalty, a lump-sum payment under specific contract.

4. Necessity of Process Patent

Let's explain now, what is a Process Patent? A process patent refers to a patent granted to a process or method of making an article. "Patented article" has been defined for the purposes of Chapter XVI of the Patent Act to include any article made by a patented process. As we have seen, the right to manufacture a product is one amongst the many rights that accrue upon a patentee. In the case of a process patent, the patentee is given exclusive right to manufacture an article using a particular process for which the patent is claimed. The patentee can stop any person from using that particular process to manufacture the article. A point that needs emphasis is that the right to manufacture the end product is not *per se* hindered. Only a particular way of manufacturing a product, that is to say, a particular process is claimed and protected. As such there is no bar for a competitor to manufacture the same – end product using a different method or process. In this way, process patent for pharmaceuticals do not curb the manufacture of medicines and drugs. Similarly, the process patents for beverages do have the same effects to this regards. The competitors in the market are free to manufacture the product using different process Thus, a process patent restricts only some of the means through which a product can be manufactured, but does not restrict the ends of manufacture.¹⁵ In short, product patent refers to patent protection granted to the end product. Any method of manufacture which results in the patented product would amount to an infringement.

5. The Market Approach: An Analysis of Costs & Benefits

Prior to market analysis of IPR crimes, let's have some idea about why do people intend to commit a crime. If we properly analyze and go through modern criminal psychology, we find that most of criminal commit crimes with a view to gain or to make some profits out of his or her criminal activity. In this sense, a potential criminal is assumed to behave rationally. He or she usually compares the anticipated gains from a crime with the anticipated costs that he or she has to face while involved in commission of the desired

¹⁵ *Supra* note 9 at 20.

crime. The costs of engaging in criminal behaviour are more varied and no doubt, complicated. Daryl A. Hellman¹⁶ has talked about certain kinds of costs to be calculated by the criminal before the crime is committed. First, the material costs which include costs of tools and equipment used for commission of the crime. Second is the time costs. Rather than committing an illegal act, the criminal could be doing something else, such as earning a legal wage or salary by working in a legal market, and engaging himself or herself in economic activities. This is the opportunity cost as already explained which must at least be paid to induce him to keep himself engaged in the legal industry. The value of the time used in planning and executing a crime must therefore, be regarded as a cost. In fact, opportunity costs are the value of the leisure time. Third category of costs taken into account by the criminal is the psychic costs. As with psychic gains, there are a large number of possible psychic costs which vary with crimes and the criminals. Fear, anxiety, dislike of risk and guilt are some example of psychic costs.

However, the costs which are more complicated and need explanation for analyzing criminal behaviour are the expected- punishment costs. These costs are included to account for the possibility that the criminal will be caught and punished. If this were to happen, it would impose costs on the criminal in the form of fines, a prison term, or both. Punishment is not certain to happen, but there is some possibility of it. For this reason, a cost must be included to compensate for the risk involved in criminal act.

If the gains exceed the costs, then it is rational to commit the crime. This implies that if the monetary and psychic gains are sufficient to cover the material and psychic costs, as well as what the criminal's time is worth (i.e. time costs), and a compensation for risk (expected-punishment costs), then then the rational crime will be committed.

Thus, if $\text{expected-gains} > \text{expected-costs}$, crimes are likely to be committed; and

if $\text{expected-gains} < \text{expected-costs}$, the rational criminals will refuse to commit any offence. However, this will not apply to irrational criminals who commit crimes under certain exceptional circumstances.

¹⁶ A. Hellman Daryl, *The Economics of Crime* 39 (St. Martin's Press, New York, 1980).

According to Daryl A. Hellman, psychic gains is a very general category and includes lots of possibilities – the thrill of danger, or value of risk, a feeling of getting back at the system, a sense of accomplishment and so forth. The importance of psychic gains depends on the crime and differs from crime to crime.

Thus, besides these gains, we may refer to kind of more specific gains called an intellectual gain which mainly yields mental satisfaction to one's mind and add more pleasure over the present status of a person living in the society. This type of benefits or gains can easily be had or derived by an academician desiring a higher degree like Ph.D. which may result in his promotion yielding monetary or material benefits to him. This may be an encouraging for him for infringement of copyright of an original author's works; subject to only fear of being caught by Plagiarism Mechanism or subsequent cancellation of his degree if detected later on which also constitutes a psychic cost for the copyright infringer.

5.1. Market Analysis

Market analysis is very important to be explained from legal and economic perspectives. Crime market of IPR infringement may be regarded totally a unique market and more difficult for easy determination of the market forces like that of traditional natural monopoly. This is mainly due to few reasons: first, the modern legislative trend to create a legal monopoly in case of IPR, particularly the regimes of patent and copyright which requires understanding the legal and regulatory structure of intellectual property. Second is the tradition of treating intellectual property as somewhat different from physical property. It says that intellectual property is special because it also protects information and information has unique attributes not generally shared with physical property. Adam Smith also rejected the notion that copyrights and patents could be thought of as a natural species of property; he classified them as “monopolies”, though he thought them desirable monopolies.¹⁷ But we find is that intellectual property is mainly the brainchild of human being and created by human labour. The truth is that all the properties are created by the

¹⁷ R. L. Meek, D.D. Raphael, *et.al.*, *Lectures on Jurisprudence* 83 (Oxford University Press, New York, 1978).

human endeavor except the free gifts of the nature which cannot be created at all. Third is that intellectual property has also been referred to as a “Public good” which is “non-rival” and “non-excludable”. Richard Posner and William Landes define public good in the economic sense as that consumption of it by one person does not reduce its consumption by another.¹⁸ Thus, a non-rival public good is one that once produced, can be consumed by all without any person’s consumption impairing any other’s consumption which clearly indicates that additional “units “of the good can be produced or consumed with zero marginal cost. Similarly, intellectual property is “non-excludable” means that when once produced, is available to all because it is not possible to exclude anyone from consumption of that good. If we consider these attributes of intellectual property, then we find that Intellectual Property law is all about granting rights to exclude. Thus if under the intellectual law, the underlying innovations, writings and other informational products were really non-excludable, then the law in this field would be trying to do the impossible. Stanford economist, Paul Romer also explains, “even though the information from discoveries is non-rival, economically important discoveries usually do not meet the other criterion for a public good; they typically are partially excludable, or excludable for at least some period of time.”¹⁹ People and firms have some control over the information produced by most discoveries; and therefore, it cannot be treated as a public good.

5.2. IPR Theft Market: Highlighted

It is also important to have some idea about IPR crimes and an illegal market world-wide facing these days. In consideration to the above, we may rather create a separate market for the infringers of intellectual property rights and may simply refer to as the Market for the Stolen Property.²⁰ As already stated, IPR crimes are most modern committed with the help of modern sophisticated tools and equipment unlike traditional thefts are committed in respect of tangibles movable property. IP theft involves robbing creators or companies of their works, ideas, inventions, and creative expressions, known as

¹⁸ William M. Landes and Richard A. Posner, *The Economic structure of Intellectual Property Law* 14 (Harvard University Press, Cambridge, 2003).

¹⁹ Paul M. Romer, “The Origin of Endogenous Growth,” 8(1) *Journal of Eco. Perspectives* 3-13 (1994).

²⁰ *Supra* note 16 at 100-104.

Intellectual Property. Copyright crime is an example. Deliberate infringement of copyright on a commercial scale may be a criminal offence punishable under section 63 of the Copyright Act, 1957. This is usually known as copyright piracy and is often linked to willful infringement of trade marks designated as counterfeiting where criminal offence also exists. Both piracy and counterfeiting are referred to as intellectual property crime which can include everything from trade secrets and proprietary products to movies, music and software. It is a growing threat, especially with the rise of digital technologies and internet file sharing networks. With the help of these modern technologies, the rational people may even produce an IPR crime (output) if the gains from the crime exceed the costs including opportunity costs which refer to the economic cost of an alternative that has been forgone. On this analogy, a criminal will commit such crime through infringements if his monetary and psychic gains from the crime exceed the costs. The market for stolen property determines the market prices of the various forms of stolen property. There are very often middlemen in such illegal markets, just as there are in the legal markets. So, there is very likely that the prices of the stolen property are determined in each of stages of distribution, which may be very common in case of pirated goods. However, to simplify our analysis, we may regard such market as one and assume that there is a single supply of and demand for the stolen property.

Such markets are found at both national levels and international level and are very wide and more extensive in existence. There are a variety of marketplaces for fake, copied and pirate goods. It penetrates the supply chain by door to door sales, online sales, market stalls, street sales, car boot sales and even high street shops.

Thus, if we analyze them properly, then we find that the IPR theft market may accurately be termed either as pirated goods markets or counterfeiting goods markets depending on the nature of Intellectual Property Rights violations whether they are copyrights or patents. These markets generally benefit the consumers as the price is less than the monopoly price and outputs produced and supplied are higher than under the monopoly where restrictions in terms of monopoly is exercised in setting higher price with minimum amount of output produced. The costs of production of pirated and counterfeiting

goods are also comparatively less than innovative monopolists producing completely new brands which requires at least some minimum fixed costs to be incurred for their innovations and efforts. Since the number of producers are more, not one like under monopoly situations producing non-rival or substitutes goods, these markets are monopolistic in nature producing or supplying close substitutes at very competitive prices placing the consumers in most advantageous positions, provided they do not opt for branded goods strictly due to their tastes and preferences irrespective of the prices.

5.3. Intellectual Property Rights: A Legal Monopoly

The modern trend of law favours that in order to provide incentives to create intellectual products or properties, the innovators or creators must be given some degree of control over the use or marketing of their products prohibiting others from copying their ideas or expressions, or in other words, to exclude others from infringing their copyrights and patents over the subjects. In that sense, it should better be referred to as a “limited monopoly.” Because patents granted to the innovators or IPR holders are limited in time and scope, in the same way that copyrights to authors are also given only for certain definite period of time to enjoy some sort of monopoly power in the markets. On important view on this is that strong legal protection is the best, if not the only, means of stimulating innovation and economic growth. From an economic perspective, a primary purpose of IP laws, like other laws, is to produce a desired result that market forces or competition, fail to produce. Specifically, IP laws are designed, in part, to protect future economic gain from IP products as an incentive for investing in research and development (R & D) today. Without such protections, it is assumed that innovation would decline because initial costs cannot be recovered in a free market environment.²¹ Paul Romer also holds that innovation requires some degree of monopoly power which, of course, is consistent with current practices of protecting IPR.²² Thomas Jefferson was also a proponent of the “monopoly” view. At the time of framing the U.S. Constitution, Jefferson viewed both copyrights and patents as

²¹ National White Collar Crime Center, “Intellectual Property and White-Collar Crime: Report of Issues, Trends, and Problems for Future Research,” available at: <https://link.springer.com/article/10.1007/s12117-005-1014-z> (last visited on July 15, 2022)

²² Paul M. Romer, “Are Non-Convexities Important for Understanding Growth?” 80(2) *The American Economic Review Papers and Proceedings* 97-103 (1990).

dangerous government “monopolies” that should be strictly limited, if they were to be granted at all.²³

The short-term costs of providing property rights to the creator of IP are justified by the long-term benefits of promoting economic growth. However, there exists some opposite views also. Thus, by definition, a legal monopoly accorded in respect of IPR is only a grant of an exclusive right by the state for achieving certain short-term and long-term objectives. It usually intends to give protection to and control over a particular market.

5.4. Whether IPR fits into Economic Monopoly

The debate whether IPR confers economic monopoly is still not well settled due to divergent opinions put forward to this issue. Harvard Professor Lloyd Weinreb confidently asserts that “the most that can be said confidently about copyright or patent is that it confers a monopoly.”²⁴ This is, no doubt, a legal monopoly created and authorized by legislation. Going a little ahead, economists Michele Boldrin and David Levine asserted that modern rights in copyright and patent “create a socially inefficient monopoly”, and what is commonly called intellectual property might be better called “intellectual monopoly.”²⁵ Francis Hargrave observed that copyrights were a form of monopoly by defining the word narrowly to mean “an appropriation of the right of carrying on some particular branch of trade or commerce; to which all men have originally a common and equal pretention.”²⁶

IPR are exclusive rights as per law, and monopoly also denotes merely “exclusive possession or control of something” usually granted either by the state or work through certain market forces dominated by the private individuals or company. If we take this into account, then patents and copyrights certainly qualify as monopolies.

²³ “Jefferson’s view is evident in his 1789 recommendation to James Madison that the then-circulating draft of the Bill of Rights should include the following provision restricting the government’s ability to grant the monopolies of copyright and patent: Article 9. Monopolies may be allowed to persons for their own productions in literature, and their own inventions in the arts, for a term not exceeding years, but for no longer term, and no other purpose,” as quoted in Andrew A. Lipscomb. (ed.), “Letter to James Madison”, August 28, 1789, in 7 *The Writings of Thomas Jefferson*, 444,451(1904).

²⁴ Lloyd L. Weinreb, “Copyright for Functional Expression” 111(5) *Harvard Law Review* 1149-1205 (1998).

²⁵ Michele Boldrin and David Levine, “The Case Against Intellectual Property” 92 *American Economic Review Papers and Proceedings* 209 (2002).

²⁶ Francis Hargrave, *An Argument in Defense of Literary Property* 28-29 (Garland Publishing, US, 1974).

Let us now examine what actually happens in a monopoly market. As we know, a monopoly market has very low cross-elasticity of demand with other products as the firm is the sole producer of a single product having no close substitutes. There is the presence of full competition on the demand side on the part of buyers so that none is in a position to influence the price of the product by his individual actions. The price is fixed for the consumers. This implies that monopoly price is uncontrolled. There are no restrictions on the power of the monopolist who is free from any threat of entry of other firms into the market. As the monopolist aims at maximizing profits, two conditions are very essential from economic point of view:

- i. Marginal revenue must be equal to marginal cost; and
- ii. Marginal cost curve must cut the Marginal revenue curve from below.

Given these conditions, the price, output and profits under monopoly are determined by the forces of demand and supply. Whatever price he fixes and whatever output he decides to produce are determined by the conditions of demand. The demand curve faced by a monopolist is definite and is downward-sloping to the right which is also his sales curve or average revenue curve. Its corresponding Marginal curve is also downward-sloping and lies below it.

The monopolist will go on producing additional units of output as long as $MR > MC$. His profits will be maximum and he will attain equilibrium at the level of output at which $MR = MC$. In the fig.1.1 below, $MR = MC$ at OQ level of output. The firm will be earning maximum profits and will, there, be in equilibrium when it is producing and selling OQ quantity of the product. If he increases output beyond OQ, then MC will be more than MR. Therefore, the monopolist will incur loss. He is in equilibrium at OQ level of output at which $MR = MC$. At output OQ, the price (= Average revenue) is OP and the total profits earned by the monopolist are equal to the shaded area PRST. From the fig.1.1, it becomes clear that Marginal cost $QE <$ Average revenue or price $OP = QR$. Thus, price under monopoly is higher than Marginal cost, i.e. $Price > MC$.

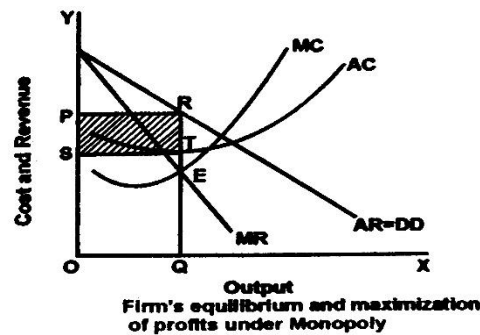


Fig. 1.1

It is to be noted that we have analyzed above the equilibrium under monopoly in general terms without introducing any time period. But in fact, in order to make it real and very near to the actual world, it would be just and proper to study equilibrium price and output-determination with respect to two important time periods: the Short-run and the Long-run.

In the short-run, the monopolist has to work with a given existing plant, and therefore, he cannot change the fixed factors employed in innovations like, plants, machinery etc. What he can do is that he can increase his output or production by changing variable factors. So, in short-run, the monopolist can enjoy super-normal profits generally; but slowly, or at the same time he can enjoy normal profits or even sustain losses temporarily. But in the long-run, if the monopolist is allowed to be in the market, he will earn super-normal profit per unit of output he produced; because in the long-run, the monopolist would definitely choose that plant size among the various alternative plant sizes which is the most appropriate or optimal for a specific level of demand for his product.

Now, if we see and consider like many authors hold the popular view that the owner of an intellectual property right possesses an economic monopoly, we accept the presumptions that an intellectual property right, like all property rights, is an exclusive right which enables the owner to exclude others from the use of the subject matter of the right and in that sense, the owner of an IP right is protected from competition and able to sell into a market with a downward sloping demand curve. For example, patents, which confer the exclusive right to make, use or sell the invention, covered by the claims of the patent, are the intellectual property right most plausibly characterized as a monopoly. But this is

true only if the claims cover all of an economically relevant market, i.e. there is no alternative way for competitors to provide the same economic functionality to their customers without infringing the claims. Trademarks, which protect the exclusive right to commercial identity, are much more difficult to characterize as a monopoly, since the ability of a firm to identify itself would seem to be an essential pre-requisite for competition, not a limit on competition. Copyright protect the exclusive right to “original works of authorship fixed in any tangible medium of expression.” However, they do not provide an exclusive right “to any idea, procedure, process, system, method of operation, concept, principle or discovery” and are infringed only by actual appropriation of the protected expression. Because of these limitations, copyrights do not prevent competitors from creating works with the same functional characteristics, as evidenced, for example, by the numerous dictionaries available, by the many television shows, novels, and movies with similar themes and characteristics, or by the many competing software programs.²⁷

5.5. What is the Alternative Market?

Let’s us explain the IPR market situations citing an example from copyright point of view. We have in actual practice many authors, companies or publishers publishing different books written on the same subject. The students of law, for example, while going to a book stall for purchasing the best one of their choice, may ask the owner to display different varieties on that particular subject which the sellers usually do and display to satisfy the enquiry made in this regard for choosing one out of different authors competing among themselves. The protection is accorded only to the individual author or publishing company or the output in terms of copyright under the Copyright Act. A tort student, thus, may opt for a book on it by the authors written either A or B or C or D or..., or N. He would choose or select that book which he finds it convenient for him to follow and which he would understand easily and digests. Each author or the publishing house has his sole authority, in other words, monopoly as to how much is to be produced in terms of output and what would the price fixed for it as he or the company i.e., the publishing house having copyright enjoys legal monopoly as well as market monopoly in the relevant market as

²⁷ Edmund W. Kitch, “Elementary and Persistent Errors in the Economic Analysis of Intellectual Property” 53(6) *Vanderbilt Law Review* 1727-1730 (2000).

regards to price- output determination; but at the same time they are facing a competition in the consumer market as regards to sale and maximizing profits. Thus, A, B, C, D,, N are facing competition in the market, and they have to compete each other based on the consumer's choice or demand i.e. the readers.

Thus, we have found that the owner of Intellectual Property Rights also faces a competition in the actual economic market; because the products, in most of the cases, can be best presented in the market as substitutes, each owner of such products having a market power like a monopolist to a greater extent, can control its price and output as an individual firm or owner, which pave the way for a fair competition in the market.²⁸ But the competition is not the economically perfectly competitive market, as the products are not purely homogeneous or identical. Perfectly competitive market is an ideal market; but does not exist in real sense. Therefore, what we have in the IPR competitive market is not the perfect competition, but the monopolistic competition. Under monopolistic competition also, due to product differentiation, the owner of IPR or a firm faces a downward-sloping demand curve where the Average Revenue curve implies to be its Demand curve.

The competition may be due to many reasons. The most important one is the assumptions of the rival competitors that the IPR owner or the firm enjoying monopoly power, though for the period of protection, is earning supernormal profits, as monopoly is always associated with profits, and they get attracted to enter into the industry, producing substitutes to that product with a differentiation. Therefore, new authors are entering into the market as a result of which no one is placed to earn supernormal profits like a sole monopolist in a monopoly market. In case of capital goods like machines and equipment and in certain inventions, this has been made possible mainly due to Reverse engineering the use of which has been recognized across the world and is considered to be one of the most beneficial business methods. Reverse Engineering is often opted for learning, changing or repairing a product, providing related service, developing compatible product, creating a clone of the product and improving the product.²⁹ Although the Patent Laws in India do not directly recognize the technique of reverse engineering, the patent laws around

²⁸ Fair competition instead of restrictive monopoly is encouraged under the Competition Act, 2002.

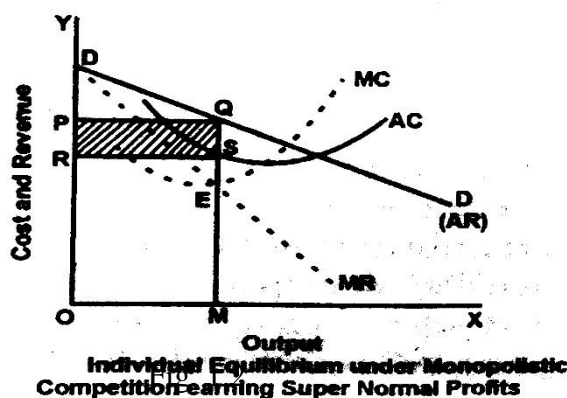
²⁹ James Pooley, *Trade Secret Law* 51 (Law Journal Press, New York, 1997).

the world have not expressly denied the reverse engineering technology. In India, a patent would be granted to an invention on satisfying the Triple test of Novelty, Inventive step or non-obviousness, industrial application and it must fall within the ambit of Patentable subject matter. Section 2 (1) (j) of the Patents Act, 1970 says that “invention” means a new product or process involving an inventive step and capable of industrial application.” Since reverse engineering involves significant improvement to a product which will also deem to be an invention under section 2 (1) (j) of the Indian Patents Act, 1970.³⁰ In order to constitute an invention it is essential to examine that such improvements or the newly innovated product resulting from reverse engineering satisfies the patentability criteria or the Triple test.

Thus, the owner of IPR normally faces the monopolistic competition, rather than a natural monopoly except those privileged by the state what we may call the legal monopoly. The individual owner of IPR or the firm under monopolistic competition can influence the volume of his sales by making changes in the amount of his selling –outlays. The expenditure incurred on advertisements and sales promotion measures etc. comprise of his selling outlays, which change the demand for his product as well as his costs. Therefore, the owner-cum-seller under monopolistic competition has to adjust the amount of his selling –outlays in such a way that his total profits are maximized. The rival owners or firms producing substitutes under this market keenly compete with each other through advertisements by which they attract more consumers and change the demand for their products. They may vary their prices and with it, their sales and output. Under the same conditions as of monopoly i.e. Marginal costs= Marginal Revenue; and MC curve must cut MR curve from below, they aim at maximizing profits. Like that of monopoly, in the short-run, they may earn abnormal profits, undergo losses or may earn only normal profits.

The firm’s equilibrium in the short-run earning supernormal profits is illustrated in the fig.1.2 below:

³⁰ *Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries*, AIR 1982 SC 1444.



In the above fig. DD is the demand curve for the product of an individual firm or the IPR owner, the nature and prices of all substitutes being given. The DD is also its average revenue curve. AC represents the average cost curve while MC is the marginal cost curve corresponding to it. The firm maximizes its profits where $MC = MR$. Thus, the firm is in equilibrium at the point E and determines price $MQ = OP$ at which output OM can be sold. At this price OP and output OM, the firm is earning supernormal profits equal to the shaded area RSQP, since $AR > AC$.

6. Conclusion

In general parlance, principles of economics of market policy can be applied for analyzing the Intellectual property rights and its market situations as well as the crime market. The paper supports what Mark A. Lemley has remarked, "While some intellectual property rights may in fact give their owner power in an economically relevant product market, most do not; they merely prevent others from competing to sell copies of a particular product, not from selling different products that compete with the original."³¹ Perhaps, the paper also supports what William M. Landes and Richard A. Posner assume (of copyrights) that "The demand curve for copies of a given book is..... negatively sloped because there are goods but not perfect substitutes for a given book."³² It is obviously true that one book is not an exact copy of another, for then it would infringe the copyright but

³¹ William Mark A. Lemley, "The Economic of Improvement in Intellectual Property Law," 75 *TEX. L. Rev.* 989 (1997).

³² M. Landes and Richard A. Posner, "An Economic Analysis of Copyright Law" 18 *Journal of Legal Studies* 325-327 (1989).

that does not mean that two or more books are not economic substitutes for each other. In fact, they do and are; as they are differentiated in quality and in respect of certain attributes qualifying both for monopoly power and competition. Monopoly powers are exercised in regard to price-output determination i.e., how much is to be produced and what will be the price fixed for each unit; but also are facing competition in the market. Because the books written on the same subject by different authors having own copyright reserved can be used as substitutes, and they are, therefore, placed in monopolistic competitive market situations. Thus, legal monopoly is only granted by law while in actual market situations, the firms (or authors) producing different varieties and selling them in the market are facing a competition to a great extent.