

THE ECONOMICS OF TRIPS

A series of primers on economic questions concerning Trade Related Aspects of Intellectual Property Rights

Policymakers dealing with contemporary intellectual property issues increasingly find the need to understand economic concepts and analytical methods employed by economists, while also making greater use of empirical findings in assessing policy options. The WTO Secretariat, in undertaking technical cooperation activities relating to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), has found a real need among diverse stakeholders for clarity on key economic concepts, and for brief explanations on the economic analysis of contemporary policy issues relating to intellectual property and trade. This series of primers has been prepared as an informal guide to support technical assistance in this field, but does not represent an authoritative or official view of the WTO on any of the issues outlined.

Primer 1:

ECONOMIC CONCEPTS RELEVANT TO INTELLECTUAL PROPERTY RIGHTS

I. Introduction

Intellectual property (IP) can be defined broadly as creations of the human mind. Intellectual property rights (IPRs) are legal rights that protect these creations. Unlike rights over physical property, an IPR generally gives its owner only gives the time-limited right to exclude others from making use of their property, that too conditional upon certain criteria.

IPRs can be divided into two broad categories of according to their economic purpose or function. One set of IPRs aim to stimulate creativity and inventiveness so that society benefits from new or improved products, services or creative works. This category comprises of IPRs such as patents, copyright, industrial designs and various specialized IPR regimes such as the protection of plant varieties or layout-designs of integrated circuits. The second set of IPRs comprise of distinctive signs, such as trademarks and geographical indications, whose economic function is to maintain the integrity of the market place by correcting information asymmetries between the buyer and the seller of a good or service. There are some forms of protection that prevent unfair competition, such as passing off or the protection against the theft of trade secrets that could be included in one or both categories and are further discussed in these two contexts below.

II. IPRs that aim to incentivize creativity and innovation

How do patents and copyright incentivize the creation of technological and creative works? If we take knowledge to be useful or beneficial information, then it would be difficult for any person to be excluded from using such knowledge once it is known and one person's use of this knowledge would not diminish another's enjoyment of it. Thus, knowledge largely possesses the classical characteristics of a public good such as clean air, namely non-excludability and non-rivalry. It is difficult to exclude anyone from using it once it is provided, and one person's use of it does not diminish another person's use of it. In these circumstances it is difficult to see how private actors would invest in the creation of knowledge if they cannot capture the returns from their investment in order to recover costs, since others can freely benefit from their efforts once the knowledge is public. This situation would lead to chronic underinvestment in the creation of knowledge, or in other words, markets would fail to produce it in socially optimal quantities. The economic problem to be tackled is that since competitive markets do not create the optimum level of invention and creativity, what should be done to promote the generation of new works. Economists wrestle with the question of how to finance the creation of new knowledge, particularly when private investment is involved.

Patents, copyright and other such IPRs constitute one way for the originator of a protectable work to restrict its use, reproduction and distribution for a certain period of time upon the fulfilment of certain conditions. This helps originators appropriate for themselves at least part of the social benefit of their creations. In theory, this set of IPRs gives the originator of a work some market power to set its price above the cost of production. How far above cost the price can be set depends on how much market power is enjoyed by the originator, which in turn depends primarily on the price and availability of close substitutes. The higher the availability of substitutes, and the closer the degree of substitutability, the greater the competition in the specific market for the work, and the lower is the market power of the IP owner and vice versa. Even so economists term such IPRs as providing a "second-best" solution, because such market power creates "deadweight" losses to consumers, i.e. reduces the gains to consumers, thus reducing societal welfare from the optimal levels obtained under perfect competition.

In theory, effective duration,¹ threshold² and breadth³ of protection and rights of third parties⁴, can be used as policy instruments to balance the costs and benefits of such IPRs. In practice these differences are more pronounced between different IPRs such as patents, copyright and industrial designs than between different types of subject matter within a particular IPR, leading to some criticism of inappropriate protection, for example with regard to patent protection for certain software, business methods or biotechnological inventions.

¹ This refers to the length of protection, including through requirements for periodic renewal of rights.

² This refers to the height of protection in terms of the standard of originality or inventive step.

³ This refers to the scope of protection. This covers, for example, narrow protection given by copyright law against the exact replication of expression and not ideas, versus narrowly/broadly constructed patent claims and the absence/presence of the doctrine of equivalents.

⁴ Independent creators, licensees, public and others could have expansive or narrow rights, depending on the law and jurisprudence.

Where markets function efficiently and new ideas are scarce, patents offer certain advantages over other types of incentives such as direct financial transfers. Decisions on the type of new works to be rewarded are decentralized and there is a direct relationship between those who benefit and those who pay, unlike when tax revenues are used to directly commission or reward new works. Further, while patents may increase costs to society in the short run or in a static sense, they could lead to dynamic benefits in terms of leading to more innovation in the long run than a situation where there are no patents. Beneficial competition could result where there are effective ways of inventing around the patented invention.

The requirement to disclose the invention fully in patent claims helps disseminate a vast amount of scientific and technical information that could otherwise have been kept secret. Society thus benefits from research conducted by those “standing on the shoulders of giants” to create further new and useful inventions. However, sometimes this could lead to patent thickets or patents that block follow-on innovation that in turn results in society underutilizing this pool of knowledge or known inventions, leading to what has been characterized as the “tragedy of the anti-commons” — a constraint on researchers seeking to develop useful technologies from a shared body of background knowledge. This has, in particular, been cited as a problem in the case of biotechnological inventions, in particular those that are used as research tools.

Patents also have transactional value as they are useful instruments in obtaining finance (venture capital), or in agreeing to licences. Patents often form the basis of different forms of contracts relating to technology transfer or technology-sharing arrangements, including patent pools.

Trade secret law can also be seen as a means of promoting innovation. An inventor has the choice of keeping his work fully or partially secret or disclosing it through a patent application. While trade secret protection is not time-limited, the owner cannot prevent any one who independently arrives at the same invention from exploiting or even disclosing the invention. Thus, the protection is only against the “theft” of trade secrets using “unfair commercial practices”. Once disclosed, a trade secret becomes non-excludable and non-rival like a public good. For information to be protected as a trade secret, the law requires the owner to take “reasonable” steps to keep the information secret. Without such a law, the owner of a trade secret may have to construct costly, fail-proof ways to ensure that the information does not get disclosed. However, where the cost of independent invention is low, trade secrets are rarely used as the primary means of appropriating return to R&D, for example in the case of chemical-based pharmaceuticals. Trade secrets have become more important with cross-border labour mobility.

Text Box: How Copyright Differs from Other IPRs that Incentivize Creativity and Innovation

Like other IPRs discussed in the section above, copyright aims to incentivize creators of copyright material and create socially optimal quantities of

copyrighted works. The right balance has to be found in the length and scope of copyright protection as it is normally assumed that with stronger copyright protection, while the supply of copyright material increases due to the right holder's ability to increase price, the demand for copyright material, and therefore access, decreases (Watt, 2009). Copyright generally provides for such a balance with a far longer duration but much narrower threshold of protection, namely against copying the expression and not the idea, and by including more "fair use" and other exceptions, than available for a patent right. Secondly, if one looks at the cultural industries, ignoring software, there is often an individual "author" or artist who creates the primary content and a "publisher" or other intermediary company that publishes or otherwise distributes the work, and the interests of these two do not necessarily coincide with respect to dividing the revenues. Most copyright owners earn relatively small amounts from the royalty of sales of their products and thus the monetary incentive function seems to motivate authors less than it does publishers (Towse, 2010). Indeed, performing artists seem to earn more from their payments for "live performances", such as concerts or talks, quite apart from remuneration from related rights accruing for them. A related point is that, given that copyright is not required to be subjected to any examination or grant formalities, finding authors of copyrighted works can be difficult, thus increasing the transaction costs of licensing such works (Landes and Posner, 2003). The third difference is that technology, especially the Internet, has revolutionized how copyrighted content is created (e.g. open source), distributed (e.g. streaming of audio and audio-visual content both in free and paid services) or licensed (e.g. the Creative Commons licence). While copyright law has sought to deal with such technological change, it appears to be only partially successful through Technological Protection Measures and Digital Rights Management in enabling "publishers" to appropriate the social value of the copyrighted work. Despite the acceptance of ever increasing term of protection in certain jurisdictions (for example, in the US the copyright term is life of an author plus 70 years or 95 years for company copyrights), many economists are sceptical of the incentive effect of such extended duration. (Landes and Posner, 1989; Gowers' Review, UK, 2006-http://www.civil.law.cam.ac.uk/policy_documents/Gower.pdf).

III. IPRs that aim to correct information asymmetries

Turning to the second set of IPRs that aim to correct information asymmetries, trademarks and geographical indications are meant to correct the imbalance between buyers and sellers in the information that they possess on the quality or other characteristics of particular product on the market.

Markets fail when there is no way to reliably signal the quality of a product. For example, in the market for used cars, it can be relatively easy for a used car salesman to sell his client a "lemon" or a bad quality car. It is for this reason that high quality used cars may not obtain the "correct price" and may exit the market. In this case of market failure both consumers and society are worse off (WIPR, 2013). There are many ways of correcting such information asymmetries, for example by guarantees, but also by the use of trademarks (Akerlof, 1970).

Thus trademarks work better to help consumers assess quality when the goods are not what Phillip Nelson calls "search" goods, for which the quality is readily discernible (for example, red and firm tomatoes), but are "experience" goods, where the consumer has to purchase the product to know its attributes (for example, canned fish)(Nelson, 1970). Brand advertising expenditures are consequently higher for experience goods than for search goods (Nelson, 1974).

Trademark law, which evolved from the common law doctrines of passing off and unfair competition, prohibits others from using confusingly similar trademarks in a way that misleads the consumer as to the true origin of the goods or services. In common law jurisdictions, trademark rights accrue to those who are the first to use their distinctive mark in the market place. Registration is an option that generally makes the trademark owner's claim stronger, and helps clarify and confirm the rights of one trader against those of commercial rivals. When enforced properly, trademarks save the consumer a vast amount of "search" and "experience" costs and thus benefit consumers. This law also benefits producers as they have the incentive to build up their reputation and invest in high quality since otherwise consumers could "retaliate" by shunning the brand. Trademarks help recoup such investment because others cannot "free ride" by using the same or similar marks. Trademark law also supports franchising which can result in the mark being used over vast geographical spreads rapidly.

Well-known trademarks have a higher level of protection in that, once registered in the jurisdiction, others can be prevented from using them even on dissimilar goods and services in that jurisdiction, even though there is lesser likelihood of confusion. Here the producer suffers losses due to the dilution of the mark, which weakens the association between the mark and the product in question. This is especially true for what could be termed as "Giffen goods", where the higher the price the higher the demand for the product. For example, while the person who buys an imitation of an expensive watch may be fully aware that it is an imitation, consumers may no longer wish to buy the genuine product as it is not so rare any more. In the TRIPS Agreement, geographical indications for wines and spirits must be accorded additional protection by prohibiting the use of accompanying epithets such as "kind", "type", "style" or "imitation", even where the true origin of the product is clear.

While trademarks do not generally block entry into a market of other identical products with different marks, trademarks that take away descriptive terms from the public domain could obstruct fair competition by forcing potential rival companies to incur higher marketing costs in making the description or essential attributes of their products known to the consumer. Trademark law uses certain policy levers to balance the costs to society. The distinctiveness-acquired-through-use doctrine for descriptive or geographical terms prevents unwarranted obstruction of competition. Similarly the requirement to use trademarks within a certain period after their registration (at least three years, according to the TRIPS Agreement) prevents the accumulation of fanciful or other distinctive signs for purposes of sale to others rather than use in the market place by the owner. The term of protection is not a policy lever in the case of marks because as long as the mark serves to distinguish the source of the product or service, it serves its essential function in society and so there is no problem with a unlimited term of protection, although trademark laws typically require periodic

renewal against a fee to deter traders from maintaining registrations of marks without using them. If trademarks become generic in that they are used as descriptive terms, they fall into the public domain, as has happened with Escalator and Zipper. Many trade mark laws allow for registrations to be cancelled when a mark has ceased to be distinctive. Hence trademark owners may have to actively prevent their trademarks from entering into common descriptive usage. Trademark owners can always abandon their marks by simply not renewing their registration or ceasing to use the mark.

The expansion of trademarks to shapes and colours of packaging (trade dress), musical compositions, and smells has begun to blur the lines between time-limited design-protected and copyrighted works and trademarks.

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