

# CHAPTER 6

## PATENTS: A GLOBAL PERSPECTIVE

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### 6.01 Introduction

#### (a) In General

Because the patent is an often misunderstood legal device, this chapter will begin with a brief history and introduction into the patent. The legal backdrop will lead to the economic significance of the patent and how the terms of protection can foster economic growth for firms and the economies in which they participate.

Following this discussion is an offering of models that may be employed to overcome some hurdles that have recently grown out of the digital divide. Finally, certain realities require the consideration of limitations on the opportunities presented in the offered models.

#### (b) History

The patent is a device that has been devised to promote economic growth in a society.<sup>1</sup> The patent, like other vehicles used to promote economic growth, is a geopolitical concept, meaning that each country has its own rules and honors only patents that it issues. Patents that are issued in the United States are not recognized in any other country. Likewise, the United States does not recognize any patent issued by another country.

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1 Poltorak, “Are Patents Bad for the Economy?”, *New York Business Focus* (August 2002). “It is an undisputed fact among economists that the U.S. patent system has been the cornerstone of technological progress and economic prosperity of this country”.

Patents are used by inventors and applicants to protect inventions, i.e., creations that are useful items (as opposed to creations that are merely new expressions of idea). In the United States, the term used to describe usefulness is “utility”.<sup>2</sup> A patent protects a concept or invention that has utility. In addition, the invention must be new.<sup>3</sup> The government issuing the patent will only do so if the applicant is presenting something new to the body of knowledge from which the rest of the society can learn and grow.

In 1449, the King of England issued the first patent starting the first patent system to reward those who developed new technology. This first monopoly grant was given to John of Utynam for stained glass manufacture. King Henry VI granted the patent to help stem the tide of the importation of stained glass from other parts of Europe, most notably from Italy.<sup>4</sup>

The United States believed the concept of awarding patents was so important to a capitalistic society that it made specific provisions for patent law in its Constitution.<sup>5</sup> The concept of patents providing monopolies for entities that develop technology has been widely accepted in every corner of the world as most countries have active patent offices that issue and maintain patents. Some believe that economic gains occur without patents.<sup>6</sup> This is, however, a minority view, as many have invested heavily into the concept and assurances that the patent system offers.

Some countries believe the patent system should promote the societal benefit by publishing patent applications as soon as possible, allowing others the ability to read, understand, and further the technology as soon as possible. Other countries attempt to provide as much opportunity for the patent applicant to maximize its return on its investment in the technology.<sup>7</sup> Either way the patent system is developed, it is done to promote commerce

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2 35 United States Code, section 101.

3 *Chisum on Patents*, section 2 (2005). “The first patent statute in the United States authorized patents for any useful art, manufacture, engine, machine, or device, or any improvement therein not before known or used”, provided a designated group of executive officers (the Secretary of State, the Secretary of War, and the Attorney General) determined that the invention was “sufficiently useful and important”.

4 See <http://www.patent.gov.uk/about/reports/anrep2002/chapter3.pdf>.

5 United States Constitution, article I, section 8, paragraph 8. “The Congress shall have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries”.

6 *The New York Times*, at C10, column 1 (29 September 2003).

7 Kotabe and Cox, *Business Horizons* (January–February 1993). “The American and Japanese systems . . . represent the ends of the continuum, with the United States placing the greatest emphasis on the rights of the inventor and Japan emphasizing the societal benefits of an invention”.

through innovation allowing new products, and now services, to be introduced into the marketplace.<sup>8</sup>

Unlike other forms of protection for intellectual property, a patent protects the owner from others taking that idea.<sup>9</sup> It is a very powerful tool that can be used in various manners to obtain an edge in the marketplace. For example, the patent may be used to protect a specific embodiment of an incremental improvement on a known technology.<sup>10</sup> Alternatively, a patent may protect a broad concept of a new idea. Regardless of the scope of protection sought or obtained, the patent must protect something that is useful. Each country defines “useful” in its own way, but it being useful is a key component for a patent to be granted.

There are other forms of protection of intellectual property that are used to protect expressions, goodwill, and other pieces of knowledge that can be maintained as secret. Those forms of protection include copyright, trade marks, and trade secrets. These legal devices are discussed in greater detail elsewhere in this book. However, an important notion to understand with regard to the patent system is the fact that a patent grants someone or some entity an acknowledgement that they developed or invented something that has not been shown in public before and that the something is useful.

Other types of intellectual property protection protect expressions, the written word, reputation, names, logos, and the like. The patent is, however, the only legal device that protects an idea, its implementation, or an improvement on that idea. It is a very powerful tool to grow in economic success because a patentholder can develop a lawful monopoly for the technology claimed, requiring the purchasing public to go to that person or entity for the patented item.<sup>11</sup>

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8 “From a theoretical perspective, patent law has the main aim of increasing the pool of technical knowledge of the United States by encouraging inventors to disclose to the country (and effectively to the world) the details of their inventions. In return for teaching the rest of the United States about new technologies and to make it financially worthwhile for inventors to disclose their inventions, the federal government grants the inventor a limited monopoly of 20 years from the time of applying for a patent”. See <http://iurtc.iu.edu/ott/inventors/032.html>.

9 Article 28 of the Agreement on Trade-Related Aspects of Intellectual Property Rights, 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, Legal Instruments — Results of the Uruguay Round, volume 31; 33 *I.L.M.* 1144, at p. 1197 (1994) [hereinafter TRIPs Agreement].

10 *Chisum on Patents Scope*, Glossary (2005). “An inventor may patent an improvement on an existing product or process (whether or not it is patented) if the improvement otherwise meets the standards of patentability. A patent on an improvement carries no right to practice the improvement in violation of the rights of the owner of a patent on a basic invention. Thus, basic and improvement patents may ‘block’ each other, and common subject matter may be used only with the concurrent authority of both patent owners . . . .”

11 *Image Technical Services, Inc. v. Eastman Kodak Co.*, 125 F.3d 1195 (9th Cir., 1997), *cert. denied*, 523 U.S. 1094 (1998).

### (c) Patent Monopoly

A patent is often spoken of in terms of an absolute right. More specifically, the patent gives the patentholder the ability to control all things with regard to the disclosure in the patent. This simply is not the case.<sup>12</sup> One reason why patent rights are not absolute is because a capitalistic society neither wants nor trusts a monopoly. It is true that an entity may work hard toward success, which results in a lawful monopoly.<sup>13</sup> However, a capitalistic society is always cognizant of the monopoly and continues to attempt to place the marketplace in the hands of those that are most capable of creating the goods and services that are most wanted by the public. It wants the marketplace to determine what products are going to be offered, sold, and successful.

Inroads in the patent monopoly have been made in a few different ways. One example of this is in the United States, wherein a statute prevents a patent application from being published or a patent from issuing if it is considered a danger to national security.<sup>14</sup> If a patent is not issued, regardless of why it is prevented from issuing, it creates an opportunity for others to enter the market with products and services similar to those that might have been protected by a patent. Another example of an inroad into the patent monopoly is antitrust laws. More specifically, it would be inappropriate for a patent holder to use its patent to gain an advantage in another market with another non-patented product.<sup>15</sup>

Returning to the situation of national security, the opportunity to enter the marketplace may be limited, but the erosion of the monopoly has been created and provides the impetus for a government to use the rationalization of having one limit in the patent monopoly when considering the desire to make another limitation.

Another way in which government has reduced the effective monopoly granted pursuant to a patent is compulsory license statutes. Many countries have laws and statutes in place that create a compulsory license for a patented technology, wherein the patentholder is required to grant a license to the

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12 Stern, *IEEE Micro Law*, at p. 9 (March-April 2000). “A major problem with the absolute right theory is that too many exceptions are already recognized for the theory of absolute rights to withstand scrutiny”. See also Carrier, “Cabining Intellectual Property Through a Property Paradigm”, 54 *Duke Law Journal* 1, 106 (2004).

13 *Smith v. Northern Mich. Hospitals*, 518 F.Supp. 644, at p. 648 (W.D. Mich., 1981). It is “well settled that there is no violation of antitrust laws if a monopoly grows and develops as a consequence of a superior product, business acumen, or historical accident”.

14 35 United States Code, section 181.

15 *Image Technical Services, Inc. v. Eastman Kodak Co.*, 125 F.3d 1195 (9th Cir., 1997), at p. 1216, *cert. denied*, 523 U.S.1094 (1998).

country issuing the compulsory license or to a third-party national entity to allow the country or the third-party national entity to exploit the patent.<sup>16</sup>

That entity may utilize the technology in the patent to develop a market in that particular country should the patent owner fail to commercialize the patented technology in that country providing those domiciled in that country access to the invention.<sup>17</sup> One way to avoid being forced into a compulsory license is for a patent owner must “use” or “work” the patented technology by commercializing it in the country.<sup>18</sup> In addition to Bulgaria, a sampling of countries that have compulsory license laws include:

1. China;
2. Iceland;
3. Mexico; and
4. The United Kingdom.

While the list presented here is a small sampling, it does illustrate how countries, regardless of their economic status, believe it be important that their economies not suffer from non-participation in a particular industry just because a patent owner fails to enter that country with its product or service.

Statistics regarding the use of compulsory licenses are not readily available. It appears that few compulsory licenses outside the pharmaceutical industry are granted. Research has not developed an answer as to why this tool is not employed more by countries. One could hypothesize that a major reason why the compulsory license is not used often is because potential compulsory licensees may find that it is not economically beneficial to acquire these rights.

As stated above, a patent has a geopolitical quality inherent to its creation. It is only valid in the country in which it is issued. If one country grants a compulsory license, it is only a right to use the patent in that country. If a

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16 Gillat, “Compulsory Licensing to Regulated Licensing: Effects on the Conflict between Innovation and Access in the Pharmaceutical Industry”, 58 *Food Drug L.J.* 711, at p. 712 (2003).

17 Gillat, “Compulsory Licensing to Regulated Licensing: Effects on the Conflict between Innovation and Access in the Pharmaceutical Industry”, 58 *Food Drug L.J.* 711, at p. 712 (2003).

18 “Any person concerned may request the Patent Office for grant of a compulsory license to work a patented invention, provided that at least one of the following conditions is met: 1. failure to use the invention for a period of four years from filing of the application for a patent or of three years from the grant of a patent, the time limit which expires last being applicable; 2. insufficient working of the invention to satisfy the needs of the national market, within the time limits set out in item 1, above, unless the patent owner gives valid reasons therefor . . . .” *Bulgarian Patentability Laws*, chapter III, section 32, at [http://www.bpo.bg/en/law\\_patents.html](http://www.bpo.bg/en/law_patents.html)).

prospective compulsory licensee wishes to export its product to another country, the patents in the other countries may bar it from such activity.<sup>19</sup>

Even when no issues regarding crossborder economics are involved, the compulsory license is not a preferred tool to be employed by those in developed countries. As such, the United States attempted to block the efforts of South Africa when they worked toward enacting legislation allowing for compulsory licenses for AIDS-related pharmaceutical,<sup>20</sup> even though it has statutes permitting compulsory licenses. By way of example, the United States permits compulsory licenses of patents necessary for the country's food supply,<sup>21</sup> patents developed through the research funds provided by the government,<sup>22</sup> and patents required to maintain the country's atomic energy needs.<sup>23</sup>

A third example of an inroad to the patent monopoly is the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs), a part of the General Agreement on Tariffs and Trade (GATT) in 1994.<sup>24</sup> The TRIPs Agreement provides an opportunity for underdeveloped countries for the ability to permissively infringe patents for a period of ten years to allow those members that are least-developed countries to develop private entities and economies to compete with first world countries.<sup>25</sup>

The period in which these permissive infringements could occur was for a period of time of which many have expired. Some time periods have,

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19 Much of the discussion regarding compulsory licenses revolves around medicines and pharmaceuticals. For lack of alternatives, one may look to this "technology sector" for guidance in the information and communications technology sector. Love, "Access to Medicines: Solving the Export Problem Under TRIPs", *Bridges Between Trade and Sustainable Development* Year 6, Number 4 (May 2002), at p. 3. "Korea, for example, is currently facing a request for a compulsory license on Gleevec, a drug that is very effective against two rare forms of cancer. Korea has a world-class pharmaceutical industry, and is now the most efficient global supplier for some important medicines. It would be possible, but not efficient, for Korea to manufacture Gleevec for its domestic market alone. This is so because, although it accounts for 15 to 20 per cent of all adult Korean leukemia cases, chronic myelogenous leukemia afflicts only about 500 people each year. A much more efficient solution would be to allow generic producers to make Gleevec for sale in several countries where the combined markets would justify the fixed costs of production".

20 Abbott, "The TRIPs-Legality of Measures Taken to Address Public Health Crisis: A Synopsis", 7 *Widener L. Symp. J.* 71, 72 (Spring 2001).

21 7 United States Code, section 2404.

22 35 United States Code, section 203.

23 42 United States Code, section 2183.

24 Agreement on Trade-Related Aspects of Intellectual Property Rights, 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, Legal Instruments — Results of the Uruguay Round, volume 31; 33 *I.L.M.* 1144, at p. 1197 (1994) [hereinafter TRIPs Agreement].

25 TRIPs Agreement, article 66, paragraph 1.

however, been extended well into the future. For example, intellectual property rights for pharmaceutical products can be permissively infringed by less developed countries and least developed countries up to 1 January 2016.<sup>26</sup> The ability to infringe the intellectual property of another is given with the understanding that those Members will develop the necessary infrastructure to enforce the intellectual property rights of others in the future. In other words, it is the understanding of those members of the TRIPs Agreement that growing an economy is a vital step in having a member enter the global economy, with which comes the responsibilities of preparing for enforcing the intellectual property rights of those that want to introduce products and services into the member's economy with the expectation that those rights will be enforced.

These infringements on the patent monopoly find similarities in its sister bodies of law relating to other types of intellectual property. Exemptions from monopolies exist in trade mark law and copyright law. The United States has a Fair Use Exemption allowing non-copyright holders the right to copy works protected by another.<sup>27</sup>

In addition, depending on the country, trade mark rights are limited solely to the type of goods or services provided. Two identical marks can exist so long as they are associated with unrelated goods or services.<sup>28</sup> Across the board, monopolies are infringed or limited and it is because a monopoly interferes with the free flow of goods, services, and ideas that help grow an economy. These barriers also prevent those economies that fall behind in research and development any ability to catch up with other economies because the ability to make, use, and sell domestically and abroad becomes increasingly limited.

## 6.02 Is the Patent Monopoly Needed?

### (a) In General

This portion of the chapter presents how the economy of a country is affected by the monopoly created by patents. To understand the diverging economic forces that are at play will set the stage to identify the opportunities available to use the inherent qualities of the various patent systems around the world to help foster growth of the economies of the least-developed countries.

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26 Declaration on TRIPs Agreement and Public Health, WT/MIN (1) /DEC/2, at [http://www.wto.org/english/thewto\\_e/minist\\_e/min01\\_e/mindecl\\_trips\\_e.htm](http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_trips_e.htm).

27 17 United States Code, section 107.

28 “[J]ust because a trademark is arbitrary, if it is used only in a narrow area, others may use a similar mark for different goods without any trade mark infringement”. *Sullivan v. CBS Corp.*, 385 F.3d 772, 776 (7th Cir., 2004), citing *McGraw-Edison Co. v. Walt Disney Prods.*, 787 F.2d 1163, 1170-71 (7th Cir., 1986).

It is the intention that the resulting opportunities presented herein will, in addition to fostering the growth of those economies that are weaker, provide opportunities for entities and countries outside the third and fourth worlds to experience growth through the growth of these economies. If a system is developed that creates a bar to the growth of those entities and countries that are well developed, the system will likely fail. Those countries and patentholders that have invested heavily in the patent system would surely prevent the upheaval of their expectations to claim their property rights.

Understanding that owning a patent is the result of spending a great deal of resources in research, development, and patent preparation and prosecution,<sup>29</sup> one appreciates why a patentholder does not want to acquiesce the very desirable position of owning the patent.

In mature industries, a patentable invention does not begin with an idea — it begins with a great number of ideas. Those ideas are distilled down to a few ideas, often based on great expenditures in research and/or development. Some ideas appear promising, but soon fall apart due to science — miscalculations in the technology — having the technology turn to already patented technology. In the pharmaceutical industry, side effects of a perfectly good drug may prevent the marketing of an otherwise promising product. This cost is great.

Some of the costs result from the preparation and prosecution of a patent application for the invention. The costs are high because they often involve taking time with a patent attorney to identify the invention, not in terms of how it is going to be sold, but in terms of how the innovation is different than what has been done before. These costs are proportionally higher in least developed countries.<sup>30</sup>

This process is time consuming for those involved with the development of the invention. In addition, fees paid to patent draftsmen, and the patent office in which the application is filed also add to the cost of the patent application. Once filed, the prosecution oftentimes adds as much or more cost as the preparation of the original filing because arguments need to be presented to the examiner reviewing the patent application to convince the examiner that what is claimed as an invention in the patent application is deserving of a patent and the associated monopoly.

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29 Prosecution is the advocacy before a national or international patent office required by a patent applicant to further a patent application through the patent office to include a condition for allowance and the subsequent issuance into a patent.

30 The costs for patents are considered high, even in developed countries by those firms of the developed countries. See comments of Professor Alain Pompidou, President, EPO, at EPO Information Day, 30 March 2005, at [http://events.european-patent-office.org/2005/0330/itre\\_comm/President\\_to\\_ITRE\\_en\\_red.pdf](http://events.european-patent-office.org/2005/0330/itre_comm/President_to_ITRE_en_red.pdf).

**(b) Need for an Economy to Grow**

Whether a society is run by a dictator, monarchy, prime minister, philosopher, king, or through a democratic body, the society can succeed as a capitalistic society only if there is growth in the economy.<sup>31</sup> Assuming this to be true, one must understand the economy to know whether it is growing. There are several facets to an economy; it includes industries, sectors of industries, populations, natural resources, products and services distinctive to a region, and borders.

Interestingly, borders to a country's economy now exist primarily for political reasons. In the past, borders were drawn by geography, cultures, tribes, and nations. When something affected one economy, it was typically limited largely to that economy, depending of course on what happened. As more economies began to rely on each other, economies acted more in unison.<sup>32</sup> Now, if a major tragedy befell one country, it affects the economies of its neighbors. As transportation became mainstream and affordable, geography had less of an impact in isolating an economy. As communication technologies and media permeate societies, understanding of currencies and products provided by those societies aids in the introduction of imports. Exports too are in more demand.

Since economies amalgamated into their current status, a "global economy", political events and decisions tighten the integration of nations and regions advancing the flow of technology and investment.<sup>33</sup>

While it is true that natural disasters, such as the Great Tsunami of 2004, affect the global economy in deep and long-lasting ways, those natural occurrences are no longer limited to just one country's economy. In addition, to have a global economy means more than just selling more products and services to more people. With a global economy comes a global responsibility.<sup>34</sup>

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31 "Capitalism, on the other hand, grows by an ever expanding market, the innovation of new technology, and the ever-growing world population". Warner, *The Perpetual Wheel*, at <http://people.ucsc.edu/~yle/papers/SocCapRep.html>.

32 "The effect of globalization on business and industry has been profound. Innovations created in one country are routinely manufactured in a second country, often mobilizing capital from several countries . . . . No national economy is now an island. And every nation state is as interdependent as it is independent". Comments by Robin Cook at the Annual Meeting for the Trilateral Commission, at <http://www.trilateral.org/annmtgs/trialog/trlgtxts/t55/coo.htm>.

33 Maskus, "The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer", 9 *Duke J. Comp. & Int'l L.* 109, at p. 110 (1998).

34 "Those businesses most active in the globalizing economy must show the greatest global responsibility in stabilizing the global climate". Comments by Robin Cook at the Annual Meeting for the Trilateral Commission, at <http://www.trilateral.org/annmtgs/trialog/trlgtxts/t55/coo.htm>.

The fostering of lesser developed economies grows out of the communication lines that crisscross the forests, plains, and deserts of the lesser developed countries.

The peoples living in these lands now have access to images of lifestyles and wealth that are difficult to comprehend. Whole villages perceive huge riches, new products, and different life styles. With these new perceptions, first world countries must take on the responsibility to help these lesser developed economies into a more developed state to allow them the opportunity to achieve these new standards of livings if they so choose.

The stalling of the global economy in lesser developed countries is quite evident in Africa.<sup>35</sup> If a large investment in the economy of Africa was made earlier, there would not be the need for the massive investment required now to bring aid to their struggling economies.<sup>36</sup> The need for economic growth in the far reaches of the globe is similar.

If a large investment is made now to help jump-start the economies of lesser developed countries, less bridge-building will be needed later. Fewer people and societies will choose to not participate and will be able to participate in the global economy on terms with which they are comfortable. Those that are jealous of the haves will be confronted with the opportunity to change their condition in ways that they want through economic growth in themselves — and not through the violent means. In addition, through the additional growth, greater strides in the global economy will exist because whole cultures will be better educated, wealthier, and healthier. As more diversity enters the marketplace, more opportunities for choice, and growth through choice, exist. This will only contribute to the overall continued growth of the global economy.

### (c) Why the Patent Monopoly Facilitates Economic Growth

Studies have attempted to qualify the effects of a patent system on a society. These studies have limited results due to the nature of the problem. When determining whether more money is being invested in research and development in countries with strong patent rights (and intellectual property rights in general), it is difficult to determine whether the strong patent rights result in more research and development investment or whether the strong research

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35 Maskus, “The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer”, 9 *Duke J. Int’l L.* 109, at p. 115 (1998).

36 “In every aspect of Africa’s complex plight an ounce of prevention will be worth a ton of treatment. In recent years America gave a negligible \$4m a year to Ethiopia to boost agricultural productivity, but then responded with around \$500m in emergency food aid in 2003 when the crops failed”, Sachs, “Doing the Sums on Africa”, *The Economist*, at p. 19 (22 May 2004).

and development investment is sought to be protected by a society that inherently values strong research and development.<sup>37</sup>

Having said this, it is clear that several industries benefit from the patent system, the computer industry being one of those industries.<sup>38</sup> The economics of the benefits are less tenable, yet well recognized.<sup>39</sup>

Regardless of whether data can be empirically determined, the patent system provides a measure of confidence when investing in research and development and so that there will be a means to help gain a return on that investment. In the computer industry, so many advancements are made so rapidly that one would think that an investment in patent protection would be worthless due to the pendency of patent applications maintaining averages nearly 36 months.<sup>40</sup>

However, the advancements made are advancements to technologies that might last for years. The incremental improvements may render the principle or underlying technology “obsolete”, but without the underlying technology, there would be no foundation for the improvements and, hence, there is value in protecting the underlying computer technology.<sup>41</sup>

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37 Merrill, Levin and Myers, *A Patent System for the 21st Century*, at p. 40 (2004).

38 “One may legitimately question whether the impact of patenting on innovation and its consequences for social welfare are, on balance, positive outside of a handful of industries, such as pharmaceuticals, biotechnology, medical devices, and specialty chemicals where the benefits are well established, and possibly to a lesser extent, computers and auto parts”, Merrill, Levin and Myers, *A Patent System for the 21st Century*, at p. 41 (2004).

39 “[It is] emphasized that from an economic point of view, it is very difficult to make normative statements or explicit comments on the economic development impact of [intellectual property rights] protection. Intellectual property rights are very difficult, hugely interrelated processes. Empirical work by economists on this topic has, so far, been mostly inconclusive, although there is some consensus that [intellectual property rights] protection have a moderately positive effect on international business (i.e., mainly international trade and foreign direct investment). One major difficulty economists face in evaluating the effects of [intellectual property rights] is that the causation between [intellectual property rights] and such international transactions often runs two-way. Moreover, [intellectual property rights] are an endogenous variable — not only with respect to the level of economic development, but also with respect to a country’s culture”. Intellectual Property Rights and Economic Development: An Agenda for The World Bank Group, at <http://www.worldbank.org/html/fpd/technet/sem-sums/march5.htm>.

40 In the United States Patent and Trade Mark Office, the pendency for technologies related to the communication arts is nearly 42 months. See [http://www.uspto.gov/web/offices/com/annual/2004/060404\\_table4.html](http://www.uspto.gov/web/offices/com/annual/2004/060404_table4.html).

41 *Noll v. O.M. Scott & Sons Co.*, 467 F.2d. 295, at p. 301 (6th Cir., 1972), citing *Temco Elec. Co. v. Apco Mfg. Co.*, 275 U.S. 319, at p. 328, 48 S. Ct. 170, at p. 173 (1928). “It has long been recognized that an improver operating under a subsequently issued patent can not appropriate the basic patent of another and that the improver without a license is an infringer and may be sued as such”.

The protection of computer technology helps advance the industry by allowing those that are in a position to invest in research and development to do so with an understanding that a larger firm will not be able to immediately take the fruits of its labor and compete against the firm developing the technology. Hewlett Packard did as much in the 1980s when they embarked on the development of the inkjet printer. Hewlett Packard made an enormous effort to patent every technology it developed in its research and development of the inkjet printer:

Citizen engineers trying to develop print heads learned H-P had some 50 patents covering how ink travels through the head. ‘It’s like being in a maze: You go down this path and suddenly you’re into an area that may infringe on their main patents and you must back up and start over’.<sup>42</sup>

As such, it became very difficult for the competition to obtain a foothold in the newest technology for the printer business. In addition, by the time the competition of Hewlett Packard did manage to produce a product that could compete with it, Hewlett Packard’s “H-P” trade mark was almost synonymous with inkjet printers. For 20 years, patent protection has afforded Hewlett Packard with a commanding share of the printer business worldwide.

As a minor side note, the social welfare of a society that employs strong patent laws grows the economy in indirect ways. If there are strong patent laws, legal teams must be employed to assert and defend the rights of the parties. Legal teams often employ more than attorneys; they employ paralegals, secretaries, and clerks. These teams require resources such as offices, computers, copiers, paper, printers, electricity, and the like.

These components to the patent legal system aid in the development of an economy. The fees paid to patent offices in the filing and prosecuting of patents employs those that ensure the patent office runs properly. These minor, indirect ways in which monies are spent to protect inventions through the patent system help build and sustain an economy through employment and consumption. Thus, to say that the patent system financially overburdens a lesser-developed country<sup>43</sup> is to look only at direct costs while ignoring the benefits in the capital redistribution that occurs by having such infrastructures in place and funded.

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42 *The Wall Street Journal*, at p. A6 (8 September 1994).

43 AIPPI, *AIPPI Contribution to the Patent Agenda*, at p. 9 (15 February 2002). “It is true that for some applicants the cost of obtaining patents is an obstacle, particularly for applicants who are individual inventors with scarce economic resources, such as some [small and medium-sized enterprises]. This problem is greater in developing countries, less-developed countries and countries in transition where the proportion of these kind of applicants is higher”.

### 6.03 Patents and Their Obstructive Ways

#### (a) In General

As alluded to above, it is quite common for a technology to be protected through layers of patents based on layers of technological advances. One can appreciate that the development of products based on technology does not progress in a linear fashion. Research and development may go in several different directions. The resulting product may be vastly different from initial product concept.

This is common in the development of software and communications products used on the Internet. Unlike an automobile, physics is not a factor in many of the issues faced by those looking to sell a software product. This is less true for hardware, where size, shape, heat generation, and energy consumption are variables in design that may dictate certain parameters of the product design. However, once these issues are dealt with, the product may take on many different functions, some of which may not have even been contemplated at the initiation of a project due to other advances in technology made by others operating parallel to one another.

#### (b) Research and Development Factors

The entities that are developing products for use in the digital arena must consider the fact that others may have incurred large expenditures in research and development for a particular product. The product developed may never make it to the marketplace. Reasons for failure to make it to market include failure of technology, failure of packaging the technology in a viable end product, i.e., missing or unnecessary features, software bugs, and technology obsolescence before final development.<sup>44</sup>

Even if a product never made it to the marketplace, the investment in the technology developed has been incurred, and firms treat the research and development in a technology as an asset. In addition, if it is determined that the asset has value, regardless of whether the technology is to be incorporated into a product to be eventually sold, it may have value sufficient to warrant protection. If the decision is made to protect the investment, patents may be applied for and obtained on the non-marketed invention. A firm may do this for future freedom of practice.<sup>45</sup> Alternatively, a firm may patent non-marketed technology so that those that are successful in bringing the technology to market will have to seek licenses from the entity that first developed the technology.

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<sup>44</sup> Mangione, "Software Project Failure: The Reasons, The Costs", *CIO Information Network* (3 January 2003), at <http://www.cioupdate.com/reports/article.php/1563701>.

Whether or not a particular technology is included in a product currently in the marketplace it is very difficult for a firm, much less a firm domiciled in a lesser developed country, to be able to research and develop a product only to find out protection for that product or underlying technology was obtained by another firm.<sup>46</sup> It is more difficult to discover this when the firm owning the patent(s) is not utilizing that technology because the lesser developed country firm may improperly believe it has no reason to investigate whether patents have issued on the non-marketed technology.

Adding to this problem is the fact that most firms filing patent applications do not file patent applications in lesser developed countries. For example, Microsoft owns more than 3,600 patents<sup>47</sup> that have issued in the United States. They own substantially fewer patents in lesser developed countries. Therefore, while a lesser developed country firm may have freedom to produce a product in the country in which it is domiciled, it may have difficulty when its product is transported to another country or region where patent protection may have been obtained. These products are referred to as “parallel imports”.<sup>48</sup>

Because the nature of the digital divide relates to information and communication technologies, including software and hardware relating to communications, the Internet, and electronics, it is easy to understand that these types of products, especially software, are easily transportable. If the product were to cross

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45 *Manildra Milling Corp. v. Ogilvie Mills*, 76 F.3d 1178, at p. 1183 (Fed. Cir., 1996). “The freedom to practice an invention without fear of suit by the patentee is a valuable commercial benefit. By removing the potential threat of the patentee instituting an infringement action, the competitor necessarily alters the patentee’s subsequent behavior to his benefit”.

46 Nottenburg, Pardey, and Wright, “Accessing Other People’s Technology: Do Non-Profit Agencies Need It? How to Obtain It”, Environment and Production Technology Division, International Food Policy Research Institute, *Discussion Paper Number 79*, at p. 34 (September 2001). “But it would be hazardous to assume general freedom to operate; mistakes could result in catastrophic legal liability. To reliably implement a strategy of obtaining intellectual property only where necessary, those that make research commitments must have access to adequate information on patent rights, and to expert legal counsel. Such access is not widely available at present on an international basis, and does not exist for most [lesser developed country] researchers and research institutions”.

47 Electronic search for “Microsoft” on the website [www.uspto.gov](http://www.uspto.gov) on 15 January 2005. No other entity name was searched so the number of patents owned by Microsoft Corporation could be larger, depending on the corporate structure(s) employed thereby.

48 Maskus, “Parallel Imports in Pharmaceuticals: Implications for Competition and Pricing in Developing Countries”, Final Report to the World Intellectual Property Organization (April 2001). “Parallel imports . . . are goods produced genuinely under protection of a trademark, patent or copyright, placed into circulation in one market, and then imported into a second market without the authorization of the local owner of the intellectual property right”.

into a country that has a patent covering some or all of the technology in the product, the value of the product is reduced. If a lesser developed country firm cannot export its products, the economy of the lesser developed country cannot grow as much as it could have if the product did not infringe any patent in any country, thus allowing it to be freely exported and enjoy a balanced economy.<sup>49</sup>

### (c) Exportation of Information and Communication Technology Products

The exportation of a product relating to information and communication technologies is a concern that should be addressed in earnest. An economy can grow when it exports to other countries.<sup>50</sup> The money that is infused into the economy of the lesser developed country will help the lesser developed country lose its lesser developed status so that it can reinvest the capital received from other economies into its own so that more can be produced and more can be consumed. Exportation of products relating to information and communication technologies is such a concern because it is possible to export with little infrastructure investment.

In other words, a lesser developed country firm could export products with minimal investment due to the nature of many of the products utilized in the digital economy. A creator of software could be uplinked and downloaded anywhere there is Internet access.<sup>51</sup> The creator need only a computer to create the software and obtain access to the Internet to distribute it. Any lesser developed country firm with access to the Internet could ship software anywhere in the world. There would not have to be warehousing, trucking, inventorying, and the like.

Much of the hardware used in the digital economy is small, which further facilitates the exportation of those products. Investments in huge warehouses, factory equipment, inventory tracking systems, and transportation via any means is not necessary. In short, the business model of any lesser developed country firm attempting to build a business in the digital economy should and must include steps to promote the exportation of its products to other nations to infiltrate as many economies as possible to reach as many consumers as possible.

Therefore, it becomes imperative for lesser developed country firms to have the freedom to export products in a seamless fashion, meaning that the

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49 Friedman and Friedman, "The Case for Free Trade", *Hoover Digest*, Number 4 (1997).

50 Maskus, "The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer", 9 *Duke J. Comp. & Int'l L.* 109, at p. 112 (1998).

51 Internet access is not an assumption, as it is very much a problem with lesser developed country firms and their ability to operate in the digital economy.

lesser developed country firm can be free to produce a product and sell that version of the product anywhere in the world, allowing that firm to maximize its revenue collection. It is obvious that a lesser developed country firm would be hindered and its ability to generate revenue diminished should it be required to develop different versions of a product for different nations based on the position patentholders may have in those various nations.

#### **6.04 How to Treat Patents, Patent Owners, and Infringers from Lesser Developed Countries**

##### **(a) In General**

Patents have diverging effects on the economies in which they issue. On the one hand, they promote the dissemination of information relating to science and manufacture. This grows the societal pool of information, which may be used to grow an economy by the development of new products and services.<sup>52</sup> On the other hand, however, patents have a deleterious effect on an economy because they prevent those that may be able to develop a competitive product from entering the marketplace with that product because to do so would be an infringement of the patent. Monopolies interfere with the ability of others that want to compete from entering the marketplace.

In the case of a patent, potential competitors with new and possibly better ideas cannot do so for the legal ramifications of another owning the patent rights to the underlying technology. In the situation where there is no patent, a monopoly results from having a large percentage, more than 60 per cent, of the sales associated with the product or service. This allows the monopoly holder the ability to use its shelf-space and pricing to prevent others from competing successfully with newer products and services.

In either instance, the monopoly prevents the advancement of a society by inhibiting the ability to purchase newer, better, and/or cheaper products, creating additional jobs, and allowing the dominant player in the product or service the ability to rest on its laurels. The dominant player will not be driven to reinvest in its product or service, which further stymies the advancement of technology.

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52 *Grant v. Raymond*, 31 U.S. 218, at p. 247 (U.S., 1832) “The third section requires, as preliminary to a patent, a correct specification and description of the thing discovered. This is necessary in order to give the public, after the privilege shall expire, the advantage for which the privilege is allowed, and is the foundation of the power to issue the patent”.

**(b) Facilitating Patent Infringers from Lesser Developed Countries**

Given it is a desire for the global economy to foster development of the global economy from all sectors and all economies, something must be done to facilitate the ability for patent infringers from lesser developed countries to enter the global economy with some degree of freedom. It might be questioned why anyone should be permitted to infringe a patent. As stated above, patentholders will be less likely to invest in new technologies if they will not be able to enjoy the benefits of a monopoly; a monopoly that ensures them the ability to obtain a return on their investment in the research and development of the new technology.<sup>53</sup>

With firms from lesser developed countries, there are obviously limited funds for investment in the development of products. There are also limitations in the surrounding infrastructure that supports the development of technology. Raw materials may be limited. Research facilities are limited and may be too difficult to reach. Research resources also may be limited, especially when there are more life-threatening issues to which government funds are being directed.

This limits the ability of these lesser developed country firms from investigating whether they will infringe on the rights of others.<sup>54</sup> Those resources may be spent on developing some of the necessary business components of providing a successful product in the global economy. For example, resources which, in a firm founded in a developed country, could be earmarked for research and development, may need to be spent on packaging, translations of user manuals, development of distribution networks, or facilities to protect inventory. The list is large and these are but a few of the possible uses for funds that would not be needed to be spent on freedom to practice studies in multiple countries.

Another reason for allowing a lesser developed country firm to infringe the patent rights of another is that a lesser developed country firm could spend less of their resources on unproven products. If a product is successful in the marketplace, a lesser developed country firm may be able to capitalize on its success and develop similar products that also may be successful. For a lesser developed country firm to miscalculate on the needs of the marketplace and spend its resources on the development of products that will not be well received can be catastrophic for a lesser developed country firm and the lesser developed country in which it is domiciled.

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53 Bagchi, "Compulsory Licensing and the Duty of Good Faith in TRIPS", *55 Stan. L. Rev.* 1529, at p. 1531 (May 2003).

54 Nottenburg, Pardey and Wright, "Accessing Other People's Technology: Do Non-Profit Agencies Need It? How to Obtain It", Environment and Production Technology Division, International Food Policy Research Institute, *Discussion Paper Number 79*, p. 34 (September 2001).

It is difficult to appreciate how a lesser developed country firm could be able to pirate ideas and patented technology while still having the goal of a viable global economy in our sights. However, it is quite reasonable to suggest that such actions will result in a stronger global economy because some products produced by lesser developed country firms may introduce lesser developed country markets to the products provided by the patentholder.<sup>55</sup> In fact, a more competitive marketplace would exist in the economies in which the lesser developed country firm is permitted to infringe with the introduction of its products.

## 6.05 Models for Solving the Patent Problem

### (a) In General

To say that a lesser developed country firm could permissively infringe any patent in the name of growing a sector of the global economy without any limitations would be cavalier. Limitations have been a part of the compulsory license since the Paris Convention.<sup>56</sup> Limitations have been a part of the compulsory license since the Paris Convention.<sup>57</sup> Unbound, it would greatly inhibit the desire of those participating in the research and development of products incorporating information and communication technologies.<sup>58</sup>

This is especially true for these product and service sectors because information and communication technologies may so readily be transported to nations having patents issued that cover them. In fact, it would be safe to say that such a wholesale and unencumbered permissive infringement would never be accepted by the governments of the developed countries.

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55 The “patentholder” is considered to be the firm that owns the patent and/or the rights to manufacture product, or sell services that would be covered by the patent(s). Therefore, the patentholder may be a licensee and not the owner of the patent. In some instances, this will change who may bring suit for patent infringement.

56 Article 5 of the Paris Convention for the Protection of Industrial Property, March 1883, as last revised at Stockholm, July 1967 and as amended September 1979, 828 U.N.T.S. 305 [hereinafter Paris Convention].

57 Article 5 of the Paris Convention for the Protection of Industrial Property, March 1883, as last revised at Stockholm, July 1967 and as amended September 1979, 828 U.N.T.S. 305 [hereinafter Paris Convention].

58 Any research and development that does occur may never be implemented for fear of its use by its competitors. Black, “The Cure for Deadly Patent Practices: Preventing Technology Suppression and Patent Shelving in the Life Sciences”, *14 Alb. L.J. Sci. & Tech.* 397, at p. 398 (2004) “Companies will suppress new technology if the technology threatens to disrupt the profits in a market. Under most circumstances, the delay of public access only costs the consumer money or inconvenience”.

**(b) Limitations on Infringement**

A model of limitations must be developed to define the relationship between patentholders and the lesser developed country firms that wish to obtain the permissions to infringe information and communication technologies patents. A model of limitations must be used for a couple of reasons. The first reason a model of limitations is desirable is to allow the patentholders that made the investment in the research and development, which eventually resulted in the patent(s), to maintain the ability to seek a return on its investment in the information and communication technologies that it patented.

This is a basic tenet<sup>59</sup> that should never be overlooked when contemplating the consideration of a compulsory license scheme for information and communications technologies. In other words, any system that prevents any return on an investment by the firm that makes the investment will surely fail. If it is known that there will be little opportunity for a return, a firm will forego any investment in the technology, information, and communication technologies or otherwise.

While it is desirable to have a lesser developed country firm have the ability to help foster economic growth in its sector of the global economy, it cannot be done to the detriment of those firms that are based in developed countries. This would be ill-received and, if instituted, would introduce a higher level of risk in the success of those patentholders. This would, in turn, adversely affect those developed countries to a level that would offset any benefit gained by having a lesser developed country firm enter the marketplace successfully.

A second reason to have limitations on the ability of a lesser developed country firm to permissively infringe a patent or group of patents is the resulting development associated with the permission. It is expected that as a lesser developed country firm becomes more successful, partly due to its permissive infringement, it will have enough resources to develop technologies, products and/or services that will be able to be both successful in the marketplace, and non-infringing.<sup>60</sup>

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59 Article 30 of the TRIPs Agreement provides: "Members may provide limited exception to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties".

60 This limitation in time seems to be similar to that which is found in article 31(c) of the TRIPs Agreement. However, the reasoning has less to do with urgent matters and national emergencies, as set forth in article 31(b) of the TRIPs Agreement, and more to do with fostering a growth in a lesser developed country.

Once a lesser developed country firm can successfully wean itself off technology, products, and services that are patented by another, the lesser developed country firm may be able to invest in protecting its own advancements in and to the technology. This would provide an additional income stream of royalty payments in addition to the sale of products and service, and further the lesser developed country firm and the lesser developed country toward its goal of leaving its status as a lesser developed country.<sup>61</sup>

Yet another reason for limiting the rights of lesser developed country firms is to have successful lesser developed country firms develop their own technology which they will want to protect.<sup>62</sup> This protection will require the enforcement of intellectual property laws. The desire will be to strengthen the intellectual property laws and enforce them so that there will be more certainty in the marketplace as the lesser developed countries enter the global economy.

### (c) First Selected Model

In the United States, there has been an acknowledgement that some firms have a greater difficulty participating in the market than others. Typically, those that are successful have largely been operating in the business sector for a long period of time. These firms are owned and operated by those that are considered to be a part of the majority in the United States.

Minorities have made inroads into a business sector, but it appears to take longer before a minority-owned business can become successful. This breeds a discontentment and social unrest undesirable on many levels, the least of which is an economic level.

To overcome this perception and reality, and to further those firms owned and operated by the disadvantaged, there is a network of federal laws<sup>63</sup> and programs,<sup>64</sup> as well as state laws<sup>65</sup> and programs.<sup>66</sup> within the United States providing benefits to those that operate their respective firms by purchasing

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61 This desire is reflected in the objectives of the TRIPs Agreement, which are “. . . the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, . . .”. TRIPs Agreement, article 7.

62 Again, this is similar to the intent of the TRIPs Agreement. Maskus, “Intellectual Property Challenges for Developing Countries: An Economic Perspective”, *2001 U. Ill. L. Rev.* 457 (2001).

63 49 Code of Federal Regulations, Part 26.

64 National Minority Supplier Development Council, at [www.nmsdcus.org](http://www.nmsdcus.org).

65 Oregon State Rules, section 200.

66 Minnesota Minority Business Development Council, at <http://www.mmbdc.org>.

the goods and services they need from an entity that has been certified as a disadvantaged or minority business enterprise. A firm must prove its status as a minority business enterprise. Once proven, it can engage in contractual relationships at preferred terms to help it grow.

A system for lesser developed country firms could be developed that would mirror the minority business enterprise laws of the United States. This system, hereinafter referred to as a lesser developed country Patent Infringement Permissive Program, provides a vehicle for lesser developed country firms to register for a status that would allow them to obtain permissions to infringe patents so that such firms could enter into a particular technological sector in the marketplace of the global economy.

A comprehensive study of various lesser developed countries and technology sectors could clarify which lesser developed country firms would be eligible to participate in the lesser developed country Patent Infringement Permissive Program. The eligibility of lesser developed country firms would depend on the type of technology or technologies they would implement under the program and the lesser developed country in which it is domiciled. The technology would be studied to determine if it were appropriate to foster the development of the technology in the lesser developed country in which the lesser developed country firm is domiciled.

Factors to determine such activity include how the technology can be manufactured, sold, and exported. This would be important because if the marginal gain to an economy is trivial, the comparative gain may not be worth the detriment to the patentholder by losing its monopoly for the technology.

The lesser developed country Patent Infringement Permissive Program would periodically review the status of the lesser developed country firm. Participation in the lesser developed country Patent Infringement Permissive Program by a firm could be terminated over time based on the success in fostering economic growth in the lesser developed country.

By generating revenue, the lesser developed country firm participating in the Program would eventually be able to reinvest the revenue back into the lesser developed country firm to develop products that would not be infringing any other patent. In this manner, the lesser developed country firm may slowly be able to move away from the manufacture and sale of infringing products while still operating as a viable and contributing firm in the economy to which it is domiciled.

While this model for reducing the Digital Divide is based on the lesser developed country firm, it also could be based on the lesser developed country. In this alternative model, a particular lesser developed country would be able to obtain a set number of permissions. As lesser developed country firms domiciled within that lesser developed country seek permission to infringe a

patent, it would seek the permission through its home government. The lesser developed country might be able to foster the growth of industry therein by clustering its permissions around a particular industry it may deem important for its own economy. The lesser-developed country could act as a clearinghouse to obtain the necessary certificates to facilitate the growth of a desired industry.<sup>67</sup>

For information and communication technologies, it is quite possible that the development of a technology and the resulting product or service would infringe several patents should the product or service reach the countries in which these patents have been issued. The weave of studies to determine what is and what is not being infringed would likely bankrupt a lesser developed country firm. In the latter model, where the lesser developed country government obtains the permissions, the lesser developed country government takes on the role of a clearing house. It clears the way for a lesser developed country firm to step in and make a product that would read on several patents.

The Lesser Developed Country Patent Infringement Permissive Program may be too decentralized to effectively work. It would seem that there is a large opportunity for the governments of the various parties to weigh in on each opportunity sought by a lesser developed country firm. Such governmental involvement will most probably add too much time to the process and, with the information and communication technologies advancing rapidly, opportunities would be lost in bureaucracy.

#### (d) Second Selected Model

##### (i) *In General*

**Nature of Compulsory License** The compulsory license was described above. It is a device implemented by many countries that enables a particular country to have its economy benefit from the manufacture, use, and/or sale of patented technology. The country typically must wait for a predetermined period of time before it can issue a compulsory license. The time period is used to prove an underutilization of the patent, a concept which dates back to the Paris Convention.<sup>68</sup> The TRIPs Agreement also has provisions for a compulsory license;<sup>69</sup> however, it may be limited to situations that are catastrophic in nature.<sup>70</sup>

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67 The lesser developed country would act in a manner similar to the Kansai Patent Center. Kukkonen, "The Use of a Patent Licensing Center as an Intermediary for Facilitating the Licensing of Commercially Viable, Unused Patents", 3 *Va. J.L. & Tech* 10 (Fall 1998).

68 Paris Convention, article 5(A)(4).

69 TRIPs Agreement, article 31.

70 TRIPs Agreement, article 31(b).

This time period is designed to give the patentholder an opportunity to enter the economy with the particular patented technology. After the time period, typically three to five years, it will authorize the licensing of the patent to a third party posed to market the product in the country.

The compulsory license is a device that seems worthy. The people of a particular country have the freedom to help their economy, and the country is able to keep up with developed countries by having every technology available to the marketplace at its disposal. Yet, contrary to the well-intentioned legislation, the compulsory license is not in wide use. It is believed that China has yet to grant a compulsory license to a third party.<sup>71</sup> There are two possible reasons for this.

**Lack of Need to Seek Compulsory License** One explanation for the lack of activity with compulsory licenses is simply that firms do not need to seek compulsory licenses. Typically, the countries in which a compulsory license may come into play are lesser developed countries that are on the cusp of bettering their economies. In this instance, the patentholder may believe there is enough future growth opportunities in the country that warrants potential protection of its technological development for the 20-year period, but does not believe there is enough current economic potential to warrant an immediate investment in the country.

Thus, while it will patent its technology in that lesser developed country, it will not produce or import it because the profit margins do not justify this investment. In these countries, one could make the generalization that the laws regarding intellectual property are lacking in quality and attention. More specifically, a country that is just developing a growth-oriented economy may have little on the legislative books relating to intellectual property.<sup>72</sup> In addition, even if a country has a substantial body of law regarding intellectual property, and in particular patents, it may have little resources to enforce those laws.

This leaves lesser-developed-country firms within such a country with a choice. A lesser developed country firm looking to market a patented technology may seek a license from the patentholder; it may seek a compulsory

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71 A statement was made by Maria C. H. Lin, an expert on Chinese intellectual property, during the Patent Law Day Conference 2004, Michigan State University College of Law, that she was not aware of China issuing a single compulsory license. Currently, there are no accessible public channels for individuals to reach information about the issuance of compulsory licenses in China. A telephone call was placed in February 2005 directly with the State Intellectual Property Office (SIPO) of China wherein it was stated that there have been no compulsory licenses issued in China.

72 Maskus, "Intellectual Property Challenges for Developing Countries: An Economic Perspective", *2001 U. Ill. L. Rev.* 457 (2001).

license should the patentholder decline to entertain a license; or it may ignore the patent completely. Economically, the best choice for the third party may be the latter of those described above. If the patentholder has no intention on being active in the country's economy, and has little or no concern for parallel imports it may choose to ignore such activity.

If the patentholder chooses to ignore the infringing activity, there is no need for the third party to request a compulsory license. Other than the resulting economic gains, the government has no stake in the compulsory license, so there is no incentive to police such activities. If the patentholder does recognize the infringement and notifies the country of the infringing activity, there is again little incentive to enforce the compulsory license law because to do so would further hinder the fragile economy the government is trying so hard to nurture.

**Global Economy Conflicts** Another reason why so little economic activity is based on a compulsory license is dictated by the very conflict between countries and the global nature of the economy. Each country promulgates its own laws and, absent a treaty between countries, does not recognize the laws of any other country. This is why each country has a patent system and issues its own patents. While the third party may be able to obtain a compulsory license in the country in which it is currently domiciled or operating, the compulsory license only extends to the borders of the country in which the government issues the compulsory license.

If a non-patentholder third party is looking to develop a product or service, it would look for alternatives to the patented technology so that it could sell the same product or service in other countries. In the case of information and communication technologies, which are highly mobile technologies in the sense that a software package can operate easily anywhere and can be distributed via the Internet, a compulsory license would provide little advantage. The third party could enjoy the market in one country, but its permission is only for that particular country.

Exporting the technology to other countries would expose the third party to patent infringement claims once the technology crossed a border into another country where a compulsory license has not been obtained or is not available because the country does not recognize it or because the patentholder is operating in the country. Therefore, the compulsory license in its current form is not an acceptable model in which to encourage entities to invest in the economies of lesser developed countries because each country has its own laws on parallel imports and the exhaustion of intellectual property rights.<sup>73</sup>

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73 Maskus and Chen, "Vertical Price Control and Parallel Imports: Theory and Evidence", at p. 5, at [http://wbln0018.worldbank.org/research/workpapers.nsf/0/c36b5a43b69c9c47852569690050bf33/\\$FILE/wps2461.pdf](http://wbln0018.worldbank.org/research/workpapers.nsf/0/c36b5a43b69c9c47852569690050bf33/$FILE/wps2461.pdf).

*(ii) Benefits from Compulsory Licensing*

The compulsory license model for encouraging economic growth is not entirely improper. There are four accepted reasons for issuing compulsory licenses with the first relating to the exploitation of the patented technology.<sup>74</sup> The compulsory license could spark economic growth in a lesser developed country if one was sought by a third party domiciled in the lesser developed country. To a lesser extent, the economy would experience growth if a third party entity, domiciled outside the lesser developed country, were to invest in the economy of the lesser developed country by promoting its product therein.

In the case of information and communication technologies, the compulsory license would, however, be much more effective if it represented a licensing scheme that reflected the international flavor of the global economy and the borderless flavor of the information and communication technologies.

*(iii) Required Modifications in Compulsory Licensing*

**In General** The compulsory license needs to be modified. It needs to be an international vehicle. To bridge the Digital Divide and give the ability of growing digital economies to lesser developed countries, the lesser developed country firms need to directly engage the patentholder and obtain the right to place products and services in the marketplace that are capable of being bought and sold anywhere in the world.

For a patentholder to provide anything less than a regional or global license is providing a handicap to the third-party licensee which may eventually minimize the contribution to the economy of the lesser developed country by the lesser developed country firm. After all, the value of information and communication technologies is greatly reduced if it can only be used in those countries in which no patent exists or only in the country in which the compulsory license was issued.

There are three necessary components to a modified compulsory license that would allow the third party to help the economy of the lesser developed country in which it is domiciled and to further reduce the digital divide between those better developed countries and the lesser developed countries. It is believed that the three components are equally vital to the success of the modified compulsory license as a device that is to help the lesser developed countries enter the digital age and compete with the better developed countries. The three components are:

1. The modified compulsory license should be a regional, if not global, in scope;

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<sup>74</sup> Baca, "Compulsory Patent Licensing in Mexico in the 1990s: The Aftermath of NAFTA and the 1991 Industrial Property Law", *IDEA The Journal of Law and Technology*, at p. 184 (1994).

2. It must be limited, either temporally or in terms of output; and
3. It must be exclusive of terms relating to copyright infringement.

This is because having all three components will further the overall desire to have whole economies enter the Digital Age without having to sacrifice the capitalistic nature of the economy to the point where the support for the lesser developed country and its economy is falsely supported and doomed for subsequent failure.

**International Scope** A key factor to a modified compulsory license is that it must be international in scope. For a lesser developed country firm to be as competitive as possible in a licensing arrangement, with a product or service that incorporates information and communication technologies, Internet, or electronics fields, it must be able to be marketed across the boundaries of countries. Many of these products are portable and must be free of encumbrances should the purchaser travel. Other products may engage in activity outside the lesser developed country without the lesser developed country firm ever leaving home.

Another reason why the modified compulsory license needs to be international in scope is a result of the recent trends in labor. With the advances in technology and transportation efficiencies, jobs in manufacturing continue to move around the globe to markets that have inexpensive work forces.<sup>75</sup> If a lesser developed country firm finds itself with an expensive work force, it might move production of an electronic good to another country. If their compulsory license is not international, limitations on where the manufacturing process can be moved are limited. In addition, such limitations could hinder the lesser developed country firm's ability to grow and contribute to the global economy.

More important than lower job costs is the cost of manufacturing. The production of products and services depending on information and communication technologies have dropped in price. Modern factories, robots, and automation have forced the costs of production down. Staying competitive in these industries has resulted in the savings in production, which are passed on to the consumer. Therefore, prices in products and services have dropped drastically.

To stay as competitive as the competition, many firms that have less efficient manufacturing facilities meet the downward price pressures by reducing the profit margin in their products and services. Regardless of the patent position that a firm may enjoy, the competition oftentimes has a similar product that

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<sup>75</sup> Gumpert, "An Atlas of Offshore Outsourcing", *Business Week Online* (18 February 2004), at [http://www.businessweek.com/smallbiz/content/feb2004/sb20040218\\_6502.htm](http://www.businessweek.com/smallbiz/content/feb2004/sb20040218_6502.htm).

may avoid the patents owned by the firm. So, the firm must compete in pricing of the product or service. In situations where the margin of profits is so small, the way a firm succeeds is by growing its purchasing class.

In some markets, that means selling to everyone in a particular class within a country. In other markets, it requires sales to so many entities, firms, or people that no single country can satisfy the requirements of the firm, especially when the state is a lesser-developed country. Sales across a country's borders become a necessity, and this becomes a driving force in why the value of any compulsory license will be measured by its freedoms to cross those borders to reach as many consumers as possible.

In short, the modified compulsory license must be an international document allowing the lesser developed country firm to reach as many consumers as possible so that the lesser developed country firm will not fail for having prices too high. If the lesser developed country firm cannot sell its products and services globally, it cannot compete with the patentholder due to the price elevation by having only one nation's population to which the lesser developed country firm can sell.

The third reason why the modified compulsory license needs to be international in geographic scope is because the lesser developed country firm cannot truly become a viable entity unless it can compete side-by-side with the patentholder. Most patentholders would find this proposal adverse to their interests, but the competition is what capitalistic societies thrive on — competition is the life blood of the capitalistic society. It is this competition that drives consumers to the marketplace to purchase better products and services and more competitive pricing.

The competition will help teach the lesser developed country firm how it needs to compete in an unrestrained market. The marketplace will teach the lesser developed country firm lessons that will help grow the lesser-developed country firm and help it compete better. The products and services provided by the lesser developed country firm will become better over a shorter period of time, or the lesser developed country firm will be limited to undesirable markets of limited growth potential. The patentholder will learn to be more competitive as well. The licensing terms will include some royalty scheme so that the patentholder will always have a slight edge over the lesser developed country firm representative of recognition of its contribution to the world's information and knowledge.

**Impact of Compulsory License** Further to this point, it would be the hope that as the lesser-developed country firm matures, it will not require the assistance of a modified compulsory license, and the time under the modified compulsory license in which it competes in some or all geographic markets against a few competitors will teach the lesser-developed country firm about producing efficiently and leanly and bringing to the consumer something for

which the consumer is looking. Mere production capacity is no insurance of success in any manufacturing process.

One need only look to the difficulties and loss in market share that the automotive manufactures in Detroit have experienced to understand that manufacturing is an ongoing discipline that cannot be thrust on a lesser developed country firm with the expectation that, after a time of enjoying protected market share, it will be able to thrive and succeed in a completely free marketplace. Many factors, including quality, perception, marketing, and design, all must be dealt with to have a successful product rollout. Hence, the sooner the lesser-developed country firm experiences a competitive marketplace, the sooner it will develop into a firm that requires no assistance to contribute to the global economy.

#### **(e) Limitations on Permissive Patent Infringement**

##### *(i) In General*

If left unchecked, the modified compulsory license could possibly do more harm to the global economy than help it. A patentholder unexpectedly finding itself in competition with its own product in a global sense may expose itself to failure with regard to that product. The exposure could be so significant that the patentholder may fail as a result of the competition.

Failure of a patentholder to benefit a lesser developed country firm is not a result that is desired because, simply put, it is the goal of the modified compulsory license to bring more stability into the global economy and not disrupt the current status of the global economy. It may be that a failed patentholder in a developed country can be more easily absorbed into the global economy but, depending on the size of the patentholder, this may not be the case.

Therefore, some limitations should be put placed on a lesser developed country firm and the modified compulsory license to satisfy those that become patentholders so that they will not be undermined by the modified compulsory license.<sup>76</sup> Assuming other economic factors do not come into play, a patentholder should always be able to enjoy a return on its investment in the research and development of a particular product or service, regardless of whether a lesser developed country firm chooses to attempt to market similar products and/or services which an independent claim of a patent reads thereon.<sup>77</sup> Stability and

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<sup>76</sup> Limitations are expected in compulsory license arrangements. see the Paris Convention, article 5, where limitations were presented for compulsory licenses.

<sup>77</sup> A claim of a patent “reads on” a product or service when all of the elements and limitations of an independent claim are found in the product or service. Infringement occurs when the product or service reads on independent claims of the patent. If the patent discloses the product, but the claims do not read on the product or service, there is no infringement.

growth in the global economy, especially with lesser developed countries and the economy associated with the Digital Age, cannot come at the price of some established patentholders.

**(f) Modified Compulsory License — Exclusive or Non-Exclusive**

*(i) In General*

Once a lesser developed country firm decides to enter into a particular market with a product or service based on a patented technology, it may produce the product or provide the service so long as there is no patent in any of the countries in which the lesser developed country firm is operating.

In the arena of information and communication technologies, the goods and services may quickly cross into countries where patents exist. Once this occurs, an infringement of the patent or patents occurs.

At this point, the lesser developed country firm may be an infringer of the patent(s) of the patentholder. The lesser developed country firm is an infringer if it is directly responsible for the exportation of the product or service into the country. Regardless of whether the lesser developed country firm is responsible or not, it will have to make the decision on whether to clear the way for the distribution of the goods in that country.

Should the lesser developed country firm make the decision to work for greater proliferation of its goods into that and potentially other countries, it will have to seek permission via a license from the patentholder or look to change the product to avoid infringement of the patents that include claims that read on the goods. Should the process determine that a design around<sup>78</sup> is not possible, it must look to the patentholder to negotiate a license arrangement therewith.<sup>79</sup>

*(ii) Standard Agreement*

There is always the possibility that the relationship between the lesser developed country firm and the patentholder can be resolved with the standard compulsory license arrangement should the legislation in the country to which the products are flowing provide for this. In this situation, the patentholder is obliged to enter into a license agreement with the lesser

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78 A “design around” is where an entity specifically designs a product or service that does not infringe the claims of a patent by focusing on what the patent does claim and purposefully designing the product around or outside the scope of coverage provided by the patent so the patent does not read on the product or service.

79 Article 31(b) of the TRIPs Agreement requires the potential licensee to seek a voluntary license prior to taking steps which will result in a compulsory license relationship.

developed country firm. There are no third-party entanglements because the compulsory license relationship is designed to work in the situation where there is no activity regarding the patent position of the patentholder in the that country. While it is understood that the compulsory license is designed to be implemented in the situation where there exists no activity in the country regarding the patent, the compulsory license will be non-exclusive allowing subsequent parties to enter the market.<sup>80</sup>

One of the requirements allowing a lesser developed country firm to force the compulsory license on the patentholder is inactivity on the part of the patentholder in that particular country.<sup>81</sup> But for the rights to the patent, the patentholder has no interest in the country or its economy. As stated above, this relationship is not, however, a compelling one for the lesser developed country firm. The lesser developed country firm will have only the right to operate within that country, which is difficult for the lesser developed country firm when the products and services relate to information and communication technologies and are so easily transportable across a country's boundaries.

The standard compulsory license relationship may work for a nascent lesser developed country firm. In fact, the relationship may satisfy such a lesser developed country firm for a period of time. After a period of time, the lesser developed country firm may require growth that requires it to consider exporting its licensed technology. It certainly will be in the best interest of the host country's economy that the lesser developed country firm export the products.<sup>82</sup>

As the country has more lesser developed country firms exporting products, its economy grows and the standard of living improves. The problem with this situation is that the lesser developed country firm may have no rights other than other countries outside its country where no patents have issued or compulsory licenses are available.<sup>83</sup> Hence, the lesser developed country firm may be prevented from exporting its product to significant markets due to the patent position held by the one or more patentholders in other countries.

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80 Paris Convention, article 5; TRIPs Agreement, article 31(d).

81 Paris Convention, article 5.

82 Maskus, "The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer", 9 *Duke J. Comp. & Int'l L.* 109, at p. 112 (1998).

83 One could argue that a lesser developed country firm could export product produced pursuant to a compulsory license into countries which have laws permitting parallel imports. It could be argued that the product is produced legitimately under authority of law and, hence, not infringing or counterfeit product.

*(iii) Other Agreement Options*

**In General** Once a lesser developed country firm determines that the standard compulsory license, if available, is not going to suit its needs due to the technology, or the requirements for growth and export, the lesser developed country firm needs to see what options it has in the region or in terms of global expansion. Should the lesser developed country firm require a license, and one is economically available, the lesser developed country firm need merely strike a bargain with the patentholder or patentholders, allowing it the expansion it needs to flourish in the digital economy.

The economy of the lesser developed country will benefit by the influx of funds as the lesser developed country firm competes in new markets. The lesser developed country, the region surrounding the lesser developed country, and the lesser developed country firm all become more stable and the global economy grows.

The scenario above is rather simplistic and rarely occurs. The reason it rarely occurs is mainly due to the fact that patentholders in the information and communication technologies space all tend to manufacture their inventions, which makes it difficult to enter into licensing relationships with the patentholder. Therefore, it is unrealistic to think a lesser developed country firm can grow in a global sense with a simple license avoiding the only ownership-related encumbrance. The patentholder is surely going to desire the monopoly in the countries to which it holds a patent.

After all, the patentholder bargained with the government and disclosed its new technology hold a monopoly in the countries of its desire. The patentholder is not going to appreciate the competition it must face, even when it receives a royalty from the lesser developed country firm, if its marketing strategy was based on a monopoly. If the modified compulsory license is going to be successful, lesser developed country rights will need to be phased into existence in such a manner as to allow patentholders to adjust the rationale for patents and the expected return on the investment for obtaining patents. This phase-in period can be temporal or geographic.

Phasing a patentholder into the concept of having to relinquish its monopoly in one or more countries may be a tall order, given that this particular technology sector is such a fast moving one. It would not benefit the lesser developed country firm at all to make it wait for a period of time so that the patentholder could adjust its operations and business model to take into account the fact that another will be in the same space with the same product.

**Geographic Phase-In** It is suggested that any phase-in of a lesser developed country firm into the marketplace currently occupied by a patentholder be

done geographically and not temporally. Obviously, the lesser developed country firm could enter markets with no legal ramifications where the patentholder does not have a patent position.

After those markets are saturated with as much product as the economy can handle, then the lesser developed country firm can “announce” its need to enter regions and countries where the patentholder currently holds a legal monopoly. In addition, this invasion into monopolistic regions can be done systematically over time if so required as long as both the patentholder and the lesser developed country firm are not unduly prejudiced.

There are at least two benefits for temporarily preventing the lesser developed country firm from selling its product globally when the patentholder is doing so well. In the first instance, it provides a buffer to the patentholder so that it can adjust to the *entrée* of the lesser developed country firm into its domain. In the economies of the twenty-first century, a patentholder will not be able to sustain competition for identical or similar product, if it is not planned for at the outset. Allowing the patentholder this time to adjust will maintain the patentholder in a condition as stable as it was prior to the emergence of the lesser developed country firm.

Additionally, the prohibition of a lesser-developed country firm from immediately attempting to reach the entire global economy at once will force it into a growth scheme that is gradual, if not systematic. The lesser developed country firm will learn through gradual growth how to deal with the issues that confront a firm as it grows through each stage of development. By providing a system wherein the growth is required to be systematic and gradual, the lesser developed country firm will have a greater chance at growing in stability as well as revenue.

Obviously, there are situations where more rapid growth of a lesser developed country firm may be required. If such a situation were to exist, additional considerations must be taken into account. However, first and foremost, the stability of the patentholder cannot be compromised for the benefit, growth, and stability of the lesser developed country firm. Looking well into the business and technical plans of the lesser developed country firm should reveal options that were not seen or contemplated which may facilitate a mutual benefit for all parties. A discussion below will address the notion of the review process and with whom that responsibility should lie.

Thus far, only strictly bilateral relationships have been examined, i.e., the relationship between the patentholder and the lesser developed country firm. There is a simplicity to this relationship because one firm can figuratively look the other firm in the eye and strike bargains, deals, and potentially mutually beneficial relationships that could exist long after the lesser developed country firm is no longer eligible to obtain benefits by operating under the umbrella of the modified compulsory license.

**Multilateral Relationships** The relationship becomes much more complex when more than the two firms are at the table. When this occurs, multiple competing interests may require more care to ensure all parties concerned have acceptable outcomes with the introduction of a lesser developed country firm to the table.

The modified compulsory license cannot be an exclusive arrangement when the patentholder has already entered into licensing relationships with third parties. On the one hand, the patentholder is in a better position to deal with a lesser developed country firm in this instance because it already can appreciate the role it takes on as a licensor. Having another party in the mix may be financially rewarding with the patentholder adding minimal infrastructure to deal with a license relationship. The real difficulty arises, however, when the prior licensee external to the modified compulsory license is an exclusive licensee.

The exclusive licensee may not have contemplated the fact that its exclusivity may be encroached upon by a lesser developed country firm that comes into the relationship after all economic decisions have been mapped out and negotiated between it and the patentholder. If a lesser developed country firm is allowed to permissively infringe in a country where an exclusive licensee has already established itself, will the patentholder be liable to the exclusive licensee for breach of contract? Legislation should be crafted to avoid this potential. It would be appropriate for the legislation to require the participation of the third-party exclusive licensee in the negotiation process of the modified compulsory license.

Because the exclusive licensee is in every way similar to ownership, the exclusive licensee should be treated as the patentholder. In most exclusive license arrangements, the exclusive licensee has every right the patentholder has, including the right to sue for infringement and to collect damages. Therefore, as with much of the discussion throughout this chapter, the exclusive licensee is considered to be in the same position as the patentholder.

In addition, the exclusive licensee is not helpless in this situation. Experienced representation on behalf of the exclusive licensee will successfully shift the burden that a lesser developed country firm may place on the economics of the production and sale of the invention from the exclusive licensee to the patentholder.

Or, what is more likely (and more reasonable) will be the negotiation of contract terms in the license agreement which shifts the burdens imposed by a lesser developed country firm to a shared burden borne by the patentholder and the exclusive licensee. In both instances, the exclusive license agreement should recognize the possibility that a lesser developed country firm

may seek rights to the licensed invention. In the former instance, if a royalty payment clause is based on a lump sum fee, it could include language such as:

As consideration for the license herein granted, exclusive licensee shall pay Patent holder a royalty of 1 million euros, payable in ten equal annual installments of 100,000 euros, less one-quarter of any remaining scheduled royalty payment should a lesser developed country firm enter into a modified compulsory license with the patent holder.

If, on the other hand, the royalty clause is based on a percentage of revenue or a “net selling price” per unit sales, the clause could include the following language:

As consideration for the license herein granted, licensee shall pay patent holder a royalty of 7 per cent of the net selling price of each product sold by licensee and its sub-licensee under this agreement which are covered by, or made with methods or apparatus covered by licensed patents, less 50 per cent of any royalty received by patent holder from lesser developed country firm for each product sold by lesser developed country firm, should a lesser developed country firm enter into a modified compulsory license with the patent holder.

Obviously, the licensee engaging in a license agreement with the above terms must have the ability to audit the patentholder so that it can guarantee that it is receiving the appropriate rebate for sales of the lesser developed country firm. The terms may vary based on how likely it will be that a lesser developed country firm will want to seek a modified compulsory license that would affect the business model of the licensee.

Because the relationship between the patentholder and a lesser developed country firm is one that will most likely be global in scope, it does not seem practical to rely on legislation to provide answers for the questions surrounding contractual obligations. While each country that issues patents should recognize the existence of the modified compulsory license and what it means to force a patentholder into a license obligation with a lesser developed country firm, it is not expected that each country would pass legislation specifically as to what patentholders are to do contractually.

The relationship is far too complex, and depends on variables such as type of product sold, the amount of similar products currently in the marketplace, revenue streams required by the patentholder and the lesser developed country firm to be successful, and the like. To rely on legislation to dictate how an economic relationship is to exist is to doom the modified compulsory license before it can do any appreciable good to lesser developed countries and the firms therefrom.

The creation and regulation of the modified compulsory license must have flexibility built in so that it can respond to the various relationships that might be confronted by this legislation.

**(g) Limitations on the Number of Lesser Developed Country Firms***(i) In General*

With all the lesser developed countries in the world, it is conceivable that multiple lesser developed country firms from one or more lesser developed countries may seek the opportunity to permissively infringe a patent or set of patents. If multiple lesser developed country firms seek the same rights, the patentholder would be required to organize several different license arrangements in multiple jurisdictions.

Coordinating these rights would take a great deal of resources. In addition, there might be a tendency for the patentholder to divide the rights to the lesser developed country firms based on geography. This could possibly run afoul of antitrust laws. Therefore, a limit as to how many lesser developed country firms can seek modified compulsory licenses should be contemplated. However, setting the limit to one may unnecessarily prevent an opportunity to another lesser developed country firm that may be able to grow without hindering the patentholder and the first lesser developed country firm that entered into a modified compulsory license.

In a vacuum, it is difficult to determine what a limit should be. Each specific technology sector may have different nuances to its market that multiple lesser developed country firms operating in a single country may not hinder the ability of any party to maximize their return while still allowing the patentholder to reach for its maximum return on its investment in the patented technology in as much of the global economy that it can based on its patent position. In other instances, even two lesser developed country firms seeking licenses from the patentholder may prove to be economically disastrous for the patentholder and/or the two lesser developed country firms.

Quite frankly, even a single lesser developed country firm having a modified compulsory license that extends across the globe may prove so unsettling for the patentholder that a qualification might be required before a patentholder can be forced into modified compulsory license. Such qualifications may relate to geography, output, language, and the like. In addition, to the extent that a patentholder can be required by law to enter into a modified compulsory license, there should exist requirements that protect the patentholder. Otherwise, additional instabilities will be forced on the patentholder which will do more damage to the patentholder and the global economy than would be benefits from allowing an unfettered modified compulsory license to be put into place.

*(ii) Loss of Confidence*

One form of instability that would inflict the global economy should a patentholder be denied a reasonable opportunity to make the best of the

research and development is the loss of confidence in the patent process. If patents are going to be weakened to the point that the patentholder can expect nothing more than a modest return for its massive monies invested in the research and development, then there will be such a huge discouraging effect on the global economy that technological advancement will be stifled. Stifling the technological advancement will stagnate whole economies, and this will adversely affect the global economy. Basically, eroding the patent protections too far will foster the instability that the modified compulsory license is trying to reduce and eliminate.

Therefore, while a hard fast rule as to how many, if any, lesser developed country firms are able to obtain modified compulsory licenses for a particular patent or set of patents, steps should be developed to measure or estimate the economic gain of a patentholder by maintaining its monopoly and how its economic position will be hindered or improved by the presence of one or more lesser developed country firms.<sup>84</sup>

It is not the purpose of this chapter to engage in a discussion of which business model or economic factors are best to measure to attempt to reach the best answer on a case-by-case basis, but to suggest that a thorough model will be required to maximize the growth and stability of the global economy while adversely affecting as many firms as possible.

#### **(h) Copyrights and Patents**

##### *(i) In General*

It is extremely important to understand that the modified compulsory license is a model for growing an economy that has been minimized by those in the world that have done so much better. To do so is to dismiss short-term gains for strides that produce benefits over the long term. In addition, it is commonly held that short-term “fixes” do little to help truly fix a problem. To paraphrase an old saying: if one gives a fish to a hungry person, that person will eat for the day; but teach that person to fish, and he will eat for a lifetime.

Taking this concept and transposing it into the problem for the Digital Divide, it must be the goal to foster an economic growth in a lesser developed country

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84 It should be noted that the economic position of the patentholder may be improved by the licensing of the patent to a lesser developed country firm through a modified compulsory license. In such a circumstance, the lesser developed country firm may be exposing markets that the patentholder cannot feasibly reach. The development of those markets may prove beneficial to the patentholder in more ways than just receiving a royalty for sales. That particular market may develop more rapidly than the lesser developed country firm can develop. If the market matures faster than the lesser developed country firm, the market may seek out the patentholder for an additional, more sophisticated product, or the next generation of the product should one be developed.

so that it will be able to sustain itself in future times, regardless of the direction in which its economy grows. A typical economic environment cycles through good times and bad, and through periods of expansion, contraction, recession, and depression. While it would be futile to think any firm were impervious to every economic situation, it would be the desire to grow the global economy and the stability of lesser developed countries as best as possible.

One possible way in which a lesser developed country firm can withstand economically difficult times is to diversify. While diversification is typically discussed in terms of product or service offerings, diversification for a lesser developed country firm should be discussed principally in terms of skills. The lesser developed country firm cannot merely sell a product or service and expect to grow. A modified compulsory license for a patent may provide an advantage in a particular marketplace, especially if it is the only modified compulsory license and it is exclusive, but it is never to be considered a guarantee for financial success. The only guarantee, if one exists, is the ability to understand what is needed in the marketplace, and having the skill to execute a business plan to efficiently provide the product or service to the marketplace in a timely manner.

As a partial solution to the above problem is to provide as few shortcuts to a lesser developed country firm. This will position the lesser developed country firm into working on solutions as a matter of survival. It should be remembered that it is not the intent of this chapter to provide as much of a “free ride” as possible. It is to introduce a lenience into the patent question when a lesser developed country firm is attempting to produce, sell, and potentially export a product or service so that the lesser developed country in which the firm is domiciled will be able to introduce a greater level of stability into its economy. It is not to allow a lesser developed country firm to pirate technology.

*(ii) Copyright Infringement*

One way to ensure a lesser developed country firm is working in a healthy manner is to prevent such shortcuts as copyright infringement. In information and communication technologies, copying a work could allow another party to have a complete product or service. This would be a disservice on many levels. First, it does not provide assurances to the patentholder, who also is a copyright holder that their product will be distinguished in any way from the offering of a lesser developed country firm. This is tantamount to the taking of a reputation. Trade marks may be infringed.

Additionally, the buying public may be confused as to the source or origin of a product based on its complete similarity in its look and feel. The instability introduced into the marketplace by this confusion does not offset the minimal short-term gains received by a lesser developed country firm should they be allowed to engage in this type of commercial activity.

A second reason for preventing the infringement of copyrights even though permissive infringement is granted through a modified compulsory license is because it is simply a short-term solution to an economic problem that needs long-term solutions. If a lesser developed country firm is permitted to infringe copyrights that are critical to the functioning of a patented product or service, the lesser developed country firm is doing little by way of development of a suitable alternative to the offering of the patentholder. The lesser developed country firm does not need to take into account building an infrastructure to develop new products and services from those offered by the patentholder.

If the lesser developed country firm does not build itself into an entity that can perform some level of research and/or development, it may become nothing more than a small-scale operation, depending on the product or service being sold. While these sized firms are valuable to any economy, it would be the goal of the issuance of a modified compulsory license to help develop an economy capable of more resiliency than that.

It would be the desire to empower a lesser developed country firm to grow to a size sufficient to develop its own technologies, employ several people, require peripheral services from others in its community, and even seek and obtain its own patent portfolio so that it can grow through passive income, i.e., royalty payments that the lesser developed country firm can infuse back into its own firm or into its community to enhance the position of the community and the lesser developed country. This is how an economy of a lesser developed country will stabilize and grow.

A third reason why it is important that copyright infringement should not be permitted when patent infringement is permitted through a modified compulsory license is that a capitalistic society looks to innovation for growth. If copyright infringement were permitted, there would be no market differentiation in products and services — no real choice for the consumer, but price. The lesser developed country firm will have an unfair advantage over the patentholder and will have no incentive to do anything more than to take as much market share away from the patentholder as possible while investing little into itself and its surrounding community.

Understanding that it is a desire to have lesser developed country firms to be able to sell products and services in their country of domicile and to possibly export to other countries, it also is a desire for the lesser developed country firm to develop into something more than a minimal firm that does little to the surrounding community in terms of stabilization and growth. By requiring the lesser developed country firm to develop its own products, albeit infringing of the patent(s), the lesser developed country firm will be required to engage the community in its business activities more than if it were merely an authorized pirate.

Finally, by permitting infringement of copyrights is to allow stagnation in product development. The mantra of a capitalistic society is growth through development. If the global economy is to grow through development, an opportunity is lost by having even the smallest lesser developed country firm copy something only because it can. If all lesser developed country firms that enter into modified compulsory licenses were able to merely copy a portion of a patented product or service, if not the whole product or service, there will be many lost opportunities for growth.

Economic gains would be shallow and easily disrupted. The consumers will not benefit because they will have no choice other than price. They will not be able to select more desirable features or stripped-down versions based on their specific needs and economic condition. The shallow economic gains by a lesser developed country will be especially true if more than one lesser developed country firm were able to enter into modified compulsory licenses for the same patent or set of patents.

The resulting economic growth would shift to the lesser developed country firm that has the smallest margin and the cheapest workforce. This may effectively create more instability than it creates stability because a situation can be envisaged where one lesser developed country firm invests in product production and distribution only to find a second lesser developed country firm with a cheaper work force or government subsidies that can undercut the price of the first lesser developed country firm.

The undercutting of price is the only differentiator between the two products because both would be virtual copies of the offering by the patentholder. The first lesser developed country firm would lose its opportunity to compete because it would not have the simple economic advantages the second lesser developed country firm had. If nothing was done to the product to differentiate it from the patentholder, it stands to reason that junior parties will have nothing to differentiate their products either.

In addition, in the end, supply is merely shifted from one lesser developed country firm to another, which may have a devastating effect on lesser developed country firms that lose their business opportunity. By preventing copyright infringement, roots in an economic growth in a lesser developed country firm and its lesser developed country will take hold and at the same time provide opportunity to the consuming class to purchase a variety of products without the consuming class being confused about who provided the product or service.

**(i) Economic Engagement by Patentholder**

*(i) In General*

Another limitation that should be considered when determining whether a lesser developed country firm is capable of entering into a modified

compulsory license is whether the patentholder has engaged the lesser developed country in some economic way. This is a similar hurdle that is faced by potential licensees in the traditional compulsory license arrangement.<sup>85</sup> The Digital Divide is the result of first world countries advancing technology and selling products and services to others in the first world countries. Whole generations of technology are non-existent to many of the lesser developed countries.

Because this phenomenon creates such difficulties for lesser developed country firms entering into the global economy a solution must be sought for the lesser developed country firms and their domicile countries in their attempts to reach for economic stability by tapping into these markets with products and services that may not only have a patent that prevents them from doing so, but multiple layers of patents on several successive stages of development.

If a patentholder has, however, participated in the economy of the lesser developed country, the solution of striving to bridge the Digital Divide has been achieved. Empowering a lesser developed country firm with the ability to force the patentholder into a modified compulsory license would pose greater harm to the growth and stabilization of the economy of the lesser developed country. Determining what level of participation is required by a patentholder to prevent lesser developed country firms from seeking licenses is one that requires some thought.

It may not be enough that the patentholder merely open a sales office in the lesser developed country. It may be that a sales office and extending the patent portfolio covering the particular product or service into that lesser developed country would be enough. Or, if there are more functions being performed on behalf of the patentholder by the offices in the lesser developed country, it would suffice the requirement to prevent modified compulsory licenses from being invoked.

*(ii) Ramifications of Borderless Modified Compulsory Licensing*

An interesting dilemma emerges from this issue. If the modified compulsory license is to be a pseudo-borderless concept, it will provide the lesser developed country firm the ability to export products, resulting in money entering the economy of the lesser developed country. If another lesser developed country firm from another country engages in the modified compulsory license process with the patentholder, it may be able to export to the country in which the patentholder has engaged on its own.

The end result is that firms from the lesser developed country in which the patentholder has entered are prevented from engaging in economic activity

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85 Paris Convention, article 5.

relating to the particular product other than what is provided by the patentholder, whereas another lesser developed country firm from another country is able to obtain licensee status and can enter the lesser developed country and minimize the economy of the lesser developed country by having imports grow while preventing the exportation of this type of product or service.

One possible solution may be to prevent lesser developed country firms from obtaining modified compulsory licenses should the patentholder be within its country. Another possible solution is to allow the lesser developed country firm the ability to enter into a modified compulsory license, but prevent the lesser developed country firm from entering any country in which the patentholder has an economic interest therein. Granted, these potential solutions seem to be one-dimensional, but there must be some consideration to the patentholder and the lesser developed country.

Anything more forgiving on the part of the non-domiciled lesser developed country firm may result in more erosion of patent rights for the patentholder. In addition, the multiple parties entering a lesser developed country with imports may further hinder the lesser developed country in its ability to better its economic position. In both situations, a clearing house of sorts could regulate where lesser developed country firms would be able to enter and where current activity by the patentholder or another lesser developed country firm would prohibit their entry therein.

It may be useful to have such information readily available to provide a lesser developed country firm the ability to see if a product or service has potential to reap the necessary gains to make the development of such more practical. If it were to be determined that the lesser developed country firm would be limited to a patchwork of countries, it may determine that distribution may be too difficult.

#### **(j) Reciprocity of Infringing Status**

An interesting scenario could occur during the life of a modified compulsory license. What would happen if a lesser developed country firm, while operating under a modified compulsory license, developed a companion feature for the product that enhanced the product? In addition, what if the lesser developed country firm sought patent protection for those technological advances?

It would be somewhat of a success if this were to occur. The lesser developed country firm has developed in such a manner that it is not only becoming an economic survivor, but an economic contributor. It is contributing to its economy and community. The lesser developed country firm is capable of generating such economic activity that it can seek protection for its new

technologies. This begins to elevate the lesser developed country firm to the level of first world firms. It can plan for years into the future and reap the benefits through its continued development or its collection of royalty payments.

If the lesser developed country firm is still a party to a modified compulsory license, considerations should be given to the patentholder because there are opportunities for the lesser developed country firm that would not have been available if the patentholder did not first develop the technology and invest in protecting that technology.

One consideration would be to give the patentholder the option to terminate the modified compulsory license. This is an extreme response and may be detrimental for the lesser developed country firm even though it is patenting its own technology. After all, the lesser developed country firm may still need rights in and to the underlying patented technology to continue selling its newly improved technology.

Another option would be to convert the modified compulsory license into a standard license agreement whereby the patentholder and the lesser developed country firm would enter into a relationship that is normally bargained for between parties when technology is involved. This would be an ideal situation because the lesser developed country firm has grown to the point where it can operate without the assistance of subsidies such as the modified compulsory licenses.

A third, less desirable, option in this situation is to force the lesser developed country firm and the patentholder into a mandatory cross-licensing relationship.<sup>86</sup> Here, the modified compulsory license would be maintained for its terms. However, as long as the modified compulsory license were to remain in effect, the lesser developed country firm would have to provide a license to the patentholder. This new license could mirror the terms of the modified compulsory license.

One difference in the newly required license would be that there would be no royalty payments contemplated. The new license would be similar to a grant back clause in a standard license providing a licensor the right to make and use all developments by the licensee during the development and use of the licensor's property. The lesser developed country firm can accept these terms because it will be receiving rights in the modified compulsory license that it would not have otherwise received.

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86 This concept resonates in the traditional compulsory license relationship where one invention cannot be practiced without the permission of a first patent. In this situation, if the patentholder of the first patent is required to enter into a compulsory license, it is entitled to a cross license for the technology claimed in the second patent. TRIPs Agreement, article 31(l)(ii).

**(k) Time Limits for Licensees of Modified Compulsory Licenses**

Throughout this discussion of the modified compulsory license, there has been an underlying current that this will only work if it is beneficial to all parties concerned. It was spoken of in terms of economics, growth, and stability. For a patentholder to acquiesce some of its rights on which it has spent resources to obtain can only be done when safeguards are in place. Without the safeguards, the patentholder will be put at risk resulting in no net gain, globally speaking. In fact, it might be a net loss. Governments will understand this.

Developed countries will surely prevent such legislation from being passed should the safeguards not be in place — and rightfully so.

All patent rights exist for a limited time.<sup>87</sup> Therefore, there is a window of opportunity for the patentholder to garner a return on its investment. In reality, this window of opportunity is even more reduced in the information and communication technologies because those technologies develop and advance so rapidly. One way in which a patentholder may have some protection in its property is to limit the time period in which the modified compulsory license may be in force.

The limited time period may be technology specific so that any lesser developed country firm starting the process will be able to have a reasonable time period to recoup its costs in starting up production or in laying network materials. If system infrastructure is required, the time period for the modified compulsory license would need to be greater than that for something like a software package.

Regardless of the technology, the modified compulsory license can only have a fractional life of the patent into which the modified compulsory license is entered. Depending on the technology that the patent relates to, the term of the modified compulsory license would be dictated by the remaining term of the patent. In some situations, the patentholder may entertain the notion of extending the term of the modified compulsory license to something greater than what would be considered acceptable under the terms of these types of licenses.

In these situations, the patentholder may believe it appropriate that an extension of the term may prove beneficial to the patentholder to help mature a market. If this were the case, it might be contemplated that the two parties would enter into a standard license agreement that would start on the termination of the modified compulsory license.

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<sup>87</sup> Again, referring to the traditional compulsory license arrangement, the time allotted for the permissive infringement is always limited. TRIPs Agreement, article 31(c).

It is hard to put a number on a ratio between the term of the patent with respect to the term of the modified compulsory license. All attempts to define this ratio seem capricious due to a lack of information as to the technology, the products, and the economic position of the parties involved. As a starting point in a discussion that would have to evolve based on data collected, it would seem appropriate to limit the term of the modified compulsory license to one third of that which remains on the patent.

The remaining patent term should be calculated based on the date on which an application for the modified compulsory license is made by the lesser developed country firm. This would provide an incentive for all parties concerned to resolve the modified compulsory license efficiently by counting the time that would be consumed by the bureaucratic procedures that must be followed to create the relationship between the two parties.

#### **(l) Export Limitations for Lesser Developed Country Firms**

Another means in which the patentholder can be protected so that it would continue to develop and disclose new technologies is to limit the export potential for a lesser developed country firm. If a patentholder has built a business plan around maximizing its penetration into specific countries, the presence of a lesser developed country firm with a modified compulsory license may disrupt the patentholder's business plan.

Therefore, trade offs must be accepted by both parties. Other than a mutual agreement to target different sectors of the same market through the providing of different offerings that may have different price points, there must be a limit as to how much a lesser developed country firm can penetrate a particular market. As stated above, there can always be an agreement allowing a lesser developed country firm more opportunity, but that can only come from the patentholder because the patentholder has no intention to develop a particular market and only stands to gain by greater sales on the part of the lesser developed country firm in that market.

There is no magic ratio between domestic sales and exports that would be suitable for an overall target. Too many variables would have to be set before one could create a model which would be helpful in any way to determine what the ratio would be. After making gross assumptions as to variables, the resulting model may have little reality left. However, a percentage could be set to somewhat put the brakes on a lesser developed country firm in its attempts to export heavily to the detriment of the patentholder.

Another reason why it is important to limit exports based on a ratio of domestic sales is to reduce the number of firms attempting to illegitimately take advantage of the opportunity a modified compulsory license may afford. It is conceivable that a firm not originally domiciled in a lesser

developed country may establish a meager presence in the lesser developed country to take advantage of an opportunity to sell products elsewhere.

By requiring exports from a particular country to be tied to the number of sales within the country will limit the number of those firms that will attempt to take advantage of these provisions; firms that have no reason to be in competition with the patentholder because it will make no real effort to grow and stabilize the economy of the lesser developed country.

This proposition of having a ratio of exports based on domestic sales is problematic, however, because it presupposes a domestic market that can sustain a lesser developed country firm as it grows. It may be the plan of a lesser developed country firm to maximize sales through exporting. In the situation of little domestic sales, domestic sales will never meet the requirements of the plan for exports. This situation cannot be adequately satisfied through the modified compulsory license as it is contemplated because it is designed to help a lesser developed country firm bring products and services to the lesser developed country and to help sustain the bridging of the digital divide through the aid of exporting a percentage of its product and/or services.

It is not designed to aid a lesser developed country firm from reaping benefits in a business model that may maximize the profits of the lesser developed country firm with little opportunity for increased products and services being offered to the people of the lesser developed country from which the lesser developed country firm is domiciled. Therefore, it is important to maintain some relationship between the domestic sales and exports to ensure the benefit of the modified compulsory license remains focused on the result of doing as much as possible to have as many in a lesser developed country to have an opportunity to obtain the tools necessary to understand, become comfortable, and use all things digital.

#### **6.06 Who Would Oversee Permissive Infringement by Lesser Developed Country Firms?**

A coordinating body will be needed to administer the modified compulsory license because the rights of all parties involved in these agreements will have to be determined and to a certain extent regulated. It is conceivable that many patentholders will not appreciate being forced into these types of relationships.

In addition, it is for this reason that the lesser developed country firm will need to go through a regulatory body to ensure it gets the rights it is entitled to based on the legislation that provides for the modified compulsory license. The coordinating body will be able to monitor the patents, the remaining period of enforceability, who has obtained a modified compulsory license

and whether there is an opportunity for additional lesser developed country firms to obtain rights under the same patent or patents. The coordinating body could also act as a clearing house should a particular product require rights under many patents that are not co-owned.

The most likely candidate to act as the coordinating body is the World Trade Organization (WTO). It has the infrastructure to bring parties together and resolve disputes. The World Intellectual Property Organization (WIPO) can be tapped to provide data on the patents and the patent activity in the various countries.

The WTO and the WIPO have cooperative agreements in place with respect to intellectual property.<sup>88</sup> Therefore, it would be appropriate to augment the responsibilities of these two organizations to develop a database of technologies, parties, royalties, lesser developed country firms, and licensing activity in selected lesser developed countries so that the modified compulsory license can be monitored to determine whether the results in the economies of the various lesser developed countries are improving in response, at least in part, by the ability of the members of the lesser developed countries to participate in the Digital Age by incorporating information and communication technologies into their products and services.

Additionally, counseling could be provided to certified lesser developed country firms to aid them in their endeavors on entering and growing in the global economy. Many issues present themselves when products and services are reaching a global market which will find many, if not all, lesser developed country firms ill-equipped to handle.

The coordinating body could help facilitate this type of counseling so that the lesser developed country firm does not experience unnecessarily fatal situations. Of course, a lesser developed country firm could seek help from any institution it sees fit, but issues relating specifically to the modified compulsory license could be fielded by the coordinating body.

Finally, the coordinating body could review a lesser developed country firm to determine whether continued activity under the modified compulsory license is warranted. Certainly, on the lesser developed country firm becoming a truly viable firm, its permissions to infringe patents should be limited or scaled back gradually until it no longer may obtain permissions based on its status as an entity from a lesser developed country. These actions would be detailed steps in the modified compulsory license, and the “early” termination of the modified compulsory license would follow the terms thereof.

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88 Agreement Between the World Intellectual Property Organization and the World Trade Organization, at [http://www.wto.org/english/tratop\\_e/trips\\_e/wtowip\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/wtowip_e.htm).

It should be noted that on the termination of the modified compulsory license, a lesser developed country firm has the opportunity to enter into a standard license agreement should the parties reach a mutual agreement as to the terms of the relationship. In addition, as always, a lesser developed country firm that loses its rights under a modified compulsory license will be able to continue to market their products and software in countries in which the patentholder has failed to obtain patent protection. Therefore, a lesser developed country firm is not without opportunities if it fails to create new products that will not infringe others' patents as it moves forward in its attempts to become a firm that does not need to rely on normal business dealings to be successful.

### **6.07 Conclusion**

In this attempt to bridge the Digital Divide and help lesser developed countries in their quest to enter the Digital Age, it is the hope that more lesser developed countries gain an appreciation for intellectual property rights. As more lesser developed country firms seek assistance via a modified compulsory license, they will only stand to gain by having intellectual property rights in their host lesser developed countries strengthened and enforced more vigorously.

In addition, this will prompt those lesser developed country firms to encourage their respective governments to provide new legislation where needed or enforce existing legislation to bring more certainty to those that stand to gain by investing resources in products and services that will better the economies of the lesser developed countries and eventually move those countries into better positions such that they will no longer be considered a member of the lesser developed countries.

Modifying patent laws to accommodate the modified compulsory license on a worldwide basis must be done with care. If done improperly or inconsistently, the probability that instability will grow instead of stability will increase, if done properly; however, the world has much opportunity to gain in stability, growth, and prosperity.

