Interoperability: Intellectual Property vs. Anti-Trust

Kevin W Reckamp, DePaul University

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Kevin Reckamp

Abstract

In the past few years, the European Union and the United States have taken differing paths in the name of consumer welfare. The European courts recently struck Microsoft with the largest fine ever for violating the EU competition laws, because Microsoft had refused to release proprietary codes to rival companies that would allow the rivals to make their products “interoperable” with Microsoft’s dominate system. The Microsoft decision is the latest in a line of cases that goes down a path of stripping intellectual property rights from an individual or company that becomes too successful.

The United States has been much more leery of stripping intellectual property rights. While the EU has taken aim at creating short-term consumer benefits, while the US has shown greater willingness to sacrifice short-term consumer benefits in the hopes of generating greater innovation which will bring about greater long-term benefits. This Article explores the difference between the European and US methods, through their cases, as well as empirical, anecdotal and theoretical evidences. This article ultimately concludes that the long term innovative benefits combined with the short term benefits of minimizing costs of error fall in favor of maintaining intellectual property rights as sacrosanct.

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1 J.D. Candidate, DePaul University College of Law, 2009.
INTRODUCTION
Interoperability is, put quite simply, the ability of a system to work with or use parts of another system.\(^2\) This seemingly simple concept has in fact proven problematic, sometimes with dire consequences. In 1904, a fire raged through Baltimore. Surrounding towns sent firefighting companies to help extinguish the blaze. However, their hose couplings would not fit onto the hydrants in Baltimore, rendering their hoses useless.\(^3\) Fire departments and towns always knew the hoses had to fit the hydrant to work together, but now they were faced with the problem of too many different types of hoses and hydrants that were not interoperable amongst one another.

A more current example of the problems that arise from interoperability is embodied in Apple Inc.’s iPod and iTunes. The iTunes program works very well with the iPod, as even the technologically unsophisticated are able to interconnect the devices. However, problems arise in attempting to use another company’s digital music player (“mp3 players”) with iTunes. Using FairPlay Digital Rights Management (DRM), Apple effectively limits the usage of music purchased from its iTunes Music Store, and prevents it from being used on mp3 players other than the iPod, or being distributed over the internet.\(^4\) While Apple proved that consumers are willing to pay for legally downloaded music, it has also become a target of criticism for the


\(^3\) Robert Noth, Chairman of the Board of Directors, American National Standards Institute, speech given at the Interoperability Conference in Warsaw, Poland on Feb. 6, 2008, available at: interoperabilityconference.org. (In his speech he notes there was a great loss of life, however only one person died, a firefighter that had caught pneumonia while fighting the fire.)

restrictions that they impose, which is compounded by its status as the dominant player in the market.\textsuperscript{5}

In the case of the fire hoses, faced with the potentially dire consequences, organizations gathered to eventually determine a standard that should ultimately be used for hoses and hydrants, so that this problem would not cost lives and property in the future. Apple, on the other hand, dominates the market with its iPod and iTunes, setting the standard, while refusing to allow others to join in. Absent the dire consequences that existed with the fire hoses, should Apple be required to make its products not only work amongst themselves, but with the products of Microsoft and SanDisk as well? This, after all, would help Microsoft and SanDisk compete with Apple and lower prices and prevent complacence, but at the same time, if known before the fact may have discouraged the creation of the iPod and iTunes in the first place, or even subsequent improvements, like the iPod Touch.

Presently, interoperability is a hot topic with regard to the crossover of intellectual property rights and antitrust. While on its face these sources of law would seem mortal opposites bound for an eternal struggle, both the Federal Trade Commission (\textquotedblright FTC\textquotedblright) and Department of Justice (\textquotedblright DOJ\textquotedblright) have stated that the intellectual property and antitrust laws \textquotedblleft share the common purpose of promoting innovation and enhancing consumer welfare.\textquotedblright\textsuperscript{6} This paper examines the benefits and pitfalls of forced interoperability, by asking the question: does forced interoperability aid or discourage innovation? Innovation is one of the most important factors in maintaining a strong economy, as famed economist Joseph Schumpeter put it: \textquotedblleft the fundamental


impulse that sets and keeps the capitalist engine in motion comes from the new consumers’
goods, the new methods of production or transportation, the new markets, the new forms of
industrial organization that capitalist enterprise creates.”

The United States and European Union have started down distinct paths with regard to
interoperability that is protected by intellectual property laws. The US has remained largely
steadfast that a refusal to license intellectual property does not create antitrust liability without
something more. While the EU recently took a different tack when it found Microsoft in
violation of its competition laws for refusing to license its certain of its proprietary information
to its competitors.

While the US and EU have gone in different directions both claim to be doing so in the
interest of consumer welfare. The US aim is to enhance consumer welfare by promoting
dynamic efficiency. The US holds sacrosanct its IP protections to ensure that innovators remain
secure in the knowledge that their innovations will be rewarded, and they can recoup the costs of
the innovation as well as the reward for the risk that was undertaken. The danger of the US track
lies in the indeterminate trade-off between the short- and long-run, as consumers suffer a loss in
static competition, in the hope of reaping the future benefit of dynamic efficiency. As an
empirical matter, it is not yet possible to establish that the prospect of enhanced long-run reward
through stronger IP protection necessarily outweighs the concomitant short-run harm.

The EU on the other hand has taken aim at fostering competition in the static sense. The
danger of this model is that it is potentially myopic. It emphasizes short run gains to the
consumer perhaps at the expense more radical innovation and long run gains offered by dynamic

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7 JOSEPH SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 83(2d ed. 1947).
8 Image Tech. Services v. Eastman Kodak Co., 125 F.3d 1195, 1219 (9th Cir. 1997).
efficiency. The problem with examining competition in its existing (static) structures is that the market is ever changing. Instead the investigator should look to the process by which those structures are created and destroyed.9

**DYNAMIC EFFICIENCY: THE WAVE OF THE FUTURE**
The US has sought not to intervene when dominate market players refuse to license valid intellectual property. The US thinking falls under the economic idea of dynamic efficiency, which stems from the Schumpeterian theory of competition as a “gale of creative destruction”10 Pursuant to this theory, markets are continually replaced by succeeding markets, and are characterized by competition for the market, rather than competition within the market. Markets in the “new economy” tend to fall towards monopoly with one dominate player. This may be attributed to the combination of law of marginal cost in production, coupled with network effects that increase the demand for a good as the number of goods consumed increases.11

In an information market marginal costs may approximate zero. Once a program is written, it cost essentially nothing to email that program to another user, or burn the music onto CDs, which costs only pennies. If the information is protected by intellectual property rights, competitors are at a marked disadvantage as licensing costs will naturally make it more costly for them to reproduce the same information, assuming they can get a license at all. However, the creator of the intellectual property may have had very high costs in its initial creation. For example it costs Apple almost nothing to make the iTunes program available for download on its website, but it likely cost Apple millions of dollars to actually develop the program.

9 See SCHUMPETER supra note 6.

10 Id.

11 Alan Devlin, Michael Jacobs, & Bruno Peixoto, *Success, Dominance and Interoperability* at 25 (Forthcoming)
Network effects also pull markets in the new economy towards monopoly. Network effects can either be direct, or indirect. Network effects are most easily explained with the example of a telephone network, one telephone is pointless, since there is no one to call. When a friend gets a telephone, the telephones then have some value, and the value increases further as yet more people obtain telephones. As the telephone becomes more valuable, it further elevates the consumer demand. As such demand increases, and enhanced economies of scale create higher efficiencies, network effects naturally pull markets to a “winner-take-all” outcome.

Static efficiency, which occurs when firms compete within the marketplace, has been the aim of antitrust rules for traditional markets. Competition forces them to streamline their methods, cut costs and drive the price of a product down towards the cost of unit production. A plethora of economists now believe that dynamic efficiency is an even greater driver of consumer welfare. Dynamic efficiency is the result of a whole new way of doing business that can take the place of the previous market.

Joseph Schumpeter famously described dynamic efficiency as:

> Competition from the new commodity, the new technology, the new source of supply, the new type of organization competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives.

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12 Direct network effects arise when value to the consumer of a good is increased by the increase in the users or the same good.

13 Indirect network effects arise when an increase in consumers leads to an increase in manufacturing of complementary products.

14 See Devlin supra note 10 at 25.


16 Id.

17 See SCHUMPETER supra note 6.
This can also be termed leapfrog competition as one market replaces the other. An excellent example of this has taken place in the music industry. It began with vinyl records, which eventually were replaced by tapes, and then by compact discs, which are now giving way to digital music (one format being mp3). In order for the Schumpeterian view to be at its most effective in creating dynamic efficiency and producing the maximum benefit to consumer welfare, it is absolutely imperative that antitrust vigorously protect innovation.  

Antitrust and competition law enforcers must take great care in fostering innovation as the same forces that bring about the advantages of static efficiency and encourage adoption of new business methods and cost cutting to lower marginal cost, can also frustrate radical innovation that embodies dynamic efficiency. If the drive toward marginal cost occurs too rapidly it becomes unpractical to invest in radical innovations, as investors will not be able to recoup the research and development costs, nor will they be rewarded for the risk they undertook in the endeavor.  

The European Commission and the Court of First Instance’s decisions against Microsoft, the latter of which is discussed more thoroughly later in this paper perhaps have the wrong impression of IP rights. Dynamic efficiency demonstrates that they should not be seen as protecting the owner from competition but rather they should be seen as encouraging firms to engage in long-term innovation competition that involves risk and long-term investment.

18 See Barnett supra note 14.
19 Id.
STATIC EFFICIENCY DOES NOT NECESSARILY CURTAIL DYNAMIC EFFICIENCY

Some have argued that, with respect to interoperability, the benefits of insisting on open interoperability far outweigh the negatives and view the negatives as largely theoretical.\(^\text{20}\)

Interoperability does indeed lead to innovation that allows systems to communicate more easily, and with fewer complications. It will also create a market place with more choices for the consumer. This more equal market place allows competitors to develop innovation on top of innovation in a “generative” system.\(^\text{21}\)

Individual firms will adopt their competitive strategy of interoperability (or non-interoperability) based largely on their current market position, technological capabilities and IP portfolio. Changes in these can affect a company’s strategy over time as well as their attitude.\(^\text{22}\)

Apple, for example, believed its iPod and iTunes system would be sufficiently compelling to consumers to create large enough network effects without interoperability. While Microsoft, (coming somewhat late to the game) initially sought to work with others to create the network effects desired to profit from the network.\(^\text{23}\)

During testimony of the US trial against Microsoft, one of the DOJ’s economic experts stated that,

If Microsoft were to simply rest on its laurels and not innovate, to simply shut down its R&D version and say, “here is Windows 98, we are never going to change it,” that should it do that, it would probably lose its monopoly power within a reasonable time period….There is not an economic theory that tells you that a monopolist will not innovate. The economic theory is really simple on this.


\(^\text{21}\) Id at 13 (citing Jonathan Zittrain Future of the Internet and How to Stop It. Forthcoming).

\(^\text{22}\) Id.

\(^\text{23}\) Id at 6.
It says the monopolist charges higher prices and makes a lot of money and has a big profit margin. There is nothing in economic theory that says if an industry is monopolized, the rate of technological change will either speed up or slow down. It may do either, but there is no particular bias here. And so, if you ask the question, would I expect a monopoly of the operating system to continue to innovate, the answer is, not only would I expect it to continue to innovate if it’s a profit-maximizing firm, but I wouldn’t expect the fact that it was a monopoly to particularly systematically affect the rate of innovation.24

This can be seen in Microsoft’s continued attempts to fend off surging Google, and when Microsoft felt they were falling behind they offered a staggering $40 billion to buy Google rival Yahoo!25

Another problem with dynamic efficiency is that the necessary innovation must not only entail superior technology, but it must also be sufficiently enticing to induce consumers to overcome the switching costs in adopting the new technology.26 Fortunately, this may be somewhat muted in the “new economy” given the primacy placed by consumers on quality over price.27 Moreover, as Richard Posner has observed, the fact that certain network markets may be predisposed to monopoly is in itself irrelevant to substantive antitrust law.28


26 See McGown supra note 23 at 790.

27 RICHARD POSNER, ANTITRUST LAW 298 (2d ed. 2001).

EUROPEAN COURTS CHIP AWAY AT INTELLECTUAL PROPERTY RIGHTS

In 1989, the European courts started themselves down a path that would ultimately lead to the largest fine in European history, and it all started with an entrepreneur who wanted to create a weekly program listing of the three British and Irish television stations. The TV listings were protected by copyright, and the stations only made the information available in each morning’s newspapers, and refused to license the information to Mr. Magill. The TV stations shielded themselves behind the notion of exclusivity provided by intellectual property. The Commission cracked that shield in forcing the stations to provide the information.\(^{29}\) The case ultimately reached the European Court of Justice (“ECJ”), which upheld the Commission’s decision stating: “[t]he [stations’] refusal to provide basic information by relying on national copyright provisions thus prevented the appearance of a new product…which the [stations] did not offer and for which there was potential consumer demand.”\(^{30}\) To this the court added that there was no justification for the refusal except to keep the secondary market, of weekly TV guides, to themselves and exclude all competition.\(^{31}\)

The ECJ’s holding seems to demonstrate that intellectual property rights in and of themselves do not constitute sufficient justification to exclude other from the information. Yet, it is exclusivity that is the very basis of intellectual property rights.\(^{32}\)

The EU courts could have limited this holding to the facts, as it presented a case of “weak” intellectual property indeed, few countries would have recognized any IP rights at all.\(^{33}\)

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\(^{29}\) Magill TV Guide/ITP, BBC & RTC, 1989 O.J. (L 78) 43.

\(^{30}\) RTE v. Commission 1995 E.C.R. 743 paragraph 54

\(^{31}\) Id at paragraph 55-56

\(^{32}\) See Devlin supra note 10 at 17.
However, in *NDC Health/IMS Health* the Commission continued its assault on the shield of intellectual property. In this case, IMS was the world’s leader in pharmaceutical sales and prescription data; so much so, that its IMS brick structure format for processing data had become the de facto standard, according the Commission. IMS had refused to grant a license to its competitor.\(^34\) The ECJ confirmed the Commission’s decision and maintained under *Magill* that intellectual property was not in itself sufficient justification for a refusal to license. Where the IP holder is in a dominant position, its refusal to license will amount to abuse if it prevents the emergence of a new product and if the refusal is capable of eliminating all competition in the market.\(^35\)

In early 2004, the European courts took a further dramatic step in competition law. The European Commission determined that Microsoft had abused its dominate position by refusing to license information to its competitors.\(^36\) This decision was ultimately upheld on appeal by the Court of First Instance (“CFI”).\(^37\) Microsoft had refused to license its intellectual property protected interface codes between Microsoft PC operating system and its work group server operating system. Sun Microsystems, a competitor of Microsoft in the server market, sought licensing from Microsoft for specifications that would allow Microsoft PCs, Microsoft servers and Sun’s Solaris server to interoperate, but was rebuffed by Microsoft. The Commission determined that Microsoft had conducted a leveraging strategy in order to extend its dominance.

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\(^33\) Id.

\(^34\) *IMS Health v. NDC Health*, 2004 E.C.R. I-5039

\(^35\) Id.

\(^36\) Microsoft commission decision ¶ 1064


in the PC market to the server market. The Commission was also concerned that the potential domination of the server market would increase the barriers of entry to any potential competitor. The Commission’s second fear was that Microsoft would continue to leverage into other markets, particularly the high end server market.38

The Commission adopted an approach focus on the primacy of static efficiency innovation stating:

The possible negative impact of an order to supply on Microsoft’s incentives to innovate is outweighed by its positive impact on the level of innovation of the whole industry (including Microsoft). As such the need to protect Microsoft’s incentives to innovate cannot constitute object justification that would offset the exceptional circumstances indentified.39

The Commission’s decision will almost certainly succeed in providing more choice for consumers, and with it lower prices. One must ask, however: how long will it last? As technology markets have shown, things will inevitably change, as someone (or some company) will come up with an even better way of doing business, perhaps rendering contemporary standards completely obsolete, and they will go the way of the Sony Walkman. The Commission itself acknowledges these “shifts of paradigm” and accuses Microsoft of taking actions to stave off such shifts.40 But in the Schumpeterian view, the actions of the Commission will at best delay these shifts, as companies will now divert resources from dynamic to static innovation. As a result, servers and PCs may operate faster, more securely, more accurately, and cheaper, which will all be necessary because the future replacement of the server will now take longer to arrive. If an inventor/innovator knows that a successful creation will mean he will be forced to license

38 See Microsoft Commission Decision supra note 45 at ¶ 1065.
39 See Microsoft Commission Decision supra note 45 at ¶ 783.
40 See Microsoft Commission Decision supra note 45 at ¶ 770.
out his intellectual property right before he recoups his investment, due to the compulsory licensing requirements laid out by the Commission decision the inventor will look elsewhere to invest his money and efforts.

U.S. COURTS HOLD INTELLECTUAL PROPERTY RIGHTS SACROSANCT
The courts in the United States courts have fought to maintain the core principle, as expressed by the DOJ and the Federal Trade Commission in their Antitrust Guidelines for Licensing of Intellectual Property, that “market power does not impose on the intellectual property owner an obligation to license the use of that property to others.”

Amongst the cases that have dealt in the same way with the intersection of intellectual property rights and antitrust, two principles have emerged: “(1) neither patent nor copyright holders are immune from antitrust liability, and (2) patent and copyright holders may refuse to sell or license protected work”

In Image Technical Services v. Kodak, independent service organizations (“ISOs”), brought Sherman Act violation claims before the court. The ISOs alleged that Kodak used its monopoly in the supply of photocopier and micrographic parts to leverage its way into a second monopoly in the market of servicing that equipment. As the use of ISOs expanded, Kodak eventually halted sales of its parts to the ISOs and entered into multi-year service contracts with its customers. One of the justifications that Kodak set forth was that it was attempting to protect its patented parts. However, Kodak not only refused to sell just the patented parts but made a blanket refusal to sell any parts whatsoever, which included protected parts as well as unprotected parts. Given the blanket refusal, it is possible to rebut the intellectual property

41 See Antitrust Guidelines supra note 5.

42 Image Technical Services v. Kodak 12 F3d 1195, 1215 (9th Cir. 1997).
justification on the grounds of pretext because a blanket refusal is evidence of more than just an aim to protect IP rights.\textsuperscript{43} The Ninth Circuit seemed to emphasize the importance of the distinction between a blanket refusal that includes unprotected parts, as opposed to a refusal to sell limited to only protected parts, thus maintaining that refusal to sell/license intellectual property alone is not in violation of the Sherman Act.

In 2000, the Federal Circuit rebuked the Ninth Circuit’s rebuttable presumption and established a much clearer rule in \textit{In re Independent Service Organization Antitrust Litigation}. The Federal Circuit stated that a patent holder may enforce the statutory right to exclude, free from liability, unless there had been some indication of illegal tying, fraud in the Patent and Trademark Office, or sham litigation.\textsuperscript{44} The Federal Circuit followed the First Circuit’s line of reasoning in \textit{Data General Corp. v. Gruman Systems Support Corp.} in stating:

\begin{quote}
Congress’ empirical assumption that the right to “to exclude others from using their works creates a system of incentives that promotes consumer welfare in the long term by encouraging investment in the creation of desirable artistic and functional works of expression…We cannot require antitrust defendants to prove and reprove the merits of this legislative assumption in every case where a refusal to license a copyrighted work comes under attack.”\textsuperscript{45}
\end{quote}

While the Ninth Circuit followed this line of reasoning, its inclusion of pretext as a rebuttal fallaciously allowed the jury to “second guess the subjective motivation of the copyright holder in asserting its rights to exclude….”\textsuperscript{46} Although the Federal Circuit rebuked the Ninth Circuit for allowing subjective intent to creep into consideration, one thing remains

\textsuperscript{43} Id at 1220.

\textsuperscript{44} \textit{In re Independent Service Organizations Antitrust Litigation} 203 F.3d 1322, 1327

\textsuperscript{45} Id at 1328-1329 (citing \textit{Data General Corp v. Grumman Systems Support Corp.}).

\textsuperscript{46} Id at 1329.
true for both cases. An IP holder can unilaterally refuse to license its IP protected without violating the Sherman Act.47

**ERR ON THE SIDE OF ALLOWING THE MARKET TO WORK**

Antitrust law protects competition, not competitors.48 Courts should resist the temptation to protect a particular firm(s). Courts must use an identifiable purpose in their decisions to amount to a workable rule of law. Lawyers, clients, and brethren judges must not only be able to understand the reasoning behind the decision but, perhaps more importantly, they must be able to replicate it. This is important to the efficiency of law, as setting down rules that market participants can see clearly where they stand under the law and take actions to avoid crossing into potential litigation.49

A government’s actions in providing competitors open access to a successful firm’s intellectual property can have another significant limiting effect on dynamic innovation. If the government demonstrates a willingness to regulate a dominant player and impose compulsory licensing, then rivals will divert money away from R&D and shift it over to legal funds. In doing so, those competitors may attempt to free-ride on the innovation of others, rather than engage in innovation themselves.50 While litigation to determine a player’s dominance is not cheap it pales in comparison to the amounts that may need to be spent in R&D which may never achieve any gains.

47 See Devlin *supra* note 10 at 10-11.


49 See McGowan *supra* note 23 at 788.

50 See Barnett *supra* note 14 at 865.
There is also a significant risk of a Type I error,\textsuperscript{51} which is much harder for the market to mete out than a Type II error.\textsuperscript{52} When anticompetitive monopolistic practices are allowed to continue, the practice will eventually be eliminated because the higher prices will attract competition.\textsuperscript{53} On other hand, the market is unable compensate for mistakenly condemning a procompetitive behavior, since companies are barred from that behavior until the judgment is reversed, and “[t]here is no automatic way to expunge mistaken decisions of the Supreme Court.”\textsuperscript{54}

We have already seen the market at work with regard to Apple’s iPod. When it was initially introduced it only worked with the Mac computer, this limited iPod’s viability for many potential users and market demanded that it be made to interoperate with PCs too. Apple also preferred to use its firewire rather than the standard USB plugs for connection. Since most PCs did not have firewire ports the market demanded this be changed as well and Apple made the iPod available with USB connectors.\textsuperscript{55} Apple has continued to be lead by market demands and has reached agreements with the major record labels to begin selling DRM-free song on iTunes.\textsuperscript{56} This is just a recent example, but it shows the effect and potential speed with which the market can force changes. Dominant players may not be forced to change with such speed as

\begin{footnotesize}
\begin{enumerate}
\item Type I error is the rejection of a proper null hypothesis.
\item Type II error is the acceptance of an improper null hypothesis.
\item Frank Easterbrook, \textit{The Limits of Antitrust} 63 Tex. L. Rev. 115 (1984).
\item Id.
\item See Barnet supra note 14 at 862.
\item See supra note 4.
\end{enumerate}
\end{footnotesize}
Apple was, as their initial changes were intended to gain market share, but they none the less will be forced to change or risk being overtaken.

Legal systems must aim to minimize the total costs of decisions, by seeking rules which minimize costs of (1) anticompetitive practices that are mistakenly allowed to continue, (2) procompetitive practices that are mistakenly condemned and (3) the system itself.  Following the Federal Circuit, per se legal rule for unilateral denial of licensing of intellectual property rights, absent some indication of illegal tying, fraud in the Patent and Trademark Office (“PTO”), or sham litigation, is the surest way of accomplishing all three of these goals. The US and European court cases agree that most examples of the category of refusal to license are competitive. Since most examples are competitive, rules should be stacked so they do not ensnare these competitive practices just to ensure that the few anticompetitive practices are caught. A per se legal rule will allow all of the procompetitive practices to continue, and allow the market to eliminate the few anticompetitive practices that slip through, though this article would only deem it anticompetitive if there is illegal tying, fraud in the PTO, or sham litigation, which would then be caught by the per se rule. The per se rule would also minimize costs of the system itself. It would allow lawyers, clients, regulators and judges to clearly and quickly be able to determine any liability or potential anticompetitive actions which need to be stopped.

57 See Easterbrook supra note 33 at 16.

58 Id at 15.
RELATIONSHIP OF INTELLECTUAL PROPERTY RIGHTS TO ECONOMIC GROWTH
While both static and dynamic efficiency have their advantages and disadvantages, how can we determine which theory is closer to reality? There is little in the way of empirical evidence regarding innovation and the strength of intellectual property rights. Economic growth, however, is a useful proxy in examining the correlation of IP rights and innovation, as many theories of economic growth, like Schumpeter’s wave of creative destruction, depend heavily on the importance of research and development and innovation to create economic growth.

Empirical Evidence

One empirical study by Falvey, Foster and Greenway demonstrated an interesting relationship between economic growth and strong IP rights that is partially determined by the development level of the country. The study which examines data gathered for 80 countries and covers four five-year periods (1975-79, 1980-1984, 1985-89, and 1990-1994), found a positively significant correlation between strong IP rights and economic growth for both high and low income countries, but no such correlation for middle income countries.59

For low income countries the positive correlation is likely not to spur domestic innovation within the country, but rather creates a safer situation for others to import products and encourages foreign direct investment. This does not harm similar domestic efforts, largely because these countries do not have them.60

60 Id.
Though there is no significant positive relationship for middle income countries regarding economic growth and strong IP rights, at the same time there is also no significant negative relationship. The authors of the study suggest that the lack of correlation is due to two opposing forces. Similar to low income countries, strong IP rights likely encourage importation and foreign direct investment which leads to economic growth. This is held back by the negative effect of slowing the diffusion of knowledge, and discouragement of domestic imitation. Middle income countries may not be in a position to significantly innovate, but they are in a position to copy inventions and create a domestic competitor, which the strong IP rights would prevent them from doing.61

Finally, as would be expected, the higher income countries with stronger IP rights grew more rapidly. For such countries the stronger IP rights encourage further innovation by allowing inventors to profit from their technological contributions. High income countries provide the world with virtually all of its R&D efforts.62 These findings show that countries should never be so eager to weaken IP rights, especially in the US and Europe, as high income countries, whose innovations also aid low and middle income countries.

Anecdotal Evidence

In one study, the authors found no empirical evidence, “but anecdotal evidence is plentiful” in linking interoperability to innovation.63 This study included cases studies of

61 Id.
62 Id.
63 See Grasser supra note 19 at 8.
Digital Rights Management ("DRM") protected music distribution, Digital Identity Systems, and Web services: Mashups. The study places great emphasis on “generative” innovation, defining generativity as “a technology’s overall capacity to produce unprompted change driven by large, varied, and uncoordinated audiences.”64 In this case, interoperability is a prerequisite for creating platforms upon which others can create further innovation. The authors, however, acknowledge that the higher levels of interoperability required for generative innovation would negatively affect other types of innovation, notably dynamic innovation.65

In the case of DRM-protected music distribution the authors conclude that increased interoperability would foster innovation. The increased interoperability would incentivize new market entrants with innovative products and services and force competitors to improve market position through product differentiation. The authors take note that although innovation is fostered by interoperability, this may not be the maximum innovation. However, the authors, state that: “we have not found concrete indicators in our case studies that would strongly support the argument that lower levels of interoperability lead to leapfrog innovation.”66 The authors conclude that the benefits of interoperability far outweigh its potential drawbacks, and that the drawbacks are largely theoretical and uncertain, while the benefits are obvious.67

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65 Id at 13.
66 Id at 15.
67 Id at 18.
Experience from European Pharmaceuticals

The European pharmaceutical industry has experienced a steady decline in both R&D investment as well as new unique medicine output. The Europeans’ noble effort to reduce healthcare costs has hindered the amount of investment that investors are willing to make. Prior to 1992, the Europe had led in total R&D expenditure for pharmaceuticals. For the next ten years, European investment grew 8% annually, but was outpaced by the 11% annual increase in the United States.68 The effect of the decline on investment can clearly be seen in the output of the industry. From 1993 to 1997, the European pharmaceutical industry was able to introduce 81 new unique drugs, while the US pharmaceutical industry managed to only introduce 48 new drugs. In the next five year period (1998-2002), Europe and the US flip-flopped with Europe only introducing 44 new drugs, while the US churned out 85 new drugs.69

The pharmaceutical industry can be seen as a forerunner of what is to come in European technology investment if the EC continues to weaken intellectual property rights. In order to lower costs of drugs, European governments enacted numerous laws limiting the prices they could be sold at, either through some sort of “reference pricing” or other complicated calculations to determine the price.70 The consumers certainly benefited from the reduced price at which the drugs were available, but not without significant cost. Not only did the pipeline of drugs get dialed down, but the decrease in

68 Pedro Lichtinger, “Road To Recovery” Wall Street Journal Europe, June 19, 2008, available at (http://online.wsj.com/article/SB121382908522086449.html?mod=opinion_main_commentaries). (Pedro Lichtinger was president of Pfizer Europe at the time he wrote the article.)

69 Id.

70 Id.
investment in Europe also meant that investment was shifted elsewhere, bringing with it
good jobs, and some of the sciences brightest minds.71

This seems to provide the clearest example of the dangers of focusing on the short
term consumer welfare. Likewise in the information technology sector a similar
undertaking may occur in light of the Microsoft case. Rather than invest their monies in
regions with weakened IP rights, they will funnel the money to regions where they will
be allowed to reap not just the investment costs, but their reward for undertaking the risk
as well. If the EC continues, it will likely result in a continuing “brain drain” as the best
and brightest follow the investment money to regions with greater IP rights protection,
like the US.

**PROBLEM OF DETERMINING “REASONABLE PRICES” FOR COMPULSORY LICENSING**
A significant problem arises when a court decides to force access in order to
promote interoperability. What price should the holder of the intellectual property rights
be allowed to charge? In the European Commission’s Microsoft decision, it allowed
Microsoft to charge reasonable and non-discriminatory prices.72 In February 2008, the
EC subsequently fined Microsoft $1.3 billion for charging “unreasonable” prices.73
Microsoft initially charged 3.87% of a licensee’s revenue for patented information and
2.98% for confidential information. The EC eventually forced Microsoft to a

71 Id.

72 See Microsoft Commission Decision *supra* note 45 at ¶ 1007

73 See Commission Press Release, Antitrust: Commission imposes €899 million penalty on Microsoft for non-
compliance with March 2004 Decision. (Feb. 27, 2008), available at:
http://ec.europa.eu/competition/antitrust/cases/microsoft/index.html
“reasonable” rate of 0.4% for a worldwide patent license or a flat fee of €10,000 for a license to giving access to interoperability information. 74

This stark difference in belief as to what is a reasonable price begs the question: how should a reasonable price be determined? Surely, competitors are likely to demand that the “competitive” price be the access price. In the new economy, the competitive price being marginal cost poses the problem of approximating zero. This would preclude the intellectual property holder from recovering its fixed costs. 75

The IP holder would seek to set price at the opposite side of the spectrum with a price at the “monopoly” price. 76 Yet, even the monopolist is not entirely sure where this level is and must try different prices and adjust the price based on consumer demand. 77 Likewise, a monopolist being forced to license will charge a price above that which it has determined the license is better kept to itself, and make it impractical for a competitor to pay the fee and still be able to compete. 78

Since the ends of the spectrum seem to be unacceptable choices, “reasonable” prices must lie somewhere in the middle. Regulators must allow for a supracompetitive price to be charged, but this can potentially be a fairly wide range, as evidenced by the difference in the price Microsoft sought to charge, and the price that the EC ultimately

74 Id.

75 See Devlin supra note 10 at 57 (citing Carlton & Perloff and Scotchmer)

76 Id at 58 (citing Carlton & Perloff).

77 Id.

78 Id.
demanded. A true reasonable price would be the price at which both parties would agree to upon negotiation, if they were so inclined. If the IP holder had believed licensing was in its best interest, it would have sought to do so. Court mandated access either means the IP holder was not so inclined to negotiate at all, or the parties could not agree on a “reasonable” price. The US appears open to allowing supracompetitive prices for IP licensing, as Xerox was allowed to do in the mid-1990s in settling its lawsuit filed by independent service operators (“ISOs”). In Europe the concept of “reasonable,” as demonstrated through its enormous fine of Microsoft, lies nearer to the competitive price end of the continuum.

In any attempt for a regulator (perhaps court appointed) to determine what price should the IP holder be allowed to charge for access, it should consider any previous negotiations, as well as any licensing agreements it may have reached with other parties. Even if such information is available, this remains a problematic endeavor for a regulator, since sides could not agree on the negotiations, or were unwilling to negotiate at all. This is not to say that courts should be willing to gouge into IP rights, merely to demonstrate the problems associated with the next step if they choose do so, as the EC has done.

CONCLUSION
At the outset, this article put forth the question: does forced interoperability aid or discourage innovation? The short answer seems to be that it does both. Forced

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80 See Devlin supra note 10 at 56.

81 Id.
interoperability will no doubt encourage innovations aimed at increasing static efficiency through competition. These innovations aim to streamline methods, cut costs and drive the price of a product toward the cost of unit production.

On the other hand, forced interoperability will, theoretically, discourage more radical innovations aimed at increasing dynamic efficiency. These innovations result in a whole new way of doing business, or even an entirely new market, the way the music industry has been affected by the shift from tapes and CDs to digital music available online.

Perhaps a better question to ask is: should courts impinge on intellectual property rights to promote static efficiency or hold them sacrosanct in hopes of achieving dynamic efficiency? We have seen the US and EU take largely different tracks on this issue, both in the name of consumer welfare. Although the US has some variance, it has remained steadfast that a unilateral refusal to license, without something more, is not a violation of the Sherman Act.

The EU, however, has been descending on a slippery slope of impinging on IP rights, starting with *Magill* and extending to its finding in *Microsoft* that a refusal to license by a dominant player is sufficient to amount to abuse. The EC determined that the negative impacts on the incentives to radically innovate were outweighed by the positive impact on innovations aimed at static efficiency. This may be a short sighted view of the market, which will likely change into a new and better market, the way Walkmans have given way to iPods. The ultimate impact of this decision may very well be to extend the length of time the server market survives and delay the creation a new and better option.
The empirical evidence suggests that strong IP rights will aid an economy’s rate of growth through encouragement of innovation. The anecdotal evidence is a little less clear but even those in favor of open systems recognize the potential harm to radical innovation. Some case studies suggest that innovation through “generative” systems is more practical, relying on all users of open systems to create innovation on top of innovation for new and better ways of operating. These studies tend to see the discouragement effects of openness on radical innovation as largely theoretical.

The pharmaceutical industry is likely the best anecdotal evidence as to the dangers of impinging on IP rights. As the EU sought to aid consumers and lower drug healthcare costs, investments into European pharmaceuticals shifted to other countries, like the US, where return on investment would more likely reach its fuller potential. The EC decision against Microsoft risks this outcome for the European technology sector.

In turn the decision to force compulsory access licensing also creates the problem of the price that IP holders should be allowed to charge. IP holders have a different notion of “reasonable” than do competitors, neither of which could be considered reasonable. This leaves regulators to determine a price somewhere in between. In forcing Microsoft to accept a mere fraction of what they had offered as reasonable, the EC has fallen toward the competitive price end of the spectrum, and ultimately depriving Microsoft of massive amounts of value which it had placed on intellectual property.

Allowing for a per se legal rule for refusals to license, absent evidence of illegal tying, fraud in the PTO or sham litigation, is the only sensible course of action going forward. Not only is this rule simple, straight forward and replicable, it minimizes total costs associated with errors in judgment, as well as the total costs of the system itself.
The evidence in this article may not be overwhelming, but it tends to validate the theoretical ideas of Schumpeter and the aim of dynamic efficiency. The ultimate conclusion is that society is more enhanced by the continued flow of investment into radical innovations and must tolerate excessive monopoly prices, rather than give in to the lure of lower prices which would threaten future advances. The ultimate balance between static and dynamic efficiency as determined by intellectual property rights is one that is best left for Congress and other countries legislatures to determine, but the protections, once granted, should not be impinged without some showing of illegal tying, fraud in the obtaining the IP right, or sham litigation.