

# COPYRIGHT UNDER SIEGE: AN ECONOMIC ANALYSIS OF THE ESSENTIAL FACILITIES DOCTRINE AND THE COMPULSORY LICENSING OF COPYRIGHTED WORKS

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## Abstract

This paper examines the application of the essential facilities doctrine (“EFD”) to copyrighted works. It attempts to address three contemporary issues. First, it offers reasons why copyright has become subject to competition law regulation under the essential facilities doctrine. Second, it makes a brief survey of seminal cases where courts in the EU and US have had the unenviable task of grappling with the esoteric economics of copyright and network effects, as well as the impact of sector specific regulation. It argues that while the EFD may be necessary, certain assumptions need to be reconsidered. The EFD should not be an arbiter of unmeritorious copyright, but rather intervene because such forms of copyright cause market inefficiencies. Separately, those seeking access should be from a downstream market and must offer more than a mere clone of the copyrighted work. Care must also be taken not to adopt a *per se* approach toward “superdominant” copyright owners and “locked-in” markets. Third, this paper argues that “reasonableness” is a workable standard for compulsory licensing, and highlights the role of economics in working towards a clear and principled standard of access to copyrighted works under the essential facilities doctrine.

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<sup>φ</sup> This paper is both a lightweight companion and addendum to my earlier work, *Binding Prometheus: Regulating Refusals to Access under the Singapore Competition Act 2004*. The author wishes to thank Dr. Stanley Lai, Dr. Robert Ian McEwin, Professor Frances Hanks, and Mr. Sun Haochen for their encouragement and invaluable comments. All errors remain my own. I welcome comments, questions or criticisms, and may be contacted at [lawdaryl@gmail.com](mailto:lawdaryl@gmail.com).

## I. INTRODUCTION

It is increasingly difficult to think of the economics of copyright without also thinking about the impact of competition law on it. As copyright expands into the realm of functional works, the capacity of copyright owners to create economic bottlenecks through refusing access increases, particularly where the copyright protects an arbitrarily chosen interface that has become an industrial standard or where the owner is the sole source of raw data. Tentative pronouncements by the highest courts in the United States (“US”) and European Union (“EU”) suggest that the complexity at the interface between copyright and competition law (“**the Interface**”) is far from being resolved.<sup>1</sup> The key issues are whether a copyright owner should be required to give access to their copyright content in these situations, how far that duty extends, and whether compulsory licensing through competition law provides an acceptable solution.<sup>2</sup>

Economics has a central role to play in competition law. It supplies the rules necessary for the market to function effectively and thus provides the standards for most economic policy decisions.<sup>3</sup> Competition policy then guides competition enforcement officials (“CEOs”) and courts to translate economic models into reality.<sup>4</sup> Competition regimes across market economies today generally agree that consumer welfare is the ultimate goal of competition policy, and a free market is the most efficient way to meet consumer demand for goods and services.<sup>5</sup> The goal of

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<sup>1</sup> See for example F L Fine, ‘European Community Compulsory Licensing Policy: Heresy versus Common Sense’, (2004) 792 PLI/Pat 444 (Describing “a stormy debate on both sides of the Atlantic as to whether compulsory licensing, on antitrust grounds, is an appropriate means of breaking monopolies that owe their existence, to a large extent, to the ownership of valuable intellectual property.”); see also A Heimler and A Nicita, ‘Intellectual property right-based monopolies and ex-post competition: Some Reflections on the Essential Facilities Doctrine’, (2000) Roma, Villa Mondragone 26-28 (Noting the growing number of cases involving IPRs and competition law.)

<sup>2</sup> **It should be clarified here that the discussion on compulsory licensing relates primarily to the remedy granted through the essential facilities doctrine under competition law, rather than under copyright law.**

<sup>3</sup> Many of the key concepts of competition law are concept derived not from law, but from economics. For example, the concepts of “competition”, “monopoly”, “oligopoly” and “barriers to entry”. See S Bishop and M Walker, *Economics of EC Competition Law: Concepts, Application and Measurement*, (London: Sweet & Maxwell, 1999), at p.5. (Arguing that “An understanding of the type of economic arguments which can be put forward and the type of empirical evidence that can be used to support such arguments is becoming increasingly important to lawyers, economists and officials practising in this area.”)

<sup>4</sup> Indeed, there is a clear trend towards economic analysis in both the case law of the EU and US. In the US, economists and lawyers have worked together on antitrust law for nearly a hundred years, from the time the Sherman Act of 1890. In the 1950s, the economic specialty of industrial organisation emerged in the midst of intense antitrust enforcement. This meant that economic expertise was frequently required to determine the size of markets or potential consequences of mergers. For the EU, economic analysis in competition law only emerged from the 1990s, when a group of UK lawyers and economists generated discussion to apply competition rules in a modern economic way. This caught momentum and by late 1990s, the Commission started to apply economic analysis as well. However, unlike US antitrust policy, competition policy in the EU is not based solely on economic considerations, but embedded in other policy objectives such as Community integration. This makes it difficult to articulate the mainstream economic theory the EC’s uses. Nonetheless, it is clear that the Commission attempts to promote effective competition. The yardsticks of these are the maximisation of consumer welfare and achieving the optimal allocation of resources. For a comprehensive history of the evolution of competition economics in the US and EU, see D Hildebrand, *The Role of Economic Analysis in the EC Competition Rules* (2<sup>nd</sup> Edition) (The Hague: Kluwer Law International, 2002) and S Bishop and M Walker, *ibid.* Singapore has benefited from these experiences. From its inception in 2005, the Competition Commission in Singapore has had nearly one-to-one ratio of economists to legal counsel. See <http://www.sgdi.gov.sg> (Last visited June 2006)

<sup>5</sup> A free market is necessary to fully mobilise entrepreneurial forces in a sequence of moves directed toward maximising profit through economically efficient behaviour. Adam Smith presumed that self interest drives individual competitors’ to persuade customers on grounds of quality and value to make a particular purchase. A Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (New York: The Modern Library, 1937) See also S. Willmsky, ‘The Concept of Competition’ (1997) 1 ECLR 54. (“It is believed that only selection, expressed

a free market in turn translates into a desire to reduce barriers to exit and entry in order to achieve socially optimal pricing. The greater the costs associated with entry and exit, the less contestable the market is, and by inference the less competitive the market will be.<sup>6</sup>

Generally, there is no inherent conflict between copyright and competition law. Copyright promotes competition in the long run by rewarding innovative efforts. While copyright confers a limited legal monopoly over expression in creative works, it is rarely coextensive with economic dominance, much less monopoly. It follows that copyright may create a legal monopoly, but does not necessarily imply a dominant position, or abuse of that dominance.<sup>7</sup> To the extent that copyright create entry barriers, these are usually a measure of market control that is the *quid pro quo* of state conferred exclusive rights.<sup>8</sup> It is therefore generally pro-competitive to allow copyright owners to freely exploit assets they create, including the ability choice whether to deal with other commercial undertakings, if at all. Exclusive property rights provide incentives for innovation.<sup>9</sup>

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through consumer choice, would lead to an equilibrium of demand and supply and hence further the interests of society as a whole. Adam Smith's 'invisible hand' ... would lead to the best overall solution.”)

<sup>6</sup> In contestable markets such as these, barriers to entry are relatively limited. Incumbent firms are constrained from raising price above the marginal cost level by fear of a 'hit and run' entry that captures the incumbent's market share and profits. A market that fully meets these ideal market conditions qualifies as 'perfectly contestable. The free market is regarded as the most efficient way to meet the demand from consumers for goods and services. It is also generally believed to encourage companies to increase productivity, expand, innovate and create jobs. Competition is an instrumentality to ensure that entrepreneurial forces are mobilized and the full potential of the efficiency of firms is exploited. It therefore calls for a maximum of free market and for reliance on competition where possible. Competition, in this sense, is an unlimited sequence of moves and responses in which profits can be seen as a motive for initiation and imitation of economic efforts. The time competition needs to erode these profits indicates the degree of effectiveness of competition. It determines whether competition itself performs its function in a sufficient manner and exerts sufficient competitive pressure which cannot be controlled by incumbents. It is obvious that this view of competition is a dynamic one and is regarded as the guiding principle of a forward looking economic policy designed to achieve growth and employment. W J Baumol, *et al*, *Contestable Markets and the Theory of Industry Structure* (New York: Harcourt Brace Jovanovich, 1982), at p.350 (Noting that "Monopolists and oligopolists who populate such markets are sheep in wolves' clothing, for under this arrangement potential rivals can be as effective as actual competitors in forcing pro-social behaviour upon incumbents, whether or not such behaviour is attractive to them.")

<sup>7</sup> These are the core ingredients to infringement of competition law in the EU under Article 82 of the EC Treaty and Section 47 of the Singapore Competition Act (2005 Rev Edition). The US uses the standard of "monopolisation" resulting in antitrust injury under Section 2 of the Sherman Act. However, it is submitted that while *jurisdictions* may differ geographically, *jurisprudence* shares common denominators and remains useful points of cross-fertilisation.

<sup>8</sup> As the US Supreme Court explained "compelling ... firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival or both to invest in ... economically beneficial facilities." *Verizon Communications IC v. Trinko LLP* [2004] 124 S Ct 872, 157 L Ed 2d 823.

<sup>9</sup> Copyright aims to address the potential market failure associated with the production of public goods. Without adequate protection, suboptimal investment is made in innovation by entrepreneurs who might otherwise remain vulnerable to unbridled free riding on the fruits of their creative investment. At the same time, if the incentive copyright provides to stimulate the first-comer's investments deter the emergence of new and innovative work, we would have merely traded one kind of market failure for another. Therefore, the goal of any well-oiled copyright system capable of stimulating constant innovation must strike a dynamic balance between avoiding parasitic duplication on one hand, while preventing rent-seeking copyright owners from stifling innovation on the other. Copyright laws give their owners a temporary, exclusive right to their original works; this remedies certain public good problems, and allows creators to obtain an economic return on their investment. For a discussion on this, see K E Maskus and J H Reichmann, 'The Globalization of Private Knowledge Goods and the Privatisation of Global Public Goods', in K Maskus and J H Reichmann (eds), *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime*, (Cambridge: Cambridge University Press, 2005)

However in practice, great tensions have arisen between copyright and competition law.<sup>10</sup> Businesses have increasingly understood that copyright can be used as a strategic weapon to bolster their market power. Firms therefore try to make it tough for their competitors. Incumbents mould copyright over functional works to create entry barriers. Owners may also use copyright to reinforce pre-existing barriers such as those caused by network effects in tipped markets, thereby raising the switching costs for consumers to products offered by competitors. Thus the growing importance of rights to information in a world of competitive platforms has made copyright of central importance to competition policy in several industrial sectors.<sup>11</sup> Two industries that have seen claimed the highest number of skirmishes are software and database industries.<sup>12 13</sup> It is important to note, however, that while these industries may exist quite separately, they may also overlap.<sup>14</sup> At the Interface, exclusionary practices are not motivated by firms wanting to exploit consumers by controlling prices or qualities, but rather in controlling the direction of investment in research and diffusion of innovation in the industry.<sup>15</sup>

In response to this anticompetitive threat, competition law has devised the essential facilities doctrine (“EFD”) to mandate access through requiring compulsory licensing.<sup>16</sup> The focus of an EFD inquiry is not on the *conduct* of the firm, but rather on the *structural* conditions

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<sup>10</sup> An additional explanation for this conflict stems from competition law's focus on attaining competitive market conditions not particular outcomes, as opposed to intellectual property law's preoccupation with ensuring the optimum amount of innovation. Competition law assumes that deterring monopolies will lead to the attainment of economic efficiency, while intellectual property law assumes that efficiency will be achieved only if CEOs correctly estimate the proper mix of incentive and access to copyright as needed to provide the optimal amount of innovation. See D McGowan, *Regulating Competition in the Information Age: Computer Software as an Essential Facility Under the Sherman Act*, 18 *Hastings Comm. & Ent. L.J.* (1996) 771, 773-74; Thomas F. Cotter, *Intellectual Property and the Essential Facilities Doctrine*, (1999) 44 *Antitrust Bull.* 211, pp.227-28.

<sup>11</sup> See F Lévêque and H Selanski, ‘Introduction’, in F Lévêque (ed.) *Antitrust, Patents and Copyright: EU and US Perspectives* (Cheltenham: Edward Elgar, 2005) (Noting that “The debate over the scope of patent rights exemplified in the EU and FTC reports ... has moved to questions about the appropriate scope of copyright in the face of concerns about competition and innovation.”)

<sup>12</sup> Databases may broadly be understood to include a collection of independent works or data arranged in a methodical or systematic way that may be individually accessed via both electronic and non-electronic means, and cover vastly diverse subject matter from telephone directories to television programs. See E Derclaye, ‘What is a Database?’ (2002) Vol. 5 No.6 *Journal of World Intellectual Property* 981. See further discussion in Parts II and III.

<sup>13</sup> Gilbert and Shapiro have observed that EFD claims will likely occur in areas where copyright has expanded into functional work. See R J Gilbert and C Shapiro, ‘An Economic Analysis of Unilateral Refusals to License Intellectual Property’ (1996) *Proc. Natl Acad. Sci. USA* Vol 93 12749.

<sup>14</sup> For example in the software necessary for the manufacture or operation of databases, or if the database is computer-generated.

<sup>15</sup> J I Klein, Assistant Attorney General, Antitrust Division of the US Department of Justice before the Antitrust, Business Rights and Competition Subcommittee, Committee on the Judiciary, US Senate, 22 March 2000, at p.6. Available at [www.usdoj.gov/atr/public/testimony/4381.pdf](http://www.usdoj.gov/atr/public/testimony/4381.pdf) (Noting that “the more important innovation becomes to society, the more important it is to preserve economic incentives to innovate.”) See also R Kramer, ‘Antitrust Consideration in International Defense Mergers, Chief, Litigation II Section, Antitrust Division, United States Department of Justice (4 May 1999), at p.3 (“As important as price competition is to us, a second and possibly even greater concern is maintaining competition for innovation.”)

<sup>16</sup> The EFD grew out of cases where a vertically integrated owner had exclusive control over some facility, and used that control to gain advantage over competitors in an adjacent or downstream market. It was first discussed in the US in *United State v. Terminal Railroad Association* [1924] 266 U.S. 17, in which a set of railroads formed a joint venture owning a key bridge across the Mississippi Rivier and excluded non-member competitors. In the EC, the EFD was first discussed in *Sealink/B&I Holyhead* [1992] 5 CMLR 255, where a port owner was prohibited from imposing competitive constraints on downstream customers. The doctrine has also surfaced in cases involving such “bottleneck” inputs as sports stadiums, warehouse spaces and newspaper distribution systems. However, recent cases have focused on technological knowledge for access to networks. These include physical networks like electricity or telecommunications, where there are clear elements of natural monopoly and the presence of explicit regulation, as well as “virtual” networks.

of the relevant market, typically bottleneck situations, where the copyright owner controls a ‘facility’ which is indispensable to its competitors and refuses to grant access to it.<sup>17</sup> The EFD eschews copyright’s rationale for protecting market power, and imposes a duty to deal fairly with rivals, or continue a relationship once it has begun.<sup>18</sup> Access must therefore be giving on reasonable and non-discriminatory terms. Further, the EFD is most likely to condemn copyright in precisely those circumstances in which intervention is least defensible: the more an invention is unique, valuable, and difficult to duplicate, the greater is the obligation to share it.<sup>19</sup>

However, the last few decades have witnessed the development of diverse approaches to this evolving paradigm.<sup>20</sup> US cases have thus far limited the EFD to foreclosure of competition in the downstream market or where the refusal helped the owner to acquire or maintain a monopoly in that market.<sup>21</sup> Recent case law has suggested it has been limited even further.<sup>22</sup> The ‘exceptional circumstances’ test developed by European courts has a lower threshold,<sup>23</sup> since the prohibition is directed toward a broader concept of ‘abuse’.<sup>24</sup> These divisions reflect contrary views about the complexity and robustness of markets as well as the ability of courts and CEOs to correct market failure.<sup>25</sup> While commentators have pointed to the goal of market integration as

<sup>17</sup> P E Areeda *et al*, *Antitrust Law: An Analysis of Antitrust Principles and their Application*, Vol IIA, (Boston: Little Brown, 1995) at pp.650-51.

<sup>18</sup> *Oscar Bronner GmbH & Co. KG v Mediaprint Zeitungs- und Zeitschriftenverlag GmbH & Co. KG, Mediaprint Zeitungsvertriebsgesellschaft mbH & Co. KG and Mediaprint Anzeigengesellschaft mbH & Co. KG* at 122. (“[I]n certain cases a dominant undertaking must not merely refrain from anti-competitive action but must actively promote competition by allowing potential competitors access to the facilities which it has developed.”) See also *United States v. Terminal R.R. Assn.*, [1912] 224 US 383.

<sup>19</sup> A B Lipsky, Jr. and J G Sidak, ‘Essential Facilities’, (1999) 51 Stan. L. Rev. 1187 at 1219.

<sup>20</sup> Various economic schools of thought, such as the Harvard School’s “structure-performance-conduct” model, the *laissez faire* Chicago School and the post-Chicago School’s game-theoretic approach, have helped to redefine the study of competition law and expose the important economic implications of copyright exploitation. R A Posner, *Antitrust Law* (Cambridge: Harvard University Press, 2001).

<sup>21</sup> *Otter Tail* and *MCI* both had such a characteristic. Hovenkamp *et al* argue that so does *Aspen* on the grounds that primary market access “could open the door to all sorts of claims in which competition is not really at stake.”, see H Hovenkamp, *Federal Antitrust Policy: The Law of Competition and Its Practice*, 2<sup>nd</sup> edn, (St. Paul: West Publishing Co., 1999), at §13.3.

<sup>22</sup> *Trinko*, *supra*, n.8. See discussion in III.(A).

<sup>23</sup> The test stemmed from *Volvo*’s recognition of liability through “arbitrary refusals” to supply spare parts based on design rights as abuse under Article 82. As the Court explained, this included “arbitrary refusal to supply replacement parts to independent repairers, the fixing of prices for spare parts at an unfair level or a decision no longer to produce spare parts for a particular model even though many cars of that model are still in circulation.” *Volvo v. Veng (UK) Ltd* Case 238/87 [1988] ECR 6211. at pp.135-36.

<sup>24</sup> This conceivably includes using the essential facilities to prevent rivals entering or remaining in the primary market. J S Venit and J J Kallaugher, ‘Essential Facilities: A Comparative Approach’, (1994) Fordham Corp. L. Inst. 315, at p.333. (Stating that: “In the United States the essential facility doctrine focuses on effects in markets where a firm holds market power subject to control under Section 2. The Article 86 [now Article 82] cases, in contrast, appear to apply the concept in a monopoly leveraging context without extensive consideration of the extent to which the dominant firms holds a dominant position in the downstream market.”)

<sup>25</sup> US jurisprudence has been largely influenced by the Chicago School. This School assume that competition in markets can be reasonably good even with high market concentrations because of self-regulating ability of the market to select the most efficient firms. It follows that the state should intervene only minimally to provide a legal framework. Copyright reduces transaction costs and addresses the free rider problem, and should be permitted. It has had a huge influence on US antitrust jurisprudence. For an explanation of this view of “Economic Darwinism”, see G J Stigler, *The Organisation of Industry*, (Chicago: University of Chicago Press, 1968) and R H Bork, *The Antitrust Paradox: A Policy at War with Itself* (New York: Basic Books, 1978). EU regulators seem split between two schools. The first is the Harvard School, which argues that concentrated markets decrease the intensity of competition and leads to inefficient distribution and use of available resources. The lack of competition provides few incentives to increase the overall performance through cost reduction and innovation. As a result, a dominant firm may directly harm other market participants, and indirectly harm consumer welfare. All entry barriers should therefore be kept to a minimum. The second strand of EU thought seems to lie with the post-Chicago approach. This

a basis for a fundamental difference between the application of EU competition law and competition law as practised in other jurisdictions, such as US and Singapore, this need not affect the assessment. Economic reasoning provides the necessary tools to assess the effectiveness of competition in all industries regardless of the jurisdiction.<sup>26</sup>

Issues at the Interface are not merely of microeconomic interest. Industries where technological innovation is a central dimension of performance increasingly affect the global economy.<sup>27</sup> Multi-national companies want rules that reflect home rules as closely as possible.<sup>28</sup> At the same time, while minimum standards of copyright protection are necessary to attract foreign investment from copyright conglomerates,<sup>29</sup> a over-zealous application of competition policy risks alienating owners who may take their business, as well as accompanying jobs and investments elsewhere.<sup>30</sup>

As the globe tilts toward Asia, the Asian perspective will be come increasingly significant. China, long under US pressure to strengthen its copyright laws has finally made steps toward do so.<sup>31</sup> At about the same time, this awakening economic leviathan has also taken

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School believes that the Chicago school places too much confidence in market discipline. There is potential for market imperfections and barriers to entry, such as those created by the exercise of copyright, to inhibit the competitive process and thus greater need for government action. Further, it sees Chicago models are too abstract and simplistic to address market realities. They believe that economic theory should be used to highlight uncertainties on a given set of facts rather than economic filters and efficiency based defences. In network markets, dominant firms can obtain decisive advantages that enable to exclude superior standard due to a high degree of path dependency. This ties users to a particular standard not because it is superior, but because compatibility is essential and others use the established technology as well. See R H Lande, 'Beyond Chicago: Will Activist Antitrust Arise Again?', (1994) 39 Antitrust Bulletin 1, at pp. 631-44 and C Shapiro, 'Exclusivity in Network Industries' (1999) 7 Geo. Mason L.Rev 673.

<sup>26</sup> S Bishop and M Walker, *supra*, n.3.

<sup>27</sup> In the US, government reports have credited productivity growth driven by technological change with stimulating the major economic expansions of the 1960s, 1980s and 1990s. *The Economic Report of the President*, (Washington: United States Government Printing Office, 2000) at p.35. Although accurate estimates of the percentage of economic output or growth that can be attributed to innovation are elusive, policy makers and economists strongly agree that innovation is a critical component of long run economic health. *The Economic Report of the President*, (Washington: United States Government Printing Office, 1999) at p.35. (Reporting how high technology sectors of the economy increased its combined share of manufacturing output by more than 50%.) For a EU perspective, see F Lévêque and H Selanski, 'Introduction', in F Lévêque (ed.) *supra* n11 (Noting that "The debate over the scope of patent rights exemplified in the EU and FTC reports ... has moved to questions about the appropriate scope of copyright in the face of concerns about competition and innovation.")

<sup>28</sup> See for example, Microsoft, 'Internally harmonized treatment important to be focal point for technology business in Asia; need to know that it can rely on same compliance measures as elsewhere. Available at <http://www.ccs.gov.sg/PublicConsultation/Archives/index.html> (Last visited June 2006)

<sup>29</sup> J H Reichmann, 'From Free Riders to Fair Followers: Global Competition under the TRIPS Agreement', (1997) 29 NYUJ Int.'l L. and Policy.

<sup>30</sup> A recent reminder of this came from a South Korean competition case against Microsoft. The latter threatened to withdraw its Windows operating system from the Republic when its national competition authority alluded that it might impose an order requiring Microsoft to remove code or redesign Windows uniquely for the Korean market. For reasons know best to itself, Microsoft later decided otherwise. See <http://news.bbc.co.uk/1/hi/business/4505698.stm> See also V Korah, *Intellectual Property Rights and the EC Competition Rules* (Oxford: Hart Publishing, 2006), at p.172. ("I remain concerned that the EC position is in many ways stricter than in the US. This may encourage firms to perform their R&D and produce the results outside the Common Market, exporting products to the Common Market. This avoids the wider scope of Article 82 and the special responsibility of dominant firms to give access to essential facilities.")

<sup>31</sup> E Low, US may bring China to WTO over piracy, *The Straits Times* (6 June 2006). As China and other emerging economies move toward an innovation based economy, it would increasingly be in its own interest to bolster copyright protection (Quoting Mr. Myron Brilliant, vice-president for East Asia at the US Chamber of Commerce as saying that "IPR violations could pose a greater threat to China's own economic development and security than they do to foreign rights holders.") Reuters, *Financial Times*, 9 June 2006. (Reporting that China has drafter

concrete steps toward enacting its own anti-monopoly laws.<sup>32</sup> It follows that stakeholders in China will eventually have contend with similar tensions in determining access to functional works, and will likely take a reference from major trading partners who already have a mature competition regime. And as economies like China rises, the experiences from “culture-bridging countries” such as Singapore will become increasingly useful reference points.<sup>33</sup>

In Singapore, copyright is big business. In 2003, the IP Academy undertook the first study in Asia using the World Intellectual Property Office (“**WIPO**”) framework to measure the economic magnitude of copyright industries. It found that these industries generated an output of SGD 30.5 billion, amounting to 5.7% of GDP in 2001. These industries also provided employment for 118,600 people or 5.8% of workforce.<sup>34</sup> Like the US and EU, Singapore has opted for a general competition regime rather than legislative exemption of intellectual property rights (“**IPRs**”), leaving the balance in the regulation of innovation to be struck within competition law itself.<sup>35</sup>

Strikingly, unlike the US and EU, Singapore has explicitly recognised the EFD. At the same time, the official Guideline issued by the Competition Commission of Singapore (“**CCS**”) suggests that a refusal to supply copyright content will constitute an anticompetitive infringement in “limited circumstances”, when the refusal relates to an essential facility, “with the effect of (likely) substantial harm to competition”. One relevant factor is the presence of network effects.<sup>36</sup> The extent of the actual impact of the EFD on the exploitation of copyright in Singapore is difficult to assess at this stage because of the nascence of the regulatory framework. However it has taken a deliberate step to emphasise the fundamental compatibility between the objectives of IPRs and competition law and provided broad caveats.<sup>37</sup> One may therefore speculate that copyright are less likely to be interfered with in Singapore than in the EU.<sup>38</sup>

“hundreds of copyright, patent and trade mark laws to meet its commitments to join the World Trade Organisation.”). At least part of the impetus for this may be threatened sanctions by the US against China for rampant copyright violations that allegedly cost US companies some US\$250 billion a year.

<sup>32</sup> Tschang C C, ‘China Approves Draft of Anti-monopoly Law’, 8 June 2006 (Reporting that as China’s law will “focus primarily on outlawing anticompetitive agreements, and the abuse of dominant market position as well as assessing mergers and acquisitions.”)

<sup>33</sup> Singapore has worked closely with China in establishing special economic zones such as those in Shuzhou and Liaoning, and has provided not insignificant advice on its economic policies in these areas. See <http://www.pathfinder.com/asiaweek/96/0621/biz1.html> and

<http://www.moe.gov.sg/speeches/2004/sp20040420.htm> (Last visited June 2006)

<sup>34</sup> Chow K B and Leo K M, ‘Economic Contribution of Copyright-Based Industries in Singapore’, (June 2005) Available at <http://www.serci.org/documents.html> (Last visited June 2006).

<sup>35</sup> As Japan and Australia have. See S D Anderman, Issues Raised at the IP/Competition Interface: Lessons from Singapore, (2004) Recent Developments in the Enforcement of Asian IP Law, a paper presented at the Twelfth Annual Conference on International IP Law and Policy, Fordham University School of Law, New York 2004. (Observing that judges in these countries have found ways to skirt around the legislative immunity anyway.)

<sup>36</sup> Competition Commission of Singapore Guideline on the Section 47 Prohibition 2005, para. 3.12.

<sup>37</sup> First, refusing to license may be objectively justifiable if “the dominant undertaking has behaved in a proportionate way in defending its legitimate commercial interest.” (Para. 4.6, Competition Commission of Singapore Guideline on the Treatment of Intellectual Property Rights “**CCS Guideline**”) Second, the copyright will be “essential” only if there are “no potential substitutes (through duplication or otherwise) thus making the facility “indispensable to the exercise of the activity in question”. (Para. CCS Guideline 4.7) Third, “care must be taken not to undermine the incentives for undertakings to make future investments and innovations. (Para. 4.7 and 4.8, CCS Guideline.)

<sup>38</sup> For example, CCS Guideline, *supra* n. 37, at para.21 (“Both intellectual property and competition laws share the same basic objective of promoting economic efficiency and innovation”) and para. 2.5. (The possession of an IPR does not necessarily create market in itself... “”)

These developments have provided impetus to advance the debate by presenting issues and raising questions for future inquiry. If along the way, the discussion also produces useful guidelines clarifying the circumstances where access to copyright content would be essential, then so much the better. Despite this paper's attempted economic tenor, some legal discussion is necessary to provide the proper context to understanding challenges courts have had in balancing competing interests often advanced and rebutted in the relatively esoteric language of economics. Part II offers reasons why copyright has become subject to competition law regulation under the essential facilities doctrine. Part III makes a brief survey of seminal cases where courts in the EU and US have had the unenviable task of grappling with the esoteric economics of copyright, network effects and sector specific regulation. It observes that certain market conditions requires a more nuanced approach when regulating access in order to properly take into account dynamic efficiencies. Third, this paper argues that "reasonableness" is a workable standard for compulsory licensing, and highlights the role of economics in working towards a clear and principled standard of access to copyrighted works under the essential facilities doctrine. Part IV summaries the discussion and concludes with some key observations.

## II. WHY IS COPYRIGHT "ESSENTIAL"?

Owners enjoy copyright on a utilitarian basis. On one hand lies the owner's right to appropriate its investment. On the other lies the right of the public to access the work whether for direct consumption or to use its contents to create complementary or competing works. However in recent years, it appears that the growing importance of copyright in national trade balances and concerns over piracy have spurred developed countries to push for stronger multilateral and bilateral commitment for stronger, longer, and broader control over access, use, and dissemination of their content. It is suggested that this may have contributed to courts being more willing to entertain plaintiffs who seeking access on the basis that copyright protects an "essential facility".

### A. *Expansion into Functional Works*

The last century has seen increased political and legal activities designed to strengthen the various types of protection for ideas. This may be due to two related reasons. First, a country offering stronger rights will encourage content owners, assured of financial returns, to exploit its content there compared to another with a high likelihood of free riders.<sup>39</sup> While the strengthening of protection has sometimes been explained in terms of legislative convenience, it also suggests that there is at least an implicit agenda between owners and lawmakers to maximise returns from copyright protection.<sup>40</sup> The US has been the primary mover of the trend toward stronger rights, and it has acted at two levels. The first level is multilateral.

Concerns over huge losses sustained by software and database industries in the US led it to bring IPRs into its international trade negotiations.<sup>41</sup> Given the ease of copying, copyright

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<sup>39</sup> J Gurnsey, *Copyright Theft* (Hampshire: AslibGower, 1995) at p.155.

<sup>40</sup> L Bently and B Sherman, *Intellectual Property Law* (Oxford: Oxford University Press, 2001) at p. 42.

<sup>41</sup> The fact that existing conventions such as the Paris and Berne did not have effective sanctions and penalties no doubt was an important consideration. See S Ricketson, 'New Wine into Old Bottle: Technological Change and Intellectual Property Rights', (1992) *Prometheus* Vol. 10 No. 1, at 68. As Jessica Litman explains: "The content industries, copyright owners argued, were among the few in which the United States had a favourable balance of trade. Instead of focusing on American citizens who engaged in unlicensed uses of copyrighted works (many of them legal under US law), they drew Congress's attention to people and businesses in other countries who engaged in similar uses. The United States should make it a top priority, they argued, to beef up domestic copyright law at home, and thus ensure that people in other countries paid for any use of copyrighted works abroad." J Litman, *Digital Copyright*, (New York: Prometheus Books, 2001), at pp.80-1.

gives software and database owners exclusive rights over reproduction not found in traditional works, subject to extremely narrow exceptions.<sup>42</sup> This was justified on the basis that the author's reproduction right was fundamental, and the utilitarian basis of copyright law required that the extent of that right not be diminished to ensure that future incentives to create are not stifled.<sup>43</sup> In recent years, copyright law therefore tailored any limitations narrowly while at the same time expanding the scope of protected subject matter.<sup>44</sup>

The Agreement on Trade Related Aspects of Intellectual Property Rights ("TRIPS") is a direct consequence of technological development and the desire of technologically advanced nations to protect their IPRs abroad.<sup>45</sup> TRIPS represents the high watermark of international consensus on copyright evolution. It extends copyright to computer programs, in source or object code,<sup>46</sup> as well as compilations of data that constitute intellectual creations because of selection or arrangement independently of pre-existing copyright in the material itself.<sup>47</sup> This follows the US position as laid down in by the Supreme Court in *Feist Publications, Inc v. Rural Telephone Services Co* ("*Feist*").<sup>48</sup> Recognizing the potential access bottlenecks that would be caused by allowing database owners to control access to factual databases based on investment and effort alone, the US Supreme Court ruled that databases may only be protected through copyright if the owner expended sufficient skill and judgment in the selection and arrangement of the contents.<sup>49</sup> The Court reasoned that because facts were not subjectively created, but objectively discovered, copyright protection could not subsist in mere facts, no matter how great an investment had been made in their compilation. Since reutilization of data is allowed, the alternative forms of expression to other authors are limitless. Thus in *Feist*, the Court attempted

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<sup>42</sup> For example, computers work by reproducing data in its volatile Random Access Memory (RAM), which could technically be saved to disk. Copyright lobbyists used this as a premise to argue that each appearance of any portion of software code in a computer program's RAM is an infringement of copyright. This means that owners have the legal right to control access to every appearance of the work in the memory of any computer anywhere.

<sup>43</sup> J Litman, *supra* n.41 at p.27.

<sup>44</sup> Right owners have been conferred greater control over the right of communication to include access on demand, and the right of electronic reproduction. This makes all reproductions, however transient, liable for infringement. In Europe, these are found in the Directive on the Harmonisation of certain aspects of Copyright and Related Rights in the Information Society 49 and EC Directive on the Legal Protection of Computer Programs, Council Directive 91/250, 1991 O.J. (L 122) 42 ("Software Directive"). In Singapore, Section 15(1A) of the Copyright Act, provides that "For the purposes of this Act, reproduction, in relation to any work, includes the making of a copy which is transient or is incidental to some other use of the work." It has not included the equivalent of Article 9(1) into the Singapore Copyright Act Cap 63, (1999 Rev Ed.).

<sup>45</sup> Marrakesh Agreement Establishing the World Trade Organization Annex 1C. 33 ILM 81 40 (1994). The TRIPS Agreement contains seven parts. Parts I and II contain the substantive law provisions. Parts III and IV set forth the procedural standards for acquisition and enforcement of IP rights under national law. Part V deals with dispute resolution using World Trade Organisation dispute resolution mechanisms. Part VI provides transitional provisions providing selected groups of nations with additional time to comply with TRIPS. Part VII establishes institutional arrangements at the international level for TRIPS compliance, notably the TRIPS Council.

<sup>46</sup> Art. 10.1, TRIPS, *supra*, n.45.

<sup>47</sup> Art. 10.2, *ibid*. TRIPS lays down the minimum level of protection expected from member states, which member states have raised through domestic legislation. Singapore has faithfully incorporated each development in its Copyright Act, *supra*, n.55 conferring exclusive rights to the author to the reproduction and making available of literary, artistic and musical works (Section 26), and expanding copyright to computer programs and factual compilations (Section 7).

<sup>48</sup> *Feist Publications, Inc v. Rural Telephone Services Co* [1991] 499 US 340.

<sup>49</sup> *Ibid* at 345 ("The sine qua non of copyright is originality. To qualify for copyright protection, a work must be original to the author. Original, as the term is used in copyright, means only that the work was independently created by the author (as opposed to copied from other works), and that it possesses at least some minimal degree of creativity.") As Stanley Lai explains, this requires that "the author must have exercised some choice in determining an aspect of the form of a work before that part of the form can be said to have originated from him or her.", in S Lai, *The Copyright Protection of Computer Software in the United Kingdom*, (Oxford: Hart Publishing, 2000).

to balance user rights by conferring a limited right to the expression original to the author of a work through the copyright regime.<sup>50</sup>

Similarly, the US Court in *Lotus Development Corp v. Borland International Inc* (“**Lotus**”),<sup>51</sup> held that the menu system of Lotus 1-2-3 was a method of operation not protected by copyright. It served as a method by which the underlying software was operated and controlled.<sup>52</sup> The policy underlying this exclusion was drawn from the utilitarian mandate to encourage subsequent authors to build upon the efforts of their predecessors. The court was also influenced by the fact that the menu commands used in Lotus had become an “industry standard” in the market for computer spreadsheet programs. It would therefore have been undesirable if copyright could be acquired, and asserted, in a way that would compel the many software users who were familiar with the Lotus menu commands to learn different commands for different spreadsheet programs.<sup>53</sup> The court was concerned with customers being ‘locked into’ the Lotus system, such that the cost for customers to change their practices may be so high that they are not likely to buy a competing product that even when it might be commercially superior.<sup>54</sup> By allowing Borland to replicate the Lotus interface, customers could opt for the superior product, thus promoting competition via substitution. In essence, while the computer program may have deserved copyright protection, the owner had no basis to impede competition by imposing unnecessary learning costs upon consumers. It is important to note that while copyright had expanded into functional content at this point, a very strict approach was taken in preserve access.

The need to curb piracy is closely related to trade issues.<sup>55</sup> Functional copyrighted works require considerable investment to be made, but are often taken over by others quickly, effectively and cheaply. The early computer industry was content with contract and secrecy.<sup>56</sup> However, the astonishing ability of digital technology to copy programs and mass consumer markets for pirated content rapidly reversed this perception. Millions of computer users recognised the ease with which software could be copied and exchanged and, inevitably, dubious entrepreneurs who hover at the margins of any successful industry recognised there was a market for illegally copied material that they could all too easily exploit.<sup>57</sup> The ease of instantaneous and

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<sup>50</sup> Singapore seems to have codified the approach taken in *Feist*, expressly limiting protection in factual compilations to “the selection or arrangement of its contents which constitutes an intellectual creation” Section 7A(2) Singapore Copyright Act Cap 63 (2004 Rev Ed). Section 7A(2) provides that copyright which subsists in a compilation is limited to the selection and arrangement of its contents. For a foreshadowing of this development in Singapore see Ng-Loy W L, ‘Copyright Protection for Traditional Compilations of Facts and Computerised Databases-Is Sweat Copyrightable?’ (1995) SJLS 96.

<sup>51</sup> *Lotus Development Corp v. Borland International Inc* [1995] 49 F.3d 807 (1st Cir.).

<sup>52</sup> *Ibid*, at p. 818. Even though expressive choices had been made by Lotus in choosing and arranging the menu commands, this expression was not copyrightable because the specific words chosen were necessarily part of a “method of operation”

<sup>53</sup> Boudin J observed: “If Lotus is granted a monopoly on this pattern users who have learned the command structure of Lotus 1-2-3 or devised their own macros are locked into Lotus, just as a typist who has learned the QWERTY keyboard would be the captive of anyone who had a monopoly on the production of such a keyboard.” *Ibid*, at 821

<sup>54</sup> W A Sheramata, ‘Barriers to Innovation: A Monopoly, Network Externalities and the Speed of Innovation’ (1997) Antitrust Bulletin 937, at 955.

<sup>55</sup> Piracy is understood broadly to include any situation where the owner is not able to appropriate returns from an expected sale of its work. W R Cornish and D Llewellyn, *Intellectual Property: Patents, Copyright, Trademarks and Allied Rights* (London: Sweet & Maxwell, 5<sup>th</sup> Edition, 2003) at p.358 .

<sup>56</sup> J Gurnsey, *supra*, n. 39.

<sup>57</sup> *Ibid*, at p.112. (Noting that copyright piracy that exists is complex and costly, comprising a mix of casual theft and large scale piracy.)

perfect duplication of keystone technologies annuls the natural lead-time of copyright owners.<sup>58</sup> This jeopardises the ability of first comers to recoup their investments. This makes the case for stronger copyright hard to resist.

TRIPS merely sets the minimum standard required for protection, and member states are free to provide for stronger intellectual property rights (“IPRs”).<sup>59</sup> Every roll out of a new technology forces players in the copyright system to find a new point of equilibrium between access to protected works and incentives to create new works. The pressure for increased protection is commonly directed toward the expansion of existing regimes.<sup>60</sup> This is generally easier, from a legislative point of view, than creating a new system. The main attraction of copyright protection is the immediacy and lack of formality in its application. For a product that is invariably dynamic and relatively short lived, the long lead-in time to granting a patent - to say nothing of the disclosure requirements – is clearly unacceptable. Patent protection creates problems for an industry that has developed a great deal of its products by building unashamedly on the work of those who have gone before.<sup>61</sup> Most programs will be ‘original’, but few will be ‘novel’ and ‘inventive’.<sup>62</sup> It is therefore not surprising that many technological developments seek protection in copyright. Yet ironically, in granting copyright over functional software interfaces, the law may have inadvertently granted patent-like rights. As Stanley Lai observed:

“The inherent functionality of computer software advances a utilitarian *raison d’etre*, that is to accord it broad copyright protection may permit patent-like monopolisation of valuable processes without satisfying the demanding prerequisites of patent law.”<sup>63</sup>

<sup>58</sup> For a summary of legislative reforms aimed at addressing the problems arising from the development of digital technology in Europe, see T Dreier, *Adjustment of Copyright Law to the Requirements of the Information Society* (1998) IIC 623. For a US perspective, see P Goldstein, *Copyright’s Highway: The Law and Lore of Copyright from Gutenberg to the Celestial Jukebox* (New York: 1994), L Lessig, *The Future of Ideas: The Fate of Commons in a Connected World*, (New York, 2001).

<sup>59</sup> TRIPS, *supra*, n. 45, Article 1(1). Article 3(1) of TRIPS applies to IPRs as set out in Sections 1 to 7 of Part II of TRIPS. There may be an argument that the new *sui generis* right is outside of Part II and therefore not subject to national treatment principles. It is possible that the reciprocity provisions may be challenged under TRIPS on the basis of a most favoured nation argument.

<sup>60</sup> Z Nordin, Singapore Parliamentary Debates, 16 November 2004 at:

[http://www.parliament.gov.sg:80/reports/public/hansard/title/20041116/20041116\\_S0004\\_T0003.html#1..](http://www.parliament.gov.sg:80/reports/public/hansard/title/20041116/20041116_S0004_T0003.html#1..)

(“(C)opyright protection has to keep up with the fast paced developments of the IT sector ... The proposed amendments are intended to keep our Copyright Act relevant in the digital age.”)

<sup>61</sup> J Gurnsey, *supra*, n.39 at p. 111. (“The reason for this can be readily appreciated. If computer programs and associated technology, such as semi-conductor chip design, could be protected under existing regimes, this would greatly lessen the immediate need for a new international convention on protecting the technology... the problem is that whilst copyright ... may have been a ‘ready made system’ in the 1970s, it was not a ‘tailor made system’ for computer programs.”) That is not to say that patents are irrelevant. Computer programs may well be patentable as an invention. Other legal vehicles may also have a role to play in safeguarding computer programs. These include the law of confidential information and the law of contract. However, the focus is on the role played by copyright. Source codes, object codes in ROM chips and documentation are protected as literary works under Section 7(1) of the Copyright Act, *supra*, n.76.

<sup>62</sup> As required for patent protection. See Sections 14-16 of the Singapore Patent Act (Cap 221, 2002 Rev. Edn. ). Other reasons may be given. Unlike patents the work is kept secret, failing to activate competitive dynamics that come from diffusion of knowledge and challenging of validity. Second, there is no requirement of use or threat or revocation for non-use. Third, there is no obligation to grant licenses to authors of derivative works. Fourth, copyright is not subject to exhaustion.

<sup>63</sup> S Lai, *supra*, n. 49 at p. 7. Similarly, the author observes that the EU Software Directive “skirts perilously close to protecting ideas”. At p.14.

There has also been growing support for copyright protection of databases. A recent report on scientific and technical databases describes the importance of databases.<sup>64</sup> Recent technological developments have eroded the natural lead-time that database developers have enjoyed, since anyone who obtains a copy of the compilation can quickly reproduce its contents.<sup>65</sup> This results in a sub-optimal level of investment in research and development that the law has attempted to address through stronger database protection. To the extent that the law protecting investment in databases increases their production, it serves to enhance society's problem-solving abilities through a comprehensive compilation of information. It also increases productivity, advances education and training and facilitates the creation of a better-informed citizenry through the ease of informational access.<sup>66</sup> This means that there is a good case for database rights in this digital age. Indeed, even most conservative scholars support the essence of rights in the non-creative aspects of factual databases, differing only on the question of the scope of rights that should be conferred.<sup>67</sup>

In the decade since the EU adopted its Database Directive signatories to TRIPS have had strong cause to consider its implications on protection for functional works.<sup>68</sup> In particular, the EU has moved toward extending protection toward the unoriginal data in databases through broadening its criteria to include those that are protected based on the sufficiency of the investment of labour and resources expended in their creation: the *sui generis* database right.<sup>69</sup> Under this right, database owners can prevent extraction and re-utilisation of the whole or substantial part, evaluated qualitatively and/or quantitatively, of the content of that database.<sup>70</sup> In certain cases they may also prevent the systematic extraction and/or re-utilisation of insubstantial

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<sup>64</sup> It noted, “almost every aspect of the natural world, human activity, and indeed every life form can be observed and captured in an electronic database.” In terms of the economic effect of databases, “[t]here is barely a sector of the economy that is not significantly engaged in the creation and exploitation of digital databases, and there are many - such as insurance, banking, or direct marketing - that are completely database dependent.” From 1975 through 2001 the number of databases has grown from 301 to 12,111 and the number of records has increased from 52 million to 16.86 billion. During the same period, the number of database producers has grown from 200 to 3879. M E Williams. ‘The State of Databases Today: 2001’, in *Gale Directory Of Databases* (Thompson Gale, Michigan: 2002). Committee For A Study On Promoting Access To Scientific And Technical Data For The Public Interest, *A Question Of Balance: Private Rights And The Public Interest In Scientific And Technical Databases* (1999), available at <http://www.nap.edu/books/0309068258/html/> (last visited 1 August 2005) The Report was based, in part, on a Workshop held in Washington D.C. on January 14-15, 1999 in Washington D.C. See *Proceedings Of The Workshop On Promoting Access To Scientific and Technical Data For The Public Interest: An Assessment of Policy Options*, available at [http://books.nap.edu/html/proceedings\\_sci\\_tech/](http://books.nap.edu/html/proceedings_sci_tech/) (last visited 1 August 2005)

<sup>65</sup> J Lipton, ‘A Framework for Information Law and Policy’ (2003) 82 Or. L. Rev. 695.

<sup>66</sup> G M Hunsucker, ‘The European Database Directive: Regional Stepping Stone to an International Model?’, (1997) 7 *Fordham Intell. Prop. Media & Ent. L.J.* 697, at 727.

<sup>67</sup> L Ray Patterson, ‘Copyright Overextended: A Preliminary Inquiry into the Need for a Federal Statute of Unfair Competition’, (1992) 17 *U. Dayton. L. Rev.* 385 at pp. 407-10 (Asserting that factual collections should be afforded protection for a limited time, against competitors only, not encompassing the contents of the work, and “subject to forfeiture for predatory pricing”); M Pollack, ‘The Right to Know?: Delimiting Database Protection at the Juncture of the Commerce Clause, the Intellectual Property Clause, and the First Amendment’, (1999) 17 *Cardozo Arts & Ent. L.J.* 47, 99 at 123-44 (advocating statutory protection that would protect only databases at risk of market failure); J H Reichman and P Samuelson, “Intellectual Property Rights in Data?” (1997) 50 *Vanderbilt Law Review* 51 at 137-51 (suggesting unfair competition and modified liability approaches to database protection).

<sup>68</sup> Directive 96/9/EC of the European Parliament and of the Council on the legal protection of databases, 11 March 1996, OJ No. L 77/20 of 27 March 1996.

<sup>69</sup> Article 7(1), *ibid*: Member states shall provide for a right for the maker of a database which shows that there has been a qualitatively or quantitatively substantial investment in either the obtaining, verification or presentation of the contents to prevent extraction and/or reutilisation of the whole or a substantial part, evaluated qualitatively and/or quantitatively, of the contents of the database.

<sup>70</sup> *Ibid*.

parts.<sup>71</sup> Commentators have noted that this in effect extends protection over the realm of factual information traditionally denied protection by copyright law.<sup>72</sup> The protection of databases and software has also found sanctuary in the WIPO Copyright Treaty.<sup>73</sup> More recently, the US-Singapore FTA has provided for one of the highest levels of IP protection in the world.<sup>74</sup> In addition to obligations to promote anti-circumvention measures and transmission rights,<sup>75</sup> the USSFTA requires Singapore to extend the copyright term to TRIPS-plus levels of life plus 70 years.<sup>76</sup>

It may be argued that if an imbalance has been caused by overbroad copyright, the solution lies with a more circumspect legislature, sensitive to calibrating copyright to produce optimal innovation. But there is a problem. The optimal amount of protection for innovation is unknown. Ambiguity begets obfuscation, and in such an environment interest groups tend to be far more influential.<sup>77</sup> At least some copyright protection is necessary to encourage innovation. Up to a point the trade-off is positive—that is, as protection increases, the marginal social gains from innovation are greater than the marginal losses from enforcement of exclusionary rights and the transaction costs of negotiating licenses. However, it is important to understand that the relationship between copyright protection and innovation is not monotonic.<sup>78</sup> Whatever the merits of extending copyright protection to digital works, enhancing protection has diminishing marginal benefits, and at some point will cause a net negative impact on innovation, as the strengthening of existing rights stifles more new innovation which builds on those rights than that which further expansion encourages. Thus, the relationship between the two resembles an inverted ‘U’.

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<sup>71</sup> Article 3, *ibid.*

<sup>72</sup> H A Deveci, ‘Databases: Is *Sui Generis* A Stronger Bet than Copyright?’ (2004) 12 Int’l J.L. & Info. Tech. 178

<sup>73</sup> Articles 4 (“Computer programs are protected as literary works within the meaning of [Article 2 of the Berne Convention](#). Such protection applies to computer programs, whatever may be the mode or form of their expression”) and Article 5 (“Compilations of data or other material, in any form, which by reason of the selection or arrangement of their contents constitute intellectual creations, are protected as such. This protection does not extend to the data or the material itself and is without prejudice to any copyright subsisting in the data or material contained in the compilation”). Available at [http://www.wipo.int/treaties/en/ip/wct/trtdocs\\_wo033.html](http://www.wipo.int/treaties/en/ip/wct/trtdocs_wo033.html) (Last visited June 2006)

<sup>74</sup> For a comprehensive discussion on the specific effects of the US-Singapore FTA on Singapore IP law, see Ng-Loy W L, ‘The IP Chapter in the US-Singapore Free Trade Agreement’ (2004) 16 SAclJ 42.

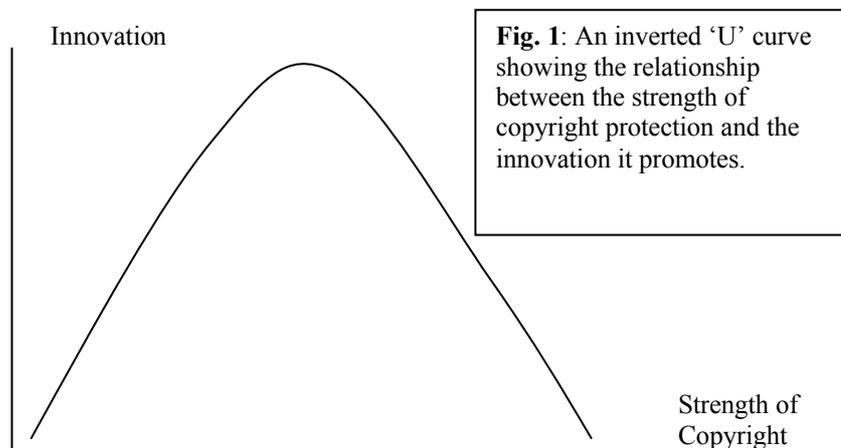
<sup>75</sup> Chapter 12, US-Singapore FTA, available at:

[http://www.ustr.gov/Trade\\_Agreements/Bilateral/Singapore\\_FTA/Section\\_Index.html](http://www.ustr.gov/Trade_Agreements/Bilateral/Singapore_FTA/Section_Index.html) In the EU, the Directive on the Harmonisation of certain aspects of Copyright and Related Rights in the Information Society (the “InfoSoc Directive”) even the reproduction by private individuals of a Web page for non-commercial purposes, will trigger a compulsory levy. In this respect, the Directive would appear to be providing right holders with an exclusive right to control access to information, the right to read, a sphere copyright has never previously attempted to regulate.

<sup>76</sup> Article 4, USSFTA, codified in Section 28 Singapore Copyright Act Cap 63, (1999 Rev Ed.). At its inception in 1710, the English Statute of Anne conferred copyright protection to the author for 14 years from first publication; but if the author was still living at the end, another 14 was given. (UK Copyright Act 1710, ss. 1 and 2) In 1814, the term of statutory right was extended to 28 years or the author’s life, whichever was longer. (UK Copyright Act 1814, s. 4) The Berne requirement of life and 50 years was mirrored the requirements in TRIPS. (TRIPS, Article 12)

<sup>77</sup> H Hovenkamp, *The Antitrust Enterprise: Principle and Execution*, (Cambridge: Harvard University Press, 2005), p.251.

<sup>78</sup> A failure to acknowledge this limit is one of the flaws in Polk Wagner’s recent argument that there is no reason to worry about ever-increasing control over intellectual property. R P Wagner, *Information Wants to be Free: Intellectual Property and the Mythologies of Control*, (2003)103 Colum. L. Rev. 995. Wagner argues that since control over intellectual property is imperfect, increasing intellectual property rights will encourage new creation that will have spillover benefits to the public. While this is certainly true up to a point, beyond a certain level of control the costs of marginal increases in control outweigh any such benefits. Wagner simply assumes that point has not been reached. It is submitted that there is substantial evidence to the contrary.



There are extremely few empirical studies made on the proper scope of copyright.<sup>79</sup> SERCI is an important institutional step in the right direction, but more is required. Copyright markets have evolved into an area with complex sector specific considerations. Copyright may not merely pose a legal barrier to market entry to the market. It may also reinforce structural barriers caused by the market itself. In copyright industries, a popular theory is that network effects form a key barrier.

### B. Copyright and Network Effects

Network effects are found in both database and software markets.<sup>80</sup> However, thus far successful allegations that it creates an anticompetitive barrier to entry has been limited to the latter. As an illustration, in the US *Microsoft* cases, a critical issue was whether Microsoft been able to perpetuate its market power by taking advantage of its “applications barrier to entry”.<sup>81</sup> With over 90% of the Operating System (“OS”) market,<sup>82</sup> Microsoft had an installed base, encouraging software vendors to write compatible programs for its Windows OS. This installed base made it difficult for rival OS software providers to enter. Few programmers would invest time and money developing applications for OS that do not have a large installed base, because demand for such applications is low, making rival OS unattractive. Simultaneously, Windows OS users are unlikely to switch to other systems, because Windows allows them to choose from among a much larger number of compatible applications.<sup>83</sup> Consumers are also reluctant to switch to new networks because of investments in hardware and time spent learning a system. Brand name recognition and the consumer confidence it inspires may be even more powerful barriers preventing entry in information platform industries where consumers rely heavily on suppliers for continuing support.

<sup>79</sup> E Derclaye, ‘An Economic Approach to What the Conditions of Abuse of a Dominant Position of Copyright Should Be’, (2003) [www.serci.org/2003/derclaye.pdf](http://www.serci.org/2003/derclaye.pdf) (Noting that the most striking example being the database sui generis right - and of increased scope of copyright and of increased means to enforce it.)

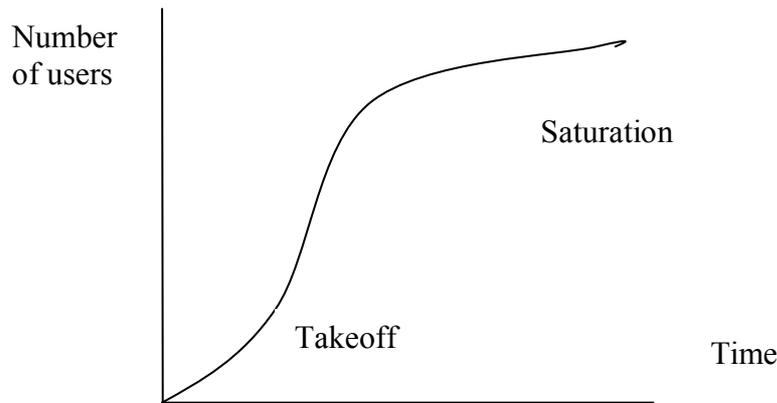
<sup>80</sup> See for example the cases of *IMS Health* and the *Microsoft* cases, discussed below.

<sup>81</sup> *United States v. Microsoft Corp.* Findings of Fact, [ 1999] 84 F. Supp. 2d 9, 20 (D.D.C.)

<sup>82</sup> *Ibid.* at para.19 (finding that Microsoft's share of the market for “Intel-compatible PC operating systems” is at ninety percent).

<sup>83</sup> D J Teece and M Coleman, *The Meaning of Monopoly: Antitrust Analysis in High-Technology Industries*, (1998) 43 *Antitrust Bull.* 801 at 814 (“[T]he more users of a given [computer operating] platform, the more complementary products that will likely be supplied to that platform. This will lower the cost or increase the value of the platform.”).

The result is a ‘positive feedback’ process in which more and more applications are written for Windows. Thus network effects exert a strong influence on software developers’ and consumers’ choices.<sup>84</sup> As **Fig 2** shows, once network saturation occurs, consumers are likely to remain with an established network because of the costs they have incurred in adapting to the network, and costs involved in switching to another one.<sup>85</sup> These ‘switching costs’ thus create substantial barriers to entry in digital markets. Because the “switching costs” for consumers in network markets are so high, they become “locked in” to Microsoft’s network.<sup>86</sup>



**Fig. 2** Positive feedback systems follow adoption of new technologies in three phases: (1) flat during launch (2) a steep rise during takeoff as positive feedback kicks in (3) leveling off as saturation is reached. Source: Carl Shapiro and Hal R. Varian, *Information Rules*, (Boston, MIT Press, 1999), at p. 178.

Simultaneously, consumers' demand for one compatible technical standard leads network markets move from the joint existence of two or more incompatible products to coalesce around a single standard.<sup>87</sup> Hence, once copyrighted the digital content gains enough acceptance to be perceived by most consumers as the ultimate technological winner, the market “tips” and

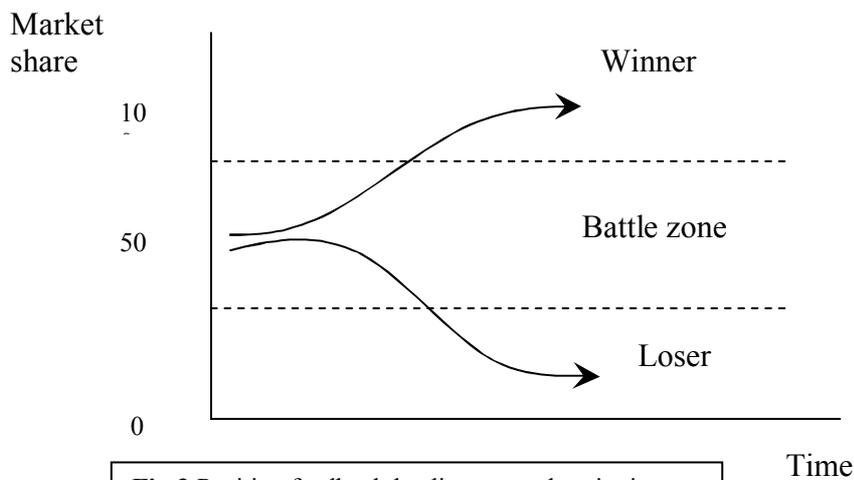
<sup>84</sup> As pointed out in the Commission’s decision, “The exploitation of those (network) effects with a view of leveraging (Microsoft’s) quasi-monopoly ... is at the root of the identified abuse of refusal to supply”. At para. 533.

<sup>85</sup> These include the compatible software foregone, the interoperability with users of that network and time involved in learning that platform in the first place.

<sup>86</sup> J E Lopatka and W H Page, ‘Antitrust on Internet Time: Microsoft and the Law and Economics of Exclusion’, (1999) 7 Sup. Ct. Econ. Rev. 157 at p.170 (“Software vendors tend to write applications for the most popular operating system. The greater availability of applications in turn induces new users to choose that operating system. The market thus tips in favor of a single standard, to which the industry is locked in.”).

<sup>87</sup> D A Balto and R Pitofsky, ‘Antitrust and High-Tech Industries: The New Challenge’, (1998) 43 Antitrust Bull. 583, at p.604 (“In industries characterized by networks even monopoly is seen by some observers as inevitable and merely an accommodation to consumer demand for a compatible technical standard.”); D Rubinfeld, ‘Competition, Innovation and Antitrust Enforcement in Dynamic Network Industries’, Speech before Software Publishers Association Meeting (1998), at p.876 (“With consumer preferences for uniformity in products and compatibility in complementary products, dominant firms operating with a single standard are likely to develop in dynamic network industries.”); S Lohr, ‘Open Windows: The New Math of Monopoly’, N.Y. Times, 9 April 2000, § 4 (Week in Review), at 1 (“[Network markets] tend to naturally evolve toward one or two dominant companies (think Cisco in routers for Internet data or eBay in online auctions). They control the technology standards in their markets.”)

consumers migrate to that standard *en masse*.<sup>88</sup> Early users of a particular network often join in anticipation of other users hopping on the bandwagon later.<sup>89</sup> This is seen in **Fig 3** below.



**Fig 3** Positive feedback leading to market tipping;  
 Source: Carl Shapiro and Hal R. Varian, *Information Rules*, (Boston, MIT Press, 1999), at p. 177

Tipping can occur rapidly because of network effects.<sup>90</sup> Consumers become ‘locked in’ to the product because of switching costs associated with moving from one network to another. The net result is that the product technology standard that is adopted can mean, that inferior products continue to dominate production decisions and consumer purchases.<sup>91</sup> Even if a new entrant promises a less expensive or technically superior product, users of the current network may not be willing to run the risk of losing their investments in that network. This consequence is sometimes referred to as “path dependency”.<sup>92</sup>

Courts and competition authorities adopting dynamic efficiency goals strive to provide the means for alternative products to be offered through mandating access to market standards protected by copyright in order to ensure that the dynamic welfare gains promised by sacrificing static efficiencies are obtained.<sup>93</sup> There is no guarantee that the superior platform would win, given the incumbent’s first mover advantages and its likelihood for aggressive competitiveness. Once the market has tipped it may be difficult or even undesirable to undo any anticompetitive effects that have arisen.

<sup>88</sup> M A Lemley and D McGowan, ‘Could Java Change Everything? The Competitive Propriety of a Proprietary Standard’, (1998) 43 *Antitrust Bull.* 715, at p.721 (“[O]nce consumers perceive that a de facto standard has been established, tipping will occur very quickly.”).

<sup>89</sup> Controversial examples of tipping include VHS versus Beta videocassette formats and QWERTY and Dvorak keyboard layouts. See P Lewin (ed), *The Economics of QWERTY*, (Hampshire: Palgrave, 2002).

<sup>90</sup> K Kelly, *New Rules for the New Economy, 10 Radical Strategies for a Connected World* (USA: Viking, 1998) at p.34, (Suggesting that in new network economies, the tipping point is significantly lower than in traditional ones because of low fixed costs, insignificant marginal costs and rapid distribution.)

<sup>91</sup> W A Sheremata, ‘Barriers to Innovation: A Monopoly, Network Externalities, and the Speed of Innovation’, (1997) 42 *Antitrust Bull.* 937 at p.958 (Describing how “consumers will get ‘locked into’ the first product that appears on a new platform, even when the product is technologically inferior”).

<sup>92</sup> R A Posner, *Antitrust Law: An Economic Perspective* (Chicago: University of Chicago Press, 2001), at p.930 (Explaining “the issue of ‘path dependence’: an industry may be stuck with an inferior technology because of the cost advantage of the existing network”).

<sup>93</sup> I Rahnasto, *Intellectual Property Rights, External Effects and Anti-trust Law*, (Oxford: Oxford University Press, 2003).

The prospect that a single firm, controlling a key input can protect a dominant position, or extend its dominance into new areas, raises a number of anticompetitive concerns. Copyright in functional works may persist beyond its useful economic life, and copyright monopolies possess inherent natural advantages that make them difficult to dislodge.<sup>94</sup> When the copyright owner is well entrenched, it may not feel compelled to continue to pursue efficiencies,<sup>95</sup> and is more likely to engage in harmful monopolistic conduct, including raising prices, impeding innovation, and reducing output. Tipping increases the leverage power of the winning technology, and may encourage exploitation of locked-in consumers, or fail to innovate and yet stifle future innovation by preventing switching to better alternative technologies. Even if the industry structure ultimately relies on a single standard, competition policy should still allow rival standards to battle it out in the marketplace. Even if it were true that successful copyright owners are often aggressive in price and innovation, competition is still necessary, if only because it is likely that consumers would be better off with several aggressive companies, rather than a single dominant firm.<sup>96</sup> Moreover, in addition to maintaining the possibility of competition on quality, rival standards also hedge against the risk that the owner's standard proves fundamentally flawed.

Therefore, the feasibility of challenging an existing network monopolist becomes critical. Courts and CEOs act to prevent consumers from being "locked in". Rivals have to duplicate the network to enter the market, significantly increasing entry costs. Competition law prevents the copyright owner from exploiting bottlenecks through mandating access to interface information. Similarly, competition law may also intervene *ex ante* to prevent premature tipping to a possibly inefficient standard.<sup>97</sup> Given the seemingly awesome market power at the copyright owner's disposal, there seems little reason why competition, *ex ante* tipping, or *ex post*, should not be promoted by requiring access to the owner's copyrighted works.

### C. Copyright as a Block to Innovation

Copyright in functional work exists primarily for the functions they perform and not because of any elegance in expression. The consumer is not concerned with the computer coding that make up his program, only whether it works efficiently, effectively and in a user friendly manner.<sup>98</sup> Similarly, a database is only as good as the veracity of its contents. Two important consequences follow the mutation of copyright in functional works. The first is that copyrighted works become non-substitutable and therefore an "essential" competitive input. A second related outcome is that as technological innovation becomes more dependent on prior work, as well as current developments, strong copyright in functional works may retard the innovation process.

<sup>94</sup> Federal Trade Commission, 'Entering the 21st Century: Competition Policy in the World of B2B Electronic Marketplaces, Executive Summary', at 2, at <http://www.ftc.gov/0s/2000/10/b26report.pdf> (Oct. 2000). Part 3, at 29 ("[O]nce a marketplace monopoly is attained, it may be very difficult to dislodge."). See Chapter III, Part III.

<sup>95</sup> *United States v. VISA USA, Inc.* 163 F. Supp. 2d 322, at 342 ("The higher the barriers to entry, and the longer the lags before new entry, the less likely it is that potential entrants would be able to enter the market in a timely, likely, and sufficient scale to deter or counteract any anticompetitive restraints.... Where barriers to entry are high, ... a monopolist would find it easier to raise prices because it would be unlikely that a competitor would, or could, enter the market.) see also Beltway on Top, Wall St. J., June 9, 2000, at A18 ("The only incentive to produce anything is the possession of temporary monopoly power.").

<sup>96</sup> K J Arrow, 'Economic Welfare and the Allocation of Resources for Invention', J Eatwell (ed.), *Essays in the Theory of Risk Bearing* (Chicago: Markham Publishing Co., 1971), at pp. 156-60. In terms of challenging the perspective at a theoretical level, Kenneth Arrow famously countered that competition provides the best spur to innovation.

<sup>97</sup> I Rahnasto, *supra*, n. 93 at p.190.

<sup>98</sup> *Computer Edge v. Apple Computer* [1986] FSR 537.

## 1. Non-Substitutability of Functional Content

In the beginning, copyright protection extended to the expression of creative intellectual content, and not the content itself.<sup>99</sup> Copyright was thus an alienable and temporary right to economically exploit expression in creative works that, upon expiry of the legal term of protection, falls into the public domain. It was also comprised of an inalienable moral right to claim authorship and object to any derogation of his work in a manner that would be prejudicial to his honour or reputation.<sup>100</sup> While copyright created a legal monopoly, it did not necessarily create an economic monopoly unless the scope of the copyright is co-extensive with the scope of the relevant market. Because of the exceptions and limitations built into copyright law, there are normally substitutes.<sup>101</sup>

However, copyright is a pliable tool, shaped by firms with an eye toward disadvantaging competitors through raising entry barriers. The easy manner in which copyright arises over functional works makes it possible for firms to get copyrights over arbitrary but non-substitutable interfaces or raw information generated by the owner. This extension raises a danger that database owners may impede the use of information in derivative markets or by rivals in the same market to produce competing products, since they may be conferred a *de facto* monopoly on the information. An example of this is the seminal EU case of *Radio Telefis Eireann and Others v. Commission* (“*Magill*”).<sup>102</sup> In *Magill*, three TV stations were dominant over the listings of its own programmes and enjoyed copyright protection. When *Magill* started to publish comprehensive weekly listings for all three stations, each TV station successfully sued for copyright infringement. The stations had never supplied the information to anyone before.<sup>103</sup> Yet the ECJ found that this amounted to an abuse of a dominant position over the programme information. This was because each TV station enjoyed a *de facto* monopoly over the lists of its own programmes and was the only source of information that was essential to *Magill*. This

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<sup>99</sup> Article 9(2), TRIPS states that “copyright protection shall extend to expressions and not ideas”. Thus, objective justification afforded by copyright must only be valid to the extent that the third parties’ use in fact infringes on copyright. In the USA, copyright is firmly grounded with the aim of favouring the general public interest. Under the US Constitution, the purpose of IP laws is “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.” United States Constitution, Article 1, Section 8. Copyright does not extend to ideas, facts, functional elements, scenes a faire, or unoriginal portions of a work. 17 USC §102(b). See also *Feist*, *supra* n.48.. Conversely, in the UK and therefore most Commonwealth countries, where copyright is based on the protection of investment and not really on the promotion of science and the arts and especially where a law of unfair competition is in-existent, therefore creating a lack of protection, copyright’s provisions are generally relatively protective (see e.g. low originality requirement (skill, judgment and labour), unclear recognition of the idea/expression dichotomy (see *Ibcos*), fair dealing less broad than the US fair use). Finally, in civil law countries, whose copyright laws are based on natural law and the sacrosanct notion of author and ‘the work of his/her mind’, copyright protection is generally the strongest (except for the relatively high requirement of originality, rights are broad and exceptions are generally numerous but very narrow).

<sup>100</sup> Art 6bis(1) Berne Convention.

<sup>101</sup> Hence, the inordinate success’s of Dan Brown’s book *The Da Vinci Code* was not dampened by the infringement suit brought against it by the authors of *Holy Blood Holy Grail*, an earlier book allegedly encapsulating the same ideas since the copyright in their book did not prevent other similar and competing books from entering and remaining in the market. *Michael Baigent and Richard Leigh v. The Random House Group Limited* [2006] EWHC 719 (Ch). Holding that even if the literary themes were copied they are too general or of too low a level of abstraction to be capable of protection by copyright law.

<sup>102</sup> *Radio Telefis Eireann and Others v. Commission (Magill)* [1995] 4 CMLR 718. [1995] 4 CMLR 718

<sup>103</sup> Like the earlier case of *Volvo supra* n.23, where the ECJ intriguingly reached an opposite conclusion: the refusal to supply to eliminate competition was not an abuse, as the right to restrain third parties from exploiting the design for front wing Volvo car panels “constitutes the very subject matter of that exclusive right”. (at para.8) In that case, the ECJ opined that arbitrary refusal to supply, price fixing or ceasing production for goods where there was still a potential consumer demand may amount to abuse.

prevented the appearance of a “new product” that the TV stations did not offer, and gave rise to “exceptional circumstances” that warranted mandatory access to the stations’ copyrighted content.<sup>104</sup>

The sole source problem is a very real one. When a database is truly a sole source database, then expression of fact and fact are one and the same. Database users need to interact freely with and transform databases in the course of their research. Database rights would potentially disrupt this pattern of usage.<sup>105</sup> Researchers do not simply face increased costs, a problem that may be ameliorated through increased funding. It has been argued that the real problem is much deeper, going to the ability to actually use the database to its highest potential, that is, in an interactive and transformative manner.<sup>106</sup> The user is reduced to a mere consumer of a product that may be accessed and read only on a pay-per basis. The former ability to reutilise the data, combine it with other data, and store it for later use is lost. This entrenches established dominant firms. Even if a monopoly position were only temporary, the results would be significant, as the rapid pace of scientific research in industries requiring a common pool of information would nonetheless be slowed.<sup>107</sup>

Similar concerns exist in software industries. A product dominating a software market may not always reflect greater efficiency or quality, but simply be due to random circumstances and sometimes to shrewd marketing and advertising options that hardly can be associated with meritorious competition.<sup>108</sup> The copyright owner can choose to design an arbitrary standard and make it extraordinarily expensive to duplicate. The incumbent chooses a set of permutations at no cost, but an entrant will face high costs if it must independently re-create the code.

In February 1998, Sun Microsystems lodged a complaint before the European Competition Commission accusing Microsoft of breaching competition rules by denying access to essential information on its Windows Personal Computer Operating System (“PCOS”). After a gestation period of 5 years, *Microsoft v. Commission (Microsoft EU)* was born.<sup>109</sup> The Commission found that Microsoft had disrupted previous patterns of cooperation when full interface information had been made available.<sup>110</sup> When Microsoft first entered the Work Group Serve Operating System (“WGSOS”) market, its servers were inferior to those of its competitors.<sup>111</sup> Then, it supplied full interface information (protected by various IPRs, including copyright) to enable competitors’ servers to work well with its Windows WGSOS and PCOS.

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<sup>104</sup> The ECJ’s judgment was extremely vague. The precise scope of “exceptional circumstances” remains unknown even to this day. Whether this was because of a shrewd desire to preserve wiggle room to refine the conditions for access or otherwise will remain for all time, a matter for academic speculation.

<sup>105</sup> S E Trosow, ‘Sui Generis Database Legislation: A Critical Analysis’ (2005) 7 Yale J. L. & Tech. 94. (Arguing that characterizing a measure as a Misappropriations Act with a broad “making available in commerce” right neither changes this dynamic nor mitigates the interference with the transformative uses of databases.)

<sup>106</sup> B Hugenholtz, ‘Abuse of Database Right Sole-source information banks under the EU Database Directive’ A paper presented at Conference ‘Antitrust, Patent and Copyright’, École des Mines/UC Berkeley, Paris, January 15-16, 2004, available at

<http://www.ivir.nl/publications/hugenholtz/abuseofdataseright.html> (last visited 1 August 2005)

Any data service built upon data that is obtained from government funded sources like weather data or GPS data is, by definition, not a sole source information purveyor. See J Hughes, ‘How Extra-Copyright Protection of Databases Can Be Constitutional’ (2002) 28 U. Dayton L. Rev. 159.

<sup>107</sup> *Ibid.*

<sup>108</sup> R Pertz Dynamic Efficiency and US Antitrust Policy, in *Post-Chicago Developments in Antitrust Law*, A Cucinotta, et al (eds) (Cheltenham: Edward Elgar, 2002)

<sup>109</sup> *Commission Decision of 24.03.2004 (Case COMP/C-3/37.792 Microsoft)*

<sup>110</sup> *Ibid.*

<sup>111</sup> V Korah, *supra* n.30, at p.156.

This enabled Microsoft to sell more Windows OS licenses, thereby increasing its value. It in turn created direct and indirect network effects bolstering Microsoft's market power in its client PCOS as more people use its WGSOS. Once Microsoft had gained sufficient market share, it diminished its level of disclosure in the workgroup server market, making rival products less able to take advantage of the PCOS functions compared to its own workgroup OS.<sup>112</sup> The result was that buying a workgroup server equipped with a non-Microsoft OS means lower network performance because desktops were equipped with Windows. Developers of complementary software for servers expect Microsoft's WGSOS to win, and ported their applications for it. Customers in turn bought Microsoft's WGSOS because more applications are available, tipping the market in favour of Microsoft's WGSOS.<sup>113</sup>

As a "superdominant" undertaking,<sup>114</sup> Microsoft was therefore using its market power to exclude competition and destroying the incentive for competitors to innovate. In the past, competitors in the WGSOS had introduced new features to meet consumer demand. However, if they now did not have interface protocols for Windows, there was no point in investing in innovation that they could not use, but could only sell to Microsoft for it to meet that demand.<sup>115</sup> Further, withholding interface information to design competing programs locked consumers into Microsoft's server market, with the result of perpetuating an inefficient standard.<sup>116</sup>

In an interim hearing, the Court of First Instance ("CFI") upheld the Commission's fine of nearly €500 million, the largest ever imposed on a single firm. However, what was perhaps more devastating was the affirmation of the order for Microsoft to disclose interface information on reasonable and non-discriminatory terms to competitors to enable the WGSOS of rivals to achieve full interoperability with Microsoft's PCOS. This order covered past, present and future Microsoft products without any time limitation. This means that Microsoft must continually update this information as it brings to market new versions of its products. This remedy has been criticised as "extraordinary", both in terms of the significant loss in the strategic value of its copyright but also the fact that competition authorities are involved in determining of how much

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<sup>112</sup> *Microsoft, supra*, n.89 at para. 588- 97. The Commission also found that Microsoft had abused its dominant position by tying Windows Media Player with Windows OS. On this second charge, see M Dolmans and T Graf, 'Analysis of Tying under Article 82 EC: The European Commission's Microsoft Decision in Perspective', (2004) W. Comp 27(2) 225-44.

<sup>113</sup> According to the Commission, neither reverse engineering, nor open industry standards, nor the access ensured by the communication licensing program created in us are alternative ways for Microsoft competitors to achieve interoperability of their products. In addition, the Commission pointed out that Microsoft ultimately could upgrade its operating system so as to destroy the compatibility achieved by its rivals through their reverse engineering efforts.

<sup>114</sup> Various measures of market share were given, but all are over 90%. *Microsoft/ W2000* [2004] COMP/C-3/37.702 at para. 431-5. ("Microsoft, with its market shares of over 90 per cent, occupies almost the whole market – it therefore approaches a position of complete monopoly, and can be said to hold an overwhelming dominant position.")

<sup>115</sup> *Microsoft, supra*, n.84 at para. 725.

<sup>116</sup> It should be recognised from the onset that the Commission took great care in preparing its case against Microsoft, even subjecting the file to peer-review. V Korah, *supra* n. 30 at p.166.

a company should supply.<sup>117</sup> The appeal on the merits is ongoing and the result will likely be out only after the third quarter of 2006.<sup>118</sup>

The dominant copyright owner may have no incentive to charge downstream customers the monopoly price for access. Indeed, it has to charge the competitive price in the secondary market to avoid problem of double marginalization.<sup>119</sup> A rational owner would simply prefer to refuse access and earn monopoly profits in primary market rather than open competition in secondary market. Closing competition in the secondary market further allows it an important advantage. It can control rate and direction of innovation. This strategic hold up is especially effective in industries with cumulative innovation.<sup>120</sup> Empirical evidence exists that suggests that firms creating intellectual property portfolios solely for the purposes of opportunistic behaviour.<sup>121</sup> Firms thus use copyright as market locks to create entry barriers and raise switching costs.

## 2. Block to Cumulative Innovation

Traditionally, the innovation process occurs in linear, sequential stages, from research to development, design production and finally marketing, sales and service.<sup>122</sup> This is illustrated in **Fig. 4** below. In this serial model of innovation, little incremental innovation follows the initial breakthrough. There is no feedback or overlap between and among stages.<sup>123</sup> In the copyright context, the owner of copyright on a book may be able to control whether it should be adapted into a movie. However, once the movie is made, it may not control how its soundtrack or visual effects should be produced, or control its merchandising.



**Fig. 4:** A traditional value chain, where innovation is linear.

<sup>117</sup> See I S Forrester, ‘Article 82: Remedies in Search of Theories?’, (2005) 28 Fordham Int.LJ 919, drawing a parallel with *Syfait and others v. GlaxoSmithKline AVEE*, [2004] Case C-53/03 where GSK, a pharmaceutical company, was under an affirmative duty to supply unlimited orders from wholesalers active in the trade of certain prescription drugs from low-price to high-priced Member States, but distinguishing Microsoft because it goes further and represents the most expansive inroad of EC competition law enforcement into the protection of IPRs in Community legal history.

<sup>118</sup> This parallels proceedings in the US, where the US DOJ asserted that Microsoft’s conduct reduced the incentives of competitors and potential competitors to undertake R&D because “they know that Microsoft will be able to limit the rewards from any resulting innovation”. Complaint para.37, *United States v. Microsoft Corp.*, No.98-1232 (DDC 1998) available at <http://www.usdoj.gov/atr/cases/fl700/1763.htm> (Last visited April 2006)

<sup>119</sup> The double-marginalization problem occurs when two monopolists own complementary inputs, and each price at the monopoly level. The resulting systems price is inefficiently high.

<sup>120</sup> R N Langlois, ‘Technological Standards, Innovation and Essential Facilities: Towards a Schumpeterian Post-Chicago Approach’ (1999) University of Connecticut Department of Economics Working Paper Series (Available at [ssrn.com/abstract=204069](http://ssrn.com/abstract=204069))

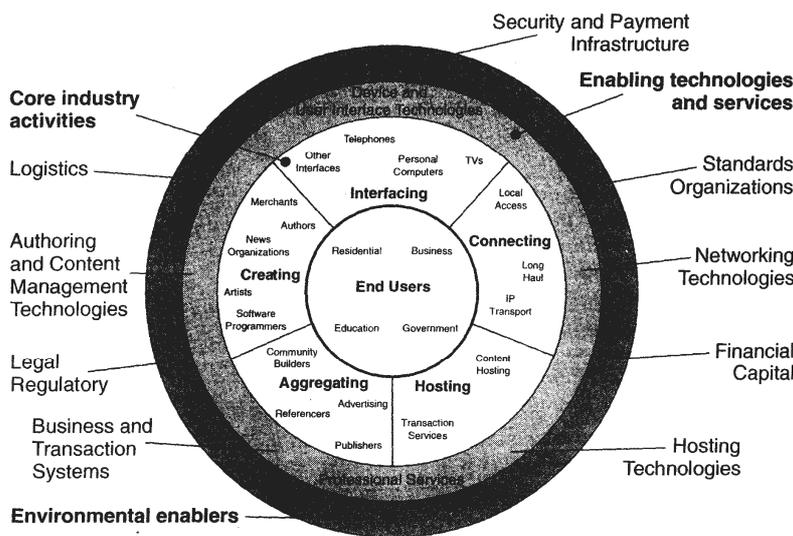
<sup>121</sup> B H Hall and M Ham. The Patent Paradox Revisited: Determinants of Patenting in the US Semiconductor Industry, 1980-94. (1999) Available at <http://ideas.repec.org/p/ucb/calbwp/e99-268.html> (Last visited June 2006)

<sup>122</sup> J Tirole, *The Theory of Industrial Organisation*, (Boston: MIT Press, 1988) at p. 389.

<sup>123</sup> Unlike the model of simultaneous innovation discussed below.

However, this model does not address the innovation processes at the heart of technological change in software digital markets, and some database ones as well.<sup>124</sup> In these markets, the innovation process is radical and involves significant vertical and horizontal interdependencies, with tight linkages and feedback among and between the various stages.<sup>125</sup> Ideas flow freely within firms in the same industry, simultaneously creating ripples of innovation in firms of associated industries.<sup>126</sup> This promotes cumulative innovation capacity. Innovation takes place simultaneously at each level, as seen in **Fig. 5**. For example, software products increasingly combine elements from previous solutions. Where copyright is granted to interdependent functional interfaces, their owners will not merely be able to exert control on their independent production process, as was the case with the linear model of innovation. Instead, it will have control over the development of complements and substitutes that require access to interface with the standard. Further, with this model of simultaneous innovation, the quickest copyright owner will control the technological development dependent on its standard, even if its own initial contribution to the utilitarian balance was minimal.<sup>127</sup> It thus extracts the maximum value from pre-existing research while contributing little to future progress.

The substitutability of aesthetic works creates much less competition concerns than functional works. The latter limits substitutes to foster the competitive advantage under copyright law. That is why there is more justification for a competition friendly framework. Further, these rights are given not merely to the authors, but also to those involved in the production and diffusion of the work. Copyright over functional works can therefore seriously impede innovation if it prevents the diffusion of knowledge and market entry by those seeking to provide derivative products or superior substitutes.



**Fig. 5:** A Network Based Value Chain showing simultaneous innovation  
Source: CONRINET  
<http://www.echo2.lu/condrinet>

<sup>124</sup> For a detailed and insightful discussion of how costs affect market structure in ‘traditional’ and R&D intensive industries, see J Sutton, *Sunk Costs and Market Structure* (Cambridge: MIT Press, 1991).

<sup>125</sup> T M Jorde and D J Teece, ‘Innovation Co-operation and Antitrust’ in T M Jorde and D J Teece eds., *Antitrust, Innovation and Competitiveness* (XX: New York, 1992) at pp. 48-50. B A Kemp, ‘The Follow-on Development Process v. the Conventional Patent Protection Concept’, (1974) 16 IDEA 31; R R Nelson, ‘Intellectual Property Protection for Cumulative Systems Technology’, (1994) 94 Colum.L. Rev. 2674.

<sup>126</sup> J H Reichman, ‘A Contractually Restructured Research Commons for Scientific Data in a Highly Protectionist Intellectual Property Environment’ (2003) 66 Law and Contemporary Problems, at pp. 315-462. (Citing the example of Silicon Valley and Research Triangles of California, Massachusetts and North Carolina.)

<sup>127</sup> M A Heller and R S Eisenberg, ‘Can Patents Deter Innovation? The Anticommons in Biomedical Research’, *Science*, (1998) Vol. 280 No. 5364 at p. 698.

Innovation has become more complex, and depends on technological inputs from more actors. It is debatable whether society benefits most if it rewards initial innovation through broad copyright protection, or if it fosters successive innovation by requiring access to the copyright of the initial innovator. Copyright has grown into a thicket that leads to a protectionist barrier in favour of dominant enterprises. This threatens to balkanize the flow of knowledge in an age where industries move towards standardisation. Standardisation produces a range of compatible products. However, where standardised technology perpetuates on the market, it attracts doubts that the standard may be suboptimal, and access should be granted to allow competition for a new standard to emerge.<sup>128</sup> As Gustavo Ghidini argues:

“(I)ntellectual protection over the standardized technology vests the IP-owner with an extremely far reaching power: namely the power to control the degree of competition (in the relevant market, as well as downstream related ones) throughout the level of interoperability she is willing to grant.”<sup>129</sup>

In essence, the copyright owner today not only has a state sanctioned right over the competitive process, but also the rate of innovation. After all, the corollary of the copyright owner receiving greater control over its content is the ability to restrict the access of third parties to it.<sup>130</sup> Compelling arguments have been made that any imbalance should be corrected by endogenous changes rather than shifting the balance through an application of competition law. As Michael Katz puts it:

“Even if one concludes that someone should engage in fine tuning IPRs to reflect competitive conditions or other market characteristics, that someone need not be a competition policy authority. Present antitrust laws and enforcement institutions have not been created with this role in mind. Moreover, co-ordination with the PTO<sup>131</sup> is essential to implementation of a sound overall policy. Absent legislation, using antitrust policy to fine tune IP laws would very likely create more problems than it would solve.”<sup>132</sup>

The presumption is therefore against exogenous remedies. After all, it may be argued that hundreds of years have been spent developing a sophisticated endogenous machinery to ensure a

<sup>128</sup> G Ghidini, *Intellectual Property and Competition Law* (Cheltenham: Edward Elgar, 2006, at p.104. (Arguing that economic analysis has identified the risk of adverse impacts of standardisation on competition and consumer welfare as well as the dynamics of innovation.)

<sup>129</sup> G Ghidini, *ibid*, at p.105

<sup>130</sup> W. M. Landes and R. A. Posner, ‘An Economic Analysis of Copyright Law’, (1989) 18 *Journal of Legal Studies* 325 at p.326, See also A Thierer and W Crews eds., *Copyfights: The Future of Intellectual Property in the Information Age* (Washington: Cato Institute, 2002) (presenting various authors debating over, inter alia, how intellectual property law should be revised to meet the unique conditions of the ‘digital’ or ‘information’ age and the proper scope and subject matter of patent law).

<sup>131</sup> This refers to the US Patent and Trademark Office.

<sup>132</sup> M L Katz, ‘Intellectual Property Rights and Antitrust Policy: Four Principles for a Complex World’ (2002) Vol. 1 Issue 1 *Jour. Tele. & High Tec. Law* 325 at 328-9. As Richard Posner argued: “It is not a violation of (antitrust laws) to acquire a monopoly by lawful means, and those means include innovations protected by intellectual property laws. If copyright protection of software is too broad (either because too much intellectual property protection can reduce output or because... too much innovation can be inefficient), it is a matter to take up with Congress.” R A Posner, *Antitrust Law*, 2<sup>nd</sup> Edn, (Chicago: University of Chicago Press, 2001), at p. 250. See also, B Ong, ‘Anti Competitive Refusals to Grant Copyright Licences: Reflections on the IMS Saga’ (2004) *EIPR*. 26(11) 505 at p.508 (Arguing that copyright law can remedy anti-competitive refusal to license through (1) “tinkering with the rules on the eligibility of the subject-matter for copyright protection”, (2) “the nature and scope of the copyright owner’s exclusive rights”, (3) “the availability of compulsory licences to would-be competitors of the copyright owner”.)

‘proper’ balance between the owner and the public.<sup>133</sup> As the OECD broadly declared, “Any intrusion by competition law, particularly into the owner’s exclusive right in refusing to license its IPR after it has been legitimately obtained would discourage innovation.”<sup>134</sup>

However, the truth may be that an interface between copyright and competition law may be inevitable. Copyright cannot anticipate and respond to every possible situation where a copyright owner exploits his right in an anti-competitive manner. Indeed, TRIPS itself explicitly provides for the use of competition policy as a device for controlling anticompetitive abuse of IPRs.<sup>135</sup> Any presumption of legality based on a unilateral refusal to license copyright extends to the extent that the rights themselves do. Clearly then, copyright that extends beyond the creative works to create economic bottlenecks must be outside the protection of that presumption. In *United States v. Microsoft*, Microsoft argued that because Windows was copyrighted, it could not violate antitrust laws by refusing to let people alter the program. The District Court rejected this argument holding:

“... whatever copyright protection Microsoft enjoys in its software is not unlimited. For example, copyright in a computer program does not extend to its functional aspects.<sup>136</sup> It does not preclude design choices dictated by necessity, costs, convenience or consumer demand.<sup>137</sup> And it does not render inviolate portions of the program that are not original to its creator.... Copyright holders are restricted in their ability to extent their control to other markets. They may not prevent the development and use of interoperable programs by competitors.”<sup>138</sup>

It is difficult to imagine a regime that will produce watertight systems of law. Copyright is not an end in itself. It is but a microcosm in an ecosystem of rights and interests steered towards innovation and competition. Properly conceived, copyright resounds in harmony with competition law to maintain and enhance efficient market conditions. However, the expansion of copyright into functional works, far from representing a well-balanced response to the need to foster dynamic processes of innovation, seems to serve powerful corporate interests aimed at preserving their market dominance for as long as possible by trying to exclude current and potential competitors. This results in unbalanced protection that sacrifices the dynamics of competitive innovation. This might lead to an overall reduction in innovative output,<sup>139</sup> as ever

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<sup>133</sup> Copyright law protects only works of expression, excluding facts and ideas; the fair use doctrine, often referred to as a "safety valve," protects against cases in which the routine application of copyright law would unduly restrict public access to the work; and the Copyright Act contains compulsory licensing provisions. Trademark law provides no protection for generic marks or, with some qualification, descriptive marks. (stating that registered marks that become generic terms are subject to cancellation at any time); (stating that descriptive marks may only be registered provided they have acquired secondary meaning). Patent law provides no protection for fundamental principles or for laws of nature. See D I Bainbridge, *Intellectual Property*, (5<sup>th</sup> Edition) (Essex: Longman, 2002) at 13.

<sup>134</sup> Organisation for Economic Development Directorate for Financial, Fiscal and Enterprise Affairs, Committee (OECD) on Competition Law and Policy, Competition Policy and Intellectual Property Rights Executive Summary (1998) at p.8.

<sup>135</sup> Article 40(2) allows Members states to legislate against “conditions that may in particular cases constitute an abuse of intellectual property rights having an adverse effect on competition in the relevant market.” Available at [http://www.wto.org/english/tratop\\_e/trips\\_e/t\\_agm3\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/t_agm3_e.htm) (Last visited June 2006)

<sup>136</sup> Citing *Lotus*, *supra* n. 51.

<sup>137</sup> Citing *Apple Computer, Inc. v. Microsoft Corp* [1994] 35 F.3d 1435, at 1442. (Where the court found that user interfaces were protected only against virtually identical copyright, because of the limited number of ways the underlying idea can be expressed); *Computer Associates International v. Altai* [1992] 982 F.2d 693. (Significant portions of structure, sequence and organisation of a program may be copied to write similar programs to run on different platforms.)

<sup>138</sup> *United States v. Microsoft* [1998] WL 614482 at 15.

<sup>139</sup> G Ghidini, *supra* n. 128, at p.67

smaller groups of unchallenged firms consolidate total control of the innovation market.<sup>140</sup> Competition law therefore should be there to regulate abuses of dominant position by copyright owners, which copyright law generates but does not satisfactorily address.<sup>141</sup> Copyright protects investors against free riding by granting them a micro-monopoly on the industrial sector they developed, not a macro-monopoly on the industrial sector to which the solution belongs.<sup>142</sup> Where the growth impedes economic efficiency, competition law acts as an integral counterbalance in a system of innovation. The application of the EFD to copyright aims to achieve access from the outside, that cannot be achieved from within. As Hanns Ullrich noted:

“Because legislators often fail to properly define the limits of exclusive property rights, the exercise of these rights in new situations, and especially with regard to new technologies, attracts scrutiny under competition law, with a view to preventing anti-competitive market foreclosure.”<sup>143</sup>

It may be argued that copyright in functional works simply proves its malleability in securing investments in innovation of a different kind than aesthetic work as it adapts and reinforces its ability to promote innovation. However, it is not soft sentimentalism that requires a defence of the classical position. It is the need to preserve the *raison d’être* of copyright in promoting both primary creative works and their derivations that raises the issues in this paper. Copyright may reinforce barriers to entry caused by network effects resulting in consumers being locked into an allegedly inferior standard. The developments have threatened to upset effective market competition by creating informational bottlenecks that seem to cry out for a remedy. This the EFD has provided. But could the remedy be worse than the malady?

### III. LAW AND ECONOMICS AT THE INTERFACE

Having established that the expansion of copyright into functional work can give rise to competitive harm, the analysis turns to how courts and CEOs have attempted to balance the need to prevent harm to consumer welfare against the costs of false convictions that chill innovation. The three broad approaches taken by courts will be examined. Second, two observations will be made regarding the assumptions underpinning intervention: whether the EFD should be an arbiter of unmeritorious copyright, and whether the “new product” criteria has been sufficiently well defined as to be workable. Third, two exhortations are made with respect to intervention in network industries. First, that “superdominance” should never be an excuse for sloppy competition analysis. Second, that clear instances of consumer harm should be required before the EFD unravels tipped markets. Finally, the section concludes by examining the role of law and economics in providing a useful resolution to the elusive standard of “reasonableness” in compulsory licensing.

#### A. One Doctrine, Three Approaches

Cases have adopted three distinct approaches to regulate access to functional works. The first approach begins with the assumption copyright bottlenecks are best dealt with by focusing on what is protectable under copyright laws than on what protectable elements are candidates for

<sup>140</sup> M P Ryan, *Knowledge Diplomacy: Global Competition and the Politics of Intellectual Property*, (Washington DC: Brookings Institution Press, 1998)

<sup>141</sup> E Derclaye, *supra*, n.79

<sup>142</sup> G Ghidini, *supra* n.128, at p.109.

<sup>143</sup> H Ullrich, ‘Expansionist Intellectual Property Protection and Reductionist Competition Rules: A TRIPS Perspective’ (2004) *Journ. Int. Ec. L.*, 401.

compulsory licensing under the EFD. The second approach denies access based on owner-centred dynamic efficiency considerations. The third approach grants access based on competitor-centred dynamic efficiency considerations.

### 1. Approach #1: No Protection

The first category of cases does not recognise copyright subsisting in the disputed content at all. Thus, in its simplest form the US courts in *Feist* and *Lotus* have held that banal works do not qualify for copyright protection in databases and software.<sup>144</sup> The EU has taken a markedly different approach, preferring instead to offer legislative sanctuary in the form of the Software and Database Directives. Because the European legislators had expressly recognised IPRs in these forms, the courts in the recent *British Horseracing Board* cases chose instead to construe the provisions very strictly, and then apply the EFD without dynamic efficiency considerations.

The British Horseracing Board (“**BHB**”) is the governing authority for horseracing. It is responsible for compiling a database that contains racing information. In *The British Horseracing Board Limited & Anor v. William Hill Organisation Limited* (“**WHO**”),<sup>145</sup> the ECJ ruled that the BHB had no valid database right in its collection of pre-race data since it had not made a sufficient substantial investment in creating the database over and above that invested in the creation of its constituent parts. The ECJ made it clear that BHB was investing in the creation of the database, rather than in the obtaining, selecting and verification of its constituent parts, activities which gave rise to the *sui generis* database right.

Following its defeat in *WHO*, BHB then demanded that entities such as Attheraces (“**ATR**”) who obtained data via BHB enter into an additional licence with BHB to pay for database rights in the data. ATR asked the BHB to clarify the basis on which it sought payment. In response, BHB threatened to terminate the supply of data unless ATR agreed to pay licence fees to the BHB. In the UK case of *AttheRaces & Anor v. The British Horseracing Board Ltd & Anor*,<sup>146</sup> ATR claimed that BHB effectively had a monopoly in the supply of pre-race data to information on runners and riders that was necessary to enable bookmakers to take bets on horse races. BHB abused its market dominance by refusing to supply ATR with pre-race data and threatened to terminate the supply of data to ATR even though ATR was an existing customer of BHB and pre-race data is an essential facility controlled by BHB. The Court found that BHB had abused its dominant position in relation to pre-race data. However, since the ECJ had earlier found that there were no database rights in the pre-race data, this is not authority for the Interface, but rather how courts can skirt around copyright considerations in Interface cases. This approach has the merit of focusing on the types of products that justify copyright protection and the appropriate scope of that protection. However, in a utilitarian work such as software and databases, it may be difficult to ascertain the boundaries between creative expression that is protectable under copyright law and other, functional elements.

### 2. Approach #2: No Access

In the second category of cases, the EFD was expressly considered in the copyright context. However, no access was given. The jurisprudence here suggests greater belief in net gains from allowing the owner the prerogative to control access. The ECJ in *IMS Health GmbH*

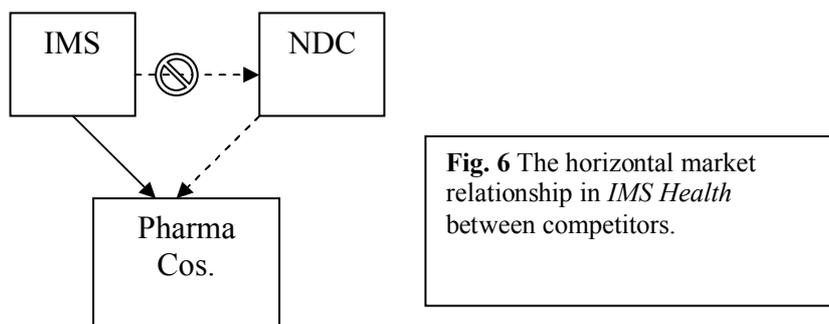
<sup>144</sup> See discussion in Part II.A.

<sup>145</sup> *The British Horseracing Board Limited & Anor v. William Hill Organisation Limited* Case C-203/02, [2005] RPC 260.

<sup>146</sup> *AttheRaces & Anor v. The British Horseracing Board Ltd & Anor* [2005] EWHC 3015 (Ch)

& Co KG v. NDC Health (“**IMS Health**”) therefore refused a competitor seeking access only to offer mere duplicate products. The US Supreme Court in *Trinko*,<sup>147</sup> making obiter comments on IPRs in a case involving access to telecommunications facilities, went one step further suggesting that where a sector-specific regime is in place, the EFD had only a severely limited role to play.

(1) *IMS Health*: In *IMS Health*,<sup>148</sup> the copyright covered a modular structure used for data classification by wholesalers of pharmaceuticals had become the market standard. Pharmaceutical companies used this data to measure the effectiveness of their promotional efforts in each town and district. In order to supply usable marketing data to customers that data had to describe sales in geographic zones as their customers delineated them. There were no substitutes or alternatives to reporting sales along the same geographic lines as the map of postcodes as arranged by IMS Health, which, IMS Health was successfully claiming, constituted a breach of its copyright. NDC, who sought market entry based on access to IMS’s structure argued that its copyright was an essential facility because pharmaceutical companies did not want to use any map except the brick structure, even though competitors were free to develop and offer their own structure or maps. The market relationship is shown in **Fig. 6** below. The Commission therefore claimed that compulsory licensing was necessary to enable the competitor to present the same data in the same format. In doing so, the Commission implicitly suggested that strong customer preferences can make a competitive advantage into an essential facility which the dominant owner must share with rivals. It follows that a monopoly can be made the subject of compulsory licensing even if no other abuse has occurred, to share its principal competitive advantage with its competitors - dominance without abuse is illegal *per se*.



The ECJ recognised that while network effects were relevant in determining whether the data was “essential”, the element of “abuse” could only be established when that behaviour impedes the development of derivative markets.<sup>149</sup> In order for abuse to exist, it is necessary that the requestor did more than merely duplicate the product offered on the secondary market by the copyright owner. It had to show tangible evidence that it intended to produce “new products” not already offered by the owner for which there is a potential consumer demand.<sup>150</sup> The requestor did not wish to change or improve or create new reports on regional sales, but only to provide

<sup>147</sup> *Trinko*, supra, n.8. See also *Covad Communication Company et al v. Bell Atlantic Corp et al* [2005] 398 F 3d 666, 365 US App DC 78. (Where the court denied a private action for treble damages in antitrust for failure to perform regulated activities)

<sup>148</sup> *IMS Health GmbH & Co KG v. NDC Health* [2004] 4 CMLR 1543

<sup>149</sup> In truth, the judgment was equivocal. While the ECJ held that a new product was required in a secondary market, it set a floor-high threshold in also holding that two separate markets can be found at two different stages of production. *IMS Health supra*, n. 148 at para.45.

<sup>150</sup> *IMS Health ibid*, at para. 49.

similar or identical services to IMS Health. This meant that the copyright owner had to provide information on its own market. Since it could not show potential demand from consumers for new hypothetical product, access was not granted.

(2) *Trinko*: *Trinko* was described as the “most important antitrust decision in 20 years”.<sup>151</sup> In *Trinko*,<sup>152</sup> Verizon was compelled by the Federal Communications Commission under the US Telecommunications Act 1996<sup>153</sup> to share its local networks with entrants. *Trinko*, a firm that bought services from one of the entrants alleged that Verizon had violated US antitrust law by filling rival’s orders in a discriminatory manner to discourage customers from joining the entrants. On appeal, the Supreme Court placed strict limitations to the situations where antitrust law could interfere with market with sector-specific regulation, suggesting that the existence of sector-specific regulation should leave little scope for antitrust intervention and the EFD.<sup>154</sup> The Court’s enthusiasm short-circuits the debate that has raged for decades in the economic literature about the market structure that best promotes innovation.<sup>155</sup> While not stating it in so many words, *Trinko* may have effectively brought the era of essential facility claims in the US to an end, certainly in regulated industries where an agency is actively supervising the conduct that forms the basis of an antitrust claim, and possibly to copyright as well.<sup>156</sup>

### 3. Approach #3: Give Access

The final approach directly confronts the core issues at the Interface. The facts make a compelling case for the court to grant access to copyright content under the EFD. This raises the challenging question of determining the scope of access and the compensation due to the owner. The EU cases of *Magill* and *Microsoft (EU)* both fall into this category. However, as will be seen, the justifications for access in one case may be less defensible than the other.

<sup>151</sup> A Cabdeub, ‘Trinko and Re-grounding the Refusal to Deal Doctrine’ (2005) 66 U. Pitt. L. Rev. 821

<sup>152</sup> *Trinko*, *supra*, n.8.

<sup>153</sup> US Telecommunications Act 1996 Pub L No 104-104, 110 Stat 56.

<sup>154</sup> *Trinko*, *supra*, n.8 at p.881 (“One factor of particular importance is the existence of a regulatory structure designed to deter and remedy anticompetitive harm. Where such a structure exists, the additional benefit to competition provided by antitrust enforcement will tend to be small, and it will be less plausible that the antitrust laws contemplate such additional scrutiny.”).

<sup>155</sup> See J A Schumpeter, *Capitalism, Socialism, And Democracy* (3d ed). (New York: Harper & Row , 1950) at pp. 81-106 (Stating that monopolists are encouraged to innovate because of scale economies in research and development and increased appropriation of the full value of their ideas); K J Arrow, *Economic Welfare and the Allocation of Resources for Innovation*, in *Essays in the Theory of Risk-Bearing* 144 (3d ed.) (Chicago: Markham Publishing, 1976) (Explaining that monopolists may have less incentive to innovate because they have more to lose than competitors); F M Scherer, ‘Antitrust, Efficiency, and Progress’, (1987) 62 NYU. L. Rev. 998, 1011 (“Although there are fairly simple and well-accepted generalizations as to which market structures stimulate the most rapid pace of innovation, the question of what progress rate is socially optimal, and . . . which market structure driving it is best, is extremely complex and poorly settled.”).

<sup>156</sup> As Gustavo Ghidini observes: “Europe strikes a clear difference with the other side of the Atlantic. In the US, as hinted, the dominant opinion, quite in tune with the recent ruling of the Supreme Court in *Trinko*, is traditionally reluctant to allow any breaches in excluding faculties of IPRs, views as (a) indispensable incentives to innovation, and (b) already subject to (sufficient) ‘built-in’ limitations of time and scope.” G Ghidini, *supra* n.128, at p.107. A parallel should be drawn with *Oscar Bronner*, *supra*, n.18 which warns against the overzealous application of the EFD to IPRs.<sup>156</sup> The EFD was justified only when there was a genuine stranglehold on the related market. This may be where the cost of duplication is prohibitively highly, particularly where the original investment had been made through public funding. While *Oscar Bronner* was not a case involving copyright, it was important both because the EFD was discussed at length in the context of IPRs, as well as that compulsory licensing was regarded as a sub-set of the EFD.

## B. Two Observations

The brief survey of cases from *Feist* to *Trinko*, *Magill* to *Microsoft (EU)* give rise to several important observations regarding the balance that is to be made at the Interface. This section examines two of the most fundamental issues. The first issue is whether courts and CEOs should use the EFD as a counterbalance against unmeritorious copyright expansion. The second issue is how the “new product” criteria first espoused in *Magill* should be developed to protect the copyright owner’s right to appropriate rewards in the technology.

### 1. Should the Essential Facilities Doctrine be the Arbiter of Unmeritorious Copyright?

It may be argued that in cases where access was granted, such as in *Magill*, the ECJ was skeptical about the existence of the copyright in the case and believed it to be unworthy of protection. In this case, dynamic efficiency considerations were weak. Few Member States in the European Community granted copyright to data, and the copyrighted television listings themselves had little literary merit. Copyright unnecessary to induce the stations to produce the listings because they needed viewers to be aware of the programmes they offered. Therefore, the incentive to produce and disseminate programs would be the same irrespective of whether the broadcasters were protected from competition in the television guide market.<sup>157</sup> Compulsory licensing therefore would not significantly impact on the production and release of program listings. Using compulsory licensing under the EFD to remedy unmeritorious copyright might well enable courts and CEOs to weaken the copyright owner's grip over material that it should not be his exclusive right to exploit. However, there are two problems with this reasoning.

First, the EFD does not distinguish between types of copyright based on its value. It has no legal basis to do so, is not supported by any holding in *Magill*.<sup>158</sup> Correcting defects in the political process is not competition law’s role. Rather, competition law takes legislation as it finds it, even if the legislation serves the public interest poorly. The scope of copyright may have an impact on the number and kind of conflicts that arise, but competition law is concerned with economic and not political competition. By taking into account merit in copyright, competition intervention invariably translates into uncertainty in copyright exploitation, as copyright owners will not know in advance whether their rights will be whittled down or upheld by competition authorities. They will also not be able to estimate correctly the return on their investments. It is submitted that this consideration led the *Trinko* court to fervently defend monopoly power, positioning it as “an important element of the free-market system” and the magnet for “risk taking that produces innovation and economic growth”.<sup>159</sup>

Second, distinguishing unmeritorious copyright is difficult at best. If the courts or CEOs discriminated among different classes of copyright, or even within a single class, deeming that access to some works may be ordered, while others are beyond its scope of application, this

<sup>157</sup> Indeed, officials of the Commission’s legal service stated, in their personal capacities, that *Magill* should be limited to “unmeritorious kinds of intellectual property” See J Turney, ‘Defining the Limits of the EU Essential Facilities Doctrine on Intellectual Property Rights: The Primacy of Securing Optimal Innovation’, *Northwestern Journal of Law and Intellectual Property* (2005) Vol 3 No. 2 179

<sup>158</sup> Other differences include the fact that in *Magill*, the information was owned by the TV companies. In *IMS Health*, the sales data was freely available from wholesalers; in *Magill*, nobody could produce a substitute for the program list, while in *IMS Health* the plaintiffs had produced their own brick structures; in *Magill*, the copyright owners discriminated against *Magill* as they had given the information to newspapers and foreign magazines, in *IMS Health*, it never licensed brick structure anywhere except where it sold a business; licensing *Magill* did not affect the core of the TV companies’ activities.

<sup>159</sup> *Trinko*, supra, n.8. at 407.

would throw into serious question the integrity of competition law analysis. If the courts were seeking to discredit copyright granted under a legislative instrument even indirectly, the final ruling should be that the copyright matter falls in the public domain, rather than a finding that the parties must negotiate terms of access, or failing that, the terms would be imposed by the courts or CEOs. Put another way, it would be incongruous for CEOs and courts to question the validity of copyright on the one hand, and on the other, claim that the owner is entitled to a royalty for the exploitation of the underlying work.

A better perspective to achieving the same end would be to regard the EFD simply as a means to compel access to copyright that has been found to impede the efficient functioning of copyright. Viewed in this light, access in *Magill* may then be understood as follows. What *Magill* needed was information. If it had been possible to provide the information without infringing the copyright in the program schedules, no compulsory license would have been needed.<sup>160</sup> Even if copyright law did not protect the type of low level information which *Magill* wanted to publish, the television companies were the only source of it. If they chose not to distribute the information at all it was not obtainable elsewhere. This information was raw material from which television guides were made. The television companies therefore held a dominant position both in the information itself and in the guides made from it independently of any copyright they might own. Copyright was merely the tool used to effect the abuse.<sup>161</sup>

## 2. Defining the “New Product”

The cases such as *Magill* require that the copyright owner impede the appearance of a “new product” desired by consumers.<sup>162</sup> This requirement attempts to address the concern that EFD cannot be used to require compulsory licensing merely because the existence of the copyright creates market power. This makes good sense. Depriving the owner the right to exploit on the primary market interferes with the existence of the right. The difficulty with the new product requirement is that it is a continuous rather than discrete variable.<sup>163</sup> Products are composed of a specific bundle of characteristics.<sup>164</sup> A product may be new because additional features alter the manner of functioning, or improvements in interoperability, medium, formatting, appearance or product safety. Improvements also may not be physical, but take the form of more efficient manufacturing processes, making the product cheaper. A new product may therefore be either a product integrating a new characteristics<sup>165</sup> or a product with a better performance on particular characteristics.<sup>166</sup> However, this does not help establish whether the refusal prevents development of the secondary market to consumer detriment.<sup>167</sup>

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<sup>160</sup> J T Lang, ‘The Application of the Essential Facilities Doctrine to Intellectual Property Rights under Competition Law’, in F Lévêque (ed.), *Antitrust, Patents and Copyright: EU and US Perspectives* (Cheltenham: Edward Elgar, 2005), at pp.61-2 at p.57 (Arguing that the copyright issue had been raised only as a defense to access by the television companies.)

<sup>161</sup> For a comprehensive analysis see *Philips Electronics v. Ingman and Video Duplicating*, [1998] CH 1997 P.No. 4100.

<sup>162</sup> See for example *Magill*, supra, n.102, *IMS Health*, supra n.148.

<sup>163</sup> D Ridyard, ‘Compulsory Access under EC Competition Law – A New Doctrine of “Convenient Facilities” and the Case for Price Regulation’ (2004) ECLR 669 (Arguing that the “new product” may lead to newcomers being given access for even minor changes)

<sup>164</sup> Such as the maximum speed or the number of seats of a car.

<sup>165</sup> Such as a car engine powered both with gas and electricity.

<sup>166</sup> Such as a higher maximum speed.

<sup>167</sup> *IMS Health*, supra n.148 at para.49.

It is submitted that there should be two refinements to the “new product” requirement. First, the product should be a derivation not previously offered, and not merely a clone. The latter would set too low a threshold since every product would potentially attract compulsory licensing. The implications of the potential markets concept are far reaching. For example, new functions can always be added to software. The law could hardly impose a duty to share important internally-generated competitive advantages with direct competitors on demand, merely on the basis of their intention to offer a product with some new characteristics. It would be unsatisfactory if a copyright owner had to decide whether it was free to refuse a license merely on the basis of a rival’s allegation about the degree of novelty of a product that the competitor was not yet in a position to produce, and which it would be certainly be unwilling to describe in detail.<sup>168</sup> As William Cornish observed:

“It can certainly be argued that this fencing off of intangible subject-matter fulfils an economic function equivalent to that of ownership of physical property, because otherwise the incentive to optimise the value of the information will be impaired or destroyed. Those who would be innovators will wait instead to be imitators and the dynamic process which would have generated new ideas will disappear; in the end there will be little or nothing different to imitate”<sup>169</sup>

It is simple enough to identify a specific “new product” the TV guide in *Magill*,<sup>170</sup> which clearly could not be offered without access to the copyrighted listings owned by the defendants. However, in *Microsoft(EU)*, both the Commission and CFI simply held that Microsoft’s refusal to disclose its copyrighted codes would prevent competitors from developing “new products” without specifying what they were.<sup>171</sup> Indeed, it is difficult to see what additional value access to Sun Microsystems could have since it was in fact producing a functionally identically substitute to Microsoft’s work group server OS. Where a “new product” cannot be convincingly defined, then the plaintiff has not discharged its burden of proof, and not access should be granted.

Second, the EFD should be confined to “new products” in the secondary market. Copyright justifies an exclusive protection in the primary market in order to prevent copying. Appropriability does not take the form of a lump sum payment, but rather as an opportunity to market their goods without interference by free riders. In contrast, when downstream markets are also affected, the contribution through the creation of copyrighted work does not justify its abusive use for other purposes on a secondary market.

### C. Two Exhortations

Generally, network markets do not require special rules. However, they require sensitivity to the fact that networks can both produce significant efficiencies and increased opportunities for the exercise of market power. However, two issues are of special importance to functional copyright industries. The first issue is whether “superdominant” owners are penalised

<sup>168</sup> J T Lang., *supra* n.160 at p.71.

<sup>169</sup> W R Cornish, *supra*, n.55 at p.35

<sup>170</sup> This would be a weekly TV magazine comprising the programmes of all TV channels.

<sup>171</sup> *Microsoft*, Commission Decision, [2004] Case T-201/04, at para. 694 and 700; Court of First Instance *at supra* n.50. For avoidance of doubt, the CFI did not hold that Microsoft’s refusal to disclose APIs would prevent ‘new products’ for the purposes of demonstration of exceptional circumstances under Article 82. The proceedings before the CFI leading to the President’s order of 22 December 2004 were for interim relief. The only issues were (1) whether Microsoft established a prima facie case that the Commission was wrong on the law and its application to the facts (2) the harm to Microsoft of having to implement the Commission’s orders immediately gave cause to overrule them. On the issue of diminishing consumer choice as a result of non-interoperability.

because their market power makes abuse a matter of course. The second issue is whether cases have required access without proof of real harm to consumer welfare.

### 1. Penalising Superdominance

Whether a facility is “essential” is often a question of a degree of dominance. Dominance is the power to behave independently of market forces.<sup>172</sup> As in any investigation into abuse of dominant position, it is necessary to define the relevant market in an EFD case. The downstream market will inevitably influence the definition of the essential facility in the upstream market. Economists play a critical role in measuring “essentiality” through market power analysis. Once dominance is established, the copyright owner has a duty to grant access where a non-dominant does not. This is because dominance brings a special responsibility to refrain from acting in a manner that harms competition.<sup>173</sup> It follows then that “superdominant” copyright owners have an even heavier responsibility to ensure an objectively acceptable state of market competitiveness.

The first danger here is that because the competition analysis involves a value judgment based on the facts of each case, the decision makers also have substantial discretion in defining that objectivity. This discretion creates a danger that the “essentiality” may be read so broadly as to mean that a plaintiff is automatically entitled to access the owner’s copyright content whenever dominance is established. As Herbert Hovenkamp observed:

“To be sure, the rules that courts develop are related to the values they believe antitrust should further. If we think that copyrights are packed with anticompetitive potential, then we might respond with a rule that presumes their owners are monopolists. Several decisions have done just that.”<sup>174</sup>

Even assuming dominance is properly established, another danger would be assuming an abuse automatically follows a refusal to grant access. Compulsory licensing in such cases then arises from looking forward at the desired conduct rather than looking backward and ensuring the discontinuation of the alleged abuse. The link between the compelled conduct and the infringing act may be rather imperceptible, although to the eyes of the general public the compelled conduct may have great political or industrial symbolism.<sup>175</sup> The EFD then becomes most attractive to plaintiffs because “essentiality” effectively shifts onto defendants the burden of justifying its denial of access.<sup>176</sup> If it can be accepted that this happens, however inadvertently, at least some of the time, the EFD may then represent a streamlined technique for proving anticompetitive harm. This provides savvy plaintiffs with a short-cut to turn the EFD into a

<sup>172</sup> See for example CCS Guideline of the Section 47 Prohibition 2005, *supra*, n.36 at para.3.3

<sup>173</sup> *Compagnie Maritime Belge v. Commission* [2000] 4 CMLR 1076.

<sup>174</sup> H Hovenkamp, *supra* n.77, citing as examples *United States v. Paramount Pictures* [1948] 334 US 131; *United States v. Loew’s* [1962] 371 US 38; *MCA Television Limited v. Public Interest Corp* [1999] 171 F.3d 1265.

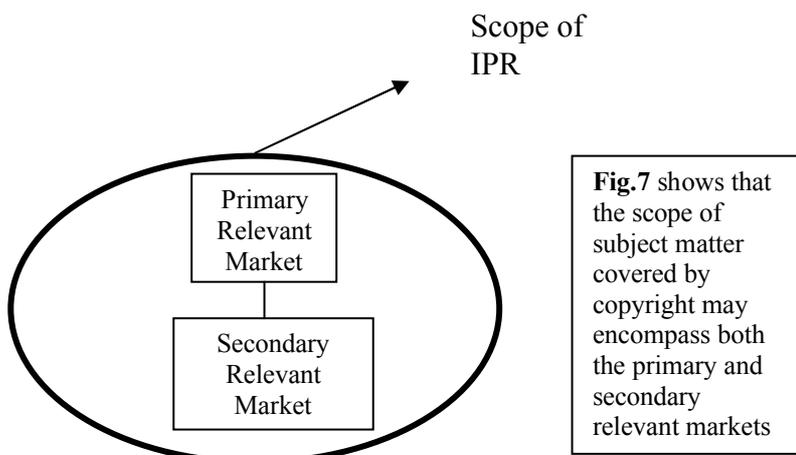
<sup>175</sup> As Ian Forrester aptly noted: “to put matters rather severely, but not necessarily unfairly, the analysis sometimes seems to start with the desired remedy rather than with the theory of the abuse”.. I S Forrester, *supra*, n.117 at 922.

<sup>176</sup> A Kezsbom and A V Goldman, ‘No shortcut to antitrust analysis: The Twisted Journey of the “Essential Facilities” Doctrine’ (1996) Col. Bus. Law Review 1. . As Areeda and Hovenkamp caution: As with most non-per se claims, the plaintiff bears the burden of persuasion that the challenged conduct is unreasonable. Of course, the defendant should bear the usual burden of coming forward with some evidence of justification. *But once he does so, it should be the plaintiff’s obligation to persuade the judge or jury that the justification should be rejected.* That seems especially appropriate here where the warrant for requiring owners of goods or facilities to share them with competitors is somewhat questionable to start with, where the imposition of such a duty is exceedingly intrusive, and where it is subject to so many reservations about the ability of courts to compel dealing with reasonable predictability, with reasonably effective administration, and without chilling desirable activities

siphon to appropriate the owner’s investment and effort under a doctrine of “convenient facilities”.<sup>177</sup>

Traditional market definition analysis should come *before* applying the doctrine. Defining a market merely by existing dominance begs the question of whether the copyright work is “essential”. Once access is granted to interface information, the competitor, particularly in permeable software markets, are free to develop competing products against the original work. To contextualise the issue, the Commission in *Microsoft* opined that since access to the source code was not being required, Microsoft’s fears of cloning were not justified. It followed that Microsoft’s incentives to innovate would not be affected.<sup>178</sup> However, Valentine Korah disagrees, saying that: “the incentive must have been considerably reduced.”<sup>179</sup>

The second danger with superdominance is that the assumptions supporting it may not be appropriate. Superdominance assumes that market definition was correctly done, and that the superdominance will be permanent. Technology markets may not be neatly fitted into competition markets. As **Fig. 7** shows, exploitation of copyright may often transcend more than one relevant market. The scope of a *legal* monopoly is defined by the normative boundaries of copyright, not by what a court determines is the relevant market. In contrast, the scope of an *economic* monopoly refers to a firm's power to control the price of a product in a properly defined relevant competition market. Since the reward of copyright is the right to exploit the entire field it covers, they can implicate multiple competition markets. Accordingly, there should not be liability for refusing to license within the market defined by its legal monopoly, regardless of the number of competition markets this implicates. By restricting this exploitation, the legitimate extent of exploitation may be eviscerated.



**Fig.7** shows that the scope of subject matter covered by copyright may encompass both the primary and secondary relevant markets

Third, large market shares can often be deceptive. Often an essential facility is continuously under threat and the right holder is compelled to constantly keep under review or develop its primary product. Technology markets, in particular, are dynamic and ways are often found to circumvent what was previously believed to be an industry standard. Secondary market rivals may also be potential primary market rivals. After all, market definition is more a legal construct than a reflection of bright line distinctions on a production chain. Generally, mere exploitation of an industrial standard without regard for rivals has never been itself viewed as

<sup>177</sup> A Kezsbom and A V Goldman, *ibid*.  
<sup>178</sup> *Microsoft*, *supra n.171* at para. 725.  
<sup>179</sup> V Korah, *supra n.30* at p.162. And if Microsoft’s cutback on R&D is anything to go by, she is probably right. In 2000, R&D was USD 3,775 million, declining in 2005 to USD 1,241 million. See Microsoft Annual Report 2000 and 2005, available at <http://www.microsoft.com/msft/ar.mspx> . (Last visited June 2006)

abusive under competition law.<sup>180</sup> A firm that has achieved a market standard by virtue of its investment in R&D and IP protection is normally entitled to continue to compete by exercising its exclusionary rights even in “aftermarkets.” To find a refusal to licence abusive, something more must be shown by the competition authorities to allow the imputation of an abusive motive to the copyright owner’s conduct other than a refusal to supply or licence as such. It is appropriate to note that while the EFD requires open access, nothing guarantees that new membership into the primary market will automatically pass benefits of access to consumers. Indeed, by requiring communication of proprietary information between competing undertakings, competition law may well be trading exclusionary abuse to anticompetitive collusion. The cost structure within the technological markets naturally leads to concentrations of market power. Any attempt by CEOs to artificially fragment the market will likely damage the efficiency of the industry to the ultimate detriment of consumers.<sup>181</sup>

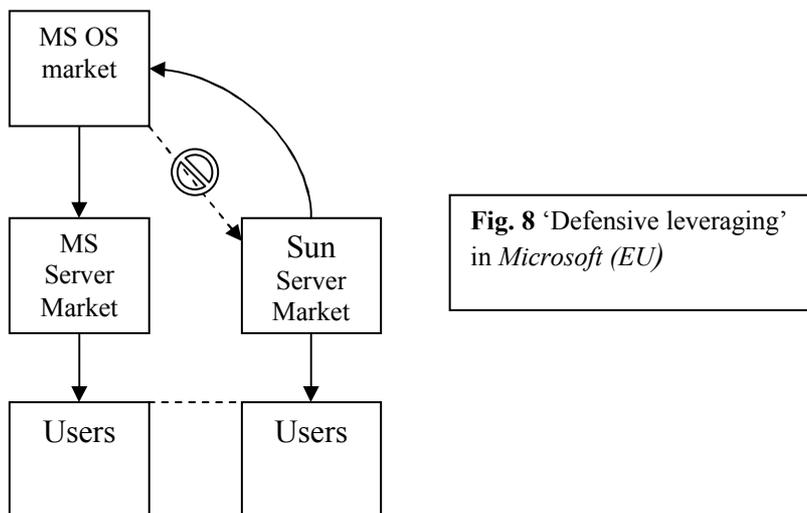
The fourth objection is closely related to the third. Some functional copyright markets are very permeable. In the *Microsoft* cases, a common justification raised was Microsoft’s concern that its downstream rival might enter the primary OS market once its application protocol interfaces were disclosed. In *Microsoft (US)*, Microsoft expressed concern about the ‘middleware’ threat posed by Netscape Internet Browsers riding on Java technology to run applications which Microsoft’s Windows OS provided a platform for.<sup>182</sup> Similarly, in *Microsoft (EU)*, Sun Microsystems requested interface information required for its downstream workgroup server OS to fully interact with Microsoft’s Windows OS. This may be seen in **Fig. 8**. Microsoft contended that this refusal was premised on its concern that Sun would then be able to use the interoperability it had provided to produce perfect substitutes to compete with its Windows OS. In neither case was this threat taken seriously.

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<sup>180</sup> R Myrick, ‘Will Intellectual Property on Technology still be viable in a Unitary Market?’ [1992] EIPR 298.

<sup>181</sup> To this problem, Steven Anderman has proposed a useful solution: “When, however, the product is more technically complex, the selection of the initial product involved the exercise of greater discretion by the competition authorities. They can decide whether and to what extent to view the various sub-products or raw materials as components of an integrated product and to what extent to view each sub-product or raw material as a product in its own right. In the case of products such as consumables and spare parts, they can decide whether they are part of the product package presented by the firm to users and consumers or separate products creating separate markets. Furthermore, where a firm has integrated two different levels of economic activity within the same company, the Commission can decide whether these operations constitute an integrated operation offering ‘one product’ or are separate activities offering separate products on separate markets despite the corporate form of the operations.” S D Anderman, *EC Competition Law and Intellectual Property Rights*, (Clarendon Press: Oxford, 1998), at p.154.

<sup>182</sup> Middleware is a platform designed to be compatible with several OS and can support many applications. This allows middleware compatible applications to be used on other OS. Arguably, middleware creates the same risk of market foreclosure if the market tips in its favour over other middleware. The riposte to this is that there will at least be competition between the middleware owner and the OS/applications owner/s, as writers of new applications will may make their applications compatible with the middleware.



**Fig. 8** 'Defensive leveraging'  
in *Microsoft (EU)*

The truth is that the threat posed by the Internet remains a real competitive constraint. As Microsoft recently admitted:

“In addition, barriers to entry in our businesses generally are low. The Internet as a distribution channel and non-commercial software model described above have reduced barriers to entry even further. Non-commercial software vendors are devoting considerable efforts to developing software that mimics the features and functionality of various of our products. In response to competitive factors, we are developing versions of our products with basic functionality that are sold at lower prices than the standard versions.”<sup>183</sup>

An example of this is Google’s web-based spreadsheet, one of several free spreadsheet programs available.<sup>184</sup> It mimics Microsoft’s Excel program, a key component of its Office suite and an oft cited “applications barrier to entry”. While still an incomplete substitute, the report states that this is part of a series of strategies to create an alternative to Microsoft’s desktop PC software business. Future potential substitutes provide competitive constraints on market behaviour much in the same manner as existing ones do and therefore should be an integral part of determining “essentiality”.

F M Scherer, in examining the distribution of rewards to technological innovation, found that the majority of innovative efforts confer only modest rewards. Technological entrepreneurs may be like lottery players and derive positive utility from the skewness of rewards.<sup>185</sup> It follows that copyright owners should not be hobbled simply because it had made too much money for dynamic efficiency considerations to be used as a justification for protection. A private firm, however dominant, should not be treated like a nationalised industry. In the case of nationalised

<sup>183</sup> Microsoft Annual Report 2005, at p.16 Available at <http://www.microsoft.com/msft/ar.msp> (Last visited June 2006). See also Forrester Research’s observation that “Microsoft is crawling into the future of concise Internet services burdened by its bloated, over-engineered ... one-size-fits-all software model.”, ‘Questions over Microsoft’s Future’, (The Straits Times, 18 June 2006)

<sup>184</sup> Others being iCalc, iRows, Editgrid and ZohoSheet, with distinctive functions that are not currently found in Microsoft’s Excel.

<sup>185</sup> F M Scherer, ‘The Innovation Lottery’, in *Expanding the Boundaries of Intellectual Property* (R C Dreyfuss *et al*, eds) (Oxford: Oxford University Press, 2001), at p. 61.

industries, the investment was either made by taxpayers or made when the firm was protected from competition. To open up a portion of these industries to competition seems fair. However, firms like Microsoft invest many millions of dollars while subject to competition from other firms. Turning upon them and requiring access when it wins innovation race and becomes the market standard seems plainly unjust.

## 2. “Lock-Ins” and Proof of Consumer Harm

As discussed earlier, interventionists have argued ‘lock-ins’ lead to monopoly prices and inferior products.<sup>186</sup> The concept of “lock-ins” rests on the belief that the free market competition does not allow the best quality standard to win. Products succeed in spite of inferior quality because consumers purchase it only because everyone else is using it, while in fact, each consumer would have preferred to use a different product. As, the European Commission argued in *Microsoft (EU)*:

“Due to the lack of interoperability ... an increasing number of consumers are *locked into* a homogenous Windows solution ... this *impairs the ability of consumers to benefit* from innovative work group server operating system features brought to the market by Microsoft’s competitors. In addition, this *limits the prospect for such competitors to successfully market their innovation and thereby discourages them from developing new products ... (and will be) confined to niche existences or not be viable at all*. There will be little scope for innovation – except for innovation from Microsoft.”<sup>187</sup>

First, it is important to recognise a distinction between the *ability* of the copyright owner to exploit the inelasticity of its short-run demand for greater profits and the *incentive* to do so, given the much higher elasticity of its long-run demand under which the network effects can build – and unravel.<sup>188</sup> A firm producing a network product must fear that an increase in the current price might lead to greater current profits, but also to an unravelling of the network in the long run, causing the firm to gain short-run profits at the expense of profits later on. The net effect of the firm seeking to exploit its current ability to raise its price could be a reduction in the market value of its stock. Indeed, there is evidence that network markets remain highly competitive despite domination by a single standard owner.<sup>189</sup>

Second, copyright and network effects may give innovators some temporary market power and rewards for innovation, but skilful and aggressive imitators tend to drive prices to costs unless the innovator can successfully retain a first mover advantage for subsequent technological advances. Stan Liebowitz and Stephen Margolis drew important correlations

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<sup>186</sup> See discussion in Part II.(B). See also P A David, ‘Understanding the Economics of QWERTY: The Necessity of History’, in W.N Parker ed., *Economic History and the Modern Economist*, (Basil Blackwell: New York, 1986).

<sup>187</sup> *Microsoft*, Comp C-3/37.792 of 24 March 2004 at para. 694 and 700. (emphasis mine)

<sup>188</sup> In common parlance, this means that the owner stands to gain much from not raising prices, and stands to lose as much from raising them.

<sup>189</sup> R Prentice, ‘Vaporware: Imaginary High-Tech Products and Real Antitrust Liability in a Post-Chicago World’, (1996) 57 Ohio St. L.J., 1163, at p.1229. (“There are many examples of network markets that started out as competitive but ultimately came to be dominated by one or a few firms. In the video recording market, the VHS format achieved such an advantage over the Beta format, and in computer operating systems, Microsoft prevailed over IBM, Apple Computer, and Novell.”)

between market shares and product quality, as indicated by computer magazine reviews.<sup>190</sup> A significant outcome was seen in the markets for personal finance software and software for spreadsheets, where products remained dominant because of their quality.<sup>191</sup> The criticism against “lock-ins” by copyright owners however, was that they should have been able to leverage on their ownership of the copyrighted work to achieve a dominant position, independent of its quality. However, according to their studies there was a strong positive correlation between the review ratings given to the product and its market share. Where the incumbent was replaced, the rival’s product is of a higher quality or technologically more advanced in some way.<sup>192</sup>

The allegation that consumers are harmed because the elimination of competition restricts their choice is only true if consumers prefer product variety to positive network externalities. For example, market dominance could enhance market efficiency because the market is actually larger than it would otherwise be. More applications will be offered by software developers who are confident of the standard’s durability. All applications could be written for a single standard. Porting costs would be reduced and the price of applications could be lower. In-house and external expertise would only need to be built on one system. The average price charged to consumers could be lower than it otherwise would be due to the increased elasticity from network effects.<sup>193</sup> Monopolies in network industries could also establish uniform standards that make it easier for consumers to connect to the network and interact with other users.<sup>194</sup> The competitive process inevitably results in the elimination of some, perhaps all competitors. By being the most innovative, efficient and responsive to customers’ wishes, copyright owner may well be the last one standing.

It would be strange and indeed harmful if such efficient market outcomes were penalised. It is unsound policy to base regulatory action simply on possibilities, particularly where those presenting them acknowledge no obligation to subject them to rigorous empirical tests. The theory of harmful ‘lock-ins’ simply asserts that under certain assumptions, the possibility exists.

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<sup>190</sup> S E Margolis and S Liebowitz, *Winners, Losers & Microsoft: Competition and Antitrust in High Technology* (Oakland: The Independent Institute, 2000). (Giving a detailed account on how standardisation of measurements were resolved in each case.)

<sup>191</sup> Three software brands competed in the PFS market: Quicken by Intuit, Microsoft Money and Managing Your Money (MYM) by Meca. In the late 1980s, MYM was initially considered the best and most powerful product in the category. When Quicken was introduced, it received less positive reviews as it was not as powerful as MYM. Over time Intuit improved Quicken, adding more sophisticated features. As the first two graphs in **Fig.13** show, by the early 1990s, it was considered at least the equal of MYM, and by the mid-1990s, Quicken was clearly considered the best product. In 1991, Microsoft introduced its Money program for Windows. Quicken’s retention of its market leadership was unsurprising given its high quality as indicated in successful reviews. S E Margolis and S Liebowitz, ‘Network Effects and the Microsoft Case’, *The Economics of QWERTY*, P Lewin, ed., (New York: Palgrave, 2002) at p.225.

<sup>192</sup> Microsoft produced a relatively inferior product, and failed to tip that market. Indeed, the PFS market share graph shows one dominant firm followed by another dominant firm, or what is known serial monopoly. Market shares changed so rapidly that the concept of lock-in and tipping seems out of place.

<sup>193</sup> R B McKenzie, *Digital Economics: How Information Technology has Transformed Business Thinking* (USA: Praeger, 2003)

<sup>194</sup> S Labaton, ‘Airlines and Antitrust: A New World. Or Not’, N.Y. Times, 18 November, 2001, at § 3. (“The old antitrust principles do not apply easily because there are countervailing benefits to consumers-like lower prices, standardization or more frequent service-when control of the industry is in the hands of a few companies.”). The benefits of uniform technological standards are evident in the contrast between wireless phone performance in the U.S. and most of the rest of the world. The United States never was able to settle on a single standard for wireless phone technology “and that blunder has resulted in a patch-work of multiple, incompatible technologies.” W S Mossberg, ‘A Guide to the Lingo You’ll Want to Learn for Wireless Technology’, Wall St. J., 28 March, 2002, at B1. By contrast, Europe and most other countries settled on a single standard thus have “better and more innovative wireless phones and wireless services.”

Customer preference is a strong indication that a new or newly designed product is superior, and courts and CEOs should not second-guess the judgment of consumers.<sup>195</sup> People are locked in all the time by prior decisions. Someone who buys Volvo would be locked in to Volvo aftermarket parts for the term of ownership. In some cases, buyers may not have examined long-term ownership costs carefully and other deceived by initial misrepresentations or post-purchase changes in policies. But to turn these into competition issues transforms it into a general economic engine for reform of improvident decisions. As the Supreme Court in *Trinko* warned:

“[t]he cost of false positives counsels against an undue expansion of (EFD) liability.”<sup>196</sup> The dichotomy between false positives and false negatives has been vigorously debated in the scholarly literature. The Chicago School has contended that false convictions (in which a defendant is wrongfully punished) are more dangerous than false acquittals (in which a defendant is wrongfully acquitted) because they cannot be remedied by the marketplace.”<sup>197</sup>

If competition law is to intervene based on anticompetitive network effects, courts and CEOs ought to find at least one clear instance of it. There must be need evidence of actual or likely future consumer harm, which economic studies have yet to show.<sup>198</sup> However, the study above shown the opposite: in the real world, good products have won. Confirmation of ‘lock-ins’ require evidence of non-adoption of existing better products. Testing for inertia requires comparing the rate of change in actual market shares with the ideal rate of change, which is considerably more detailed than empirical data offers.

Third, the belief that inferior products will follow lock-ins wrongly assumes that programmers hired by the incumbent lack or lose creativity. Dominant owners benefit from new ideas as much as smaller firms. Investors are just as eager for large firm stocks to perform well as they are for small firm stocks. A lazy board of directors will quickly see their stocks acquired and the board replaced by infuriated shareholders. Software and database markets require producers to continually add new functions to their products. Unlike consumers who want the same Big Macs they had the day before, functional works do not vanish or suffer in quality on consumption. Consumers have little incentive to purchase new software from the dominant vendor unless new and significant improvements are offered.<sup>199</sup> The policy implication of this is that courts and CEOs can help ensure that consumers get the best products by keeping regulatory impediments out of entrepreneurial competition to establish their mousetraps in the marketplace<sup>200</sup>

<sup>195</sup> H Hovenkamp, *supra*, n.77 at p.274.

<sup>196</sup> *Trinko*, *supra* n.8. at 414

<sup>197</sup> See generally R A Cass and K N Hylton, ‘Preserving Competition: Economic Analysis, Legal Standards and Microsoft’, 8 *Geo. Mason L. Rev.* 1, 30-33 (1999) (Stating that false convictions discourage competition and encourage firms to seek compensation in the courts and that false acquittals promote competition over the long run).

<sup>198</sup> D S Evans *et al.*, ‘*United States v. Microsoft*: Did Consumers Win?’ (2005?) *Journal of Competition Law and Economics* 1(3) 497.

<sup>199</sup> S J Liebowitz and S E Margolis, ‘Networks, Antitrust Economics, and the Case against Microsoft’, in *Winners, Losers & Microsoft*, (Oakland: The Independent Institute, 2000) at p. 259.

<sup>200</sup> Indeed, David Teece and Mary Coleman maintain that intervention in high technology industries should be avoided except in the most unusual of circumstances, because efforts to hobble the winner in one round of innovation will be seen as diminishing the returns available from competing in high-risk environments, thereby diverting resources to other sectors of the economy displaying less risk and affording less innovation. D Teece and M Coleman, *supra*, n.83 at pp.843-4 (Arguing that intervention “might produce severe disincentive effects throughout the entire economy. The possibility of success through superior skill, foresight and acumen, or just dumb

Fourth, where refusals to license seem anticompetitive at first blush due to concerns over path dependency, it is possible the CEOs and courts have been misled. Stan Liebowitz and Stephen Margolis suggest that there are three possible efficiency outcomes where a dynamic process exhibits path dependency.<sup>201</sup> First-degree path dependency occurs where the future impact of initial actions are fully appreciated and taken into account. There is no error or inefficiency in those decisions, despite the sub-optimality of the situation in a given period, and no remedy is required.<sup>202</sup> Second-degree path dependency recognises that information is never perfect. Efficient decisions may not be efficient in retrospect. However, the inferiority of a choice cannot be known at the point where the choice was made. In this situation, outcomes though inefficient are unavoidable and again should not warrant remedy.<sup>203</sup> Third degree path dependency occurs where initial conditions lead to an inefficient outcome, but it was possible to recognise and avoid the inferior outcome at the point where the decision is made.<sup>204</sup>

First-degree path dependence assumes that the copyright owner's product and other rivals were essentially the same and eventual market choices of the owner was arbitrary and lead to a significant and durable outcome. Courts and CEOs cannot use static or dynamic efficiency models to predict which of several equally efficient possibilities will be chosen and the outcome is completely random. If the argument is taken a step further to second-degree path dependence, CEOs may assert that the owner's products are notably inferior. However, during the time the owner dominated the standard, it might not have been known that some other standard would be better in the future. *Ex post*, it may appear that the market's choice of the owner's product was a mistake, although it was not a mistake given the information when the market tipped.

The argument can go further. CEOs may claim that at the beginning, sufficient information existed to determine that other platforms were superior, thus making a case for third degree path dependence. This may occur if at the time that the owner introduced its products, most consumers preferred rival products, but were unaware that others had similar preferences. In that case, a slim lead for the 'inferior' standard might have propagated into eventual market dominance. Refusals to grant license to interface information therefore impedes technological development, and translates into an anticompetitive abuse. Alternatively, if it were widely understood that switching to the rival platform would confer greater benefits than the switching cost of doing so, but are forced to remain with the owner, this would be another instance of third degree path dependence. This has yet to occur because each consumer prefers the owner's platform, given that all other users and developers use it.

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luck, induces entry, investment and unparalleled even maniacal effort. To penalise success with poorly reasoned antitrust intervention is dangerous." )

<sup>201</sup> S J Liebowitz and S E Margolis, 'Theories of Path Dependence', in *Winners, Losers & Microsoft*, (Oakland: The Independent Institute, 2000) at p. 49.

<sup>202</sup> An example of this would be someone buying a house, having properly taken into account future prices, incomes and family size developments. Thus the house may have been too big at first when moving in as newlyweds, then just right with children, then too small with grandchildren, then too big later on when children and grandchildren move out. All this may have been predicted fairly well.

<sup>203</sup> An example of this would be someone buying a house without possibly being able to know that five year down the road a sewage treatment plant will be built nearby, drastically lowering property prices and the neighbourhood amenities nearby. Here, there is dependence on past conditions which lead to regrettable outcomes, and the person may not have bought the house had he known in advance what was going to happen. But because of limited knowledge, the path dependence is not inefficient in any meaningful sense.

<sup>204</sup> An example of this would be where someone bought a house, knowing that a sewage plant would be built, but allowing the purchase to go through anyway because his friends were all buying houses there, and he values being part of that neighborhood. He would rather have bought a house away from a sewage plant, and so would his friends, but they were somehow unable to coordinate their actions.

However, there is neither convincing theory nor empirical support for this proposition. Indeed, empirical evidence suggests that third-degree path dependence, if it exists, is so rare that it should not be the basis for regulatory intervention.<sup>205</sup> Although markets do not always choose the best technology, there are good reasons to expect it to be very unusual for consumers to choose the wrong technology. Pernicious “lock-ins” may exist, but it hardly follows that consumers are thereby locked into inferior products. There is a difference between proving the existence of inefficiency and proving its absence. If CEOs assert that they have identified a remediable inefficiency, the onus is on them to prove it. In the same way that the law presumes an accused person innocent unless proven guilty, it seeks to minimise the costs of incorrectly identifying inefficiency by erring on presumption that the market outcome is efficient unless proven otherwise. It would therefore be wrong for CEOs to assert that without evidence of inefficiency, one may presume to have proven the outcome is efficient.<sup>206</sup> The line between conviction and paranoia is a fine one. Unless there is clear proof of consumer harm in tipped copyright markets flowing from refusals to license, the EFD has no reason to intervene.

#### D. Compulsory Licensing, Law and Economics

An economic analysis of the EFD-copyright interface would be incomplete without considering the mechanics of compulsory licensing. Perhaps surprisingly, the main objection does not seem to be the application of compulsory licensing, but rather its method of application. Instead, the main objection seems to lie in determining a “reasonable” price for the license for access, and to supervise that access on an ongoing basis.<sup>207</sup> “Reasonable” prices suggest a range of acceptable values. Unfortunately, economics may provide optimal prices, but not “reasonable” prices. Finding a “reasonable price” requires a hypothetical royalty bargaining between parties if licensing had been pursued instead of infringement.<sup>208</sup> The level could lie anywhere between a nominal sum for the cost of granting the license, to the substantial standard of the opportunity cost of allowing market entry. It requires historical data and yardstick market conditions that may be difficult to find in cases involving standards-setters who had been the first into the market. The choice of access charges is a delicate one. Barriers to entry may be created if charges are too high. Conversely, low charges may generate inefficient entry and discourage the incumbent from maintaining and upgrading their networks. In the absence of a competitive market, it may therefore be difficult to say definitively what is “reasonable”.

The EFD seeks to apply rules of microeconomics to the copyright regime with its own checks and balances. It may go astray when it relies on poor economic reasoning or untested economic theories.<sup>209</sup> Economics becomes when it creates untestable theories about competitive

<sup>205</sup> S J Liebowitz and S E Margolis, ‘Dismal Science Fictions: Network Effects, Microsoft and Antitrust Speculation’ in Peter Lewin (ed), *The Economics of QWERTY*, (Hampshire: Palgrave, 2002) at 239-40. (Also arguing that policy makers should not go about correcting markets until they have concrete proof that markets have failed.)

<sup>206</sup> P A David, ‘Path Dependence and the Quest for Historical Economics: One More chorus of Ballad of QWERTY’ (1997) Discussion Papers 020, Oxford University, Economic and Social History. at p. 13 at <http://ideas.repec.org/e/pda76.html> at p. 13..

<sup>207</sup> H Hovenkamp *et al*, ‘Unilateral Refusals to License in the US’ in F Lévêque (ed.), *supra* n. 11 at p.23. Indeed, economic studies by Scherer and Arrow seem to suggest that compulsory licensing had a very minor negative effect on innovation. B Dumont, ‘The Scope of Intellectual Property Rights and their Interface with Competition Law and Policy: Divergent Paths to the Same Goal?’, (2002) *Econ. Inno. New Techn.* Vol. 11(2)

<sup>208</sup> Copyright law conventionally uses a list of the so called 15 Georgia-Pacific Factors to determine the end-points and a likely outcome to bargaining.

<sup>209</sup> See S Bishop and M Walker, *supra*, n.3 at p.3. (Observing that this is particularly true of modern economic analysis which employs game theoretic methodology); D W Carlton ‘Using Economics to Improve Antitrust Policy’ (2004) *Colum. Bus. L. Rev.* 283.

harm. Markets are complex and diverse. Those familiar with economic theory will know that the effects of conduct can be quite different with a small change in assumptions. It is always easier to produce data consistent with the theory than it is to rule out alternative explanations. Economists often select markets to study because data-gathering in them is particularly easy or other characteristics of the market tend to simplify economic analysis. As a result there are far too many instances when a particular kind of business conduct has more than one explanation that economic theory cannot completely rule out alternatives.

Courts are worse than economists in ruling out alternative explanations. The judge is typically a well-educated generalist. The judge's education and sophistication in economics is no greater than that of the general population. Often the judge will sit through testimony by experts for the two sides, offering opposing explanations that seem about equally plausible. This is a serious problem with private enforcement. It gives rise to the problem of unprincipled experts whose skills at persuading an untutored tribunal are often much greater than the quality of their economic analysis being able to get courts to "rubber stamp" their leaky theories.

Some practices, such as those involving consumer harm from tipped and path dependent markets should effectively be immune because our institutions are not up to the task of identifying them without producing an unacceptable number of false positives. When a particular form of behavior is too complex for reliable analysis, then the only defensible rule is to let the market rather than the courts control. The legislature can always intervene, but a court is in hazardous territory when it assumes that it can improve consumer welfare in every case. An overly deterrent rule tends to discourage aggressive competition by everyone, making consumers pay a large price. By contrast, an underdeterrent rule may permit a few instances of predation to slip by, but the social cost of such "false negatives" is very likely much less than the social cost of false positives. These critiques can prove fatal to the rational administration the EFD.

At the same time, the complexity of competition economics should not be exaggerated. There is much common sense involved in economic analyses based on sound methodologies.<sup>210</sup> The focus on economic insights should not be confused with applying complex, mathematical formulas and/or econometrical calculation models in competition assessment. The strength of economics lies in econometric analysis.<sup>211</sup> This means that economists should try to help "de-esoterise" market effects of copyright and competition law.<sup>212</sup> Economics has managed to produce respected analysis with concepts such as "happiness",<sup>213</sup> and

<sup>210</sup> M Monti, 'The Application of Community Competition Law by the National Courts in a Directly Applicable Exception System' ERA-Forum, Competition Law Issue 1 (2001)

<sup>211</sup> R J Gordon, *Macroeconomics* (10<sup>th</sup> Edition) (Pearson: Boston, 2005), at pp. xvii and 5. (Noting that "Economics has become increasingly empirical ... macroeconomic theory examines the behaviour of aggregates such as national income and the unemployment rate while ignoring differences among individual households. Gordon notes that "it reaches striking conclusions by pretending that there is just one interest rate, instead of the many rates reported in daily newspapers".)

<sup>212</sup> R Dornbush *et al*, *Macroeconomics*, (Boston: McGraw Hill, 2004) at p.12 (Stressing that "We cannot overemphasise this point. The only way to understand the very complicated world in which we live is to master a toolbox of simplifying models and then to make quite explicit decisions as to which model is best suited for analyzing a given problem.") See also Vikram Khanna: "For me, John Kenneth Galbraith was the first economist – and he remained one of the few – to make economics come alive and seem relevant to the real world. I read him all the way from my teens to the present; fortunately, he was prolific. While I did not agree with everything he wrote, I always found it insightful and refreshing.. V Khanna, 'World of Ideas Loses a Towering Figure', The Straits Times, (11 May 2006) R J Gordon, *Macroeconomics* (10<sup>th</sup> Edition) (Pearson: Boston, 2005), at p.5.

<sup>213</sup> Further, quantifying abstract concepts is not altogether an unfamiliar concept to economists. Generally, economists assumed a rational decision. However, some now want to see how decisions are made in the real world. Dr. Andrew Oswald is a reknown researcher of the economics of happiness. He has integrated other disciplines to

should likely be able to produce copyright access models based on “reasonableness”. Indeed, recent literature has produced promising economic models to properly calibrate the prices in compulsory licensing of copyright.<sup>214</sup> Empirical testing may exclude alternative hypotheses, thus proving that a given explanation is correct. With established general economic principles, every EFD case need not be analysed on the basis of *ad hoc* fact specific arguments. This saves time, and introduces simplicity and certainty to the results of weighing arguments. Should an economic model fail, it should not swept under the rug, but rather is used to highlight what the model misses.<sup>215</sup> However, courts must remain sensitive to fallacies in economy theory and never “rubber stamp” what has been put forth without getting dependable counsel.

Once the preliminary role of economists are clarified, the next step is to harmonise the fusion legal and economic analysis. “Market definition”, “barriers to entry” and “product substitutability” are clearly economic issues. Whether a copyright owner has “justifiably” refused access as means of defensive leveraging is a legal inquiry. Indeed, courts routinely make findings of “reasonableness”, even in the most esoteric subject matter.<sup>216</sup> Competition policy should not retreat to purely econometric standards in its attempt to use scientific means to resolve or mask what is an inherently a normative dispute requiring a measure of “hunch, faith and intuition”.<sup>217</sup> These determinations are in the end a function of the bias or ideological conviction of the CEOs or judge. It is in areas such as these where those with cross-disciplinary training can make a useful contribution.<sup>218</sup> Recent developments at the Faculty of Law at the National University of Singapore have provided a timely reminder that the law coexists in an ecosystem with other disciplines. Two double-degrees with the economics department now complement the traditional four-year LLB program to train a new generation that are neither lawyers nor economists, but “*lexonomists*” who are able to integrate the training in each field

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analyse how people really think, and what makes them really happy. He has found that the rational approach is often not what people do. It’s determined by what they know, whom they trust and when they make the decision. Charles Murrain and Richard Layard has brought this a step further. He has observed that definitions of happiness are often of a European variety. The purpose of life is to while it away as pleasantly as possible. Whichever country has the longer holiday is best.” J Lloyd, ‘The Economics of Happiness’ The Straits Times (7 May 2006) Andrew Oswald used behavioural economics in the Pensions Commission.

<sup>214</sup>Baumol and Willig proposes an interesting economic model where entry only occurs if new entrant is able to produce with lower marginal costs, and is more efficient than the incumbent. See A Heimler and A Nicita, *supra*, n.1. Another suggestion points to the use of Demsetz auction to grant access to the firm that bids the lowest user fee E Engel, *et al*, ‘How to Auction an Essential Facility when Underhand Integration is Possible’, National Bureau of Economic Research Working Paper 8146, available at [www.nber.org/papers/w8146](http://www.nber.org/papers/w8146) Lévêque proposes a model for optimal price royalty based on a bargaining approach. See F Lévêque, ‘Innovation, leveraging and essential facilities: interoperability, licensing in the EU Microsoft Case’, in F Lévêque (ed.), *supra* n.11, at pp. 118-120.

<sup>215</sup> R J Gordon, *Macroeconomics* (10<sup>th</sup> Edition) (Pearson: Boston, 2005), at 334-39. (Citing the example of how the Solow Growth Model’s failure opened the way to a unique treatment of the debate between the new institutional economics, and the exponents of the tropical geography explanation of the failure of poor countries to converge to the income level of rich countries.)

<sup>216</sup> Singapore courts able to quantify the value of a view at SG\$15,000. Buyers were enticed by the showflat and floor plans that featured a large ceiling to floor window running the entire length of one wall, promising expansive views of the city skyline as well as the sea. But when they received their keys in early 2004, that was not what they got. In fact, the bedroom windows had shrunk to nearly half their showroom size. Buyers and developers both roped in experts, valuers and architects to prescribe a dollar value to the missing four panels’ worth of view. Not surprisingly, experts on both sides offered wildly differing values from as low as \$500 to as high as \$97,000. J Au Yong, ‘Room without a view: Condo owners win suit’, (The Sunday Times, 28 May 2006)

<sup>217</sup> R Pitofsky, ‘The Political Content of Antitrust’ (1979) 127 U. Pa. L.Rev. See also M J Horwitz, ‘Law and Economics: Science or Politics?’, (1980) 8 Hofstra L.Rev. 905.

<sup>218</sup> Even US government’s chief economic expert described threat posed by Microsoft in non-economic terms. Fischer testified that if Microsoft’s actions went unchecked, “we will live, as it were, in a Microsoft world in which choices are the choices that Microsoft makes”. Transcript of Proceedings, 12 January 1999, A.M. Session at 30. Available at <http://www.microsoft.com/presspass/trial/transcripts/jan99/01-12-am.asp>

into a synergistic whole. This may well reflect the multidisciplinary competence those researching and practicing competition law eventually be expected to possess. These individuals have the expertise to make sure that competition law is grounded in logical analysis, and provide tools to assess the relative merits of competing economic hypotheses and legal theories.

In addition, copyright tribunals which have long determined the appropriateness of licensing fees may be better suited to determine this issue once the competition authorities or courts have determined that access is necessary.<sup>219</sup> Having a specialist copyright tribunal would certainly allow an institutional balance to competition law intervention.<sup>220</sup> Copyright tribunals may offer a regime more sensitive to balancing copyright appropriability with spreading the ripple effects of innovation from the original work. The need to achieve a balance is recognised in TRIPS.<sup>221</sup> This has led Valentine Korah to observe that the lack of criteria is one of the reasons for seldom requiring supply:

“Some arbitrary test will have to be set by the Commission, perhaps a proportion of the licensee’s sales, as is fixed by some Member States for the compulsory licensing of performing rights in records.”<sup>222</sup>

It is interesting to note that in Singapore, the Copyright Tribunal has determined that “reasonableness” did not mean a “logically rational” (or economically efficient) standard, but bore the broader meaning of “fair” and similar to “equitable remuneration”. It was to be assessed in the particular circumstances of parties based on commonsense. This translated into a percentage of the requestor’s revenue.<sup>223</sup> This may provide a yardstick for pricing access. However, if the current situation of the Singapore Copyright Tribunal is at all indicative of corresponding tribunals elsewhere, a radical expansion in jurisdiction and resources will be necessary in order for them to properly assist CEOs and courts.<sup>224</sup>

#### IV. CONCLUSIONS

There is no retreat from the growth of copyright over functional works. Business needs shape the law. As economies become more technology dependent, the case for exclusive rights in database and software industries will be more compelling. To reduce the commercial risks from misappropriation in already risky ventures, businesses appreciate and, in some cases, demand the security that copyright provides in safeguarding their investments. This is not ideal, as it trades one form of risk for another - the risk that information gets balkanised by copyright owners controlling access to interface information or raw data. As Herbert Hovenkamp noted:

<sup>219</sup> G Ghidini, *supra* n.128, at p.67 (Arguing that the amount of royalties can “efficiently be addressed, as international experience shows, by quick arbitral procedures, even at administrative level- take for example, the model that has been offered by the US Copyright Royalty Tribunal.”)

<sup>220</sup> S D Anderman, *supra*, n.35.

<sup>221</sup> Article 7 states that “The protection and enforcement of intellectual property rights should contribute to 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, and to a balance of rights and obligations.”

<sup>222</sup> V Korah, *supra* n.30, at p.163

<sup>223</sup> *Singapore Broadcasting Corporation v. Performing Right Society Ltd* [1991] 216 IPR 595

<sup>224</sup> The Singapore Copyright Tribunal was set up to investigate performing, broadcast and cable programme licenses. See G Wei, *The Law of Copyright in Singapore*, (SNP Editions: Singapore, 2000) at pp.1124-32. It would therefore not have been able to hear cases on access to databases and software.

“Congress has continuously expanded the scope of patent and copyright, and ... a strong case can be made that today we overprotect at least certain intellectual property rights, perhaps severely so. This problem is in the first instance not one for the antitrust laws, but it necessarily shows up in the attitude that antitrust takes toward intellectual property practices that are alleged to be anticompetitive.”<sup>225</sup>

The danger is real, particularly where copyright owners also generate that information, as in the case of databases. A strong case may be made to support the EFD in requiring access in such cases. The owner has expended no creative effort. While in some cases, the incentive to create may be dampened by access, it is difficult to see how, on the facts of cases such as *Magill*, *Feist* and *BHB* that will be the case. However, policing banal rights is not the role of competition law. Its purpose is to make markets perform more competitively, and intervention is justified only when it moves the market toward that goal. It is clear that private firms should not be allowed to stifle distinctly new products outside the scope of their copyright based on dynamic efficiency arguments. The owner’s right to appropriation is not an unlimited one. Neither should firms previously protected from competition by government policies be allowed to prevent the emergence of alternatives. In these cases, the net dynamic efficiency gains are relatively clearer. These instances should be contrasted with situations such as in *IMS Health*, where rivals are seeking access simply to parasitically duplicate the copyrighted content of a private firm. This lowers the likelihood of false convictions, though it does not eliminate it completely. At some level, determining an optimal approach can be maddeningly speculative. But it is impossible to see how determining the *potential* effects of intervention in a regime created to promote *incentives* to create could be otherwise.

It is more controversial whether an identical attitude can be transposed in “superdominant” owners or industries tipped in favour of the copyright owner’s standard. Interventionist strategies may pay off by generating more competition in the domestic market through greater product variety and lower prices. However, rather broad economic theories would force CEOs and courts to confront problems that they may be not capable of solving. Misplaced intervention directs attention away from efficient product to a mere paper shuffling. It adds nothing to efficiency, and in fact, subtracts from it. Many industries in the global markets are porous. Copyright in functional works more so than most. Open markets may come at the cost of licensing and even research and development being chilled - such activities could be carried out elsewhere with the loss of many well paid and interesting jobs.

At the very least, it must be conceded that this makes the market less attractive to large copyright conglomerates with much to lose by risking disclosure of their assets - a disclosure that in an interconnected digital world, can permeate far beyond national borders very quickly. US jurisprudence suggests that it recognises this, and has decided instead to adopt an approach that cedes more discretion to internal regulation in the form of exceptions and limitations within copyright law. Against the relative polarity in the EU this position may attract investment growth and generate attractive job opportunities for many Americans in database and software industries, as well as industries that support them. Singapore will soon have to decide its own path. It is economically far more vulnerable to negative market sentiments, and must be even

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<sup>225</sup> H Hovenkamp, *supra* n.77, at p.3. Similarly, the Commission's interim decision in *IMS Health* is devoid of such an express limitation. If the Commission and EC Courts had wished to limit the application of competition in the compulsory licensing setting to banal copyright-protected works, they could have done so explicitly in either or both of these cases.

more careful that the EU and US. On a larger scale, it will be interesting to see which model will become the benchmark for an international competition policy equivalent of TRIPS.<sup>226</sup>

The EFD is a defensible enterprise only if it can make markets more competitive - that is, if intervention produces lower prices, larger outputs, or improved product quality. Developing rules that reliably promote consumer welfare is a daunting task that courts and CEOs can perform with confidence only if they are applying theories that are within their grasp.<sup>227</sup> The rules at the Interface must be administrable by courts with reasonable accuracy. They must also be robust and improve market performance. This is where economics plays a critical role in making dynamic efficiency less esoteric, by provided useful ways to measure the impact of regulation on innovation and calibrate the correct prices for compulsory licenses. In addition, economic theory provides an important safeguard against rivals who do not have the skill or drive to blaze their own path, but instead simply wish to appropriate the capital investment and business efforts of their successful predecessors in the relevant market under the guise of requiring fair access to essential facilities. In this regard, SERCI and the IP Academy are critical forerunners. While both are only in their early years of existence, they already have a commendable history of promoting economic research and constructive debate in copyright and other forms of IPRs, and in bringing together legal and economic minds at a common platform. It is highly significant that their individual efforts dovetailed this year at the present conference. It is hoped that such events will catalyse more constructive debate that work towards establishing a sound and equitable framework to nurture the growth of innovation.

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<sup>226</sup> E M Fox, 'Antitrust: The Big Picture', in *Antitrust under the Clinton Administration* (Boston: MCLE, 1993), at p. 350. (Speculating on whether the EU model will become the world standard)

<sup>227</sup> H Hovenkamp, *supra*, n.77 at p.39. (Noting that the biggest danger presented by post-Chicago antitrust economics is not that the variety and likelihood of anti competitive practices are exaggerated, although that too has happened, but the self-assurance that courts and regulators are capable, at present to handle its complexity.)