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COMPETITION POLICY AND THE TECHNOLOGIES OF INFORMATION Herbert Hovenkamp*

When we speak about information and competition policy we are thinking mainly about oral or written communications that have an anticompetitive potential, and mainly in the context of collusion or exclusionary threats. These are important topics. Indeed, among the most difficult problems that competition policy has had to deal with over the years is understanding communications that can be construed as either threats or as offers to collude or facilitators of collusion.¹

Of course, explicit price fixing is a use of information, but so are various kinds of cartel facilitating practices that depend on publicizing one's price or output. As a result, the way information is communicated has been a factor in merger analysis, particularly when the fear is that the merger might facilitate collusion.² Another recent example is the *Libor* litigation, including allegations that banks used misreporting about interest rates as a device for manipulating them.³ In the U.S.A. the courts have confronted complaints that exchanges of wage and salary information was in fact devices for collusive suppression of wages below the competitive level.⁴ Such claims have arisen in numerous industries, ranging from petroleum geologists, to law professors, and more recently to high tech. silicon valley employees.⁵

In the 1980s and earlier "information" meant mainly the print media, radio, television, film, and analog recording. All were involved in antitrust disputes at one time or another, and the nature of the challenged practices ran the entire gamut of United States antitrust law -- from vertical

* Ben V. & Dorothy Willie Profess, Law and History, University of Iowa. A version of this paper was presented at the conference on Antitrust & Information, Bocconi University and Salento University, Milan, Italy, June 20, 2014. Thank you to Professor Mariateresa Maggiolino for the invitation.

¹ E.g., William H. Page, *Communication and Concerted Action*, 38 LOY.U.CHI.L.J. 405 (2007); William H. Page, *The Gary Dinners and the Meaning of Concerted Action*, 62 SMU L.REV. 597 (2009).

² See 4 & 4A PHILLIP AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶914, 942-944 (3d ed. 2009) & 2014 Supplement.

³ E.g., *In re LIBOR-Based Financial Instruments Antitrust Litigation*, 935 F.Supp.2d 666 (S.D.N.Y. 2013).

⁴ *In re High-Tech Employee Antitrust Litig.*, 856 F.Supp.2d 1103 (N.D.Cal. 2012).

⁵ E.g., *Todd v. Exxon Corp.*, 275 F.3d 191 (2d Cir. 2001).

integration and exclusion in the 1948 *Paramount* case,⁶ to refusal to deal in *Lorain Journal*,⁷ a series of newspaper mergers and the passage of the Newspaper Preservation Act in 1970 to protect newspaper production joint ventures.⁸ There was also the *Times-Picayune* decision, in which the Supreme Court refused to condemn a government-challenged tying arrangement in the newspaper publishing industry, exonerating the practice of a New Orleans' newspaper of requiring that the same classified advertisements be run in its morning and evening editions.⁹ And there was the *Broadcast Music Case* (1979), which rejected an antitrust challenge and in the process recognized the value of blanket copyright licenses for recorded music.¹⁰

Information also has an important role to play in competition policy in the regulated industries, mainly because agencies depend on accurate information that is most typically supplied by the regulated firms. As a result, misreporting of one's own market position can serve to exclude a rival, or itself become a device for collusion. Or, in patent law, exaggerated threats about the validity or strength of one's own patents can become a potent exclusion device.¹¹

All of these issues concerning the relationship between competition policy and information remain very much with us today. Many are more important than ever, given the ubiquity of information and the speed at which it travels.

I want to spend a few minutes on a different path, however: the relationship between information technologies and competition policy. Technological change can both induce and undermine the use of information to facilitate anticompetitive practices. This change is partly a result of digitization and the many products and processes that it enables. The technologies of information account for a significant portion of the difficulties that competition law encounters when it addresses intellectual property rights. In addition, changes in the technologies of information

⁶ *United States v. Paramount Pictures*, 334 U.S. 131 (1948).

⁷ *Lorain Journal Co. v. United States*, 342 U.S. 143 (1951).

⁸ E.g., *Michigan Citizens for an Independent Press v. Thornburgh*, 868 F.2d 1285 (D.C.Cir. 1989); 15 U.S.C. § 1802.

⁹ *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594 (1953).

¹⁰ *Broadcast Music, Inc. v. Columbia Broadcasting Sys., Inc.*, 441 U.S. 1 (1979).

¹¹ E.g., *Walker Process Equipment, Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172 (1965).

affect the structures of certain products, in the process either increasing or decreasing the potential for competitive harm.

Power Assessments

That brings me to my first topic, which is market power assessments in markets for information technologies. An important consequence of digital technologies is to change the size or shape of the markets in which firms operate, although to some extent mail order sellers such as Amazon had already begun this even with standard product shipping. eBooks compete everywhere that electronic transmission is available. Indeed, both the production and distribution of digital books or other media is so different from the traditional structures of these markets that most historical analogies fail us. In the process, digital technologies change our ideas about assessment of power.

One problem is that the high ratio of fixed to variable costs entails that prices must be considerably above short run marginal cost in order to be profitable. However, our shorter run measures of market power, such as those based on the Lerner Index, express power as a relationship between prices and short run costs. As a result, firms with high fixed costs tend to appear as if they have significant market power. A portion of the excess of price over marginal cost may reflect the profits of oligopoly, while another portion may reflect fixed costs, including R&D investment, that does not show up in short-run marginal costs. No inference of monopoly in the antitrust sense can be drawn unless returns over a fairly long run are excessive. Often such products are sold in moderately competitive product differentiated markets. For example, the market for an electronic "app" for a device such as an iPad show competition between dozens of calculators, notepads, or games. These markets are simultaneously competitive but may also exhibit high price-cost margins if only the short run is considered.¹²

At the same time, the inability to earn high returns over the long run is not a sine qua non of antitrust market power either. For example, a combination of high fixed costs plus low variable costs, as in our "app" example, creates inducement for market division or price fixing, either of

¹² See Herbert Hovenkamp, *Markets in IP and Antitrust*, 100 GEO. L.J. 2133 (2012), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2028314

which could serve to reduce market wide output and increase the prices of the product in question. That proposition is inconsistent with absence of market power. If a cartel of firms lacking any power attempted to raise price (such as a group of 10 tomato growers in a market of 10,000) they would simply lose all their sales. This is manifestly not true of a group of app makers, provided that their collective output defines a market.

While high fixed costs might serve to explain why a cartel occurs, they certainly do not justify it. One reason is that when firms collude they can be expected to charge the monopoly price, not the minimum price necessary to get returns up to the competitive level. Another is that product differentiation is typically sufficient to produce above cost returns even when fixed costs are high. The real concern is markets with high fixed costs whose output cannot be differentiated.

In its recent *Actavis* decision the United States Supreme Court held that market power could be inferred from a large "pay for delay" settlement from a branded drug maker to a generic. Under that agreement the generic firm would stay out of the market for a specified term in exchange for the pioneer's payment, often in the hundreds of millions of dollars.¹³ That holding has been criticized for inferring market power from the existence of a patent, but that is hardly the case. The high pay-for-delay settlement indicates power because it shows that the payor has volume and margins that are worth protecting. To be sure, the payor's output may reflect the power of a valid patent, but one should not confuse the legitimacy question with the power question. Further, even if a patent is perfectly valid, a horizontal price fixing or market division agreement is not justified, because it tends to equate the value of the patent with the full monopoly or cartel value of the market.¹⁴

These facts serve mainly as a warning that the question of market power and intellectual property rights, or market power and high fixed costs, must be answered circumspectly. The answers may differ depending on the question being asked. For example, suppose that there are twenty note taking "apps" available for the Ipad or other Apple device.

¹³ *FTC v. Actavis, Inc.*, 133 S.Ct. 2223, 2236 (2013).

¹⁴ See 2B PHILLIP AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶1520 (4th ed. 2014) & 2014 Supplement; Herbert Hovenkamp, *Anticompetitive Patent Settlements and the Supreme Court's Actavis Decision*, 15 *Minn. J. L., Sci. & Tech.* 3 (2014), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2286255.

Each one of these, assuming it is not free, sells at a price considerably above short run marginal cost. This latter fact, standing alone, should not serve to establish a monopoly power requirement for an exclusionary practice, at least not without a careful assessment of exactly how the defendant app manufacturer's practice will result in market wide (as opposed to individual) exclusion, as well as the likelihood that such exclusion will occur. At the same time, however, we need not hesitate to condemn price fixing or naked market division among these same manufacturers, even when high price-cost margins explain their motive.

Digital Technologies and Consumer Choice: Google Search

The other side of the market power coin is consumer choice. One consequence of the simultaneous revolutions in telecommunications and digital technology is that consumers have never faced a wider array of choices, and the costs of switching among alternative products have never been lower.¹⁵

Here an important factor is the degree of dependence between dedicated hardware and compatible digital choices. While purely digital systems are or can be made to be highly portable, hardware is often much less so. As an example, consider the differences between the Microsoft/Windows cases of more than a decade ago¹⁶ the Google search case in both the USA and Europe today. Microsoft was able to exploit a high degree of dedication between computer hardware – so called “IBM-compatible” computer stations -- and the Windows operating systems. For example, a business that operated 300 Windows computers could switch to the Apple operating system only by switching out its computers. This would be extraordinarily costly, not only for the computers themselves but

¹⁵ For discussions from different perspectives, see Adam Candeb, *Behavioral Economics, Internet Search, and Antitrust*, 9 I/S: J.L. & POL'Y FOR INFO. SOC'Y 407 (2014); Aaron S. Edlin & Robert G. Harris, *The Role of Switching Costs in Antitrust Analysis: A Comparison of Microsoft and Google*, 15 YALE J.L. & TECH. 169 (2013). On switching costs in high tech markets generally, see Herbert Hovenkamp, *Antitrust and the Movement of Technology*, 19 GMU L.Rev. 1119 (2012), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1990559 (2012); Herbert Hovenkamp, *Antitrust and the Costs of Movement*, 78 ABA ANTITRUST L.J. 67 (2012), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1679849.

¹⁶ *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C.Cir. 2001).

also for the training of employees, the replacement of a great deal of application software, and so on.

The Google Search cases presents a very sharp contrast, and for that reason I remain quite skeptical about the U.S. and EU investigations into Google Search, notwithstanding Google's high market share in Europe. Most search engines are multi-platform products that run equally well on Windows, Apple, and Android devices. To be sure, Google may be the default, or preinstalled search engine on android mobile phones as well as some others, but it is only the default and consumers are generally able to install alternative search engines. Microsoft makes its own search engine, Bing, the default on search engines accompanying Microsoft operating systems. The story for desktop and laptop computers is even simpler from the consumers' perspective. Any of the more popular search engines, of which there are many, can be installed almost instantaneously and at no charge. Not uncommonly, computer users have several search engines preinstalled and any time they are unhappy with the results of one engine's search they can turn to another one.

Here, it is important not to confuse high market share with monopoly. The latter requires the ability to hold prices above the competitive level or provide an inferior service even while retaining one's own dominant market share. As a result competition policy makers should be wary of technological locks that make it difficult for consumers to switch to a different search engine. Having done that, the concern about the *content* of a particular search becomes far less important. To be sure, deception is a problem, but that lies in the area of consumer protection rather than antitrust. I am much less concerned about a Google search result that favors its own asset -- such as YouTube, a Google subsidiary -- in a search for videos if I know that the operator has alternative search engines that are accessible with relative ease.

This suggests to me that the competition law authorities should pay less attention to the content of Google search results, but instead focus on ensuring that every platform from which search engines are launched, including mobile platforms, have adequate alternatives available to which reasonably well informed customers can easily switch.

Digitization, Cost Structure, and Collusion: the *eBooks* Case

The name “*eBooks*” is heavily associated with a collusion case born in the United States, but which later expanded to Europe and elsewhere. Apple facilitated the creation of a cartel of book publishers that not only increased the price of electronic books but also imposed pricing rules in the form of most favored nation clauses on Apple’s competitor Amazon. At this time that case is on appeal.¹⁷

The technology of ebooks is currently transforming the book market, with implications that go far beyond that particular price fixing agreement. Most significantly, ebooks are rapidly changing the cost structure of the industry from one that had a nontrivial fixed cost component and relatively high variable costs to one in which nearly all the costs other than royalties and dealer markups are fixed.

For traditional publishing fixed costs generally refer to the costs of manuscript acquisitions, editorial staff, typesetting and at least some marketing. Variable costs include paper and other stock, printing, cutting, binding, inventory, shipping, and of course retailer carrying costs.¹⁸ The publishing market was never particularly problematic for antitrust enforcers. The market contained numerous small publishers and only rarely had a dominant firm. The sheer number of sellers as well as the extent of product differentiation served to limit the opportunities for collusion. There has been a considerable history of resale price maintenance in the book publishing industry. In the United States it actually dates back to 1908, before the antitrust laws were even applied to resale price maintenance. In the *Bobbs-Merrill* decision of that year the Supreme Court refused to enforce a price maintenance clause in a copyright license agreement.¹⁹ However, the vehicle was not competition policy but rather copyright law's "first-sale" doctrine. The British "Net Book Agreement," which largely

¹⁷ In re Electronic Books Antitrust Litig., 859 F.Supp.2d 671 (S.D.N.Y. 2012).

¹⁸For data, see <http://www.gorhamprinting.com/prices-book-printing/price-charts.html>.

¹⁹ *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339 (1908) (The Straus family were German immigrants and founders of Macys Department Stores. Isador and his wife Ida, a co-owner, both perished on the Titanic in 1912). See CHRISTINA BOHANNAN AND HERBERT HOVENKAMP, CREATION WITHOUT RESTRAINT: PROMOTING LIBERTY AND RIVALRY IN INNOVATION, ch. 13 (N.Y.: Oxford, 2012)

prevented discounting of books lower than the publisher's announced price, was another example.²⁰

The eBook has drastically changed the cost structure of the book publishing market. Acquisition, editing costs and royalties are still variable, but editing has become less expensive in the age of computers. Once a book has been typeset into an electronic file most fixed costs except for advertising and promotion are spent. Further, while advertising might be considered a variable cost for some purposes, it is not a cost that is attached to each individual unit sold. Inventory does not need to be maintained, other than the obligation to keep a copy of the digital file. A virtually infinite number of copies can be made, all at the trivial cost of electronic transmission.

This change in cost structure is having remarkable effects on the book market, many of which are not yet realized. First, it increases the incentive to collude, as is the case in many industries with high fixed costs. Competition tends to drive prices to variable, or marginal, cost without enough remaining to cover fixed costs. Offsetting this in the book industry is product differentiation: each title is unique, very likely giving publishers at least some pricing discretion.

Unquestionably the dramatic rise of the ebook has cut enormously into the sales of traditional brick-and-mortar bookstores, as well as national distribution of physical hard- and soft- copy books. Eventually it may even threaten the existence of any book retailer who is independent of the publisher, including giants such as Apple and Amazon.com. While Apple's 30% markup has been widely noted, actual markups vary from something less than that amount, to more than 100% for independently published books. These markups seem to be high in relation to services rendered. eBooks do not need to be inventoried and there is little concern about returns or losses. As a result, risk is minimal. Most of the relevant publication and promotional information is in electronic form and is supplied by the publisher in any event. To be sure the major retailers offer a format for reading the book file, but the format market is highly competitive and better ones are being introduced all the time. Many of the larger

²⁰ See British Office of Fair Trading, "An evaluation of the impact upon productivity of ending resale price maintenance on books" (2008), available at http://www.offt.gov.uk/shared_offt/economic_research/oft981.pdf.

commercial publishers, such as Penguin Random House, Hachette (currently in controversy with Amazon), Harper Collins, Simon & Schuster, Macmillan, Harlequin, and also the quasi-commercial university presses, such as Oxford, Harvard, and Cambridge produce ebooks in a wide variety of formats. Others, such as Penn Press, tend to favor direct distribution intended for more generic readers, such as Adobe Digital Editions or Bluefire Reader.

We may well see the day when the dealer intermediary in the book market becomes superfluous. In order to survive intermediaries such as Amazon or Apple will have to be able to take advantage of either economies of scale in distribution services or technology ties with their devices. There is no good technological or business reason that ebooks cannot be distributed directly by the publishers to an internet site, or perhaps by consortia of publishers. Indeed, we may see the emergence of a system roughly equivalent to the “blanket license” that governs the distribution of recorded music over radio stations or other media. That is, authors' books would be digitized and then placed by nonexclusive license into a massive database accessed by a website. Readers could then pay for and download individual titles, which they could then preserve themselves or else have maintained for them on a cloud service operated by the website. The transaction costs of monitoring such a system would be very low.

To be sure, traditional book sellers often supplied point-of-sale information as well as the books themselves. For example, a well informed employee in a high quality bookshop could be a treasure trove of information. But that particular informational service has been greatly eclipsed by a proliferation of online sources, including both professional and readers' book reviews.

Today we continue to face a variety of file formats for ebook files and readers. The history of most technologies is that for an initial period there will be a great deal of incompatibility as each seller attempts to market its own preferred format or distribution system. In the early days of the automobile cars burned many types of fuels; and in the early days of videotapes we had Sony Betamax and VHS, and later in DVDs we had Blu-Ray and HD DVD. But these multiple standards are inefficient and as the industry matures unification is virtually inevitable. That will very likely happen in the ebook market as well, as publishers coalesce around a

single standard. The internet and device market will develop readers that will cover the new standard and enable consumers to maintain an electronic library. Whether firms like Amazon or Apple will be able to hold out by offering unique features is difficult to say, but one might predict that theirs will be a losing battle. In particular, why should a large publishing house continued to pay Amazon a significant commission when it can self-distribute at little to no higher cost?

Net Neutrality

Internet neutrality, or so-called "net neutrality," is fundamentally a problem in vertical integration and pricing. In the United States it might be or become an antitrust law problem, but in general it is not. EU law sweeps more broadly and the European Parliament has recently imposed significant limitations on the power of providers to discriminate between types of offerings.²¹

In any event, the term "neutrality" is hardly self defining. For some people "neutrality" means charging everyone the same periodic price, such as 40 € per month, no matter how much they use. For others, neutrality means charging people in proportion to their use, asking higher volume users to pay more. Some look at whether different customers or content providers are obtaining different speed, or throughput levels. Some look at whether, certain providers are being excluded altogether, for either economic or noneconomic reasons. The questions are all complicated by the fact that internet access is a two sided market, in which providers obtain revenues from both consumers and providers.

Under United States antitrust law net neutrality issues can become an antitrust problem when a vertically integrated firm excludes programming that competes with its own assets. For example, Comcast Cable company, an internet service provider, also owns NBC, a large distributor of programming, including movies. If Comcast were to place limits on Netflix, a major streamer of movies and television programming, in order to reduce competition with NBC, that could certainly be an antitrust violation. Such issues are customarily dealt with preemptively under the law of vertical mergers; or as exclusive contracting or refusal to deal if no merger is under consideration. Here, however, our law of unilateral refusal to deal is so

²¹ Recent activity is summarized at <https://ec.europa.eu/digital-agenda/en/eu-actions>.

narrow that the problem would very likely have to be dealt with under communications law.

Pricing is a different matter, and would not frequently present an antitrust problem. First of all, per unit pricing is actually the norm in roughly similar technologies, including telephony, electricity, natural gas, and the like. Second, price discrimination that is unrelated to exclusion of a competitor is presumptively efficient.

The consumer choice issue also looms increasingly large on competition policy concerning older technologies – most notably cable television. Of most recent note in the United States is the [proposed] merger between Comcast Cable and Time-Warner cable, and more recently, of AT&T and DirecTV, a satellite provider. These mergers involve both old technology cable companies and relatively new technology internet service providers (ISPs). Traditional hard wired cable television delivered with scheduled programs into users' homes is in fact a technological dinosaur – increasingly abandoned by the younger generation, although it retains a strong position among older people and technologically challenged younger people.

One potential concern about the Comcast merger is restraints on innovation – i.e., the idea that the companies will limit the migration of consumers from traditional cable to internet programming. The rationale is not difficult to discern: the internet is, or can be made to be, both more efficient and more competitive. The fear, expressed in Netflix's opposition to the merger, is that cable television companies will either cap internet bandwidth or price it out in a way that makes Netflix more costly.

The issue is complicated. On the one hand, the cable companies may not obtain as much revenue from internet data streaming as they do from carrying programs themselves. On the other side, consumers typically pay an extra fee for their internet access, and sometimes this fee is quite large in relation to the bandwidth that they obtain.

In the United States the cable companies have been laggards in the move toward greater internet bandwidths. Google and AT&T are now both installing ultra high speed internet in many communities. However, this internet is typically not tied to a cable television company at all, although it may be bundled with satellite television.

The game is also a precarious one for the cable companies, because the movement away from traditional cable is well underway and the range and robustness of alternatives is growing larger by the day. One impact of a significant limitation on Netflix or similar program streamer is that the viewer will simply drop cable altogether and make a different deal for internet service provision.

In my mind, the best solution to this problem is to permit these mergers, but with significant conditions on the post-merger firm's ability to limit internet streaming. The companies should be able to charge more for greater volumes or faster throughput of data, but these differentials should be reasonable and also nondiscriminatory as between internally owned and external programming. That will both facilitate the movement to the new technology and force this cable company to think about how to shift its revenue in the new environment.

The Patent Problem in Information Technologies

Finally, a very brief word on information technologies and the patent system. Today there is a great deal of news to the effect that the patent system is not working, that far too many patents are issued, and that discerning their validity and scope is extremely costly and produces uncertain results. There is also a great deal of talk about standard setting, FRAND royalty obligations, the right to an injunction on FRAND-encumbered patents, software and business method patents, and the like.²²

Without analyzing these issues in any detail, let me observe only that they very largely, although not exclusively, concern information technologies -- that is technologies relating to the creation, formatting, dissemination, and consumption of digital information.²³ The main reason is the crucial importance of networking in information technologies, which

²² See Herbert Hovenkamp, *Competition in Information Technologies: Standards-Essential Patents, Non-Practicing Entities, and FRAND Bidding*, INTERNATIONAL ANTITRUST LAW & POLICY 439 (2013) Competition Law Institute, Fordham Univ. School of Law), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2154203.

²³ See CHRISTINA BOHANNAN & HERBERT HOVENKAMP, CREATION WITHOUT RESTRAINT: PROMOTING LIBERTY AND RIVALRY IN INNOVATION, Chs. 4-5, 9 (New York: Oxford, 2012).

demands interoperability, and thus technological compatibility, between the devices and programs of different competitors.

In the United States, where we are more concerned about seeing antitrust confined to a fairly restricted domain, most of these problems are viewed as presenting issues of patent law, not of antitrust law. Indeed, most of the big decisions, such as *eBay*, which rejected the rule of virtually automatic injunctions against patent infringers, and the recent round of FRAND cases, are not antitrust cases at all. I think we would be well served to relax those boundary requirements, and that the Supreme Court's *Actavis* decision of about one year ago is a step in the right direction. That decision makes clear that questions about patent validity and scope do not rule every decision about competition policy. Some practices involving perfectly valid patents can be anticompetitive.

Indeed, here competition law has the comparative advantage. We competition lawyers and academics have been studying the effects of industry practices on output and competitiveness for decades. By contrast, we have very little useful information about how patent duration, scope or enforcement affect welfare in the long run. In that state of affairs it is hardly clear that competition policy should be yielding much territory to patent policy.²⁴

²⁴See Herbert Hovenkamp, *Institutional Advantage in Competition and Innovation Policy*, 2013 CONCURRENCES 27 (2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2307141