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Is Online Music Locked in by Leveraging?

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Pay-to-play online music distribution, digital rights management (DRM) systems and hard-drive-based digital music players are new industries. However, they have already attracted several judgments and enquiries from the competition authorities. The first of these is already six years old. In October 2000, the European Commission approved the merger between Time Warner and AOL¹ on the condition that AOL break its tie with Bertelsmann and its music catalogue. That remedy was intended to eliminate the risk, identified by the Commission, that the merged company would dominate the online music distribution market. In November 2004, France's competition watchdog, the Conseil de la Concurrence, dismissed a claim by VirginMega against Apple². VirginMega manages a download platform on the Internet. Apple refused to grant the plaintiff a license to use Fairplay, Apple's proprietary digital rights management software. These two cases³ will be used to show how to perform an economic analysis of the anticompetitive effects of vertical integration.

Definitions

First, a few definitions. Two goods are described as “complementary” when lower price (or better quality) of one causes an increase in the quantity sold of the other. A digital music player and a set of headphones are complementary goods. If the audio quality of the music player improves, a larger quantity of headphones will be bought. The more ergonomic headphones become, the higher the sales of music players. The reason for this effect is simple. Consumers perceive the music player and the headphones as a whole: it is no use having one device without the other. Complementarity is thus the opposite of substitution, which causes a decrease in the quantity sold when the price of the substitute falls. Note that, like substitution, complementarity is a question of degree. The CD-player and the pair of headphones are pure complements, like a razor handle and razor blades. By contrast, pay-to-play online music is only partly complementary to digital music players. Digital music players can be used to play music from other sources, such as personal copies of CDs or free downloads. Conversely, music is downloaded for use in devices other than digital music players⁴.

¹ European Commission, October 11, 2000, AOL/Time Warner, Case No. COMP/M.1845, OJEC L. 268 of October 9, 2001 p. 28.

² Conseil de la concurrence, Judgment No. 04D54 of November 9, 2004 on practices employed by Apple Computer Inc. in the sectors of online music distribution and digital music players: www.conseil-concurrence.fr

³ There are also two judgments involving Microsoft. In March 2004, the European Commission ruled against Microsoft on the basis of Article 82 UE, for linking its multimedia player, Windows Media Player, to its PC operating system, Windows. In first quarter 2005, the European Commission ruled on the joint acquisition by Microsoft and Time Warner of ContentGuard. The former Xerox subsidiary owns patents in digital rights management techniques.

⁴ In its judgment in *VirginMega v. Apple*, see note 2 above, the Conseil de la Concurrence cites Forrester data according to which only 15% of users who download music transfer it to digital music players; a Jupiter Research survey in which 16% of respondents considered the ability to transfer music to a digital music player to

Leveraging

Leveraging means the extension of a monopoly from one market (or, more generally, from a dominant position) to another market.

Let's examine the example of the merger between AOL and Time Warner. The European Commission's reasoning was that the merged company would own 30% to 40% of music publishing rights in the European Economic Area. That percentage corresponds to the combined catalogues of Time Warner and Bertelsmann, Germany's leading media firm, affiliated to AOL Europe through a series of agreements.

The Commission feared that the new entity would use its dominant position to obtain a monopoly position on the online music distribution market. It would do so mainly by refusing to license the rights to its catalogue to rival music download platforms. Leveraging thus forces competitors to leave or prevents them from entering a market. In other words it amounts to closing the market, or "foreclosure", the term usually associated with leveraging.

Economic analysis of leveraging is applied both to vertical merger control and abuse of dominant position in connection with a refusal to deal⁵. Since the Chicago School's work, this analysis begins with an investigation of what the dominant company stands to gain from extending its monopoly.

AOL/Time Warner

In the case of the merger between AOL and Time Warner, the benefits for the new entity of obtaining a dominant position on other links in the vertical chain remain somewhat mysterious. The Commission showed great imagination in finding ways in which the merged company could use leveraging to reduce competition downstream and upstream, but was silent on its motives, as well as the obstacles that AOL/Time Warner might encounter on the way. To dominate the online music distribution market, the "entity controlling such a sizeable music catalogue could exercise substantial market power, by refusing to license its rights, or threatening not to license them, or imposing high or discriminatory prices and other unfair commercial conditions on ... Internet retailers offering music downloads and streaming"⁶.

be the most important feature of online music; and research commissioned by Universal that found that only 15% of users of the platform owned a digital music player in 2003.

⁵ It can also apply to tying. This topic will be covered in a forthcoming article in this journal.

⁶ European Commission, *AOL/Time Warner* judgment, see note 1 above, § 47.

The single monopoly profit theory and the Cournot effect

For a long time it seemed obvious that the input monopolist generally had an interest in conquering a second monopoly on the output market. The Chicago School, particularly the work of Bork⁷, showed that intuition to be false. The monopolist in fact has no motive to extend because all it has to do is fix the price of its input at the monopoly price to extract the entire monopoly profit. In other words, there is only one monopoly profit, which therefore can only be extracted once. Consequently, there is no need to duplicate a dominant position by integrating on a competitive market downstream or upstream. Since the single monopoly profit theory is now widely accepted, establishing leveraging therefore requires identifying specific reasons why the theory does not apply. To simplify, these reasons may be of two types: static or dynamic.

The best-known static reasons are consumption of inputs in variable proportions, the heterogeneity of downstream firms, and double margin. In the first case, the company with a monopoly position upstream has an interest in integrating downstream because it will produce more efficiently. It gains a reduction in costs. In the second case, it can engage in price discrimination and thus appropriates a larger share of consumer surplus.

In the third case, the monopoly company gains from the disappearance of the double margin. In that case, the downstream market, like the upstream market, is assumed to be dominated by a monopoly company. In that configuration, a merger between the two vertical monopolies benefits consumers, through a lower price for the end good, and the integrated producer, through higher profit than the combined profit of the two separate monopolies.

This surprising result is not new. It was demonstrated by the French economist, Augustin Cournot⁸ in 1838. It is based on the property of complementarity. Let's take another look at the example of a digital music player and a set of headphones. When the two monopolies are separate, each one sets its price independently of the other. The manufacturer of the music player does not take into consideration the fact that a lower price would also benefit the manufacturer of headphones. Similarly, the manufacturer of the headphones calculates its monopoly price without considering the benefit that the maker of the music player would draw from a lower price. In other words, each entity sets a price that is too high because it does not take the positive externality into account.

The end result is that a double monopoly margin is applied to the price of the music player/headphone combination. By contrast, when the two monopolies are united in the same entity, that new entity maximizes the combined profit of the two businesses and takes the total effects generated by a reduction in price or an improvement in quality of one of the components into account.

Furthermore, the single monopoly profit theory is only valid in a static economic framework. Outside that context, there are many dynamic reasons why a monopoly may have an interest in extending upstream or downstream. For example, the complementary good may become a substitute, or when technological innovation is fast, the bottleneck often moves along the chain⁹.

It could also compress the items in its catalogue using its own coding format, which would be dominant, and refuse to license it to rival distribution platforms.

⁷ R. Bork, *The Antitrust Paradox: A Policy at War with Itself*, New York, Basic Books, 1978.

⁸ A. Cournot, *Recherches sur les principes mathématiques de la théorie des richesses*, réédition, Calman Lévy, Paris, 1974.

⁹ D. W. Carlton, A General Analysis of Exclusionary Conduct and Refusal To Deal: Why Aspen and Kodak Are Misguided, *Antitrust L. J.*, Vol. 68, Issue 3, 2001, pp. 659-683.

The Commission also claims that AOL could use its market power in distribution “either to charge supra-competitive prices for the carriage of content or to restrict access to the online music market by favoring Time Warner and Bertelsmann and degrading the quality of access for competing content providers”¹⁰.

A glaring omission in the Commission’s ruling

The Commission claimed that the merged entity could make the Time Warner/Bertelsmann catalogue compatible only with Winamp, AOL’s media playing software and refuse to license to it. The new entity would thus succeed in imposing Winamp at the expense of Windows Media Player, Quicktime and RealPlayer. The Commission thus seems convinced that it is profitable to accumulate monopolies along a vertical chain. At the end of the day, AOL/Time Warner would have a dominant position on the music rights market, the coding software market, the media playing software market and the online music distribution market!

However, the Commission failed to give any static or dynamic reason for an anticompetitive gain from integration. This omission is all the more open to criticism as some of the foreclosure methods imagined by the Commission imply short-term sacrifices by the merged company. For example, refusal to grant licenses to its music catalogue to rival distributors inevitably causes a loss in revenues. The same goes for exclusive coding in a proprietary format, or the refusal to license Winamp. Unless a future gain that could offset those losses can be identified, the anticompetitive actions of the merged company foreseen by the Commission are seriously challenged.

Furthermore, by assuming that the question of the incentives for leveraging is resolved, the Commission failed to analyze the obstacles that might prevent AOL/Time Warner from achieving its ends. The Commission assumed, rather than demonstrated, that access to the Time Warner/Bertelsmann catalogue was essential to online music distributors and that access to AOL’s distribution was equally essential to music publishers and record companies. There is no clear evidence for either assumption.

Firstly, a catalogue of music rights is a set of songs or compositions, each of which is itself a mini monopoly. How is it possible to claim that access to a catalogue is essential because it contains one-third of the available tracks?

Secondly, there are many distribution channels for delivering content to users apart from AOL and new ones are emerging all the time (including mobile telephones). In the current context of rapidly

¹⁰ European Commission, *AOL/Time Warner* ruling, see note 1 above, § 54.

changing technology and demand, how is it possible to identify ahead of time the channels that will become bottlenecks?

Does this harm consumers?

The Commission's ruling also failed to address the harm to consumers, the final aspect of the economic analysis of leveraging. It is not sufficient for the upstream division of the integrated company to increase the price of its input to non-integrated downstream companies for the downstream division of the integrated company to be able to increase its price on the end market. Non-integrated upstream competitors would also have to increase the price of their inputs. The merger would have to facilitate collusion between the independent companies remaining in the upstream segment, for example. In other words, it is not enough for the merged company to succeed somehow in raising the costs of its downstream rivals for consumers to be harmed.

Using the example of the merger between AOL and Time Warner, the economic analysis of leveraging can be summed up in three questions: Can it succeed? Is it profitable? Does it harm consumers? Let's now apply those questions to the vertical integration of Apple in online music through the iTunes Music Store/iTunes/iPod combination.

Apple/iPod answers to France's competition authority

Apple launched iPod, a hard-drive-based digital music player, in 2001. iPod is compatible with the MP3 coding format for compressing music files, widely used in peer-to-peer file sharing. iPod is also compatible with Apple's iTunes jukebox software. Apple launched the first pay-to-play music download platform, iTunes Music Store (ITMS, hereafter), in April 2003 in the United States and in June 2004 in France. The tracks and albums bought on the site must be downloaded onto a computer that has iTunes. They can then only be entered and stored in the music library managed by iTunes and in the iPod player.

However, music purchased on ITMS can be stored and played indirectly in other jukeboxes, such as AOL's Winamp, and other players, such as Creative's or Sony's. The user first has to burn the tracks to CD and then copy them onto the computer in MP3 or ATRAC format. Likewise, in the other direction, a track (or album) bought on a rival platform to Apple such as FnacMusic.com, cannot be directly stored and played in an iPod. Users first have to burn and copy their purchases before they can transfer them to their players. This lack of interoperability is due to Fairplay, Apple's digital rights

management software. ITMS, iTunes and iPod are only compatible with Fairplay¹¹. In light of iPod's success, pay-to-play online music distributors have sought to obtain licenses for Fairplay from Apple. When Apple refused, VirginMega referred the matter to the Conseil de la concurrence, which dismissed the claim¹².

The French competition authority mainly invoked the doctrine and precedent of essential facilities. That analysis can be rounded out from a more economic viewpoint¹³: by refusing to license its digital rights management software, is Apple seeking to extend its dominant position¹⁴ in digital music players to online music?

Can the chosen method be effective? By not offering compatibility, Apple is penalizing other music distributors. An iPod owner will not discriminate between downloading a track from ITMS or from another site if the other site offers a lower price or higher quality to offset the additional cost of getting around the incompatibility problem (i.e., the cost for consumers of burning and copying the music they buy before transferring it to their player). This competitive disadvantage is all the more pronounced as consumers are reluctant to perform this additional operation.

The Conseil de la concurrence did not find the additional cost of getting around incompatibility to be significant, stressing that the cost of buying a blank CD to perform this operation is negligible¹⁵ and that the learning cost is nil because the operation is familiar to most Internet users. The cost goes up considerably, however, if the cost of the time spent burning and copying the music is taken into account. Based on a time of 90 seconds to perform the whole operation¹⁶ and a time value of 10 euros per hour¹⁷, getting around the incompatibility problem costs 25 euro cents.

In other words, all other things being equal, Apple's competitors must offer a price that is 25% lower than the current price of a track (or service quality that customers consider to be worth 25 euro cents more) to convince an economically rational iPod owner to download music from their platforms. Note

¹¹ For a presentation and analysis of the economic implications of DRM, see O. Bomsel and A.G. Geffroy, *Economic Analysis of Digital Rights Management Systems*, MediaNet Project Paper 06/12/04, 2004, <http://www.cerna.ensmp.fr/>

¹² Conseil de la concurrence, *VirginMega v. Apple* ruling, see note 2 above.

¹³ Economists have serious reservations about the doctrine of essential facilities in general and its application to intellectual property in particular (mainly because of the difficulty calculating a reasonable license fee, see F. Lévêque, *Quel est le prix raisonnable d'une licence obligatoire ?*, RDLC 12004 p. 16.)

¹⁴ This article assumes that Apple has acquired a dominant position through iPod solely for the purposes of the exercise at hand. The author does not express any opinion on that aspect. Note that the Conseil de la concurrence did not define relevant market or dominant position. It left open the possibility that the relevant market could be limited to hard-drive players – where Apple's market share by value is 53% (versus 25% if flash-memory-based players are included in the relevant market). The competition authority did not rule out either that Apple might be dominant on that market. The assumption was also made that Apple does not have a dominant position on the online music distribution market.

¹⁵ “The financial cost is negligible (around 3 euro cents per track at most, i.e., 3% more expensive than the download)”, Conseil de la concurrence, Judgment, *VirginMega v. Apple*, § 82.

¹⁶ This is the time taken to transfer a set of ten tracks to a midrange personal computer.

¹⁷ This value is the benchmark commonly used in economic evaluations, particularly of the cost of traffic jams. Of course, this time value is extremely scattered.

that this difference, although very high, does not automatically eliminate competition. The customer base for online music platforms is not limited to owners of Apple players. The tracks purchased can be stored on other types of hard drive, particularly computer hard drives.

As the French competition authority pointed out, most music downloaded from the Internet is not intended for digital music players¹⁸. The Conseil de la concurrence also stated that the attractiveness of a pay-to-play online music download platform depends on many characteristics other than compatibility with a particular type of music player. According to the competition authority, there is thus no link between ITMS's market share and access to Fairplay. However, it will be shown below that economies of scale can put holes in that conclusion.

Is the refusal to license Fairplay profitable?

Answering that question affirmatively is essential because it rules out the assumption of short-term sacrifice in the expectation of future benefits from market foreclosure¹⁹. However, we are not in a position to decide that controversial question²⁰. We lack two pieces of information: the cost of making a system compatible and the relative efficiency of the various distributors. In general, compatibility is not free of charge. For example, Apple informed the Conseil de la concurrence that a license would generate additional costs to guarantee the security of its DRM and a change in its architecture²¹. Furthermore, Apple enjoys strong brand image. Licensing one of its technologies would risk harming that image. Of course, if all these costs are higher than the consent to pay competitors to obtain a license, not licensing is profitable to Apple and in the general interest²². Secondly, assuming that ITMS is the most efficient distributor, the revenues from licensing would be unlikely to offset Apple's loss of customers.

However, Apple's platform enjoys a size effect that enables it to better amortize its fixed costs and probably obtain better purchasing terms (i.e., lower royalties). Once again, licensing would cause Apple to lose money and would not be in the general interest.

Finally, to take the exercise through to conclusion, Apple's refusal to license can be assumed to be efficient (i.e., it succeeds in eliminating rivals on the pay-to-play online music distribution market) and

¹⁸ See note 4 above.

¹⁹ For the purposes of the exercise at hand, the refusal to license is now assumed to be an effective way to eliminate rivals.

²⁰ A. Salkever, *Digital Music: Apple Shouldn't Sing Solo*, BusinessWeek Online, 24 March 2004, <http://www.businessweek.com/>, and the SpyMac forum: <http://www.spymac.com/forums/>.

²¹ Conseil de la concurrence, Judgment, *VirginMega v. Apple*, § 93 and § 94.

²² Note that the profit generated by additional sales of iPods is not taken into account here. This analysis leaves out the increased attractiveness of Apple music players that would result if iPod owners had access to a bigger choice of music available for purchase online.

not justified by the above reasons. The benefit of leveraging must therefore be sought in the acquisition of a second monopoly. The single monopoly profit theory needs to be circumvented by explaining what Apple would gain from having two vertical monopolies instead of one. The segmentation of consumption and economies of scale in production provide a plausible explanation.

To simplify, the customers of download platforms can be divided into two distinct categories: sedentary users who buy music online to listen to it on fixed devices, and mobile users who consume music on handheld devices. By foreclosing the market in the latter category, the refusal to license prevents competitors from achieving sufficient economies of scale, and their exit from the market leaves Apple free to monopolize the sedentary consumption segment. Leveraging extends the monopoly to a category of customers that was not captive and that could not be made captive solely through the dominant position in handheld players. The harm to consumers of the refusal to license is obvious here, since more of them are forced to pay a monopoly price.

The single monopoly profit theory and procompetitive effects such as the Cournot effect are the key notes of the economic analysis of vertical integration. The Chicago School prompts us to ask a set of simple questions about the incentives, gain and harm of vertical mergers and refusals to sell. It requires examining the facts for the uncommon if not exceptional circumstances for a successful leveraging harmful to consumers. This may be occurring in pay-to-play online music distribution, but it would require a combination of highly specific factors and conditions, which remain to be established.