



FOOL MONTI? AN ANALYSIS OF THE EUROPEAN COMMISSION'S CASE AGAINST MICROSOFT

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Let me thank the Chairman, Professor Peritz, and the audience for coming to this first seminar organized by LUISS' Law and Economics Lab. We plan to have plenty of these events in the future, and hope that you keep following our initiatives with the same enthusiasm.

We chose to deal with the European Microsoft case for many reasons. Most of them obvious, as of now, since everybody knows that Microsoft will get its severe fine the day after tomorrow. What really matters, however, is that the Commission's decision is likely to exert a significant impact on the future of high-tech industries, in particular as far as technical development, intellectual property protection and dynamic competition are concerned. This is why I believe that the Microsoft case has eventually become a synecdoche, and the balance struck by the Commission will certainly overcome the single interests at stake, spreading its influence over the whole digital capitalism.

I will proceed as follows. A first part of this presentation will be devoted to the description of the main allegations formulated by the European Commission against Microsoft. Subsequently, in order to get all the audience "on board", I will provide a few hints on the economics of high-tech industries, with particular emphasis on system goods and system competition under network effects. I will then analyze the main features of the European Commission's case, and provide some suggestions on the way such cases should be handled if we want to avoid both the risk of fostering the crystallization of welfare-decreasing dominant positions in the relevant markets, and the risk of depressing R&D incentives to the detriment of innovation and, ultimately, of consumer welfare.

1. The Commission's Allegations

1.1 TECHNOLOGICAL LEVERAGING

The main allegation expressed by the European Commission against Microsoft is that of technological leveraging. In particular, the Commission stated that:

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Microsoft violated Article 82 of the EC Treaty by illegally achieving a dominant position in the market for entry-level workgroup server Operating Systems. I will discuss market definition later, since market definition played a key role over the course of the proceeding.

Microsoft effectuated this abuse by leveraging its dominant position in the market for Personal Computer client Operating Systems (with its Windows family) and in Personal Productivity Application Suites (with the Office Suite). This technological leveraging was performed by refusing to supply its competitors with the interface information needed to achieve full interoperability with Windows server OSs, Windows client OSs, and Microsoft Personal Productivity Applications.

Furthermore, Microsoft abused its dominant position in applying different conditions to equivalent transactions with its competitors in the server market: Microsoft is told to have disclosed relevant interface information and applied favorable conditions to Compaq, while denying the same information to Sun.

1.2 BUNDLING THE MEDIA PLAYER

However, the most famous branch of the case is perhaps the allegation regarding Microsoft's conduct in the media player market. On this side, the Commission stated that Microsoft abused its dominant position in the market for PC client Operating Systems by foreclosing competitors from a neighboring market, *id est* the market for media players or devices for streaming multimedia content.

Microsoft bundled its Media Player with the Windows Operating system, so that Original Equipment Manufacturers were forced to pre-install both products in the personal computers they sell. Moreover, Microsoft does not charge for the media player, and this forced its competitors - such as Apple with QuickTime and RealNetworks with Real Player - to give away their software by allowing users to freely download it from the Internet.

The foreclosing effect is concentrated in the OEM distribution channel, which the Commission considers to be the most commercially relevant one for media player vendors. In this respect, the Commission reached the same conclusion that the US DoJ had drawn from an analysis of the browser market. In the US, Microsoft was found to be leveraging its dominant position in the market for Intel-compatible PC operating systems by technologically integrating the OS and the browser, and by forcing OEMs not to promote the competing browser, Netscape Navigator.

1.3 SPECIAL RESPONSIBILITY AND REMEDIES

As a result, Microsoft was found dominant in as many as three relevant markets -PC client OSs, server OSs, and PPAs-, which leaves Microsoft itself, according to the established pattern of the European case law, with a special responsibility in dealing with its competitors (*Michelin*). How far such responsibility should be taken, is still

unclear. What is clear is that the Commission thinks that Microsoft, with its abusive behaviour, is distorting competition, stifling technical development, and therefore indirectly harming consumers. (*Hoffman La Roche, Irish Sugar*).

In terms of remedies, the Commission only stated that Microsoft should undertake all the arrangements needed to ensure that its competitors in the server OS market enjoy full interoperability with Microsoft's products. The concept of full interoperability, as will be clear in a while, has been subject to a heated debate before the Commission.

Now, before we proceed to analyze the facts of the case, it is worth recalling a few features of the industry on which we are focusing our attention today. An in-depth and detailed description of the economics of high-tech markets would fall outside the scope of this presentation, and all I can do is suggest you to read the materials that we distributed today.

2 System competition under network effects

The first thing that is worth recalling is that computing devices are complex goods that are characterized by a high degree of modularity. Economists refer to these goods as "system goods". One peculiarity of system goods is that consumers need to use at least the most important system components - or, as they are normally termed, complementors - in order to effectively draw utility from use of the system. More precisely, systems have different layers, and all layers are linked by interfaces. In the graph, I sketched a rough representation of the main layers that can be found in personal computers - starting from hardware devices (including microprocessor, monitor, peripheral devices, memory storage devices etc.), the operating system, middleware platforms, application software, multimedia content and - importantly - the contribution of the final user. Amongst all these layers, the one that drives consumer demand is normally called the system "platform". For instance, the IBM hardware was the dominant platform in the early 1980s, and Microsoft Windows is the dominant platform in the PC system today.

Secondly, it is very important to acknowledge that systems can, and normally do have different architectures. If all complementors are produced by the same firm, the system is entirely closed and proprietary. Conversely, if not all the complementors are produced by the same firm, platform vendors have to ensure that producers of complementors know how to make their products compatible with the platform. This involves sharing part of one's intellectual property with other firms. For instance, Microsoft needs to share its OS interface information with firms producing hardware, middleware, application software and content. We call Microsoft's system architecture a semi-open architecture. More recently, the development of free software led to the emergence of a different business model, which implies that software vendors make available the source code behind their products, so that any competitor can have access to it and gain interoperability with other complementors in the system. This kind of architecture is normally defined as an open architecture.

2.1 OPEN VS. CLOSED SYSTEM ARCHITECTURES

The economics literature has long studied the problem of which one of these architectural options is to be preferred.

- **Closed architectures** offer the advantage of better coordination and internal consistency, as well as a better management of firms' intellectual property and, accordingly, a secure remuneration of R&D investments and reduced transaction costs.
- **Open architectures**, at the other extreme, fully exploit the potential of network effects, by ensuring the highest possible availability of applications and complete interoperability between complementors. However, these architectures also jeopardize incentives to invest in R&D, since market operators know that competitors will be able to free ride on their intellectual property. For this reason, many commentators have stated that free software has a "viral" nature, and is not suited as a stand-alone industry standard.

Let me point to some examples of firms that decided to adopt different architectural options for their systems. During the 1980s, Apple adopted a closed architecture for its Macintosh system. Apple manufactured and marketed all hardware, operating system and application software for the Mac. At the same time, IBM decided to open its architecture up by choosing Microsoft's MS/DOS to act as operating system. Since then, Microsoft's OS became the dominant platform in the Personal Computer system. Microsoft chose to adopt a semi-open architecture, which offered the advantage to almost fully exploit network externalities and at the same time preserve a degree of coordination and control. Such architecture allows for competition at all layers, with the exception of the Operating System, which lies at the core of the platform. Later on, Sun Microsystems chose a slightly more open - but still proprietary - architecture for its implementation of the Java programming language, which came together with the famous slogan "write once, run everywhere". Sun allowed all competitors to access the specific information needed to develop a Java Virtual Machine, but preserved a degree of coordination, consisting in its power to certify third-party implementations of Java. Finally, open source software such as Linux is characterized by zero coordination. Linux is distributed under a free software license, the GPL, that allows all programmers to access the source code at no cost, provided that all modifications are made available for free. This ultimately leads to the proliferation of different "flavors" of the same OS.

The question now is: does system architecture exert an impact on the degree of interoperability observed in the market? The answer is: yes.

If a closed system comes to dominate the market, there will be no room for interoperability, and competitors will have to engage in inter-system competition, by trying to convince end-users to abandon the dominant product and switch to their system.

On the other hand, if a semi-open system becomes dominant, there will be competition in the production of all complementors, with the sole exception of the platform. I call this situation intra-system competition.

Finally, if the market is dominated by an open architecture, all firms can observe the functioning of the system goods and can enter the market at any time. This is much more than intra-system competition. It is a situation that allows for free access to the platform's source code and therefore grants the possibility of perfect emulation, at the same time creating important problems in terms of recovery of R&D investments borne by the firm that developed the dominant good.

It is important, at this stage, to stress that, as of today, there is no theoretical reason to prefer one system architecture over another. I am stating this now, because the European Commission seems to be imposing one architectural option in the Microsoft case, showing its preference for open systems.

It is the peculiar features of high-tech markets, not a regulator or an antitrust enforcer, that drive systems towards the choice of the most suitable architecture.

2.2 NETWORK EFFECTS, LEARNING EFFECTS AND COMPETITIVE CONCERNS

As widely acknowledged by the Commission and also by economic theory, markets characterized by strong network effects tend to "tip" toward the emergence of a single *de facto* standard. As a consequence, before the standard has emerged, firms fiercely compete *for* the market rather than *in* the market, and at the end of the competitive race, the winners take almost all the market. The situation, before the market has "tipped", is depicted in the figure, with D^c being the demand curve for the product during the pre-standard stage and p^c being the competitive price level. Once one of the competing firms wins the "winner-takes-all" game, the market "tips", since users profit from the standardization, and the demand curve shifts outwards, as a consequence of direct and indirect network effects.

In some markets, like the market for PC client OSs, as users get familiar with a *de facto* standard, the demand curve also becomes more rigid, since the investment borne by users in learning how to use the standard platform is a sunk cost. This is normally called the "learning effect".

Well, this kind of competitive dynamics implies that markets of this kind undergo a natural overlapping of generations in which a single product prevails as the *de facto* standard. As seen in the picture, this kind of competition might well prove welfare-enhancing. On the one hand, *de facto* standard owners and their complementor producers gain huge profits for one generation, while end users profit from standardization up to a point in which consumer surplus (area B) is higher under monopoly than under the pre-standard competitive race (area A).

Normally, one-generation dominant positions do not create competitive concerns, provided that product generations quickly overlap as it usually happens in high-tech industries: by the time a firm gets to become a *de facto* standard owner, it is already time to start competing for the next generation. For this reason, dominant firms are never completely shielded from competitive pressure. However, when network externalities and learning effects are both present, *de facto* standard owners may enjoy a strong first-mover advantage, which allows them to perpetually preserve their

dominant position in a market, by locking-in consumers and complementor producers. In these circumstances, antitrust authorities are in charge of ensuring that a level-playing field is preserved in the competitive race for next generation's standard.

2.3 DIFFERENT FROM THE "WEST SIDE STORY"

This is exactly what happened to Microsoft in the US. The Redmond-based giant software house was found to have illegally preserved its first-mover advantage in the competitive race. Microsoft did so by imposing complementor producers not to market competing platforms, thereby abusing their economic dependency. The recently entered consent decree between Microsoft and the US DoJ imposed Microsoft not to discriminate between complementor producers and to allow for full intra-system competition.

But this is just the "West side story". The European case is quite another plot, since the server market is different from the PC client market that was the "set" of the US case. And there are many reasons to doubt that the server market is as exposed to tipping as the client market. First, servers are defined as "networks of systems", and can contain heterogeneous system architectures and many different technologies. Secondly, users are less exposed to "learning effects", since they are, normally, system operators with strong engineering skills.

As a result, in server markets, tipping is much less likely to be a problem for antitrust enforcers. As confirmed by market data, competition between server systems is not a "winner-takes-all" game. Lots of servers with different technologies are interconnected in large networks, and new products – such as Linux – can conquer substantial market shares without foreclosing the market to more established server OSs – such as Unix, NetWare, Solaris or Windows.

Now, let us come to the analysis of the case. I will start from the allegation of technological leveraging, and then move on to the finding of anticompetitive bundling of the media player and Windows.

3 The Finding of Microsoft's Dominance

The European Commission, as we saw, found Microsoft to be dominant in as many as three markets. Like in the US, Microsoft was found to be dominant in the market for PC client Operating Systems, although the market definition in this case included Apple's Mac OS, which had been arbitrarily – in my view – excluded from the relevant market in the US case. Moreover, in line with the US case, the Commission found Microsoft to enjoy a dominant position in the market for Personal Productivity Applications, with its Microsoft Office Suite – the one I am using right now, for this presentation. Thirdly, the Commission found Microsoft to have achieved a dominant position in the market for entry-level server OSs.

Since the Commission found the existence of significant associative and technological links between the three markets, with particular respect to the entry-level server OSs and the PC client OSs, it concluded that Microsoft had suitable tools to leverage its dominant position from a market to another, and in particular from the client OS and application market to the server OS market.

Remember. In order to envisage anticompetitive leveraging of a monopoly position – whatever are the merits of this approach–, three elements need to be present:

- a) a dominant position in the tying market –for example, the market for PC client OSs;
- b) a dominant position in the tied market –the market for entry-level server OSs–, achieved through the pressure coming from the other market, OS,
- c) a suitable tool to exercise leveraging.

Since from the Commission’s viewpoint, as I already recalled, Microsoft is dominant in both the tying and the tied market, and has suitable tools to exercise leveraging, the finding of anticompetitive leveraging would seem *prima facie* correct.

3.1 WITHHOLDING RELEVANT INTERFACE INFORMATION

More in detail, according to the Commission Microsoft withheld relevant interface information that competing server OS vendors needed in order to effectively achieve interoperability of their OS with Microsoft’s dominant client OS. The Commission found that Microsoft has preserved “privileged connections” between its client and server operating systems, which competitors cannot access.

In particular, Sun complained that, although Microsoft documents its client interfaces, it does not fully disclose the way it implements those interfaces in its server OS. This implies that competitors cannot fully emulate the functioning of Microsoft’s server operating system, and this in turn implies that there is no level-playing-field in the market for server operating systems.

Moreover, the Commission stated that Microsoft illegally refused to supply relevant information to its competitors, at least on some specific features of its server OS. In particular, Microsoft did not disclose the full functioning of its directory service, Active Directory. Furthermore, Microsoft does not supply relevant information on its security services, like the Kerberos, a protocol that allows for authentication of server users.

For these reasons, Microsoft was found to have intentionally limited server-server interoperability for the purpose of monopolizing the server OS market.

Finally, according to the Commission, Microsoft is dominant in personal productivity applications and uses that dominance to leverage its power into server operating systems by creating, one more time, “privileged connections”. This means that Microsoft designs its PPAs in order to make them work best with servers using Microsoft OS, and refuses to supply information needed by competitors to make their competing server operating systems interoperate.

However, as far as I know, the Commission has not specified in detail what kind of information Microsoft “refuses to supply”.

4 The Commission’s Approach is full of bugs

So far, so good. The European Commission’s approach resembles that of a standard leveraging case, similar to the famous *Tetra Pak II*. But a careful reading reveals all the clumsiness that characterizes antitrust enforcers when dealing with knowledge-based industries, with network effects and inextricable competitive dynamics. The same *impasse* that lingers on the current proposed directive on the patentability of computer-implemented inventions, as well as on the recently approved EU Parliament Directive on intellectual property protection.

In other, simpler words, the Commission’s approach is deeply flawed, and in more than one respect. I will focus on two main issues:

- The finding of Microsoft’s dominance in the entry-level server OS market is based on what I will define as an “acrobatic” market definition exercise. What’s more, market shares in this oddly defined market were calculated quite “creatively”, in violation of a striking number of established principles in antitrust practice.
- Moreover, the issue of interoperability was tackled with patent difficulties. First, the Commission only considered one out of the many possible ways in which server OS vendors can achieve interoperability with Windows clients. Secondly, the Commission failed to applied leveraging with respect to server-server interoperability, since the tying and the tied market are the same in this case, and leveraging requires two separate relevant markets. Finally, the allegation regarding application-server interoperability lacks support both in theory and market evidence.

Now, let us proceed step by step.

4.1 “ACROBATIC” MARKET DEFINITION

The issue of market definition has always created humongous difficulties for antitrust enforcers when dealing with high-tech industries. In the US, for instance, the FTC has once defined Intel as a monopolist in the market for Intel processors. And the DoJ has excluded Apple and Netscape from Microsoft’s rivals, since it was looking at competition between Intel-compatible operating systems, not between system platforms.

As regards the European Microsoft case, the Commission identified a separate relevant market, consisting of all operating systems installed on the so-called “entry-level servers”. These servers are defined by the International Data Corporation as servers costing less than 100,000 USD. For this set of product to be defined as a relevant

market, according to the Commission's 1997 *Notice on the definition of the relevant market*, no other product should be "regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use".

But, here, reality bites. As a first remark, the Commission did not segment the market on the basis of prices charged for server OSs, but relied on prices charged for entire systems, composed –as you may recall from my previous slides– by hardware, OS, Middleware, Applications, and so forth.

The problem is that workgroup servers and larger network servers normally differ in terms of hardware, rather than software. Larger servers normally come with more memory storage, more powerful processors, more sophisticated security devices, higher interconnection capacity. Whereas the OS core technology is normally the same for workgroup servers and larger network servers.

In a system architecture, normally one large server substitutes for many small servers, depending on the free choice of system operators. There are advantages and disadvantages in both available network architectures. In other words, even if we reason in terms of system, there is a clear pattern of substitution between systems that were included by the Commission in the relevant market and systems that were excluded from it. And this is contrary to sound economic theory as regards market definition exercises.

An additional remark. OSs sold for larger network servers differ, to some extent, from workgroup server OSs. As in many markets for information goods, OS vendors normally engage in versioning of their products, which enables them to price-discriminate between different categories of server users. At any rate, OSs are developed on a common core technology, and then made – in the techies' jargon – "scalable". OSs marketed for larger servers are able to interconnect more servers and more clients than those sold to workgroup server sysops. But this in turn implies that, should a hypothetical monopolist slightly raise its price in the workgroup server sub-market, immediate entry would inhibit whatever chance of reaping extra-profits. When this test –called the SSNIP test– fails, antitrust practitioners conclude that the relevant market should be enlarged in order to embrace also firms that would immediately enter the market.

In conclusion, there seems to be no separate relevant market for entry-level server OSs.

But look: in a wider server OS market, evidence suggests that Microsoft would have come out with a much lower market share, certainly smaller than that held by the UNIX family of Operating Systems.

Recall, now, that for a leveraging allegation to be correctly formulated, there needs to be a tied market in which dominance was achieved through leveraging. Thus, if Microsoft is not dominant in the server OS market, the whole rationale adopted by the European Commission is doomed to tumble down, just like castles made of sand.

4.2 “CREATIVE” COMPUTATION OF MARKET SHARES

This grey picture becomes even darker if we look at the way the Commission calculated market shares. A word of caution and solidarity here seems to me worth spending. Calculating market shares in these markets appears indeed as a “mission impossible”, nevertheless requires at least a consistent approach.

The Commission chose to rely on volume-based market shares rather than value-based (revenue-based) market shares in determining Microsoft’s competitive position in the relevant market. It chose to do so for two reasons. First, because network effects are related to numbers in use, not in dollars. Secondly, because Linux and other open source software can be licensed at no cost.

However, this approach seems incorrect. As I already recalled, there is a clear pattern of substitution between one large server and many smaller servers. This means that calculating market shares on the basis of units sold provides an overly distorted picture of the relative competitive position of server OS vendors, and leads to unduly overstating the market share held by vendors of OS for smaller servers, such as Microsoft.

The economic theory suggests that in extremely heterogeneous markets, volume-based shares may constitute an extremely imperfect proxy of firms’ relative strength on the market. The Commission, itself, welcomed this approach in a number of decisions, even when the relevant market was characterized by strong network effects (as in MCI/WorldCom, 1999). The 1997 *Notice on the definition of the relevant market* specifies that “In cases of differentiated products, sales in value and their associated market shares will usually be considered to better reflect the relative position and strength of each supplier”.

Then, why did the Commission abandon its consolidated approach just for (this portion of) the Microsoft case? I don’t have an answer for this question. What I can say is that those who tried to calculate Microsoft’s market share on the basis of revenues, rather than units sold, found that Microsoft had a much lower share than UNIX, and was far from dominant even in the relevant market so narrowly defined by the Commission.

To complete the picture, please note that the Commission told a completely different story when it came to calculate market shares in the market for Personal Productivity Applications. Notwithstanding the paramount importance of network effects in this market, the Commission decided to rely on value-based shares instead of unit-based shares. Strangely enough, in that market, Microsoft’s share is lower in terms of volume than in terms of revenues.

Now, before we turn to the issue of interoperability, let me rapidly sum up by recalling that the Commission oddly defined the market, and more oddly calculated market shares. In both cases, the likely consequence is that Microsoft emerged as way more dominant than it actually is.

4.3 A SHORTSIGHTED APPROACH TO INTEROPERABILITY

Heavy critiques may be formulated also on the Commission's approach to the issue of interoperability. I will not hinge on too technical details, since the time is flying. I will just highlight a few issues which I found quite interesting in the Commission's approach:

The European Commission adopted a fairly shortsighted approach to the ways in which non-Windows server OSs can interoperate with Windows clients. As shown in the picture, servers can "talk" to clients through interoperability software installed on servers, on clients, on external (gateway) servers, or using non-native communication protocols such as HTML.

This is a focal point, let me try to explain. One might say that getting servers and clients, running on different platforms, to work together is very much like making people, with different native languages –say Rudolph and, assume, most people in the audience, with their English, and myself with my dialect--, communicate among themselves. There are several alternatives to achieve this outcome: all people might learn Esperanto (a common protocol), resort to interpreters (costly and time-consuming), or employ either Italian or English, which is Rudolph's reign and my tragedy. Actually, since I can not force the majority to choose according to my taste, I am obliged to use my rusty English, which puts me at a loss, but, nonetheless, makes communication possible. No doubt, instead of contenting myself with this outcome, my best chance would be to open Rudolph's skull and share his brain, in order to emulate, at no cost, his elegant English. But I guess he would not appreciate this bloody initiative. Nor you all...

Yet, this is precisely what the Commission is aiming to. It only considered the first solution as providing full interoperability, better substantial emulation, to non-Windows server OS vendors. Indeed, this solution is the only one that does not require additional investments by Microsoft competitors; and the only one that requires disclosure of parts of Windows source code.

The same holds substantially true for server-server interoperability.

4.4 INTEROPERABILITY: OTHER ISSUES

Moreover, according to the European Commission, Microsoft hinders server-server interoperability with its leveraging strategy.

Yet, first, Microsoft server OSs normally do interact with non-Microsoft ones in many networks. Of course, different technologies require some additional effort to effectively work together. But the European Commission considered the current interoperability between different server OSs to be unsatisfactory because far from "full".

Secondly, leveraging cannot be claimed within one and the same market. Here, the specter of *TetraPak II* materializes. It is a precedent, with the asserted abuse originating

in the non-dominated market and producing its effects on the same non-dominated market; it's a precedent, but in my opinion an ominous one.

Finally, some Microsoft competitors claimed that they have to face programming costs to "port" Microsoft client applications to their servers. Yet, PPAs are installed on clients, not on servers. And those costs can be avoided only if Microsoft discloses core parts of its OS source code.

And here we are, eventually. From the combined analysis of all these findings, what emerges is that the European Commission is looking for something more than mere interoperability. The full interoperability it intends to impose on Microsoft is mistakenly termed. This is more a matter of perfect emulation, rather than interoperability. It is a costless appropriation of Microsoft's intellectual property. Way more than even the dissenting states – those that wanted Internet Explorer to be put in the public domain – had proposed in the US.

After all, this is confirmed by the wording of the Commission. In its Statement of Objections against Microsoft, the Commission acknowledged that each firm should be left free to choose how much information to disclose in the market.

"Microsoft can choose to keep its interfaces 'public' (details made available to all), 'closed' (details kept only for use by Microsoft's own developers) or some combination of the two (e.g. selective disclosure to 'friends')..."

But then, in giving its definition of "full interoperability", the Commission stated that

"Microsoft should promptly make available ... all the interface information necessary to enable full interoperability ... such information being not less complete, less accurate nor less clearly presented than that which is available to Microsoft's employees... for the purpose of developing or improving Microsoft Workgroup Server OS..."

Here we see blatantly contradictory statements at work, with the latter producing a clear example of the law of unintended consequences. If Microsoft were to make available all the above mentioned interface information, the overall outcome would be worth to giving away a substantial part of its source code: bluntly speaking, a massive taking of valuable IP rights.

4.5 THE US AND EU CASES: TWO DIFFERENT STORIES

A brief comparison between the US case and the European one.

In the US, there were strong network and learning effects, tipping, evidence of foreclosure. A contractual remedy was devised, with MS obliged to allow for intra-system competition.

In the EU case, network and learning effects are weaker, there is no tipping, nor evidence of foreclosure. Yet, the proposed remedy looks quasi-structural, since Microsoft is obliged to a forced sharing (perfect emulation). At any rate, Microsoft will undergo the imposition of a duty to aid competitors, precisely what *Verizon v. Trinko* has recently deemed to be normally foreign to antitrust laws.

Before I conclude, let me just – for sake of completeness – spend a few words on the other allegation that was formulated against Microsoft, that of monopolization of the media player market through leveraging of a dominant position in the PC client OS market. I guess this is quite a funny story, too.

5 Bundling the media player

On this side, the European Commission did not find Microsoft to hold a dominant position in the media player market. And, once again, the Commission had to rely on forecasts on the likely future emergence of a dominant position held by Microsoft. The Commission expressed its concern that the market would tip towards a single standard media player and, since Microsoft can leverage its dominant position in the PC client OS market into the media player market, this future standard was very likely to be Windows Media Player.

In bundling its media player with Windows, Microsoft was found to be foreclosing competitors from the market. First, Original Equipment Manufacturers are forced to pre-install Windows Media Player, if they want to have Windows on their computers. Since Windows is the de facto standard OS for personal computers, OEMs have almost no choice but to pre-install it on their machines. Final users will then see Windows Media Player as they switch the computer on, and – according to the Commission--will have little incentive to install another media player. Moreover, competitors such as RealNetworks and Apple are forced to price their media players at zero, since Microsoft's bundling strategy allowed the Redmond-based titan to cross-subsidize the media player with revenues from the OSs and other successful products.

This behaviour, according to the Commission, is aimed at consolidating Microsoft's application barrier to entry, and might leave Bill Gates' software house free from competitive pressure, in a situation in which technical development is not spurred, and the lazy monopolist can even indulge in *x*-inefficiency.

The rationale here is quite similar to that adopted in the US on Internet browsers. There, Microsoft was found to have engaged in technological product integration, by commingling the code lines of its operating system and the browser, Internet Explorer. Besides doing this, Microsoft had contractually forced OEMs not to pre-install competing browser icons on their desktop, by threatening to withhold the license for the Operating System, had they decided to promote competing browsers. In this case, too, competitors such as Netscape had been forced to give away their software, making it available for free download from the Net.

But similarities end up quickly. As I show in the slide, there are many reasons to conclude that, even as far as media players are concerned, Monti's team has not appropriately addressed the case.

Let me start with market facts. RealPlayer, as stated by RealNetworks in many occasions, is still the No. 1 product in the relevant market, and data show that this software is installed on more than 90% of personal computers. A good result, indeed, for a foreclosed competitor!

This happens because the OEM channel is just one out of many important distribution channels for media players. Multimedia content producers usually sign agreements with media player vendors. And RealNetworks signed important exclusive agreements with America OnLine, Virgin Records, BMG, ABC, CBS and many other valuable content producers. Moreover, RealNetworks signed a multi-billionaire agreement with Intel, and now its RealPlayer comes bundled with Intel's microprocessors, which dominate their relevant market.

Media players are not at all similar to browsers from a competition policy perspective. First, competing media players support different formats, and are therefore not completely replaceable with one another. Browsers such as Explorer and Navigator are almost perfect substitutes. Moreover, media players take just two or three minutes to download. Users typically install all media players on their computer. The computer will ask them whether they want to download a media player, they will click yes and the software will automatically install on the computer.

For this reasons, I guess it is quite unlikely that the market ends up tipping. Media players will continue to compete in the market, as there is enough room for all in the media player market.

Accordingly, I see no chance of x-inefficiency. The Commission expressed its concern that Microsoft could start lowering the quality of its media player just because competitors have no chance to reach the market. But, as I just recalled, if users find a low-quality media player pre-installed on their computer, it takes just three minutes for them to install a better one from Apple, RealNetworks or any other competitor.

Finally, market evidence shows that the market is performing extremely well, and more importantly the Commission has shown no evidence of consumer harm derived from Microsoft's behaviour. Looking at what emerged from the US Microsoft case, I believe the Commission should realize that technological tying deserves a cautious application of the rule of reason analysis, instead of being subject to a per se rule. The Commission should carefully weigh pro-competitive and anti-competitive effects, and establish whether consumers attach a higher value to the integrated good than to the sum of two distinct complementary goods. This seems to be the case for media players.

At any rate, a contractual remedy, like the one devised in the US case, would avoid any foreclosure, since the OEMs, left free to make their determinations, are in the best position to assemble the various pieces of the OS.

Now, let me sum up all the conclusions we have drawn from this presentation.

6 Conclusions

First, the European Commission seems to have interpreted the goal of achieving interoperability much too broadly - certainly more extensively than what it did in the

often quoted 1984 IBM case. Instead of aiming at interoperability, the prospected solution would lead to the disintegration of Microsoft's system architecture and to perfect emulation of Microsoft's leading products. As a modern Saint Francis, Microsoft would be led to give away its software mantle to competitors, and embrace the open source philosophy. I guess even fierce Microsoft's rivals, that market proprietary products, would not be particularly happy with such a solution.

There seems to be no need to force Microsoft to market a stripped-down version of Windows.

As a result, that of full interoperability seems to be a typical "solution in search of a problem". Antitrust enforcers should make sure that Microsoft does not impose its complementor producers not to market competing OSs and media players for fear of retaliation from the Redmond-based firm. But this goal is perfectly achieved by the consent decree signed between Microsoft and the US DoJ and entered by district judge Colleen Kollar-Kotelly last year.

A proper solution would then imply that Microsoft commit to ensure that competing server OS vendors and media player vendors enjoy adequate interoperability with its system, and can engage in inter-system competition on the merits. Competitors should then be left free to invest in inter- and intra-system competition, but not to free ride on Microsoft's IP portfolio.

7 Fool Monti?

Moreover, I will put forward a number of final remarks.

The Commission seems to have instrumentally crafted the case, by fine tuning market definition and market shares in order to devise a typical leveraging situation, hardly consistent with market facts.

Acrobatic market definition and creative market shares reveal, to say the least, that the Commission is in desperate urge for sound economic analysis in dealing with complex cases from network industries.

The solution envisaged by the Commission is likely to significantly depress incentives to invest in R&D and in alternative system architectures. This would not be a problem if the market facts confirmed that Microsoft is currently shielded from competitive pressure. But this is not true.

Finally, as I already said, the Microsoft case has become a synecdoche. What Monti is trying to achieve in this case would be better solved through careful and light-handed regulation, rather than in an antitrust proceeding. For this reason, the press awarded Mario Monti the rather unpleasant label of "regulatory pit-bull". And for the same reason, I guess the Commission should refrain from engaging in heavy-handed regulation when deciding antitrust cases (again, *Verizon v. Trinko* looming large).

The final, and quite dramatic question is, then: **Who will preserve competition from competition policy?**