



Bulletin

Water
 Energy
 Retailing
 Transport
 Financial services
 Healthcare
 → Telecoms
 Media
 Post
 → Competition policy
 Policy analysis and design
 → Regulation
 Strategy
 Contract design and evaluation
 Dispute support services
 Market design and auctions

SEPTEMBER 2005

Picking failures

MANDATORY STANDARDISATION IN ELECTRONIC COMMUNICATIONS

The European Commission's use of competition law powers to require Microsoft to publish information that would allow non-Microsoft work group servers to interoperate with Microsoft Windows PCs and servers was controversial. But this may be only the start of the debate. Under the telecoms framework directive, the Commission has even more power to intervene: it can mandate interoperability standards in electronic communications networks and services without any prior finding of the abuse of market power, and guidance as to the circumstances in which it will do so is sketchy¹. In this bulletin, we examine the economic rationale for such pre-emptive action, in order to determine when the Commission might find this "appropriate" and when it would do better to stand clear.

Technical standards are a common feature of many markets where individual products must be combined to form a compatible system. Standards allow firms to design compatible products – for example, enabling software writers to ensure that consumers →

can run programmes on their computer hardware. Standards also allow consumers to mix and match interoperable components from different suppliers – for example, allowing consumers to combine different brands of PC and printer.

Market participants play a key role in standard-setting and in determining the extent to which products are compatible. In some cases, standards are established by co-operative agreement between market participants in industry standard-setting organisations. In others, *de facto* standards may be established without agreement as the outcome of a competitive process. A further distinction is that standards may be open or proprietary. The owner of a proprietary standard may be able to prevent rivals from manufacturing compatible products by withholding access to the standard.

Regulators have a range of powers to ensure that products are interoperable. In the recent Microsoft decision, the European Commission (EC) ordered Microsoft to disclose interface information in relation to its proprietary Windows operating system. The EC argued that access to this information would allow work group server vendors to manufacture products that were fully interoperable with Windows PCs and servers, and hence would allow rivals to compete with Microsoft on an equal footing in the work group server operating system market.

This decision highlighted the tension between competition law and the protection of intellectual property rights. Critics argue that the requirement to disclose proprietary intellectual property will weaken the incentive to invest in risky R&D activities, and may deter long-run innovation.

While this debate continues, the EC has gained the power to provoke still more. Under the telecoms framework directive, the Commission also has powers to ensure interoperability in the telecommunications, media and information technology sectors – including, for example, 3G mobile services and digital TV. The directive gives little concrete guidance on the circumstances under which the Commission would be likely to intervene in this way, stating only that:

Standardisation should remain primarily a market-driven process. However, there may still be situations where it is appropriate to require compliance at Community level to ensure interoperability in the single market².

Importantly, there is no requirement to demonstrate that there is an abuse of dominance, and hence the Commission can intervene *ex ante* to ensure interoperability.³ So when is this type of intervention likely to be seen by the EC as “appropriate”?

From a policy perspective, the key role of regulation is to correct for market failures. The first step, therefore, is to assess whether or not the market has “failed” to deliver a satisfactory outcome. The second is to assess whether regulatory intervention to force standardisation would actually make things better.

HOW NETWORKS WORK...

Markets in the telecommunications, media and information technology sectors are often characterised by “network effects”. These refer not to connective hardware but to the economic features of markets where consumers want to buy products that are compatible with the products bought by others. For example, mobile phone users want to be able to communicate with as many other people as possible. As a consequence, the benefit that a user derives from subscribing to a mobile phone network increases with the size of the network. This is known as a direct network effect.

Similarly, people who buy computer game consoles want to have access to a wide range of software. Consumers benefit from buying a popular brand of console since it is likely to offer a greater number and variety of games than an unpopular brand. This is known as an indirect network effect.

Picking failures

Markets with strong network effects are prone to tip towards a monopoly outcome if products are incompatible, as consumers flock to the most popular brand. This characteristic might itself seem to make the case for intervention to preserve competition, but in fact it can have both good and bad consequences.

On the one hand, up-front competition to provide the winning standard may be intense: this will stimulate innovation and technological development. At the same time, it will be clear that the price of failure can be very high, with the risk of heavy losses for firms whose standard is unsuccessful.

This, in turn, may well lead to competing firms deciding to avoid the costs and risks of an all-out standards war by agreeing to make their products compatible. Compatible products are effectively part of the same network, and hence all firms offer the same network benefits. In other words, firms may decide not to engage in intense up-front competition “for the market”, and may instead concentrate on long-term competition “within the market”. This is more likely to happen if firms have broadly comparable technologies, and can see that their competitors are equally likely to win an all-out standards war.

On the other hand, a firm with either a clear lead in the development of products or a demonstrably superior technology may choose to go it alone, in the knowledge that network effects will help to make a standards war short-lived. Monopoly control of what becomes the industry standard may well give rise to regulatory concerns.

... AND HOW MARKETS FAIL

Three potential problems emerge most clearly from this analysis. They are:

- the abuse of market power, possibly combined with:
- lock-in to an inferior standard; or
- market fragmentation.

Market power

As described above, a standards war may end with the winner controlling a proprietary standard that has become the industry norm. Plainly, there are some circumstances in which victory can bring significant market power. An obvious example is that control of an essential standard may allow a firm to foreclose competition in related markets, for complementary products.

Lock-in to an inferior standard

A further and related problem is that the market may establish a standard that is technically inferior to other available standards. This may happen if a firm wins the standards war not through technological superiority but because it had developed an early lead in the market by other means – for example, by heavy marketing expenditure or simply by exploiting a strong existing reputation among customers. Once the standard is established, network effects may make it hard for even superior technologies to break into the market.

Market fragmentation

Paradoxically, issues may arise if exactly the reverse happens: that is to say, no standard becomes dominant and firms continue to compete “for the market”. If they decide to maintain incompatible proprietary technologies, the market may remain fragmented, and customers will be deprived of the full potential of the possible network benefits. In extreme cases, the growth of the market itself may be stunted, as none of the rival firms manages to achieve a critical mass of customers. This unsatisfactory outcome is most likely to occur if customers face high switching costs, caused for example by the cost of the equipment in which these proprietary technologies are embedded. The higher switching costs are in relation to the size of the benefits that might be gained from moving to a slightly bigger network, the more likely it is that the development of an industry standard may be delayed.

Picking failures

FOOLS RUSH IN

However, even if one of these failures is apparent or anticipated, the second question raised earlier in this bulletin has to be answered. That is, would regulatory intervention actually improve the situation? The hurdle has to be set particularly high for pre-emptive action, since this may well involve the regulator in imposing a particular standard. In other words, regulators would not only have to identify failure but also try to “pick winners”. The likelihood that regulators will do so successfully in fast-changing technologies is highly questionable. An obvious danger is that the wrong choice of technical standard may constrain innovation.

Intervention to impose interoperability will fundamentally alter the nature of competition in network markets. It will, of course, preclude the possibility that such a market tips to monopoly through the ownership of a proprietary standard, and should therefore ensure there is greater long-term competition “within the market”. But at the same time, it will abort competition “for the market” by ending a standards war. And this, in turn, may weaken firms’ incentives to develop new technologies. This means that regulators wishing to intervene have not merely to pick the “right” standard but to be sure that they are able to do so at the “right” time.

CONCLUSION

Our analysis indicates that while there may in principle be a role for the *ex ante* imposition of interoperability, there are serious risks that it may in practice lead to a worse outcome than the market. This suggests the EC would be wise to take a cautious approach to the use of these new powers. Caution would be particularly “appropriate” where technology is developing rapidly, and in the absence of clear evidence that the market is likely to fail to co-ordinate on a standard that allows the full realisation of network benefits. Even if anti-competitive behaviour can be anticipated, this may still best be dealt with *ex post*.

SOURCE	<ol style="list-style-type: none"> 1. <i>Frontier Economics advised Vodafone on regulatory issues relating to interoperability in 3G mobile markets.</i> 2. <i>Framework Directive (2202/21/EC), recital 31.</i> 3. <i>Framework Direction (2202/21/EC), Article 17.</i>
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