CRA Competition Memo

Dynamic Competition & Aftermarkets

Durables, Consumables & Competition Policy

Everyone has used equipment that requires the combination of a durable good with a 'consumable' – everyday examples include photocopiers and toner cartridges, video consoles and video games, razors and razor blades, and cars and spare parts. Anti-trust issues can arise when the same suppliers offer both durables and consumables, and when customers are inclined (or even forced) to purchase durables and consumables from one and the same supplier, perhaps because of compatibility problems. In such situations, the market for the consumables is described as an '*aftermarket*', while the durable equipment is sold in the 'beforemarket'.

Aftermarkets most often give rise to abuse of dominance allegations, but they can complicate merger analysis too. If two companies come together, each with its own 'installed base' of equipment, might this strengthen their market power in the beforemarket, in the aftermarket, or both?

Market definition and market power in such cases can be difficult to assess. There is no general rule as to whether the beforemarket and the aftermarket should be considered as separate markets, or as constituting a single market for a 'system'. The appropriate approach will depend on the particular circumstances of the market(s) in question. And for essentially the same reasons it can be unclear whether we should measure market power on the basis of the installed base of equipment, sales of consumables or recent sales of new equipment. Once again, the answer will depend on the circumstances – particularly on the nature and extent of the links between before- and aftermarkets.

Dynamic Competition

These considerations, coupled with the existence of time lags between sales in before- and aftermarkets, mean that competition analysis of aftermarkets requires particular care in the presence of intense *dynamic competition.*

Economists use the term 'dynamic competition' to describe the temporal dimension of competition. In many industries, the key ingredient of competition over time is *technological innovation* – firms attempt to gain a competitive advantage either by reducing costs or introducing new products. A new product which can do more things – or do the same things faster, more cheaply, or more safely – will replace inferior earlier products. This gives the innovating firm the lion's share of new sales – at least until the next innovation comes along. In such markets *temporary* market power is inevitable – and indeed provides the incentive for firms to innovate. They compete to be the first, to win 'the prize'.

When the pace of innovation is fast, the case for policy intervention to remove or prevent temporary market power is reduced. Ill-considered intervention can be harmful, by damaging future incentives to innovate. The principal role for competition policy in technologically innovative markets is to ensure that *entry into the race* to deliver the next innovation remains open.

Impact of Innovation on Aftermarkets

Where before- and aftermarkets are closely linked, strong dynamic competition between manufacturers of durable goods will also reduce competition concerns about aftermarket power. While suppliers of the latest equipment achieve high sales today, their beforemarket share will drop fast as soon as a new product comes into the market and makes current systems obsolete. If a new generation of durable good will be accompanied by new consumables, the present market leader's aftermarket share will drop too – albeit with a time lag, which is determined by the replacement cycle for the durable good. Any developments observed today in the beforemarket will give us a fair idea of how the aftermarket will develop over the coming years.

The recent ***Hoffman La Roche/Boehringer Mannheim*** merger in the area of in-vitro diagnostics (equipment and chemical reagents for medical testing) provides a good illustration of how concerns about the creation of power in the aftermarket are reduced once the dynamic nature of competition is recognised. The merger was the subject of an in-depth investigation by the European Commission, but was cleared after undertakings which were not unduly burdensome to the parties[1].

[1] Lexecon advised the merging parties in this matter.

Analyzers & Reagents

Diagnostic equipment and the chemical reagents used with that equipment are purchased by medical laboratories. Most laboratories tend to purchase reagents from the manufacturer who supplied them with equipment – hence it is said that sale of a piece of equipment leaves behind a 'reagent trail' (repeated purchases of reagents over time).

The Commission, having decided that reagents are a distinct market from analyzers, noted that the parties' joint share in reagents was large, and inferred that it would remain large because their joint installed base of equipment was also large.

The high 'capture rates' enjoyed by Boehringer and Roche in the sale of reagents – i.e. the fact that most customers bought analyzers and reagents from the same supplier – were also viewed by the Commission as an indication of aftermarket power. Merger of the big Boehringer business with the smaller Roche business would, the Commission initially asserted, put the combination of Boehringer and Roche so far ahead of all rival diagnostic manufacturers in the sale of reagents, as to be virtually unchallengeable.

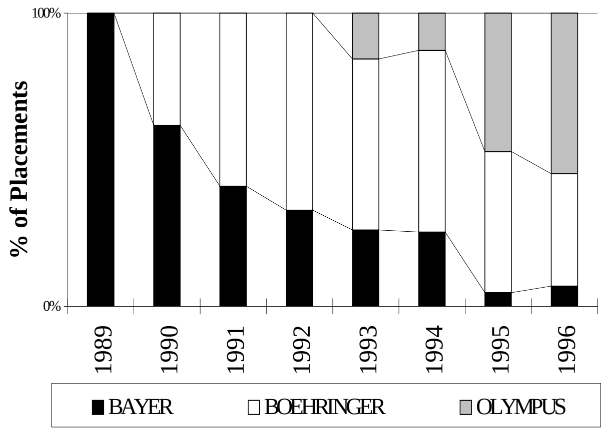
But, importantly, this is a market in which competition is intensely dynamic. Firms strive to develop more sophisticated analyzers and this process has intensified since the 1980s with the introduction of consecutive generations of improved machines. In this race, fortunes have been made and lost. The most graphic example is the segment of extra-large clinical chemistry analyzers, which in Europe was dominated until the early 1990s by Bayer. Yet within 5 years that position had been all but destroyed. Bayer's new machines of the early 1990s did not find market acceptance, and rivals displaced it. Bayer's reagent trail is now rapidly eroding.

Placements versus Installed Base

The high capture rates observed by the Commission mean that there is a strong link between competition for analyzers and that for reagents – albeit with a time lag. Hence, it is not a company's share of the installed base, but its share of the *new placements* of machines – as shown in the diagram – which best measures current competition in the market. On this measure, the market is characterised by a high degree of market share instability. This is a classic indicator of market competition. Note that Olympus, which captured nearly half the market in 1996, is a relatively new entrant in this market and comes from camera technology, not classical chemistry.

The picture, which is broadly similar for all segments of machine sizes, illustrates that 'dominance' in the sale of new analyzers is a temporary phenomenon. It is true that high capture rates mean that, at any point in time, sales of reagents will be closely related to the installed base. However, this reflects *past* competition for instrument sales – as a new analyzer takes hold, the installed base will shrink with a time lag, and so will reagent sales. The installed base is therefore not a reliable predictor of medium- or long-term post-merger market power.

Estimated Shares of Annual Placements in Europe: Extra-Large Clinical Chemistry Analysers



Conclusions

Dynamic competition can lessen the problem of market power not only in the beforemarket, but also in aftermarkets. Of course the problem will not always disappear entirely – especially if the merger brings together the only viable suppliers of consumables for the parties' installed bases, and the durable good is very long-lived. However, even then there may be good reasons to conclude that the merger will not significantly increase the opportunities for exploiting 'captured' customers.

The *Roche/Boehringer* case thus highlights two important general lessons:

- first, the nature and extent of the links between before- and aftermarkets determine the appropriate way to analyse competition issues in such markets. If the links are sufficiently strong, good predictions can be made about the future development of the aftermarket on the basis of historical developments in the beforemarket; and
- second, where there is strong dynamic competition in a beforemarket, this can ease competition concerns in the corresponding aftermarket.

As usual in competition matters, only a careful, case-by-case analysis can hope to provide the correct answers.

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