

Assessing Aftermarkets

The Digital Undertaking – When Does One and One Make Two?

The EC's 1997 *Digital Undertaking* (Commission Press Release IP/97/868) and *Eastman Kodak v Image Technical Services Inc* 122 S.C.T (1992) deal with what economists call "aftermarkets". These concern products where a durable piece of hardware, such as a computer or photocopier, gives rise to the need for the purchase complementary software, consumables and/or maintenance services. It is often observed that the prices charged by manufacturers in such aftermarkets are high and conditions restrictive leading to complaints from independent service providers (ISOs). These are often taken as evidence of and found to be anticompetitive by competition authorities.

Two Views

There are two competing views about the way aftermarkets should be treated in such cases. To illustrate, consider the example of computers and their maintenance, where the hardware supplier also sells maintenance.

View I holds that buyers of computers are sophisticated and have or should have adequate information to judge "total life-cycle costs". They are, therefore, unlikely to make wrong decisions, especially if they are repeat purchasers. Moreover, given the interrelationship between hardware and software/maintenance, maintenance costs have an effect on new computer sales, which in turn limits excessive charges for maintenance services. Thus, hardware sales act as a continuing discipline on manufacturers not to hike maintenance prices. That is, competition in the primary market implies competition in the aftermarket, and hence both constitute the one relevant market for competition law purposes.

View II casts doubt on the ability of buyers to foresee total lifetime costs at the time of purchase, and high switching costs give the seller the ability to exploit captive customers. This "lock-in" or "hold-up" theory results in two (hardware and maintenance) or many separate (hardware and a different maintenance market for each type of hardware) relevant markets to be defined. Competition authorities tend to favour View II. The EC has held that there are two separate product markets, and that the hardware purchaser subsequently becomes captive irrespective of whether there was effective competition in the market for hardware. Thus, spare parts (*Hugin v. Commission*); consumables (*Hilti v.*

Commission) and computer maintenance (*Digital Undertaking*) are separate relevant markets. The US Supreme Court in *Eastman Kodak* was more moderate yet came to the same conclusion. It held that if there was effective competition in the hardware market, there could only be an abuse in the aftermarket if switching costs were high and if the information the purchaser received when the initial purchase was made was inadequate.

Some Theory

In order to explore the issue in more detail it is necessary to look at the logic underpinning a firm's pricing decisions when it sells goods that have a significant aftermarket. A firm selling, say, both mainframe computer equipment and computer maintenance (the aftermarket) faces a trade-off when it sets the price for maintenance services. A higher price will allow it to earn increased profits on maintenance sales to consumers who have already purchased its computer equipment. It will generally be the case that those who have purchased a computer will be "locked-in" by the initial capital costs of buying and setting up the computer system, and any subsequent costs of moving to a new computer. This provides the commercial temptation to the seller to exploit those who have already purchased his computers.

The inclination of the computer manufacturer to raise maintenance prices will have a feedback effect. Higher maintenance prices will reduce computer sales, because some or all potential buyers will take into account the higher expected costs of continuing maintenance services. If a high price in the aftermarket deters a sufficient number of potential buyers, then anticompetitive pricing is not a rational strategy. Here the word sufficient is to be understood as loss of computer sales so as to make a price hike in the aftermarket unprofitable. Thus if there is effective competition in the computer market, as the EC Commission accepted in *Digital*, this acts as an effective competitive constraint in the aftermarket.

If, on the other hand, the competitive constraint is weak, because buyers do not have adequate information anticompetitive practices in the aftermarket may be profitable. Employing the EC Commission's "five percent test", the integrated computer manufacturer and maintenance provider could raise maintenance prices by 5% without inducing losses in computer sales sufficient to wipe out the profits from "overcharging on

maintenance”. In the latter case, aftermarket services and hardware would delineate separate relevant markets.

The analysis is not, however, that simple. The hold-up may not be the only explanation for high aftermarket prices. High aftermarket prices may be a method of metering and hence a form of price discrimination used to identify consumers with intense demand. The implication is that high aftermarket prices are counterbalanced by low(er) hardware prices. This, argue some economists, is not anticompetitive in the same sense that a restaurant “overcharges” for wine or a pub “undercharges” for food in order to maximise profits. What is at issue is whether the total price of the hardware and maintenance package is set at near competitive levels, not the individual prices. Moreover, it is not the role of competition authorities to regulate component prices but to ensure that the total price is set at a competitive level. Others argue that the practice is inefficient in the broader sense by a) creating excessive hardware purchases and therefore encouraging buyers to economise on “overpriced” aftermarket services, and b) leading to excess potential entry of ISOs, and obviously a spate of antitrust actions.

Developing Practical Criteria

Distinguishing between whether there is one, two or many relevant product markets - i.e. “computers plus maintenance”, “computers” and “maintenance services” or “separate maintenance service markets for each type of computer” respectively - requires a detailed analysis of business justifications and competitive forces in computer hardware and maintenance. This requires the inquiry to address a large number of factors. The discussion above provides some guidelines to identify when it is less likely that an aftermarket constitutes a separate relevant market. This would be the case if many of the following conditions existed:

- effective competition in the hardware market

- a high proportion of current to historical sales of hardware
- initial purchasers know and can predict lifetime service costs
- transparent service prices
- many repeat purchasers
- low switching costs
- open service markets
- high degree of technical change leading to short life of equipment
- business rationale supporting metering justification
- evidence that hardware discounting policy supports metering rational

Many of these factors have obvious implications. Others less so. For example, View I places considerable emphasis on effective competition in the hardware market to discipline the supplier in the aftermarket. This force may be diminished if the proportion of new sales to installed subscriber base of hardware is low, so that the anticipated loss of sales due to high maintenance costs is less. This is the case for some computer manufacturers, such as ICL mainframes, where there are very few new sales only upgrades of existing systems and significant customer lockin.

General Implications

Aftermarkets provide another example where demand for different products or services are interrelated. While the Commission appears satisfied to take a narrow view looking partially at factors in the aftermarket, economics would point to wider considerations of the dynamic constraints bearing down on suppliers of aftermarket services.

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