

CRA Competition Memo



The Economics of GE/Honeywell – Part 1: Mixed Bundling

The recent attempt by General Electric to acquire Honeywell, which ended in a prohibition by the European Commission, has been the highest-profile EU merger control case of recent years.¹ The transaction primarily affected civil aerospace markets: GE – on its own and through CFMI, a 50:50 joint venture with Snecma – is a major supplier of large aircraft engines; while Honeywell supplies avionics and other components for commercial aircraft, as well as some small jet engines. With minor exceptions, there were no direct horizontal overlaps between the parties.² Again, with a minor exception the merger did not raise any orthodox vertical issues. The main competitive concerns therefore related to “indirect effects” – merger effects which do not arise from a reduction in the number of market competitors (i.e. horizontal overlaps) or from conventional vertical foreclosure.³ This memo deals with one of two major indirect effects identified by the Commission in the case, namely “conglomerate” effects – particularly *bundling* in various forms. The other major issue of the case, the possibility of market foreclosure through vertical integration with an aircraft buyer (GECAS) accounting for under 10% of purchases, will be discussed in a forthcoming *Competition Memo*.

Forms of bundling

Two forms of bundling can be distinguished in economics:

- *pure bundling*, also known as *tying*, where the products in question are not offered on a stand-alone basis. This could potentially be implemented by means of technical integration (i.e. where products are designed and engineered in a way that means that they cannot physically be separated, or will not function properly if used together with rival manufacturers’ products); and
- *mixed bundling* where products remain available on a stand-alone basis, but are offered also as a package on discounted terms (i.e. the package price is less than the sum of the stand-alone prices of the components).

The Commission focused primarily on the second of these.⁴

The “mixed bundling” theory

One of the Commission’s key concerns was the possibility that post-merger, GE may offer *package discounts* to customers who buy both GE engines and Honeywell products. This concern was based on a theoretical economic model provided by a competitor, predicting that there would be an incentive for such behaviour after the merger, and that this would have a major adverse impact on competitors’ market shares and profits.

This effect would arise in the first place out of a potential pricing efficiency in mergers of *complementary products*. A seller of complements takes into account the effect that the price of one of

its products has on sales of a complementary one, and may therefore face an incentive to offer lower prices than a single-product supplier. Because engines and other aircraft equipment are complements – they are both required on an aircraft – the combined GE/Honeywell could find that it can sell more avionics if it prices the engine more cheaply (and *vice versa*).

This mechanism involves “internalisation” of a pricing “externality” – i.e. taking account of the effect that the price of product A has on demand for a complementary product B. The efficiency benefit from this internalisation is analogous to the pricing efficiency that can result from vertical integration, where an upstream division takes account not only of its own profits, but also of the effect its prices have on downstream prices, demand and hence profits. In the vertical context, this is known as elimination of “double marginalisation”.⁵

Note that it was not alleged that such discounts, if offered by GE, would be predatory – i.e. designed to force competitors out of the market. Rather, the Commission considered that mixed bundling would be a rational, short-term profit maximising response by GE to its post-merger ability to offer a greater range of products.

In addition, according to this theory, GE/Honeywell would have an incentive to sell the individual components separately at a higher price than pre-merger, as some of the sales lost in this way could be re-captured by the package offer (a form of price discrimination).

But the principal predicted effect, and the one which was the basis for the Commission’s concern, was that prices would *fall* as a result of the pricing efficiency. The only way in which this outcome might be anti-competitive and harm customers would be if the pricing efficiency were so great that competitors with a narrower product range (who would not benefit from the same pricing efficiency) would be unable to remain in the market in the longer term. The Commission’s concerns over mixed bundling therefore amounted to what could be described as an “efficiency offence”: a concern that the merger would make the merged entity *too efficient* and consequently threaten the future of competitors. The practical difficulties raised by this type of approach are discussed below.

Empirical evidence?

The predictions of the mixed bundling model – consistent and substantial package discounting – were contrary to experience in the industry. The evidence does not support the view that package discounts are common in aerospace markets, despite the fact that many market participants already offer a wide product range (not dissimilar to the combined GE/Honeywell), which should allow package offers and discounts. While suppliers with a wide product portfolio naturally try to submit offers for as many products as they can in any tender competition, customers (airlines or aircraft manufacturers) typically unravel any multi-product offers in order to compare terms on a product-by-product basis. This was confirmed by competitors at the Oral Hearing.

Honeywell is already in a position to offer a similar product range to that which would have been created by the transaction: it

¹ Lexecon Ltd was one of General Electric’s economic advisers.

² The extent of genuine horizontal overlap was in itself a contentious issue – for example, the Commission concluded there was an overlap in engines for large regional jets, although GE and Honeywell had never competed to power the same aircraft in this segment.

³ Lexecon’s *Competition Memo* “Indirect Effects in Merger Analysis” (October 2000) discussed effects of this kind.

⁴ While recognising that technical tying of engines and other equipment does not occur in the industry, the Commission also argued that the merged entity might eventually engage in tying by means of technical integration for future generations of products. However this was not central to the case.

⁵ Independent upstream and downstream suppliers would both add a margin to their own costs in setting prices, and this double mark-up results in the final price being too *high* relative to the profit-maximising level that would be set by a vertically integrated supplier.

already supplies both engines and avionics and related equipment for corporate aircraft. Yet there is no evidence that Honeywell has engaged in mixed bundling in relation to corporate jet engines and equipment; nor that Honeywell's competitors in these markets have found it impossible to compete with Honeywell's range.⁶

Flaws in the theory

But even if this empirical background were ignored, the theoretical model on which the Commission based its concerns did not stand up to scrutiny on its own terms.

- *Oversimplification*: all models necessarily simplify reality, but for a model to be of use in practice, it needs to capture the key features of a market. This was not true of the mixed bundling model: among other things, the model did not reflect the fact that the vast majority of the engine sales attributed to GE by the Commission are actually made by the CFMI JV. This obviously affects the incentives for bundling because GE's 50:50 JV partner, Snecma, has no interest in increasing Honeywell's sales by cutting its engine prices.
- *Uniform pricing*: the model was based on the assumption that all customers are offered the same price. This is not true of aerospace markets where prices are determined on a customer-by-customer basis following a tender and negotiation process. Prices achieved on sales to different customers vary substantially, reflecting the outcomes of this bargaining process. This changes the analysis dramatically: because mixed bundling is effectively a device for sellers to better discriminate between their customers, the benefit of mixed bundling disappears *entirely* if suppliers have sufficient information about their customers and competitors and can price individually. Even if there is uncertainty over individual customers' preferences, the ability to set prices individually, coupled with some information about a customer's situation, greatly reduces the incentive to engage in mixed bundling.⁷
- *Numerical calibration*: the model left room for arbitrary assumptions about parameters. Moreover, there was some inconsistency between the model's stated assumptions and the numerical parameters specified. These factors caused the model to over-state the impact of any bundling on competitors.

Ultimately the Commission did not rely on the model in the Decision, though it retained the qualitative conclusions from the theory. But in choosing not to place any reliance on the model, the Commission left itself without a coherent economic framework to underpin its conclusions.

Efficiency offence?

The Commission's analysis of mixed bundling raises an important policy issue: when, if at all, should the authorities block a merger on the grounds of a prediction that prices would be *lower* and customers better off? The Commission effectively accepted that any price reduction by GE/Honeywell would result from the elimination of a pricing inefficiency. Taking this to its logical conclusion, concerns could potentially be raised about any merger which produces efficiencies – for instance economies of scale or scope in production – that could render the merged company too efficient for its competitors to match.

For mixed bundling to lead to anti-competitive outcomes, there must be a material and realistic chance that the merged company could force competitors to exit the market and subsequently raise prices, without fearing re-entry (or entirely new entry) by competitors. Otherwise, selling things together at a discount is simply more efficient. Rivals will have a strong incentive to cut costs, form partnerships and generally do better if they want to recapture market share and margins.

Predicting exit

This raises an important practical issue of burden of proof. How big would the discount have to be to affect competitors' market shares to any substantial extent? How likely is it that rivals will be materially weakened and exit the market (or at least give up efforts to develop new products) *as a result of the merger*? To predict that exit will occur because of a particular efficiency requires heroic assumptions about the future on the part of competition authorities. Merger control always requires *some* judgement on how the future might look after a transaction. But as a practical matter, the prediction of exit is a more hazardous prediction than the prediction of short-run post-merger price increases (as in a horizontal merger) – not least because of the extended timescale involved, and the reliance on assumptions about general economic conditions, the success of future products, etc. This is why the US authorities, in assessing the same claims, attached more weight to short-term efficiencies than to speculative long-term "marginalisation" of competitors.

Moreover, deciding to block a merger on grounds that it will lead to lower prices and eventually exit means giving up the predicted immediate benefit of lower prices in favour of the speculative, long term possibility of price rises. A competition authority needs to be confident about the risk of exit, and conclude that it outweighs the short-term benefit of lower prices if it is to make such a judgement. In the *GE/Honeywell* case, there was no basis for concluding that competitor exit was a likely outcome of the merger. The substantial sunk costs incurred by all the major market players in developing existing products, and their long-term commitments to supplying products certified for use on existing platforms, both represent important barriers to exit in the medium term.

Implications

A serious question mark remains over the Commission's economic analysis of mixed bundling in *GE/Honeywell*. But regardless of whether the Commission was right or wrong in this case, what are its implications for future merger inquiries?

Most obviously, it suggests that "opportunities for bundling" when there are no conventional overlaps are a part of the Commission's checklist of issues to be investigated. If a proposed merger involves complementary products, then the merging parties can expect to face questions on bundling issues and their effects on competitors.

It is also difficult to escape the conclusion that the sheer *size* of the merged company – both its total scale (not just in aerospace markets) and its range of civil aerospace products – was a source of unease in this case. Conglomerate scope and "financial strength" are extensively discussed in the Decision, suggesting that these factors alone can be a source of concern because of the competitive advantage they can confer on the merged company.

But perhaps the most far-reaching element of the Commission's reasoning is the reliance on predictions of *competitor exit* as the principal cause of harm. This means that mergers with a short-term pro-competitive impact can risk prohibition if there is any prospect – even if remote in both time and probability – that it may lead to competitor exit. If this aspect of the Decision can indeed be regarded as a precedent, the potential implications are profound.

August 2001

© Charles River Associates (published originally by Lexecon Ltd, prior to the acquisition of Lexecon by Charles River Associates)

⁶ The Commission had come to the conclusion that package offers are not a significant phenomenon in this industry only 18 months earlier, in its Decision on the *Allied Signal/Honeywell* merger.

⁷ In general, the ability to negotiate prices individually can increase the intensity of competition: the incentive to compete hard to win any one customer's business is greater when cutting the price to one customer does not affect the margins earned on sales to *other* customers.