

## Nokia/NAVTEQ – navigating the non-horizontal merger guidelines

The Nokia/NAVTEQ and TomTom/Tele Atlas vertical mergers were considered by the European Commission at the same time as the publication of the Commission’s new Guidelines on non-horizontal mergers (the Guidelines<sup>1</sup>), providing an early test of the application of the new regime.<sup>2</sup> The Commission’s main concern was the likelihood of total and partial vertical input foreclosure.<sup>3</sup> Eventually both mergers were cleared without remedies following phase II investigations.

Unlike horizontal mergers, vertical mergers do not combine firms that compete at the same level of the supply chain and so are far less likely to restrict competition. In certain circumstances, however, harmful effects may occur. This Brief considers some of the key issues arising in the analysis of total and partial input foreclosure, with particular reference to the Nokia/NAVTEQ merger.<sup>4</sup> We explain the new terminology adopted by the Commission which distinguishes between ‘foreclosure’ and ‘anticompetitive foreclosure’ and highlight the theory and evidence that the Commission is likely to consider in future cases where input foreclosure is a concern.<sup>5</sup>

### Overview of the transaction

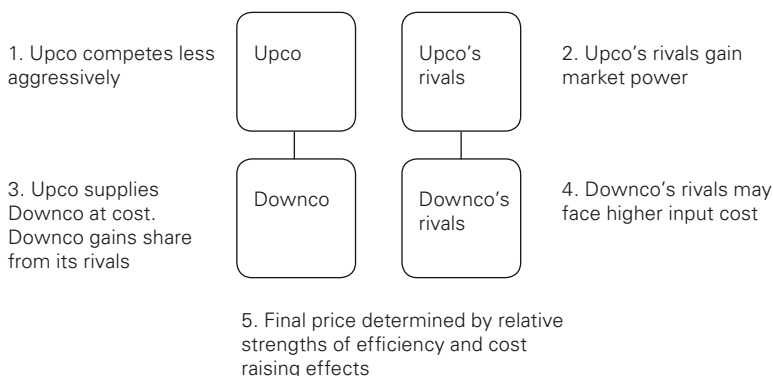
NAVTEQ produces digital maps which are primarily used for vehicle navigation services provided through ‘in-dash’ systems and Personal Navigation Devices (PNDs). These digital maps are also used in mapping and navigation services provided through internet sites (such as Google Maps) and in services provided for mobile phone handsets (handsets). The sophistication required of the map depends on the end use. For example, a map used for ‘turn-by-turn’ vehicle navigation would require more advanced features than a map on a handset used by a pedestrian to find a route to a particular point of interest. TeleAtlas is NAVTEQ’s main competitor in the supply of digital maps suitable for ‘turn-by-turn’ navigation, with an EEA share of 55–60%, compared to NAVTEQ’s 40–45%.

At the time the Nokia/NAVTEQ deal was notified, the Commission was already considering a vertical merger, between TeleAtlas, and a major PND manufacturer, TomTom. The Commission viewed PNDs and handsets for mobile phones to be separate downstream markets, with both Nokia and TomTom being leading players in their respective markets.

### The theory of input foreclosure

The theory of input foreclosure in a setting where there is competition in both stages is described below in diagram 1.

Diagram 1: Input Foreclosure



1 Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, (2008/C 265/07).

2 Case No COMP/M.4942 Nokia/NAVTEQ; Case No COMP/M.4854 TomTom/Tele Atlas.

3 The Commission also had other relatively minor concerns about, firstly, coordinated effects and, second, whether the integrated firm’s downstream rivals would no longer view the upstream arm of the integrated firm to be a credible supplier, fearing that it would pass on confidential information about their purchasing strategies to its downstream arm.

4 RBB Economics advised Nokia throughout the process.

5 There is a direct application to the UK as well, where the OFT and Competition Commission have recently indicated that they will adopt a similar three step approach to assessing input foreclosure based on ability, incentive and overall impact on end customers. See Merger Assessment Guidelines, A joint publication of the Competition Commission and the Office of Fair Trading, Consultation Document, April 2009.

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This assumes that prior to the merger Upco earned a margin when supplying Downco. Downco's cost reduction arises from the removal of 'double marginalisation' (i.e. a situation where a manufacturer sets a mark up over cost and its retailer then sets an additional mark up over the manufacturer's already marked up price).

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In principle, even if consumers gain in the short term, concern could be raised that if downstream rivals end up paying higher input prices and face a more efficient rival, their ability to compete could be permanently damaged. An alternative view, however, would be that such concerns are speculative and that, rather than fall by the wayside, rivals might instead be incentivised to invest or innovate to a greater degree to escape their plight. Consistent with the latter train of thought is the Guidelines' statement: 'the fact that rivals may be harmed because a merger creates efficiencies cannot in itself give rise to competition concerns' (paragraph 16).

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NAVTEQ would also have to refuse to supply developers of navigation software who would on-sell NAVTEQ maps, embedded in their navigation software, to Nokia's rivals.

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Further, instead of offering turn-by-turn navigation, a handset manufacturer could choose to appeal to consumers by enhancing other features of the handset, such as its camera, music player, web browser or video-player. In contrast, in TomTom/TeleAtlas, turn-by-turn navigation was an essential feature of the PND.

According to the basic theory, an upstream firm (Upco) integrates with a downstream firm (Downco). Upco then competes less aggressively to supply Downco's rivals. As a result, Upco's rivals may set higher prices to Downco's rivals (although this will not necessarily happen, as we explain below). If so, Downco's rivals have their input costs increased and this is called 'foreclosure'. In contrast, Upco supplies Downco at cost, so Downco's input cost falls.<sup>6</sup> Whether end customers gain or suffer depends on how these effects balance out. On the one hand, Downco's rivals are less competitive if their costs are higher. On the other hand, Downco has an incentive to lower price because its costs have fallen. If the cost raising effect dominates so that downstream prices increase (in aggregate), then foreclosure is 'anticompetitive' in the Guidelines' language. If the efficiency effect dominates so that end customers gain in aggregate, then the merger is beneficial (regardless of whether a foreclosure effect occurs).<sup>7</sup>

Here the Guidelines make a distinction between 'foreclosure' (raising rivals' costs) and 'anticompetitive foreclosure' (which may result from 'foreclosure' and occurs where the merger leaves end customers worse off in aggregate). While this distinction is related to the theoretical literature, it may take time for practitioners to become comfortable with the idea that the term 'foreclosure' does not necessarily refer to a harmful practice.

The preceding theory of input foreclosure can be broken down into the following three steps, which are set out in the Guidelines:

- **Ability.** Can Upco credibly generate a price increase for Downco's rivals?
- **Incentive.** Would Upco profit from such a strategy?
- **Consumer harm.** Do end customers ultimately suffer from this strategy?

## Total Foreclosure

These principles are most easily explained with respect to total (or 'complete') foreclosure. In this case, NAVTEQ would credibly *refuse to supply* digital map data to mobile handset manufacturers other than Nokia.<sup>8</sup> The concern would then be that TeleAtlas (the only other supplier of digital map data) would exercise market power over Nokia's rivals making them less competitive against Nokia when competing for handset sales, leaving Nokia in a position to capture some of their lost sales and set higher prices to consumers.

The Commission considered that it was 'unclear' whether NAVTEQ had the ability to increase prices of digital maps. First, it is not at all clear how NAVTEQ could make a credible commitment *not* to supply Nokia's rivals. Without such a commitment, NAVTEQ would be tempted to undercut TeleAtlas and supply downstream rivals again, which would cause TeleAtlas to be wary of increasing prices in the first place.

Second, TeleAtlas would continue to face some competition from Garmin, a software developer which benefited from a long term contract to supply navigation software using NAVTEQ digital maps. Third, if faced with higher TeleAtlas prices, handset manufacturers could switch to substitutes for turn-by-turn navigation applications, such as less sophisticated digital maps that show a person's location on a map but without providing real time turn-by-turn directions.<sup>9</sup>

Next the Commission considered the 'incentive' step. An analysis of the incentives to engage in total foreclosure requires weighing up the foregone profits from NAVTEQ's refusal to supply Nokia's handset rivals, with any profits gained downstream as a result of those rivals losing share to Nokia. The former are estimated relatively easily, for

example, by using internal forecasts of future demand for digital map data from Nokia's rivals, NAVTEQ's share of that demand, and NAVTEQ's margin.

However, estimating profit gained downstream is a more difficult exercise. It requires making numerous assumptions on, for example: (i) the increase in TeleAtlas' price; (ii) how much of the price rise is passed on by Nokia's rivals; and (iii) the degree to which an increase in the price of rival handsets would divert demand to Nokia handsets. These parameters may be gauged using, inter alia, prior industry studies and econometric analysis. However, it is important to note that many of these factors will be inter-related. (For example, the degree to which TeleAtlas would increase price would depend on the price sensitivity of Nokia's rivals, which in turn relates (in part) to how many units they would lose to Nokia in the event that they passed on higher input prices.) Ideally, therefore, parameters would be subjected to sensitivity and consistency tests where such tests take into account the likely interrelationships between the assumptions.

Nokia/NAVTEQ submitted an analysis which showed that, under conservative (and consistent) assumptions, total foreclosure would not be profitable for the merged entity unless TeleAtlas' prices were increased by a very large (and unrealistic) amount. The Commission confirmed the parties' analysis that such foreclosure would not be profitable. An important feature was that the digital map data input cost accounted for a small percentage of total handset costs making it all the more difficult to induce a price rise that would shift a substantial degree of output to Nokia from its rivals.

## Partial foreclosure

With partial foreclosure, the theory is that Upco may compete less aggressively than before, but without going so far as to refuse to supply Downco's rivals (and so the commitment problem does not arise).

This feature, when viewed alone, indicates that the merger might cause Downco's rivals to face higher input prices, but not quite as high as with total foreclosure. However, with both total and partial foreclosure, there are offsetting effects. First, post merger Downco purchases only from Upco and no longer purchases from Upco's rivals. Second, Downco enjoys lower input costs, and so (other things being equal) has an incentive to lower price. This would lead to lower sales for Downco's rivals, which in turn reduces their demand for inputs. Both factors reduce demand for the inputs supplied by Upco's rivals. In short, Upco's rivals may face less competition but they also face lower demand for their products. The latter effect typically dominates, causing input prices to fall – i.e. the cost raising concern ('foreclosure') does not materialise.<sup>10</sup>

Moreover, even if downstream rivals did face higher prices, this would not necessarily imply that prices to consumers would increase. If Downco benefited from a sufficiently large reduction in double marginalisation, consumers would still benefit from lower prices post merger.<sup>11</sup> In this case, foreclosure of rivals occurs, but the net effect is lower consumer prices. Addressing these issues is possible using economic models of the upstream and downstream structure. While not always required, they can be used to eliminate implausible or contradictory outcomes and hence simulate both the profitability of a foreclosure strategy and the post merger impact on end customers.<sup>12</sup>

In the case of Nokia/NAVTEQ, the Commission did not need to weigh up these effects as its analysis of the merger concluded that there was insufficient incentive to engage in partial foreclosure, of the kind required to raise input prices, as it would not be profitable.

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The theory is covered in more detail in *The Impact of Vertical and Conglomerate Mergers on Competition*, Jeffrey Church, September 2004. Report prepared for DG Competition.

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First, despite higher costs, Downco's rivals may still lower prices because competition from Downco is more intense. Second, even if the prices of Downco's rivals increase, a fall in Downco's price may be enough to cause the (weighted) average price faced by consumers to be lower.

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RBB has in house models suitable for this approach. If required, these allow considerable flexibility in modelling the industry, while grounding all simulations in realism through their ability to predict pre-merger outcomes. This may provide an informative way to investigate whether there is a high or low probability of harmful outcomes occurring post merger.

## Conclusion

Vertical mergers (compared to horizontal mergers) are far more likely to be benign or pro-competitive. In certain circumstances, however, harmful effects may occur and the guidelines put forward a three step approach to the assessment of foreclosure: ability, incentive and impact on end customers.<sup>13</sup> Input foreclosure is unlikely to be a concern where, inter alia, Upco has no market power pre-merger or supplies a non-essential input that accounts only for a small share of Downco's (and other rival's) cost.

The guidelines also introduce a new distinction between 'foreclosure' (which, in the case of input foreclosure, means raising rivals' costs) and 'anticompetitive foreclosure' (harm to end customers). Given that the term 'foreclosure' has historically been used pejoratively to mean a harmful outcome, the choice of terms is perhaps a little confusing. Nonetheless, the distinction is an important reminder that practices that harm rivals will not necessarily harm end customers.

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More recent vertical mergers where input foreclosure was the Commission's principal concern (and where the three step approach was applied) include Case No COMP/M.5449 ABF/ Azucarera and Case No COMP/M.4874 Iteima/ BarcoVision which were unconditionally cleared. In the former case the Commission was able to rule out the ability to foreclose at Phase I, while the latter case (which shared some similarities with Nokia/NAVTEQ in that there were only two upstream suppliers but the input cost was a relatively low share of total downstream costs) went to Phase II. Case No COMP/M.5406 IPIC/ MAN Ferrostaal AG was cleared after Phase I following the offer of a divestment while cases M.5262 Bonnier/Schibsted/Retriever Sverige and M.5454 DSV/Westerhavet/DFDS were withdrawn following Phase I investigations that raised foreclosure concerns.