

Agenda

Advancing economics in business

Separating incumbents: panacea or a sledgehammer to crack a nut?

Vertical functional separation has been introduced, or considered, in a number of network industries with the aim of removing or restricting incumbents' ability to discriminate against third parties in the provision of wholesale inputs. In a recent study for the Portuguese telecoms regulator, ICP-ANACOM, Oxera assessed the implications of separation. Is vertical separation a panacea for competition, and what would be an appropriate analytical framework for policy-makers considering separation?

Separation of vertically integrated incumbents' wholesale and retail divisions is not a new, regulatory innovation. Indeed, different forms of separation have been introduced in a number of sectors and jurisdictions since the early 1990s. Examples include, in the UK, the gas and electricity sectors and the fundamental restructuring of the rail industry, and, in the USA, the divestiture of AT&T's local telephony operations ('Baby Bells') in the 1980s. The US example was mainly a form of horizontal separation, but with the introduction of competition to the market for long-distance calling. However, vertical separation seems to have come back into fashion and is increasingly being considered as a tool to remove discrimination problems in sectors in which 'lighter' forms of access regulation have failed to deliver the desired market outcome.

While already introduced in some of the EU Member States, such as the UK, Italy and Sweden, larger-scale separation initiatives are expected in the telecommunications and energy markets following the recent European Commission-led amendments to the respective Directives.¹ Separation has also been considered in other sectors—for example, a recent industry review of the water sector recommended the promotion of competition through the vertical separation of the retail businesses of water companies in England and Wales.²

While popular in some jurisdictions, mandatory vertical separation has not been deemed an appropriate remedy by all regulators. Indeed, in the telecoms sector, there are a number of countries in which separation has been considered, but not implemented. For example, in France, Spain and the Netherlands,

regulators have explicitly stated that functional separation would be too interventionist a measure, given the nature of competition inherent in the market. Similarly, an independent review of the UK postal sector (the Hooper review) examined separation, but reached the conclusion that it could not be justified at this point in time.³

This article sets out the economic rationale for different forms of vertical separation, and presents a framework to assess whether separation can be a justifiable and proportionate remedy. In setting out this framework, the prospects of separation for improving competition are considered, given the associated costs—looking in particular at the conditions under which separation might be warranted, and the considerations essential in implementing such a measure.

What is the rationale for vertical separation?

Over the years, a large body of economic literature has explored the relative merits of separated and integrated structures, and the rationale for the vertical (or horizontal) separation of the incumbent operator. A number of economic studies have found that, in the absence of regulation, vertically integrated firms tend towards vertical leverage of market power and the foreclosure of third parties that seek to enter the retail (downstream) market by using the wholesale inputs provided by vertically integrated incumbents. The implication is that downstream competition may be limited and, as a result, the incumbent may have little incentive to reduce prices and innovate.⁴ Hence, the overarching question faced by a regulator is whether the efficiency-related benefits of integration (whether

This article draws on a recent Oxera report, 'Vertical Functional Separation in the Electronic Communications Sector', undertaken in collaboration with Ellare for ICP-ANACOM, July 2009. Available at www.oxera.com.

these be lower transaction costs, the elimination of double-marginalisation, or improved coordination) dominate these vertical foreclosure effects.⁵

Traditionally, the issues of vertical foreclosure have typically been dealt with through access regulation—by mandating the incumbent to provide third parties with access to its ‘bottleneck’ facilities and by determining prices and non-price terms for such access on a similar basis to those offered by the incumbent to its own retail (downstream) business.

Given access regulation, why has separation been considered a necessary condition to ensure fair competition in the retail markets between the incumbent’s retail arm and those third parties that rely on the wholesale inputs provided by the incumbent? One answer is that access regulation of a vertically integrated operator does not necessarily remove the ability, much less the incentive, of the vertically integrated incumbent, to price- and/or non-price-discriminate. In particular, the latter has proved difficult for regulators to monitor. For example, in the telecoms sector, margin squeeze cases have been common, while potentially even more severe foreclosure has occurred as a result of discrimination in non-price terms.⁶

Vertical separation is considered to provide regulators with an alternative response to the extension of regulatory powers, by enforcing a split of the upstream bottleneck and downstream businesses. The argument for this is that vertical separation should lead to enhanced competition from service-based operators (ie, operators that do not own a full, end-to-end network) and lower retail prices, while allowing more focused and efficient forms of regulation. Indeed, it has been argued that vertical separation would remove the ability and reduce the incentives of the vertically integrated firm to discriminate. Furthermore, separation (particularly in the case of more radical options) is expected to imply that regulation is more focused on the separated upstream bottleneck. Introducing watertight non-discrimination (‘equivalence’, a term introduced in the BT Openreach Undertakings)⁷ at the upstream level would, arguably, result in more effective competition downstream, and consequent deregulation in the retail markets. It is, however, worth emphasising that, while separation changes the form of regulation, regulatory oversight is also needed in the aftermath of separation.⁸ However, separation has potential downsides, too.

– **The benefits of vertical integration are removed.**

The rationale for vertical separation is intrinsically linked to the theories explaining the reasons for, and behaviour of, vertically integrated firms. Economic theory shows that a vertically integrated company with market power at both stages of supply (upstream and downstream) may, in principle, sell to more

consumers at a lower price (while earning more profit) than its separated equivalent. The intuition behind this result relates to the concept of double-marginalisation, which means that, under a separated structure, both retail and wholesale firms exploit their market power, leading to sub-optimal outcomes from an economic welfare perspective.⁹ A vertically integrated company may also be able to operate more efficiently and engage in investments which it would not be able to otherwise.

– **Separation comes at a cost.** Separation entails a one-off direct cost resulting from the break-up of an integrated company, as well as the ongoing costs of maintaining the separated structure. These costs may include the reorganisation of the company, or, where ownership is still held in common, the prohibition of certain forms of information transfer within the business (through the creation of ‘Chinese walls’), and the prohibition of duplication of staff or the splitting of activities undertaken jointly before separation.¹⁰ These costs may be significant enough to influence cost-based access prices, which in turn would be a potential unintended consequence of separation.

– **Investment incentives may be affected by vertical separation.** It has been suggested that vertical separation may compromise incentives to invest or innovate, in comparison with the situation prior to or without separation, because the non-competitive (separated) network business would not have a profit motive derived from the downstream activities.¹¹ Also, a common argument put forward by objectors to separation is that it would reduce the coordination of investment and production decisions, given that the upstream company would no longer have direct contact with end-user demand.¹²

The intuition is that the divisional structures implemented as a result of vertical separation may curb the flow of information used by the network division to determine its investment strategies and priorities. This may slow the decision-making process within the separated company, and may lead to sub-optimal levels and types of investment.

It is, however, important to bear in mind that, while separation may alter investment incentives, the specific terms of access pricing are likely to play a significant role (eg, the form of price control and the allowed rate of return). Furthermore, vertical separation does not necessarily remove the separated company’s ability to coordinate investments efficiently, which is contingent on the effectiveness of the market-based mechanisms designed and introduced as part of any separation undertakings.

A framework for assessing separation

Given the potential upsides and downsides and the significant changes that would be involved, vertical separation is considered to be an instrument of last resort when other ‘lighter-touch’ regulatory tools are unlikely to address the regulatory authorities’ concerns. To establish whether, in practice, vertical separation is a proportionate regulatory response to the competition problems identified, a four-stage framework can be employed to assess the relative merits of separation, illustrated in Figure 1.

Baseline

As a starting point, it is critical to understand the current level of competition in the different wholesale and retail markets that would be directly or indirectly affected by vertical separation. Further to quantitative metrics describing the existing market conditions (eg, prices, market share developments, investment), regulators may need to pay particular attention to issues relating to non-price discrimination, which again may be less transparent to monitor. Issues of non-price discrimination are likely to manifest themselves as disputes and complaints from third parties. The following attributes are examples of drivers of separation observed in different sectors.

- Foreclosure of entry by the imposition of a margin squeeze has been witnessed in many vertically integrated industries, despite the existence of access regulation.¹³
- Incumbents’ network divisions have privileged access to commercially sensitive information collected by the network unit, which may be exploited in retail offerings.
- An incumbent may cross-subsidise between regulated and non-regulated (competitive) services. Vertical separation is expected to reinforce the accounting separation applied in the monitoring of such practices.
- A vertically integrated incumbent may cause inertia in customer switching and hence mitigate competition by not processing entrants’ wholesale orders as accurately as the orders of its retail arm.

Key to understanding the baseline is an assessment of the extent to which the prevailing regulatory framework can address the competition problems identified.

Options of separation

The second stage of the framework concerns the identification of the options for separation. The separation process typically requires a number of

separation options to be assessed, ranging from ‘light-handed’ remedies, such as accounting separation, to structural (ownership) separation.

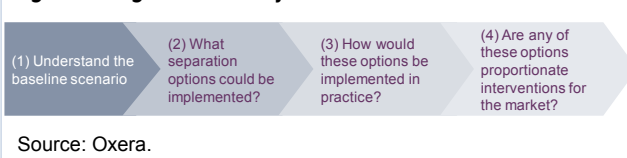
The degree of separation should be proportionate to the competition problems identified—eg, whether there are persistent issues of non-price discrimination, and whether the benefits expected from increased competition outweigh the costs of implementation. Figure 2 sets out a generic illustration of the degrees of separation.

While the spectrum of separation is a useful illustration, in practice the form of separation adopted will be a ‘non-linear’ combination of regulatory measures along four dimensions: products, processes, systems and organisational changes. For instance, a separation that involves the physical splitting of IT systems and the imposition of strict organisational Chinese walls might be imposed in respect of only a sub-set of products.

In addition to the degree of separation, regulators need to consider where to separate. The point of separation should correspond with the products and assets that possess the characteristics of a natural monopoly, and which are likely to do so for the foreseeable future. Indeed, rather than simply splitting wholesale and retail activities, separation generally focuses on non-replicable assets. However, technological change may render separation at a given point no longer appropriate, and thus the scope of assets and services included in the separated entity may need to be revisited. Examples of this include amendments to the separation undertakings in the telecoms sector resulting from the migration to next-generation access networks, or the introduction of competition within a sub-set of the distribution function (ie, metering and connections) in the energy sector.¹⁴

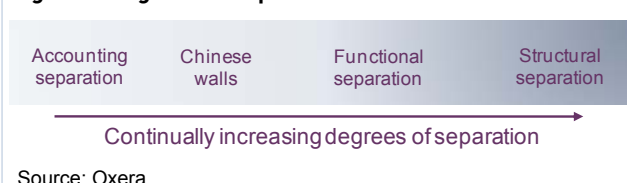
This suggests that regulators need to be cautious in defining the point of separation given that, while not irreversible, potential (retrospective) changes in the form of separation may result in uncertainty and distortions in investment incentives (ex ante).

Figure 1 High-level analytical framework



Source: Oxera.

Figure 2 Degrees of separation



Source: Oxera.

Practical implementation

Having identified the competition problems that can be addressed through separation, and the potential forms of separation that might be used to resolve these issues, regulators need to consider how separation might be implemented in practice. Examples of specific practical measures aimed at guaranteeing the removal of discriminatory practices include organisational incentive schemes and compliance monitoring practices.

- In addition to introducing Chinese walls to block flows of sensitive information, separation may entail the creation of distinct information systems for retail and network staff (eg, separate intranets).
- To address the issues of non-price discrimination, regulators need to specify the degree of equivalence required by the separated network entity in delivering wholesale inputs to competitors relative to its own retail arm.¹⁵

Indeed, the practical implementation of separation is complex, and, depending on the form of separation, typically takes several years and involves industry-wide cooperation.

Implications

The final stage of an assessment of the viability of separation involves examining the extent to which the separation options identified are commensurate with the identified competition problems, and consideration of how particular competition issues are to be addressed under each of these options. To do this, it may be appropriate to assess on a 'bottom-up' (product-by-product) basis how separation might affect the wholesale offerings of the separated incumbent, and what the consequent market outcomes at the downstream level are likely to be—ie, in terms of retail prices and ease of customer switching, as well as innovation and new product offerings.

The benefits that might be achieved through separation should be assessed against the direct costs of implementation (including staff training and the necessary adjustments to the IT systems underlying wholesale processes), as well as any potential side effects on investment incentives.¹⁶ Furthermore, while quality of service would be expected to improve in the long run, short-term service disruptions might arise during the course of the transition to a fully separated environment.

Separation is also likely to alter the form of regulation, although it cannot guarantee that regulation is scaled back. While advocates of functional separation point out that separation leads to more focused regulation—for example, by reducing the need for retail regulation—it should be acknowledged that separation

may also create an additional regulatory burden, manifested through the monitoring of equivalence measures and specific service-level agreements.

On the other hand, separation may lead to the establishment of new industry-led oversight bodies to facilitate dispute resolution between the separated network operator and third parties. Wider economic implications are also likely to result from the altered industry structure—manifested through, for example, consolidation in the energy sector, post-separation.

Are there transferrable lessons across sectors?

A key part of Oxera's study for ICP-ANACOM involved the analysis of case precedent in separation in different jurisdictions. Although all of the sectors in which separation has been considered share a number of characteristics common to utilities, the differences between them should be taken into account when considering the possibility of further unbundling.

Can separation case studies provide useful insights across sectors? From a review of separation precedent in the telecoms, rail and energy sectors, a number of transferrable insights can be identified.

- While acknowledging the technology-driven characteristics of the industry, separation in the telecoms sector provides useful lessons on the implementation and monitoring of equivalence measures introduced in conjunction with separation. In particular, the creation of Openreach (BT's functionally separate access arm) in the UK has proved a useful benchmark in demonstrating how Ofcom, the UK communications regulator, has introduced complex incentive mechanisms to monitor the implementation and compliance of equivalence measures (namely, equivalence of inputs and outputs).¹⁷
- The rail sector in Great Britain demonstrates the complexity of the coordination issues that can arise as a result of separation. Separation has proved to be an effective way of ensuring non-discrimination, leading to substantial improvements in outputs in the long term—although it has been found that the implementation of incentive mechanisms can take time and may lead to upheaval and less effective coordination of investment in the short term.
- In the European energy sector, the restructuring of electricity companies demonstrates how different parts of the value chain (generation, transmission, distribution and supply) have been separated. Issues such as the role of regulation and the effects of barriers to entry, post-separation, are still of relevance to any jurisdiction considering vertical separation.

Nevertheless, a cost–benefit assessment of separation is likely to be heavily influenced by the specific features of the sector and the country under analysis; consequently, evidence from other jurisdictions may not be considered as being fully transferable from one sector to another. Indeed, the regulatory objectives of separation vary across sectors, making it impossible to undertake a meaningful comparison of the resulting outcomes. For example, many of the utility sectors place particular emphasis on investment as a goal of separation, whereas telecoms regulation focuses more on the delivery of efficient signals to all competitors, and does not regard investment as the goal of regulation as such.

Differences in value chains should also be recognised when drawing implications from other sectors. For example, electricity and water are far more homogeneous products than telecoms, and the effect on the industry of continuous technological change is less problematic in these sectors. A salient point to note is that there is more scope for facilities-based competition in some network sectors than others, implying that the natural monopoly elements, and consequent point of separation, are perhaps easier to identify in those sectors. In addition to sector-specific characteristics, the legal and economic characteristics of different countries can have an important bearing on the nature and form of separation measures considered.

Is the sledgehammer needed?

When assessing the merits of separation, the negative effects of discriminatory practices must be assessed

against the efficiency gains of vertical integration in terms of investment, innovation and quality of service. Case precedent across sectors provides, to some extent, positive signals on the effectiveness of separation in addressing the issues of vertical foreclosure, but also shows that a careful assessment is required, given the complexities and costs of implementing separation in practice.

Overall, it appears that separation plans are increasingly underpinned by economic analysis, rather than building on purely political goals. Such assessments require a thorough understanding of the incremental benefits that could result from vertical separation, in comparison with the implementation (or modification) of less drastic measures of access regulation. In the context of the regulator's 'decision tree', separation is frequently used by regulators as an instrument of 'last resort', to be adopted only if other, less heavy-handed, options do not work.

In the telecoms sector, the rapidly changing technology used by the networks (and the existence of bottlenecks) provides opportunities for the introduction of equivalence measures into the new wholesale products and services. This could form a robust basis for forward-looking competition, without the upheaval and the associated costs of retrospectively separating the systems and processes that deliver the legacy network services, albeit there are challenges in defining the point of separation for future products. Such opportunities may not exist in other network sectors.

¹ In May 2009 the European Parliament approved various amendments to the existing Telecoms Directives, although certain issues are pending approval by the Council. European Commission (2009), 'European Parliament Approves EU Telecoms Reform but Adds 1 Amendment: Commission Reaction', Memo/09/219, May 6th. The Energy Directives have been amended to include a clause on unbundling. European Commission (2009), 'Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 Concerning Common Rules for the Internal Market in Electricity and Repealing Directive 2003/54/EC' [2009], OJ L211.

² Cave, M. (2008), 'Independent Review of Competition and Innovation in Water Markets: Final Report', April.

³ Hooper, R., Hutton, D.D. and Smith, I.R. (2008), 'Modernise or Decline: Policies to Maintain the Universal Postal Service in the United Kingdom', December 16th, pp. 99–100.

⁴ Salop, S.C. and Scheffman, D.T. (1983), 'Raising Rivals' Costs', *American Economic Review*, **73**:2, 267–71; Economides, N. (1998), 'The Incentive for Non-price Discrimination by an Input Monopolist', *International Journal of Industrial Organization*, **16**:3, 271–84.

⁵ For empirical papers exploring this question, see, for example, Chipty, T. (2001), 'Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry', *American Economic Review*, **91**, 428–53; and Hortacsu, A. and Syverson, C. (2007), 'Cementing Relationships: Vertical Integration, Foreclosure, Productivity and Prices', *Journal of Political Economy*, **115**, 250–301.

⁶ Cave, M. and Doyle, C. (2007), 'Network Separation and Investment Incentives in Telecommunications: A Paper for eircom', p. 8.

⁷ Ofcom (2005), 'Undertakings Given to Ofcom by BT Pursuant to the Enterprise Act 2002', September 22nd.

⁸ For example, quality of service and equivalence at the wholesale level would require further supervision.

⁹ A wholesale (upstream) firm with market power has the incentive, and potentially the ability, to sell its output to a retail (downstream) firm at a price in excess of the upstream firm's marginal costs of production. If the downstream firm also has market power, it may again mark up the price it charges to end-users. As a result, the price for end-users is higher, and the outputs, and combined profits, of both firms are lower than they would be for a single vertically integrated company. See Tirole, J. (1988), *The Theory of Industrial Organization*, Cambridge, MA: MIT Press, p. 174.

¹⁰ See OECD (2001), 'Restructuring Public Utilities for Competition'.

¹¹ OECD (2001), 'Structural Separation in Regulated Industries'.

¹² Salanave, J. (2007), 'The Real Impact of Structural Separation', *Communications and Strategies*, **65**, p. 185; Cremer, H., Cremer, J. and De Donder, P. (2006), 'Legal vs Ownership Unbundling in Network Industries', CEPR Working Paper, No. 5767.

¹³ As one of many examples in the telecoms sector, the European Commission concluded that the Spanish incumbent operator, Telefónica, had engaged in a margin squeeze in the broadband market, despite being subject to ex ante regulation targeted at preventing such conduct. European Commission (2007), 'Commission Decision Relating to Proceedings Under Article 82 of the EC Treaty' [2007] Case COMP/38.784, *Wanadoo España vs. Telefónica*, July 4th.

¹⁴ Ofgem (2006), 'Ofgem's Decision on the Future of Gas and Electricity Metering Price Controls', September 29th.

¹⁵ In the telecoms sector, the concepts of equivalence of inputs (EOI) and equivalence of outputs (EOO) have been applied, the key difference being that the former requires fully equal systems interfaces and processes to be faced by all parties, whereas the latter focuses on the outcomes of the wholesale products delivered.

¹⁶ The costs of separation can be limited by introducing separation for new products, not legacy ones. For example, in New Zealand separation undertakings in the telecoms sector focused on broadband and next-generation access products, in contrast to the UK where it was stipulated that legacy services were to be provided by Openreach. However, such a situation would not work in other industries that use the same infrastructure network to supply both legacy and new products.

¹⁷ Ofcom (2008), 'Service Level Guarantees: Incentivising Performance, Statement and Directions', March 20th.

If you have any questions regarding the issues raised in this article, please contact the editor, Dr Gunnar Niels: tel +44 (0) 1865 253 000 or email g_niels@oxera.com

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