

24 Separation and Contestability in Network Industries

Separation

The unbundling and liberalization described above leads directly to the issue of separation. Before the wave of privatization in Europe since 1980, utility companies were typically vertically integrated public corporations. Many remain in this form—such as the Royal Mail. Others are in partial public ownership. Privatization creates an opportunity for the government to impose a different structure, for example creating several companies for sale, broken down horizontally by service area and/or vertically by function. It is an unrepeatable opportunity, since restructuring assets in private ownership, through such measures such as compulsory divestment, is much harder to achieve.

Many privatizations retained the previous vertically integrated structure, on which the unbundling strategies described above have had to be imposed. There are exceptions. In England and Wales, the electricity supply industry was privatized in 1989 in three separate blocks: two large generating companies were sold, with a third nuclear-based one remaining in public ownership; the high-voltage transmission grid was sold as a monopoly; and 11 regional distribution companies were sold with the associated monopoly retailing functions. Since then the sector has gone through multiple transformations, leaving it in 2011 with a variety of competing generating companies, the largest six of which are vertically integrated with major retailers; a monopoly high-voltage grid company, which also owns one half of the gas distribution network; and six separate companies holding distribution licences.¹

Much restructuring has been a response to business objectives. Thus combining generation and retailing activities in electricity supply enables a company to hedge the risks of generating too much or too little electricity. However, in some sectors, particularly energy and telecommunications, regulators have imposed separation remedies, usually to ensure fair competition in an unbundled environment.

Suppose a vertically integrated telecommunications firm has been required to make its local loop available to competitors, in the interests of permitting

¹ D. Newbery, *Privatisation, Restructuring and Regulation of Network Industries* (Cambridge, 1999), ch. 6.

or promoting retail competition. To retain its market share, it might first of all seek to over-charge its competitors for the local loop. This can be seen as a form of price discrimination, as its retail arm is implicitly paying less for the local loop than its competitors are being charged. The regulator's natural response to this is to set an appropriate access price.

The incumbent might then try to ensure that the competitors are unable to provide a decent quality of service to their customers, for example by refusing to repair loops serving their competitors' customers, when they break down. This is colourfully known as 'sabotage'. It would be intended to reduce the constraint competitors impose on the incumbent in the retail market and enable it to make profits at the retail level. It has been shown that this would be a profit-enhancing strategy where:²

- the regulator has prevented such excess returns being made on the local loop;
- the incumbent is a reasonably efficient retailer; and
- incumbent and competitors are selling essentially the same product.

The simplest solution to this problem is for the regulator to deter non-price discrimination by the threat of punishment—a behavioural remedy. But if this does not work, a more intrusive structural remedy may be required. This may involve some form of separation of the monopoly activity, which precludes its managers from discriminating in favour of the firm's retail affiliate.

The most thorough way of achieving this goal is what is called ownership or structural separation, under which one of the two activities is divested or sold off. With separate sets of shareholders now owning the two companies, neither has a motive to discriminate in favour of the other.

But this has costs as well as benefits. A recent survey of the literature on the effects of integration and separation across a range of industries, not confined to utilities, has concluded that integration does generally produce benefits. The authors write:³

We did not have a particular conclusion in mind when we began to collect the evidence. We are therefore somewhat surprised by what the evidence is telling us. It says that in most circumstances profit-maximising vertical integration decisions are efficient not just from the firms' but also from the consumers' point of view. The vast majority of studies support this claim, ... even in industries which are highly concentrated.

² T. Beard, R. Kaserman, and J. Mayo, 'Regulation, Vertical Integration and Sabotage' (2001) 49(3) *Journal of Industrial Economics* 319–33.

³ F. Lafontaine and M. Slade, 'Vertical Integration and Firm Boundaries' (2007) 45(3) *Journal of Economic Literature* 629–85.

Ownership separation

Functional separation

Accounting separation

Figure 24.1. Alternative forms of separation

One possible cost of separation is the harm which it may cause to investment. To take a current illustration, many telecommunications operators are installing fibre local loops in place of current copper loops, in order to increase broadband speeds. This is a very costly process. If the network were structurally separated from any retailing activity, there is a risk that it might make the investment, but the retail sector would not promote the fibre to customers. Fearing this, the network might not make the investment.

Concerns about ownership separation have led regulators to consider less radical alternatives, illustrated in Figure 24.1, which shows a hierarchy of separation.⁴ The first step is accounting separation, under which a firm is required to produce separate profit-and-loss and balance sheet information (showing how much capital is employed) for components of the business (for example, the local loop or retailing) determined by the regulator. These data will expose where profits are being made, and in particular if the business is cross-subsidizing or discriminating in favour of some activities. However, this approach will not expose non-price discrimination.

The second form of separation, known as functional separation, involves redesigning the firm's business processes and managerial incentive systems to force the separated businesses to behave more independently. The redesign of business processes makes it easier to verify that competitors and the affiliated retailer are treated equally; meanwhile detaching managers' bonuses from the performance of the group as a whole should deter them from favouring affiliated business units. This approach lies between accounting separation and the ownership separation considered above.

Functional separation is now a remedy of last resort under the European regulatory regime for telecommunications discussed in Chapter 23 above.⁵ It has been adopted in one form or another by several national regulators, in Italy, Sweden, and the UK. The choice of this intermediate form of separation remedy reflects both concern about retaining investment incentives, and

⁴ M. Cave, 'Six Degrees of Separation' (2006) 64 *Communications and Strategies* 1–15.

⁵ See R. Cadman, 'Means Not Ends: Deterring Discrimination through Equivalence and Functional Separation' (2010) 37(4) *Telecommunications Policy* 366–74.

recognition that the boundary between competitive and monopoly activities in telecommunications is a shifting one.

An extraneous factor has, however, given considerable impetus to separation in telecommunications. Replacing copper networks with fibre is a once-in-a-century change requiring massive investments. Governments do not want to get left behind in this process, and accordingly are prepared, at local and national level, to make significant investments, ranging from a plan in Australia effectively to renationalize the local loop, to major municipal investments. Such public investments, or public/private partnerships, usually have to be made through separate companies, to reflect their different ownership structure. The application of public funds may solve the problem of financing the investment (without necessarily leading to the right investments being made), but it may lead to a patchwork quilt of different ownership structures.⁶

Energy has also faced calls for separation driven by concerns that integration between transmission and distribution on one hand and generation and retailing on the other was distorting electricity and gas markets.⁷ The European Commission conducted an energy sector inquiry, which concluded that the resulting adverse effects on the European single market warranted the separation of transmission from production and retailing.⁸ In the event, substantial fines were imposed on French and German operators, and separation was achieved in a limited number of cases.

In railways, there has been an ongoing debate about the desirability of separating provision of the network of tracks and stations from running freight or passenger services. The experience of a more complex separation in the UK, where the provision of rolling stock and track maintenance were also separated functions, was not a success.⁹ Nonetheless, after a careful review, the OECD concluded that separation had both costs and benefits, and that ‘decisions not to separate [ownership] should only be made after careful consideration of the costs that will result in the form of the additional regulatory burden and ongoing residual discrimination’.¹⁰ The final sentence draws attention to the fact that one of the benefits of separation is that, if the motive to discriminate goes, regulation to prevent it can be wound back.

⁶ See the papers on public–private interplay in next-generation communications in (2010) 34(9) *Telecommunications Policy*.

⁷ For a review of the arguments, see M. Pollitt, ‘The Arguments For and Against Ownership Unbundling in Energy Transmission Markets’ (2008) 36 *Energy Policy* 704–13.

⁸ European Commission, *DG Competition Report on Energy Sector Inquiry* (2007).

⁹ On separation in UK railways (and more generally), see J. Gómez Ibáñez, *Regulating Infrastructure: Monopoly, Contracts and Discretion* (Harvard, 2003), chs 11 and 13.

¹⁰ OECD, ‘Structural Reform in the Railway Industry’ (2005) 46 DAF/COMP.

Making Capital Investment Contestable

When a ‘natural monopoly’ asset is to be installed in a utility sector, by definition there is no scope for efficient duplication.¹¹ The firm equipped with the asset will not be in head-to-head competition, or ‘competition in the market’. However, as the chapter on franchising notes, there may be scope for ‘competition for the market’—i.e. rivalry among firms for the right to install and operate the asset. This process is often called making the activity or asset contestable.

Various contestability options are available, ranging from simple outsourcing of construction to the full transfer to another party of responsibility for delivering, financing, owning, and operating the relevant assets.

The possible benefits of contestability include:

- better specification of projects and increased cost efficiency; this is a natural consequence of increasing the pool of suppliers above one;
- better alignment of investment to customer priorities, in cases where bids are allowed not only from the infrastructure monopolist, but also from service providers. For example, if a train-operating company is allowed to bid to undertake a project to improve a station, it may have a better understanding of its passengers’ needs from station services than a track operator has;
- improvements to innovation and dynamic efficiency, arising from the introduction of competitive ideas;
- comparative information on the performance of different firms in the same activity, which the regulator can use to demand cost reductions.

Downsides might include:

- reduction in scale and scope economies arising from separating a previously integrated operation; the extent of these is likely to be case-specific;
- more complex and costly coordination; the issue here is that coordination of activities is required in all large organizations—the choice is between undertaking it within an organization through an administrative process and performing it contractually across a transaction boundary, where separation can also sharpen conflict;¹² the difficulty of coordination is likely to vary with the task at hand; for example, in the water sector, having separate organizations responsible for different parts of the network of pipes may pose few problems of coordination in normal times, but may severely complicate dealing with floods;
- two particular respects in which failures of coordination may manifest themselves are through delays in procurement processes arising from the organization of contests and increased risk in the execution phase;

¹¹ This section is based on joint work by Martin Cave and Janet Wright.

¹² These alternatives are well captured in the title of a book by Oliver Williamson—*Markets and Hierarchies* (1975).

- there may also be changes in the cost of capital—the rate at which firms can borrow in the capital markets to finance their activities; this particular element of cost can be affected by project-specific risk, the extent of which may vary with the degree of contestability of the project; systematic risk will depend on the nature of the activity, rather than the identity of the executant, but different contestants may face different borrowing constraints, which will be reflected in their marginal costs of capital.

In practice, contestability can be introduced in a wide range of formats. The key differentiator is the level at which decisions are taken. Here we identify two categories:

- a. Tenders for projects are conducted by the incumbent; this might be either required or encouraged by the regulator, in preference to the incumbent undertaking the project itself. The range of outsourcing options includes any or all of design/build/operation/finance. However, the assets remain in ownership of the incumbent, or are transferred back to it at the end of the contract.
- b. Tenders for projects are conducted by an external party such as the regulator, a government body, or an independent system operator.

The former and less radical form of contestability arises where the outsourcing decision is made by the incumbent, which determines the scope of the activity to be outsourced. The less the project is specified in detail by the incumbent, the greater will be the scope for innovation by the contractor. A potential downside of the more broadly specified contract is that it may introduce a greater risk of the contractor failing to deliver the outcome, because of the reduced predictability of the delivered outputs and costs.

Regulators have in the past tended to eschew mandatory outsourcing. There are a number of reasons for this:

- Most regulated sectors already demonstrate a significant degree of voluntary outsourcing, and the full range of contract types may be employed. This may be in direct response to the efficiency incentives in the price cap, discussed in the following chapter.
- Whilst a number of contract forms may be used, regulated networks, given their inherent risk aversion, may prefer outsourcing of a more tightly specified project. However, this is not necessarily undesirable, and may often fit with the incumbent's duties and incentives. Outsourcing that involves increasing execution risk (e.g. where more innovative designs may be proposed) may therefore require a reassessment of those regulatory frameworks.

- It is not clear that regulatory bodies have or could acquire the required skills and insight to be well placed to assess the efficiency of outsourcing by a regulated company. Procurement by public sector organizations in many countries has a poor record of efficiency (for instance, the Ministry of Defence). However, to address this, it may be possible for a regulator to employ an expert procurement advisory panel to undertake the evaluation. Given the competitiveness of the infrastructure design and construction sector, there is already a considerable degree of transparency regarding the development of alternative procurement models, enabling a ready spread of best practice. The additional benefit from greater regulatory intrusion in procurement is unclear.

The second form differs from the first, in that it would be a party other than the incumbent or other interested party that determines the need for the project and the specification of the outcome, and decides who delivers the project, typically through a tendering process. That third party might be the regulator or the government. The advantage of this approach would be that it would ensure consideration of options for delivery by non-incumbents (i.e. extension of compulsory outsourcing), where otherwise the incumbent, in control of the tender process, may have incentives to maintain a greater proportion of the project 'in-house'. It might also ensure that the project actually takes place, by relaxing constraints on capital availability, by enabling alternative bidders to come forward with a range of objectives, financial capacity, and financing sources.

This option allows for the bidder to own (and operate) the new infrastructure, effectively introducing an alternative network owner. And it also provides the opportunity for existing assets to be transferred as part of the 'package' to the new provider—for instance, where the investment is to enhance or add to an existing asset (again, the motivation would be greater efficiency in delivery and operation by the new party, and a spur to greater efficiency by the incumbent elsewhere in its operations).

A key question in evaluating this approach is whether the incumbent is allowed to tender itself at any stage in the process. On one hand, excluding an experienced supplier is generally harmful to a contest; on the other hand, if potential competitors assume that the incumbent has a very high probability of success, they will not bother to bid.

A problem arises with the second approach because it is not clear that regulatory bodies or governments may not have the skills required to assess competing tenders. It may be sufficient to address this problem that the regulator employ an expert procurement advisory panel to undertake the evaluation.

A number of examples provide some useful insights:

- a. Argentina: electricity transmission;¹³
- b. UK: offshore transmission;¹⁴
- c. UK: rail.¹⁵

The key lessons from this material are summed up as follows:

- Contestability can bring in external finance (many of the examples cited have this as a key feature—the cost of doing so depends very much on the contract type and process).
- It can be used to enable customers or those closer to the end user to have a greater say in outcome (see the Argentinian example, where a ‘public contest’ was held for major electricity transmission asset expansions, with user groups being directly involved in proposing, tendering, approving, and paying for the delivery of projects).
- The tender process can be designed in stages to enable the incumbent to bid, in order not to exclude the incumbent if it might be the most efficient provider on account of scale/scope economies for instance, while ensuring that it is still subject to the competitive pressures of having to compete in a tender.
- A very important potential drawback from third-party tendering is that it has frequently added significantly to delays and costs; there is evidence of this both with the UK offshore transmission project and with some rail projects.
- All the examples involve large-scale schemes, usually with the creation of new and largely discrete assets.
- They are also ‘separable’ to a large degree from the main core of the existing network.

Summing up the lessons of this experience, the UK energy regulator OFGEM draws the conclusion that this approach is only likely to be appropriate for large and discrete projects, where significant benefits can be expected to outweigh the high costs of administering the process and where time is not of the essence.¹⁶

An analysis of the scope for contestability of track and station projects concluded that separable, customer-facing investments were most likely to

¹³ See a series of papers by S. Littlechild and C.J. Skerk, ‘Transmission Expansion in Argentina, 1–6’ (1994) 30 *Energy Economics* 1367–1527.

¹⁴ OFGEM, *Offshore Transmission: First Transitional Tender Information Memorandum* (2009), <http://www.ofgem.gov.uk/Networks/offtrans/Pages/Offshoretransmission.aspx>.

¹⁵ M. Cave and J. Wright, *Options for Increasing Competition in the Great Britain Rail Market: On Rail Competition in the Passenger Rail Market and Contestability in Rail Infrastructure Investment*, Report to ORR (2010).

¹⁶ OFGEM, *RIIO: A New Way to Regulate Energy Networks* (October 2010).

benefit from contestability. These include the development of stations, for example by property companies, and the extensions of or enhancements to track utilized predominantly by a single train operator. Complex upgrades to track which continues to be kept in operation by its operator are less suitable for the introduction of contestability.

Liberalization and Social Objectives

Liberalization and unbundling have the normal effect of competitive measures of creating pressures for prices to come into line with costs. But this may come into conflict with the desire of many governments and regulators to maintain 'universal service' in the utilities sector, in recognition of the centrality of the services which they provide to economic, political, and social life, the significant proportion of household spending they account for, and the role of utility prices in affecting the location of industry, and hence regional development.

Universal service has two aspects: it means that the service must be made available to all households within a given area, and that it should be made available at a uniform and affordable price. The desire to maintain affordability often leads to prices of particular services which are less than cost. Uniformity of prices in the presence of cost differences imposes a problem in itself, however, because it means that servicing customers in high-cost areas may be a loss-making activity. When the sector is open to competition, competitors will have no interest in serving such customers, and the incumbent operator, which has to provide service universally, is left with them. This arrangement might at the end of the day cause the whole system of universal service to unravel, as competitors would progressively attract more customers, leaving the universal service operator with a remainder characterized by increasingly high costs; it would then be forced to progressively raise its tariffs to cover these higher costs.

When utility markets were initially opened up to competition, the power of the incumbent was such that it was able to deal with this problem fairly painlessly. However, as competitors' market shares increased, the danger grew that competition might be distorted by imposing the burden on a single operator.

One response is to leave the obligation on the incumbent, but to introduce a burden-sharing regime. This involves a complex calculation of the net costs which the 'universal service operator' incurs in serving non-commercial loss-making customers, and then dividing them among all operators above a

minimum size in proportion to revenues.¹⁷ Where the incumbent has the largest revenues, it pays the largest share of the costs. This regime has been available for voice telecommunications in Europe since 1997.¹⁸

In postal services, a similar regime is contemplated for the Royal Mail in the UK, subject to the proviso that it would only take effect when the Royal Mail, which is the universal service operator, had achieved efficiency—to prevent it from shifting the cost of its own failings onto its competitors.¹⁹

This seems a sensible and practical solution for existing universal services. But it is tested when there are new candidates for the designation. Broadband is a good example.²⁰ In some countries, it has now reached the 70–80 per cent penetration levels, which permit a service to be made universally available without imposing a crippling cost either on the designated provide, or on existing consumers—assuming that it will be financed by cross-subsidies within the marketplace rather than subsidies from general taxation. Note that we are not necessarily talking here about high-speed broadband of the kind supplied by fibre networks—which governments are keen to install in certain areas to improve competitiveness for industrial policy reasons—but about a more basic service made available to all. However, given the competitive structure of the broadband market in much of Europe (see above), there is no natural retail supplier on which the obligation can be placed. Moreover, in addition to the fixed suppliers of broadband discussed above, mobile broadband has become both faster and vastly more popular.

This is both a challenge and an opportunity. A government or regulator seeking to offer broadband universally can hold a technologically neutral ‘reverse auction’, in which competing suppliers can bid for the minimum sum of money which they would require to make broadband of a particular standard available universally in a specified geographical area.²¹ Subject to the difficulty of fully specifying a ‘franchise contract’ of this kind, discussed in Chapter 9 on franchising above, this may prove an effective and competitive method of delivering a ‘new’ universal service.

¹⁷ The calculation should also take account of marketing and other benefits which the universal service operator receives by virtue of its role as ubiquitous supplier.

¹⁸ Directive 97/33/EC of the European Parliament and the Council of 30 June 1997 on interconnection in telecommunications with regard to ensuring universal service and inter-operability through application of the principles of ONP.

¹⁹ Department for Business, Innovation and Skills, *Delivering for the Future: A Universal Mail Service and Community Post Offices in the Digital Age*, Cm. 7946 (2010), 16–17.

²⁰ See the ‘Symposium on Broadband for All’ in (2010) 80 *Communications and Strategies*.

²¹ S. Wallsten, ‘Reverse Auctions and Universal Telecommunications Service: Lessons from Global Experience’ (2009) 61(2) *Federal Communications Law Journal*.