

# Agenda

Advancing economics in business

## Set free by competition? Transitional access regulation of telecoms incumbents

**The European Commission's proposed package of reforms of the EU telecoms regulatory framework focuses on the regulation of wholesale access markets. However, access regulation is intended to be transitional, facilitating the growth of alternative operators, which will eventually invest in their own access infrastructure. Is the Commission's approach truly transitional, and will European telecoms regulators ever be in a position to deregulate wholesale access markets?**

The European Commission published its long-awaited proposals for reform of the European electronic communications regulatory framework in November 2007.<sup>1</sup> As part of this reform package, the list of markets susceptible to ex ante regulation was reduced from 18 to seven. This amendment is based on the Commission's vision of 'less but better regulation'—scaling back regulation where competition law can be relied upon (most retail markets), and refocusing it on those economic bottlenecks which still persist and which are unlikely to disappear without regulation (ie, some wholesale markets).<sup>2</sup> Indeed, the ultimate goal of the regulatory framework is to achieve a state of sustainable competition, where regulatory obligations at both the retail and wholesale levels can be removed. As the Commission states:

Competing network infrastructures are essential for achieving sustainable competition in networks and services in the long term ... Investment in new and competing infrastructure will bring forward the day when such transitional access obligations can be further relaxed.<sup>3</sup>

This vision is based on the premise that the existing regulatory framework, with its focus on wholesale access regulation, has provided European consumers with substantial benefits and has led to a high level of investment and innovation.<sup>4</sup>

However, as discussed in this article, this premise has been challenged by a number of recent theoretical and empirical studies, which point out that access regulation of broadband facilities may not only have harmed the investment incentives of incumbent fixed-line operators, but also distorted the investment incentives of alternative operators that may be considering entering the market with their own alternative infrastructure. Contrary to the Commission's view, these studies would seem to suggest that 'no regulation is better regulation'.

Given that the focus on wholesale access regulation has been the cornerstone of the European telecoms regulatory framework, is there scope for access obligations to be transitional and, eventually, to be scaled back in full?

### Changes to the EU telecoms regulatory framework

Under the existing regulatory framework, which has been in place since 2003, national regulatory authorities (NRAs) must follow a three-step process closely aligned with the principles of competition law:

- 1 define relevant markets;
- 2 assess the competitiveness of these markets;
- 3 if an operator (or a group of operators) is found to possess significant market power (SMP)—a concept equivalent to that of dominance under EU competition law—impose proportionate remedies to address the competition problems identified.

Changes to the regulatory framework include the following.

- The relevant markets susceptible to ex ante regulation have been reduced from 18 to seven, with a substantial

focus on wholesale market regulation (six of the seven remaining markets are wholesale markets).

- A proposal for an additional tool to be added to the regulator's toolkit: NRAs would have the power to impose functional separation of the incumbent's access network as a regulatory remedy.
- A proposal for the creation of a European telecoms market authority, accountable to the European Parliament, which would take over the role of the European Regulators Group (ERG) and assist the Commission in its supervisory role.
- A proposal to extend the Commission's veto powers over remedies imposed by NRAs, in addition to its veto powers over market definition and SMP assessments.

## Impact of access regulation on infrastructure competition

Within the limits of the European framework, NRAs cannot remove access obligations without proving that the incumbent does not hold a position of SMP in the relevant wholesale markets. For some of these markets, however, a finding of no SMP may be feasible only if there is a sufficient level of competition between alternative networks (ie, facilities-based competition). Facilities-based competition, in turn, can occur only if entrants have sufficiently strong incentives to invest in independent infrastructures.

The link between access regulation and investment incentives is therefore at the heart of the Commission's reform, and a number of recent economic studies have explored this link in the telecoms sector.

The conventional argument states that access regulation limits the incumbent's future potential cash flows related to the investment by fostering 'excessive' competition in the downstream market—ie, obligations to grant equivalent access to the new network assets eliminate the first-mover advantage associated with the investment.<sup>5</sup> Similarly, an additional factor reducing the expected cash flows generated by the investment may also arise from regulatory failure to treat the risk of the project proportionally. This may imply that cost-modelling methodologies applied in the derivation of cost-based access prices may need to be adjusted to account for greater uncertainty and demand-side risk associated with evolving technologies. Furthermore, if access price regulation leads to lower levels of investment by the incumbent, the viability of competition over the incumbent's network may be affected as a result of insufficient capacity for third parties to enter the market.<sup>6</sup>

The impact of access regulation on entrants' investment appears to be less clear-cut. Some empirical studies indicate that entry regulation has discouraged investment by entrants in fixed-line telecoms networks. In particular, had there been no access regulation of incumbents' networks, it is suggested that telecoms investment in Europe would be 8.4% higher, and that this would have been accounted for in full by entrants' investments.<sup>7</sup>

In addition, a study commissioned by ETNO, the association of European incumbent network operators, examines the impact of access regulation (measured as the price of local-loop unbundling, LLU) on the share and magnitude of 'unbundling-based lines' versus 'facilities-based lines'—eg, cable, fibre-to-the-home, and wireless local loop (WLL).<sup>8</sup> Regulation was found to negatively affect the investments of both incumbent and entrant. In the case of the entrant's investment, the economic rationale behind these results is straightforward: if the wholesale access charges for renting the incumbent's

network are too low, entrants are not provided with incentives to develop their own infrastructure, but instead are incentivised to benefit from the arbitrage of leasing low-cost wholesale inputs and undercutting the incumbent in the downstream market.<sup>9</sup>

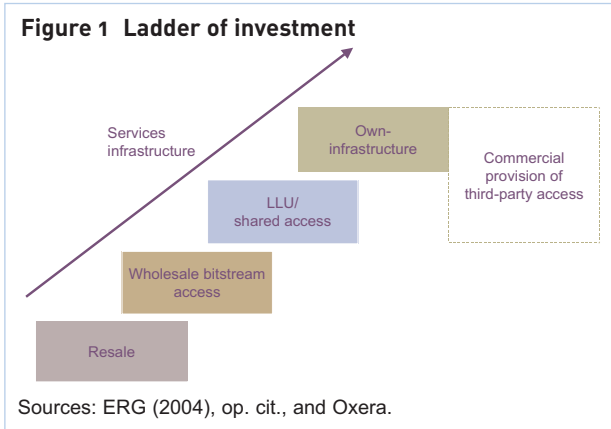
A study undertaken for the Commission during the preparation of its reform package reached a different conclusion. It found that, as a proportion of revenue, new entrant operators were investing three to four times more intensively in fixed-line networks than incumbents.<sup>10</sup> Using indices measuring the performance of the regulatory regime, the study argued that well-implemented regulation has resulted in a high level of investment by alternative operators, which in turn provides incumbents with incentives to improve their networks. The theoretical reasoning behind the Commission's framework—where regulatory remedies are considered as temporary 'stepping stones' for entrants to roll out their own infrastructure—is referred to as the 'ladder of investment', and is discussed in further detail below.

## Transitory regulation and the ladder of investment

The European regulatory framework recognises the trade-off between promoting short-term service-level competition and dynamic competition between infrastructures. The ultimate objective of the framework is to achieve sustainable competition between independent networks (inter-platform competition) where ex ante regulation is no longer needed. Essential to this objective is the concept of the ladder of investment, which relies on the assumption that entrants invest in capital assets as they acquire the critical mass of customers required to make the next step of investment profitable.<sup>11</sup> The theory underpinning the ladder concept is that 'good' regulation not only enables market entry, but also encourages competitive investment, making 'the next generation of technology contestable'.<sup>12</sup>

A typical entrant using xDSL technology, as shown in Figure 1, would therefore start by reselling the incumbent's services, then progress up the ladder by investing in some equipment of its own to provide services based on wholesale products (bitstream access and LLU, respectively) and, eventually, invest in its own last-mile access infrastructure. The intention of access regulation is therefore to provide a form of temporary solution for new entrants to overcome the incumbent's first-mover advantages, and remove regulation layer by layer as entrants move up the ladder.

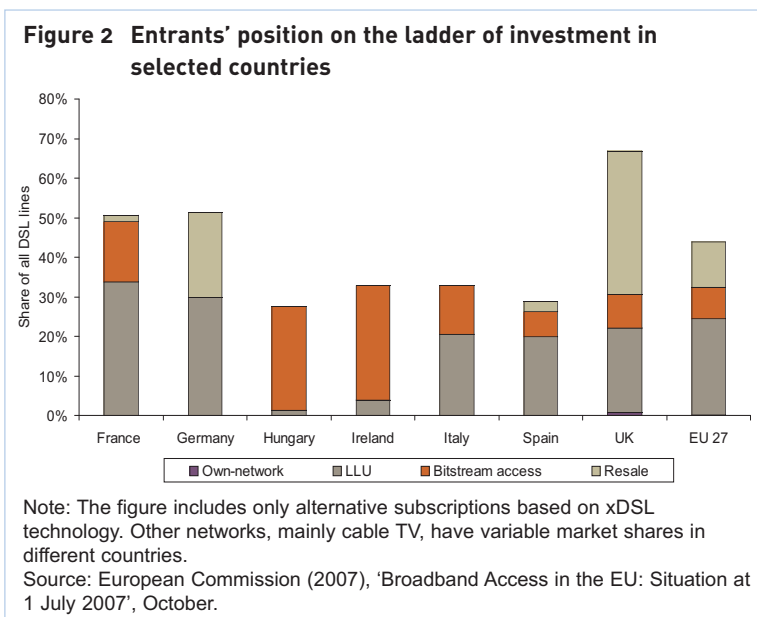
In practice, the ladder of investment has had mixed results. There are some cases where regulation of the different layers of the value chain has resulted in the roll-out of increasingly independent alternative networks.



For example, in France entrants have extensively unbundled France Telecom’s local loops and are in the process of rolling out independent fibre networks (eg, Iliad and Neuf Cegetel). However, there are also a number of examples where entrants have not been able to ‘climb up the ladder’ successfully. In these cases competitive offers are, to a large extent, based on only the resale of incumbents’ products. Figure 2 illustrates how the entrant operators are currently positioned on the ladder of investment among selected countries and the EU 27.

Some of the specific challenges that regulators face in using the ladder of investment framework to remove regulatory obligations at the wholesale level are: the difficulty of replicating last-mile connections; geographical differences; and technological progress leading to the deployment of next-generation networks. These are discussed below.

- As illustrated in Figure 2, the progress up the ladder is often stagnated in the unbundling phase. In other words, entrants have installed their own, relatively



affordable, DSL equipment, but may not invest in last-mile connections where the sunk costs are far higher. Thus the degree of replicability between different network assets is highly variable along the ladder of investment, and climbing to the last rung of the ladder (from LLU to investment in alternative last-mile infrastructure) seems to be substantially more difficult than reaching those stages below it.

- Contestable investments by entrant operators occur mostly in regions where they are financially viable—eg, in geographic areas, such as large cities, where a sufficient number of end-users can be achieved by installing own-infrastructure. However, competition case law and a number of regulators’ decisions have noted that, for entrants to be viable, competitive alternatives to incumbents should also be able to provide services in areas where there is insufficient scope for own-investment. Hence it could be argued that as long as some geographic areas remain unprofitable for entrants planning on building their own infrastructure, NRAs would not find it easy to remove access regulation in full.
- An additional challenge for regulators is to assess the applicability of the ladder of investment to the next-generation access (NGA) environment. An important feature of NGA deployment is that the point of access to the incumbent’s network is moving closer to the end-customer, namely from the traditional exchanges to street cabinets (eg, VDSL technology). The cost of investment in fibre connections required by the entrant to reach the new point of access is an order of magnitude higher than with traditional network architectures. Moreover, entrants’ launch of NGAs may be largely constrained by the timing of the network upgrades of the incumbents, which, in turn, typically have control over the copper network and other essential facilities (eg, ducts and street cabinets).<sup>13</sup> Important case precedent regarding the regulatory approach to NGA deployment comes from Germany. After complaints, the German regulator’s decision to open Deutsche Telekom’s facilities for entrants to deploy VDSL networks was confirmed by Cologne court in January 2008.<sup>14</sup> The decision included obligations regarding access conditions to above-mentioned facilities that entrants need in order to roll out NGA networks.

## Drivers of deregulation

Conceptually, the optimal process is where regulation is scaled back in stages as the market power of the incumbent diminishes along the different layers of the network. In terms of the practical implications for NRAs

conducting market reviews of wholesale access markets, the emergence of facilities-based competition is likely to lead to an increase in the importance of the concept of self-supply at the market definition or market assessment stages.

The concept of self-supply would imply the inclusion in the relevant wholesale market of xDSL-based entrants' volumes as well as entrants' volumes using alternative technologies, even if these entrants do not actually provide wholesale offers (see Figure 3).

Alternatively, if self-supplied inputs were not considered part of the relevant xDSL-based wholesale markets, the question is: how should regulators evaluate the competition 'outside' the ladder? An important aspect of assessing the self-supply of end-to-end connections in the SMP analysis relates to the question of indirect pricing constraints. Put simply, if the retail products between networks are substitutable, a price increase at the wholesale level could lead to a reduction in retail demand (from xDSL to other networks), thereby decreasing revenue extracted from the wholesale customers. Thus, even when there is no direct competition between different networks in the wholesale layer, competition in the retail market could constrain fixed-line incumbents' wholesale pricing.<sup>15</sup>

Consideration of indirect constraints, either at the stage of market definition or market power assessments, could give rise to a finding of a competitive market ('no SMP'). In practice, regulators have diversely taken alternative technologies into account in their market reviews. However, even when the self-supply from alternative infrastructures (ie, cable, mobile, WLL) has not yet notably affected the outcomes of SMP decisions, (except for the case of the wholesale broadband access market in the UK, which is discussed below) inclusion of alternative technologies in market definitions and market

power assessments can already be regarded as a regulatory commitment to consider the impact of these competing networks when evaluating the potential for withdrawal of regulatory measures. Incumbents may be even more constrained in the future given that networks and services are converging, and end-users find products from different platforms increasingly substitutable.

There are signs of competition-driven deregulation at the level of wholesale broadband access. Progressive steps have been taken by Ofcom in the UK. The removal of regulation has been implemented by imposing asymmetric regulatory remedies corresponding with the intensity of competition in different geographic areas. Ofcom divides the wholesale broadband access market into four different zones as a result of varying competitive conditions (measured as different unbundling ratios in BT's local exchanges).<sup>16</sup> SMP is no longer found to exist in areas where several alternative providers already self-supply their DSL equipment, and where further entry is likely to occur without regulation. However, BT is still deemed to have SMP in less competitive areas, and the access obligations hold. The Commission recently approved Ofcom's market review without major comments.

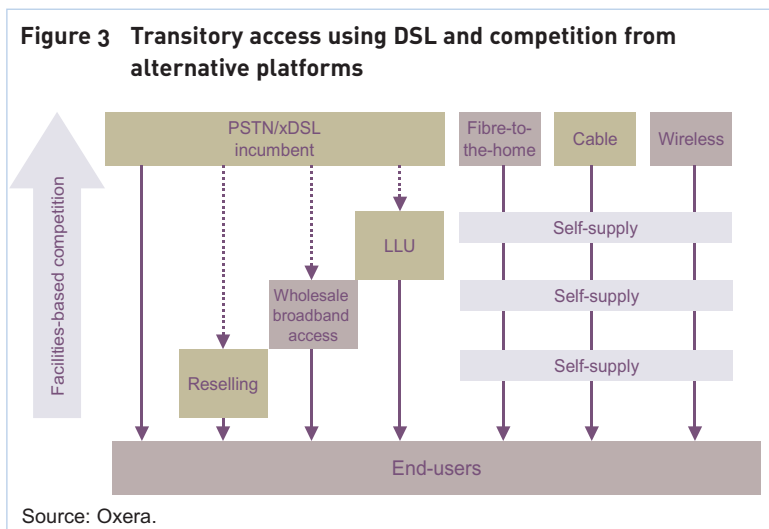
Similarly, the Spanish regulator, CMT, recently published guidelines on how it intends to regulate future investment on NGAs. The identification of competitive and non-competitive areas, with Telefónica potentially being exempt from access obligations on its fibre-to-the-home network in the former areas, is at the heart of its proposals.<sup>17</sup>

## Conclusions and implications

The European telecoms regulatory framework aims to achieve a sustainable state of facilities-based competition, which would, eventually, eliminate the need

for access regulation. In the European framework, entrants are provided with access to incumbents' bottleneck facilities layer by layer, and are expected to invest in own-networks when there is sufficient scale to install own-facilities. Again, investment in these independent networks is the assumed driver of deregulation.

However, it is unclear whether access regulation provides entrants with the necessary incentives to invest in their own network infrastructure, at least to a level that would remove the need for any form of access obligation on incumbents. Although there has been a degree of competitive investments in some Member States, there





are a number of challenges to make the ladder of investment truly operational, especially with evolving network architectures. Moreover, when assessing the market power of the fixed-line incumbent, regulators may need to consider the extent of competition outside xDSL technology. Technological progress enables alternative infrastructures to provide services that are substitutable with traditional products. This has already been the case with cable TV networks, and further competition may be driven by wireless technologies.

So to what extent are access obligations truly transitional in nature? The views expressed in the Commission's recent reform package indicate that, since the incumbents still largely dominate the last-mile networks, complete removal of access regulation is not likely in the near future. However, there are already signs of gradual deregulation in the more replicable layers of the network. For regulators, the devil is in the detail of applying the EU regime in a way that provides all parties with a level playing field to invest and innovate.

<sup>1</sup> European Commission (2007), 'Proposal for a Directive of the European Parliament and of the Council Amending Directives 2002/21/EC on a Common Regulatory Framework for Electronic Communications Networks and Services, 2002/19/EC on Access to, and Interconnection of, Electronic Communications Networks and Services, and 2002/20/EC on the Authorisation of Electronic Communications Networks and Services', COM(2007) 697 final, November.

<sup>2</sup> European Commission (2007), 'Less but Better Regulation', Factsheet no. 8, November, p. 1.

<sup>3</sup> Commission Recommendation for Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, Explanatory note, December 2007, p. 5.

<sup>4</sup> European Commission (2007), 'Investment: Breathing New Life into Europe's Telecoms Markets', Factsheet no. 5, November, p. 1.

<sup>5</sup> Baake, P., Kamecke, U. and Wey, C. (2007), 'Efficient Regulation of Dynamic Telecommunications Markets and New Regulatory Framework in Europe', in R. Dewenter and J. Haucap (eds), *Access Pricing: Theory and Practice*, Elsevier, p. 378.

<sup>6</sup> Kotakorpi, K. (2006), 'Access Price Regulation: Investment and Entry in Telecommunications', *International Journal of Industrial Organization*, **24**, pp. 1,013–20.

<sup>7</sup> Friedirizik, H.W., Grajek, M. and Roeller, L-H. (2007), 'Analysing the Relationship Between Regulation and Investment in the Telecom Sector', ESMT, November.

<sup>8</sup> Waverman, L., Meschi, M., Reillier, B. and Dasgupta, K. (2007), 'Access Regulation and Infrastructure Investment in the Telecommunications Sector: An Empirical Investigation', ETNO publications, September.

<sup>9</sup> See, for example, Bijl, P.W.J. and Peitz, M. (2007), 'Innovation, Convergence and the Role of Regulation in the Netherlands and Beyond', TILEC Discussion Paper, May, p. 9.

<sup>10</sup> London Economics and PricewaterhouseCoopers (2006), 'An Assessment of the Regulatory Framework for Electronic Communications: Growth and Investment in the EU e-Communications Sector', final report to the European Commission DG Information Society and Media, July.

<sup>11</sup> ERG (2004), 'ERG Common Position on the Approach to Appropriate Remedies in the New Regulatory Framework', ERG (03) 30rev1, April. See, for example, Cave, M. (2006), 'Encouraging Infrastructure Competition Via the Ladder of Investment', *Telecommunications Policy*, **30**, April/May, pp. 223–37.

<sup>12</sup> Cave, M. (2006), op. cit.

<sup>13</sup> Ofcom (2007), 'Future Broadband', Consultation, September.

<sup>14</sup> Federal Network Agency (2008), 'Cologne Court Confirms the Federal Networks Agency's VDSL Decision in Summary Proceedings', press release, January.

<sup>15</sup> Inderst, R. and Valletti, T.M. (2007), 'A Tale of Two Constraints: Assessing Market Power in Wholesale Markets', *European Competition Law Review*, **28**, pp. 84–91.

<sup>16</sup> Ofcom (2007), 'Review of the Wholesale Broadband Access Markets 2006/07', November; and European Commission (2008), 'Telecoms: Commission Approves Ofcom Proposal to De-regulate Part of UK Broadband Market', press release IP/08/232, February.

<sup>17</sup> CMT (2008), 'Principios y líneas maestras de la futura regulación de las redes de acceso de nueva generación (NGA)', January.

**If you have any questions regarding the issues raised in this article, please contact the editor, Derek Holt: tel +44 (0) 1865 253 000 or email [d\\_holt@oxera.com](mailto:d_holt@oxera.com)**

**Other articles in the February issue of *Agenda* include:**

- **malaise in the markets: the impact of equity volatility**
- **the shift towards defined-contribution pensions: are the risks overstated?**
- **untangling FRAND: what price intellectual property?**

**For details of how to subscribe to *Agenda*, please email [agenda@oxera.com](mailto:agenda@oxera.com), or visit our website**

**[www.oxera.com](http://www.oxera.com)**