

# Agenda

Advancing economics in business

## Trouble-play: monitoring retail bundles launched by dominant telecoms operators

**Bundling of products is becoming increasingly common among telecoms operators. While these ‘triple-play’ and other offers can provide benefits for both operators and consumers, they may also give rise to competition concerns. To ensure that new entrants can compete with the incumbent in offering bundles in the retail market, should regulators adjust the retail-minus-based wholesale prices?**

Operators in telecoms markets are increasingly selling services to consumers in bundles. Indeed, double-, triple- and quadruple-play offers, as they are known in the industry, are combining fixed, mobile, broadband and other services at a monthly flat-rate price, with a material discount for purchasing the tied product. An important feature of bundling in telecoms is the use of a broadband platform in the provision of multiple-play offers—Internet telephony (voice over Internet protocol, VoIP) and television (IPTV) being examples of this development. As all-IP networks and the scope for converged services develop, the potential for bundling will increase.

Such bundles can generate significant benefits for consumers due to reduced transaction costs and significant price discounts compared with stand-alone prices. However, those consumer benefits could be offset if bundling by incumbent operators were to have anti-competitive effects arising from leveraging of market power at the wholesale level, or from one retail market to another.

Faced with this risk, national regulatory authorities (NRAs) have recognised the potential concerns with retail bundles, and have in some cases required as a remedy pre-notification of any bundle including a broadband component.<sup>1</sup> Until now, there has been a lack of clarity about how such bundles would be assessed once notified.

This article develops an approach based on competition economics principles. The analytical framework relies on imputational tests developed to assess margin squeeze, in order to analyse whether the bundles in question lead to competition concerns and, if so, how to adjust regulated wholesale prices to mitigate those concerns.

The methodology aims to provide increased certainty to both incumbents and regulators, enabling consumers to benefit from the launch of bundles that do not generate anti-competitive concerns.

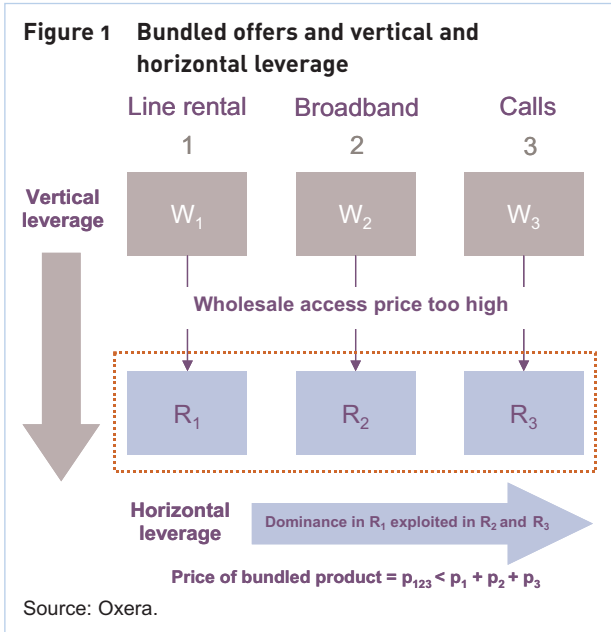
The focus of the methodology is on situations where NRAs have imposed a retail-minus price control remedy on the incumbent in at least one wholesale market—that is, entrants are charged the incumbent’s retail price for the product, less the costs avoided by the incumbent in providing access. Examples of telecoms wholesale products that are regulated on a retail-minus basis include wholesale broadband access (WBA) and/or wholesale line rental (WLR).<sup>2</sup> The article also discusses how regulators can assess potential entry by alternative means, and considers how the theoretical framework could be applied in practice.

### Competition concerns with bundles

There is a large body of economics literature exploring the implications of bundling and product tying.<sup>3</sup> Central to this literature is the comparison of the efficiency benefits of bundling with the adverse effects on competition that bundles may create.

It is well established that bundled offers can bring benefits in the form of supply- and demand-side efficiencies. While the joint supply may create cost savings at the wholesale level, these are more likely to arise in the downstream market in relation to marketing expenditure and joint billing. Demand-side efficiencies are the result of market expansion and economies of scale arising from the fact that bundling may attract customers previously not interested in single-play products.<sup>4</sup>

This article is based on the Oxera report ‘Bundling and Retail-minus Regulation: Developing an Imputation Test’, prepared for the Irish communications regulator, Commission for Communications Regulation, December 2007. Available at [www.oxera.com](http://www.oxera.com).



However, in some circumstances, bundling can have anti-competitive effects that outweigh welfare gains. Indeed, bundling might result in two types of competition concern: horizontal leverage and vertical leverage, as illustrated in Figure 1.

Horizontal leverage occurs when the incumbent holds a dominant position in a retail market (eg, telephony subscriptions) and leverages its market power to adjacent services (calls and broadband) by bundling the two (or more) products. Vertical leverage takes place when the incumbent exploits its position of significant market power (SMP) in an upstream market into a (potentially) competitive retail market. In this case, bundling is used by the incumbent as a means of charging a lower retail price overall, without translating these price cuts into lower wholesale access prices.

While the adverse effects of bundling are the subject of debate in the discussion on ‘effects-based’ competition policy (as in the *Microsoft* case<sup>5</sup>), regulators aim at pre-empting any anti-competitive practices ex ante. Since the cornerstone of European telecoms regulation lies in wholesale access (rather than in retail markets), the assessment of bundles focuses on the question of whether and how access services allow the provision of competing multiple-play retail products.

### Replicating the bundle with current access products

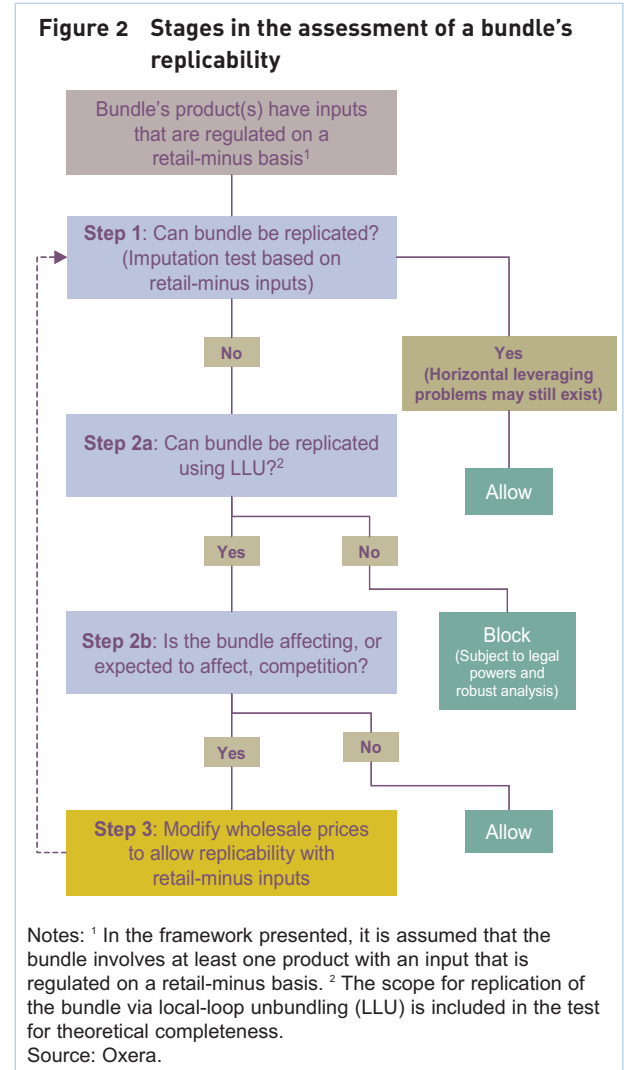
Regulation of wholesale inputs is premised on a finding of SMP and a lack of downstream competition. In this sense, central to the regulators’ agenda is ensuring the replicability of products offered to end-users. Replicability ensures that an equally efficient entrant is able to market the retail products offered by the incumbent. When

assessing whether a bundle is replicable under retail-minus, the framework for regulatory intervention is based on a three-step process, as presented below and illustrated in Figure 2:

1. can the bundle be replicated at the existing level of retail-minus access prices?
2. if not, would it be necessary to adjust the retail-minus access prices?
3. if yes, by how much should retail-minus access prices be modified?

#### Step 1: Is there a squeeze?

The first step for the regulator is to undertake an imputation test—that is, to establish whether an equally efficient entrant can viably replicate the entire bundle in the downstream market via the wholesale product being regulated on a retail-minus basis. To pre-empt potential anti-competitive concerns, the regulator may need to identify and assess the drivers of efficiency gains. Whereas wholesale efficiencies from bundling should be passed on to competing providers in the form of lower



### Imputation test

The imputation test considers whether the price of a bundle of two retail products is sufficiently high for it to be replicated via wholesale inputs under retail-minus regulation:

$$(1) P_{12} \geq A_1 + A_2 + C_{12}$$

where  $P_{12}$  is the price of the bundle including products 1 and 2. Product 1 uses wholesale input that is regulated on a retail-minus basis, and product 2's wholesale input is, for the sake of argument, determined on the basis of cost orientation. The intuition behind inequality (1) is that, to pass the imputation test, the price of the bundle should be equal to, or higher than, the sum of the two wholesale access charges ( $A_1$  and  $A_2$ ) plus the retail costs net of any efficiencies resulting from bundling ( $C_{12}$ ). In this sense, the retail efficiency gains ( $e_{12}$ ) should be subtracted from the retail costs,  $C_{12} = C_1 + C_2 - e_{12}$ . The rationale for this is that the incumbent operator should be able to retain the

Source: Oxera.

gains from any efficiencies arising at the retail level, given that these are replicable by other operators.

Assuming that the price of the bundle includes a discount worth  $d_{12}$ , it can be shown that the imputation test is equivalent to asking if:

$$(2) d_{12} \leq (P_1 - A_1 - C_1) + (P_2 - A_2 - C_2) + e_{12}$$

Furthermore, because  $A_1 = P_1 - C_1$  (due to retail-minus regulation of this wholesale input), and  $P_2 - A_2 - C_2 = m_2$ , the imputation test in inequality (1) can be expressed as:

$$(3) d_{12} \leq e_{12} + m_2$$

In other words, the imputation test would focus on the question of whether the discount in the bundle's price can be fully explained by retail efficiencies and/or the profit margin made on the product whose wholesale input is not regulated on a retail-minus basis ( $m_2$ ).

access prices, regulators should allow incumbent operators to reap the gains from retail efficiencies. The intuition behind this argument is that, in the latter case, the entrant would have the same opportunities to reach the cost advantages obtained by the incumbent.

Hence, if retail efficiencies fully explain the bundled discount, no adjustment to the retail-minus formula would be required. On the other hand, if efficiencies at the wholesale level explain the bundled discount, these should feed into the access prices charged for retail-minus inputs. Otherwise, access prices would be too high, making it difficult (if not impossible) for alternative and equally efficient operators to replicate the bundle and compete with the incumbent in the retail markets. The basic theory behind the imputation test is set out in the box above.

When the imputation test indicates that the bundle can be replicated with existing wholesale inputs, the regulator should conclude that further adjustments to any of the wholesale charges are not necessary. However, while the focus here is on vertical leverage, it should be noted that regulators and competition authorities might be concerned with issues of horizontal leverage even when the bundle is replicable, as illustrated in Figure 1. In effect, authorities would need to assess whether the incumbent holds SMP in one (or more) of the bundled products' downstream markets; whether the non-SMP products of the bundle can be replicated; and what is the current and prospective competitive situation between bundled offers.

If, on the contrary, the imputation test is failed (ie, the inequalities in the box above do not hold), it would be necessary to proceed to step 2.

### Step 2: Unbundle to bundle?

If it has been determined that the bundle cannot be replicated using retail-minus inputs, the next step is to perform an alternative imputation test where new entry would be via local-loop unbundling (LLU) (step 2a in Figure 2). The rationale for this test is that there may be economies of scope at the wholesale level—by definition not picked up in the retail-minus case—which could allow replication of the bundle using LLU. If this test is not passed, the regulator should block the bundle since it cannot be replicated by the entrant using either retail-minus or LLU inputs.

Even if replication using LLU inputs were possible, regulators would still need to establish whether the LLU-based entry by 'as efficient' entrants would lead to a sufficient scale of entry such that the market would not be foreclosed (step 2b). Clearly, LLU requires upfront investments, and operators must assess its potential cost advantages against the need for a reasonable recovery time of their investment. Furthermore, the need to acquire a large customer base is likely to make LLU a viable strategy only in the most profitable, mainly urban, areas. This may in part explain why, in practice, the extent of LLU-based entry varies significantly across countries. While high in some Member States (such as Portugal, Finland, the Netherlands and France), the number of entrants' xDSL lines using unbundled local loops has remained at low levels in many countries (eg, 12% in Ireland and 5% in Hungary).<sup>6</sup> It should be noted that low LLU figures at present do not necessarily imply that LLU-based bundles will not be viable in future—indeed, in some cases, low figures may be the result of having introduced LLU later than in other countries, while the number of unbundled exchanges

may be increasing rapidly (this is particularly the case for new Member States where the EU Framework has recently been implemented).

Regulators often view LLU as a form of facilities-based competition and, as such, a regulatory goal. In contrast, reducing the prices of retail-minus inputs might dampen the incentives to invest in LLU.<sup>7</sup> The key merit of LLU entry is that by leasing the 'raw copper' over which the operator can provide its own differentiated services, it avoids the more costly consumption of two separate wholesale products that largely use the same infrastructure, as in the case of retail-minus regulation.

In addition, before deciding to proceed with the adjustment of retail-minus inputs considered in step 3, regulators may need to take account of the potential alternative replication strategies as part of step 2b—eg, whether technological developments allow for alternative forms of entry (one example being the provision of VoIP rather than using two separate wholesale inputs).

### Step 3: Adjusting the access prices

Finally, if the imputation test on the bundle using retail-minus inputs is failed (step 1), and LLU or other means of entry are not expected to provide a viable entry strategy into the market (step 2), regulatory intervention will be needed. Given that the regulator is likely to be reluctant to prohibit bundling per se or to interfere in the discounted retail prices, the failure of the imputation test may result in the consideration of adjustments in wholesale charges.

Following the example set out in the box above, the appropriate adjustment in the retail-minus access price can be reached. The reduction in the retail-minus wholesale input price (ie, product 1) should be equal to the wholesale efficiencies derived from bundling. Hence, to calculate the adjustment, the regulator needs to identify and subtract the retail efficiencies from the overall discount on the bundle. Furthermore, the regulator will need to subtract the margin on the other product(s) in the bundle (ie, those that are not retail-minus-based—product 2 in the box above). The margin on the other product(s) should be recoverable and achievable by equally efficient entrants and thus excluded from the adjustment in access prices. As a result, only the implicit wholesale efficiencies—ie, what is left after subtracting retail efficiencies and the margin on the other product(s)—will account for the reduction in access prices.<sup>8</sup>

## Implementing the test and adjusted access prices in practice

When the methodology described above leads to the conclusion that there should be a review of the

wholesale access prices charged for the bundle, further questions arise regarding the practical implementation of adjusted access prices which are due to the variety of retail offers, where some use retail-minus-based wholesale product as inputs. On the one hand, stand-alone products would compete with bundles. On the other, the incumbent may launch multiple bundles (ie, different combinations of retail products).

These two aspects have several implications. For example, if the regulator were to follow the conceptual framework set out above, it would need to adopt several adjusted access prices as a result of varying efficiency gains in different bundles. Moreover, lower access prices relative to stand-alone products (or other bundles) could be considered against the non-discrimination obligation.

Therefore, in order to strike the right balance between robustness and practicality, regulators might decide to adopt a single price for each access product—ie, a price that would apply regardless of whether the retail product is sold on a stand-alone basis or as part of a bundle. One option could be to set the uniform access price at the lowest possible charge that is revealed through the imputation tests. This approach would impose a tougher regulatory stance on the wholesale provider. Alternatively, the regulator could adopt a blended rate between the stand-alone price and the lowest possible access price—eg, an average price weighted by the demand of different services and their combinations. An advantage of this approach is that it could capture the demand conditions for a variety of service combinations in a single price, while providing the incumbent with flexibility to launch differentiated bundles. In essence, regulators would need to assess the advantages and disadvantages of different options, including an evaluation of the wider impact that their choice would have on entrants' strategies.

A further issue relates to the differences between the static nature of the test developed above and the dynamic nature of the telecoms industry, which may render the static test inappropriate. Instead, some regulators have used discounted cash flow (DCF) models, which allocate costs and revenues through the product's reference time period.<sup>9</sup> DCF models could prove useful in capturing the dynamic nature of the telecoms industry, the incentives to acquire the necessary 'critical mass' of customers, and the significant upfront investments relative to variable costs.

Irrespective of the methodology, practical implementation of the imputation test and the subsequent adjustments requires data from the incumbent, some of which may be included in the price review originally set out for stand-alone products. Estimating the efficiencies from bundling, finding the appropriate benchmark for the

margin of the other products and, for the purposes of dynamic DCF analysis, forecasting demand of bundles, are questions for the regulators to consider.

## Conclusions

Bundles of telecoms retail products are becoming more common. Given that there are no economic reasons to prohibit them per se, the need for adjusting wholesale prices is likely to become increasingly topical. However, (adjusted) retail-minus access prices have direct implications for the competitive landscape and the

strategies of entrant operators. The regulator's decision about these adjustments is further complicated by the dynamic nature of the telecoms industry. The static competition concerns arising from a bundle not being replicable by an entrant should be traded off against the benefits of substituting retail-minus inputs with alternative, more independent, forms of entry.

The analytical framework discussed in this article could help regulators to adjust retail-minus access prices to address these developments.

<sup>1</sup> In the EU these remedies have been imposed on operators that possess significant market power as part of the regulatory framework.

<sup>2</sup> Countries where such remedies have been imposed include Ireland, Sweden, Greece, Belgium and Spain. The retail-minus rule for access prices is frequently referred to in the economics literature as the efficient component pricing rule (ECPR), originally proposed by Willig, R. (1979), 'The Theory of Network Access Pricing,' in H.M. Trebing (ed.), 'Issues in Public Regulation', Michigan State University Public Utilities Papers. Proceedings of the Institute of Public Utilities Tenth Annual Conference.

<sup>3</sup> See, for example, Tirole, J. (2005), 'The Analysis of Tying Cases: A Primer', *Competition Policy International*, 1:1, spring, pp. 1–25.

<sup>4</sup> For a discussion, see Nalebuff, B. (2003), 'Bundling, Tying, and Portfolio Effects: Part 1—Conceptual Issues', DTI Economics Paper no.1, February, p. 27, and Crawford, G.S. (2004), 'Discriminatory Incentives to Bundle in the Cable Television Industry', University of Arizona.

<sup>5</sup> Court of First Instance (2007), *Microsoft Corp. v Commission of the European Communities*, Judgment, Case T-201/04, September 17th.

<sup>6</sup> The average rate of new entrants' unbundled local loops in the EU was 55% in July 2007. See European Commission (2007), 'Broadband Access in the EU: Situation at 1 July 2007', July. The figures include both full unbundling and shared access. These figures represent entrants' relative shares of DSL lines.

<sup>7</sup> For a discussion on the relationship between entry regulation and investment, see Friederiszick, H.W., Grajek, M. and Roller, L.-H. (2007), 'Analysing the Relationship between Regulation and Investment in the Telecom Sector', ESMT Competition Analysis, November.

<sup>8</sup> This implies that the retail-minus wholesale input should be reduced by a proportion  $(d_{12} - e_{12} - m_2)/d_{12}$  of the total discount.

<sup>9</sup> Precedents in the use of DCF models include 'Freeserve.com plc vs BT's residential broadband pricing'—see Oftel (2003), 'Analytical Framework for New Freeserve Case', August; and Case COMP/38.784 *Wanadoo España vs Telefónica*, Comisión del Mercado de las Telecomunicaciones.

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)

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