

## CRA COMPETITION POLICY DISCUSSION PAPERS 12

### **Collective dominance and the New Regulatory Framework for electronic communications**

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**Charles River Associates Limited** 1 Undershaft ♦ London EC3A 8EE ♦ +44 (0)20 7664 3700 ♦ Fax +44 (0)20 7664 3998  
rue de l'Abbaye, 2 ♦ B-1000 Brussels ♦ Tel +32 (0)2 627 1400 ♦ Fax +32 (0)2 627 1444



Charles River Associates Limited 1 Undershaft ♦ London EC3A 8EE ♦ +44 (0)20 7664 3700 ♦ Fax +44 (0)20 7664 3998  
rue de l'Abbaye, 2 ♦ B-1000 Brussels ♦ Tel +32 (0)2 627 1400 ♦ Fax +32 (0)2 627 1444

## Collective dominance and the New Regulatory Framework for electronic communications

by Paul Reynolds and Paul Muysert

### Abstract

*The Irish and French telecom regulators recently found particular mobile operators to be collectively dominant and in response are proposing regulation that would include a requirement to provide access to independent service providers. This paper examines the economic implications of the use of collective dominance for the purposes of ex ante regulation with a focus on the Irish and French decisions. The paper notes that several key aspects of collective dominance differ from single firm dominance, including the difficulty in accurately predicting whether coordination will take place, the ability for coordination to quickly break-down and the potential for coordination to give rise to a range of outcomes. These differences have clear implications for the appropriate regulatory response and mean that examining the likely extent of consumer harm is critical. In considering the Irish and French cases, a number of concerns are raised with the regulators' market analyses in relation to the impact of technological developments, barriers to expansion and entry, the analysis of pricing and profitability and whether any implications can be drawn from the current limited presence of independent service providers. Finally, the paper assesses the potential impact of regulated access on the development of the mobile markets, concluding that it may harm the smaller operators and impede vigorous network-based competition.*

The New Regulatory Framework for Electronic Communications (NRF) was introduced, with effect from July 2003, as a further step towards deregulation of Europe's telecoms markets. This paper focuses on the recent findings of the Irish and French regulators that particular mobile operators possess collective dominance in the markets for wholesale mobile access and call origination in their respective countries.<sup>1</sup> On the basis of these findings, the regulators have proposed various remedies including a requirement for the operators to provide access on request to independent service providers. If the findings are allowed to stand, they will dramatically increase the number of telecoms markets vulnerable to regulation and raise the risk of regulation being imposed where it will bring more harm than good.

A central principle of the NRF is that national regulators may only impose *ex ante* regulation on operators that have been found to have significant market power (SMP),<sup>2</sup> with SMP being defined as equivalent to the concept of dominance under competition law. The adoption of a dominance-based standard was put forward as a deregulatory step that would raise the threshold for regulation from the old 25% market share test. The then Competition Commissioner, Mario Monti, explained the NRF's underlying philosophy as follows:

“It is our strong belief that the application of fundamental competition law notions, such as market definition and dominance, in an *ex ante* environment represents the best means to ensure a smooth transition towards a fully liberalised electronic communications market, in which, hopefully one day, only the competition rules will apply.”<sup>3</sup>

### **The concept of collective dominance and regulation**

Together with the concept of single firm dominance, the NRF also brought with it the notion of collective dominance as a basis for regulation. The Framework Directive defines joint dominance (or equivalently collective dominance) in the following terms:

“Two or more undertakings can be found to enjoy a joint dominant position not only where there exist structural or other links between them but also where the structure of the relevant market is conducive to coordinated effects, that is, it encourages parallel or aligned anti-competitive behaviour on the market.”<sup>4</sup>

It may be thought that if we are prepared to regulate a firm that is dominant in its own right, then we should also accept regulation of a collection of firms behaving as if they are a single dominant firm, i.e. monopoly prices are harmful to consumers regardless of whether the profits are captured by one firm or a group of firms. However, there are important differences between collective and single firm dominance. In particular, economic theory (now incorporated in the jurisprudence of the European courts and the EC's administrative practice) recognises that four necessary conditions are required for collective dominance to emerge and be sustained:

- i Firms must be able to reach a coordinated position;
- ii The coordinating firms must be able to monitor each other's adherence to the coordinated position;
- iii The coordination must be sustainable in the sense that firms do not perceive that they could gain from deviating given the risk of being detected<sup>5</sup>; and
- iv The reactions of other firms and customers must not be able to undermine the coordination.

While there is agreement on the general framework for assessing collective dominance, there is much room for dispute in relation to applying the framework in particular cases. Ultimately, any finding of collective dominance must be based on a thorough empirical assessment of the relevant market in combination with economic theory. Three key questions are:

- Is the market accurately characterised in terms of identifying all the relevant features and assessing the extent to which they are likely to be present throughout the relevant period;
- Given the particular combination of market features that are present, is it likely that the market will

satisfy each of the four necessary conditions for collective dominance; and

- Is the evidence on market outcomes consistent with the model's predictions?<sup>6</sup>

In the late 1990s regulators used to tick off “checklists” based on market characteristics, eg would a merger increase or decrease the number of factors conducive to coordination being present in the market. The European Commission was rightly chastised in *Airtours* for this approach, since it ignores the relative importance of different factors. For instance, it may be that the impact of one factor (say, for instance, the absence of barriers to entry) is sufficient to prevent coordination even when all other factors would otherwise support coordination.

Accurately predicting coordinated effects on the basis of how various factors will interact in the future can involve difficult judgements with much scope for error. In practice, competition authorities have recognised that the conditions for coordination are seldom fully met and thus coordinated effects are not regularly found in merger cases. Will this be the same in the context of analysing telecoms markets for the purposes of *ex ante* regulation?

### **Are telecoms markets conducive to collective dominance?**

Collective dominance is likely to be much less stable than single firm dominance precisely because there are multiple firms in the market. Even if coordination currently exists, it can quickly unravel should firms' expectations of each other's conduct change or underlying incentives shift. For instance, in telecoms markets characterised by waves of innovation, firms can be expected to seek to take advantage of a temporary lead in introducing new products. Further, if multiple firms have been able to successfully enter in the past, then careful examination should be given to the prospect of future entry (if, for instance, spectrum is available) or expansion of current entrants in the event that the market gives rise to significant profits. It is thus unlikely that collective dominance will give rise to the sort of essential facilities or “enduring economic bottlenecks” that

the UK regulator, Ofcom, and many economists, believe should be the focus of *ex ante* regulation.<sup>7</sup>

### **Threshold for intervention**

We have noted the difficulty in diagnosing collective dominance and the potential for any coordination to be rapidly overturned. These are important considerations in assessing the potential for consumer harm in the absence of regulation. A further complication arises from the potential for collective dominance to give rise to a range of market outcomes. Economic models of coordination can generate a number of possible market equilibria and, in practice, firms may only be able to coordinate in relation to some dimensions (eg prices, volumes, quality, innovation) and not others. Thus, even where the conditions exist to support some coordination, there remains the need to assess the likely extent of any consumer harm and whether regulation would deliver better outcomes.

Many commentators have concerns in relation to intervening, on the basis of collective dominance, to change market outcomes that are the result of firms' individual rational responses to the structure of the market. The OECD summarised its *Roundtable on Oligopoly* noting that:

“... parallel behaviour induced by interdependence cannot be eradicated with behavioural measures short of ongoing regulation of competitive conduct, a cure that is worse than the disease.”<sup>8</sup>

There is a better case for limited forms of intervention in relation to collective dominance where there is scope to prevent practices that help facilitate coordination. Indeed, one of the objectives of merger regulation is to prevent coordination from developing in the first place.<sup>9</sup>

Given that the concept of collective dominance is part of the NRF, it is critical that the concept is interpreted narrowly and is subject to the highest evidentiary standards. Moreover, all the likely effects of regulation need to be carefully identified and assessed. Price and access regulation may deter investment by new entrants in developing their own networks. Even less intrusive regulation such as transparency and non-discrimination

obligations can perversely facilitate and sustain coordination. Rather than moving towards the end of sector-specific regulation or even regulation focussed on economic bottlenecks, the consequence may be pervasive and self-perpetuating regulation and the loss of the dynamic benefits that infrastructure competition can deliver.

### **Collective dominance in telecoms markets: current regulatory practice**

In the remainder of this note, we examine the approach taken by the telecom regulators in Ireland (ComReg) and France (ART) to assessing collective dominance and determining the appropriate regulatory obligations to impose. We focus on key aspects of the regulators' findings that we believe are inconsistent with an economic approach to testing for collective dominance and explain why the proposed regulations risk harming the development of competition.

### **The market analysis of ComReg and ART**

In line with the EC's Recommendation on Relevant Markets, both ComReg and ART assessed competition in the market for "wholesale access and call origination on public mobile telephone networks". The market covers the wholesale supply of a cluster of services including mobile access, voice calls, SMS and value-added voice and SMS services. Pre-pay and post-pay mobile services were considered part of the same market. The market also covers voice and SMS services offered using 2G, 2.5G and 3G technologies. Both markets were found to be national.<sup>10</sup>

Neither regulator considered that any operator had single firm dominance in the relevant market, with ComReg noting that barriers to expansion were low.

ComReg found that Vodafone and O2 were collectively dominant, while the third entrant Meteor and the new entrant, '3', were not dominant. ART found that the three French mobile operators, Orange, SFR and Bouygues Telecom, were collectively dominant. The core of the regulators' cases was an analysis of the likelihood of collective dominance made with reference to

the jurisprudence of the European Courts and the EC's practice.

While the purpose of this note is not to undertake a point-by-point review of the regulators' findings, we do believe it is worth discussing a number of significant matters that we believe have been given insufficient attention by the regulators:

- Technological developments;
- Lack of barriers to expansion and entry;
- Evidence on pricing and profitability; and
- Restrictions on service provider access.

### **Technological developments**

The mobile markets in France and Ireland and elsewhere in Europe are at the start of a period of major change driven by technological developments. Vodafone launched 3G services in Ireland in late 2004 and O2 and '3' are expecting to launch their 3G services this year. SFR and Orange in France launched 3G (UMTS) services in 2004 while Bouygues Telecom is currently choosing to rely on EDGE technology. As this substantial new 3G capacity becomes available, operators are introducing new tariffs as well as special promotions. There are substantial discounts on voice calling and the bundling of voice and SMS with new services such as entertainment and sports content exclusive to individual operators.

Technology change goes well beyond 3G. Voice over IP has finally reached a stage where significant take-up can be expected and with it substantial downward pressure on fixed and mobile voice call prices. Further market disruption can be expected from new wireless technologies (eg Wi-Fi and later WiMAX) and fixed-mobile convergent devices (eg handsets that can switch between Wi-Fi around the home or office and a mobile network elsewhere). Given the range and depth of technological change that is likely to characterise the markets in the period ahead, it seems highly unlikely that mobile operators will be able to reach and sustain any significant degree of coordination.

### Lack of barriers to expansion and entry

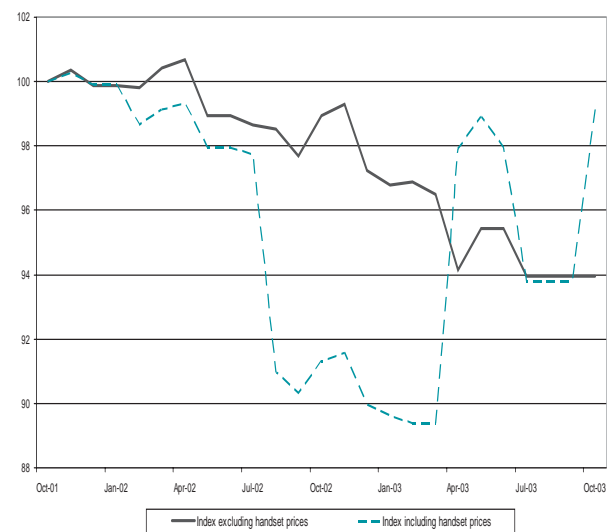
Other aspects of the regulators' characterisation of the market are also open to question. ComReg identifies the absence of significant barriers to expansion as a key reason for rejecting single firm dominance. It is not clear, therefore, why ComReg so readily dismisses the potential impact of Meteor and '3' in the period ahead, particularly as roaming enables them to offer similar coverage to the larger operators. In France, the presence of the smaller operator, Bouygues Telecoms (with a share of 19% of revenues in 2004), may also act to prevent coordination. The company has a history of differentiating itself, for instance through the introduction of i-mode into France, the focus on young people with its Nomad brand and "aggressive competition on voice with unlimited voice plans" in 2004.<sup>11</sup> In comparison with larger operators, smaller operators have more to gain from cutting prices, since they can target the large pool of customers currently with the other operators, and they often have excess capacity available to support additional customers. In addition, small operators have less to lose if their (relatively small) pool of existing customers switches to lower tariffs. In both markets, there is also a spare mobile spectrum licence and thus the possibility of entry in the event that there were actually excess profits to be earned.

### Evidence on pricing and profitability

A key element of both regulators' decisions was the use of evidence on pricing and profitability. ComReg pointed to "a lack of downward movement in high user segments, little or no leapfrogging, and a high degree of parallel behaviour".<sup>12</sup> ART also noted a certain degree of price stability.<sup>13</sup> It is noteworthy that the data relied on by both regulators excludes handset prices, even though what matters to consumers is the overall cost of their mobile service. Handsets and handset prices are, in fact, a key element of customers' decisions and operators tend to focus special promotions on handset prices rather than tariff plans. Ofcom's price data for the UK shows that the mobile price index that includes handset prices is much more volatile than the index excluding handset prices (see Figure 1).<sup>14</sup> Further, since both the Irish and French regulators were driving down

mobile termination charges during the period covered by the price data, this would be expected to limit the scope for price reductions or even drive prices higher.<sup>15</sup>

**Figure 1 Ofcom's mobile price index**



ComReg also relied on evidence that prices in Ireland were above the European average, at least in relation to post-pay services.<sup>16</sup> It needs to be recognised that translating complex mobile tariffs into simple indices inevitably involves a large number of assumptions and these can significantly alter the relative rankings of countries. Further, higher prices in one country may reflect differences in cost or demand conditions and need not imply a lack of competition. CRA recently conducted a benchmarking exercise in relation to mobile termination charges in Australia. The study adjusted for the impact of key differences in supply conditions between countries, resulting in significantly different conclusions to those of the regulator's simple benchmarking exercise.

A further element of the regulators' decision was a comparison of the accounting rates of return of the operators with the estimated cost of capital for a number of years. Profitability was not one of the factors listed in the Commission's Guidelines for Assessing SMP, although it has been incorporated into the analysis of various European regulators. A large economics literature concludes that profitability measures are too mis-

leading to be used as an indicator of market power, particularly in dynamic industries such as the mobile market. Profitability is difficult to measure, reflecting the need to address factors such as economic depreciation, intangibles, and estimating the cost of capital which in itself involves assumptions about highly uncertain parameters. Returns to some factors, such as superior management, are not readily quantifiable. Further, investments in mobile networks will typically involve years of losses followed by a period of returns above the cost of capital, so profitability needs to be assessed over the lifetime of investment. Even if such adjustments are attempted, returns above the cost of capital need not reflect market power. Mobile investments are associated with significant *ex ante* commercial and technological risks, so that high returns when market conditions have turned out favourably may simply compensate for the risk of significant losses if the investment had not succeeded.

### Restrictions on service provider access

A fourth key element of the regulators' market analyses was the observation that mobile virtual network operators (MVNOs) and other independent service providers have not been able to establish themselves (in the case of Ireland) or have only a limited presence (in the case of France). This was seen as part of the case for collective dominance. For instance, ComReg argues that:

“...if, for example O2 and Vodafone were not tacitly colluding, then there would be a strong incentive to offer access to an entity capable of delivering higher profits to the access provider. ComReg believes that this incentive mechanism was a key factor behind the emergence of MVNOs in the United Kingdom, where the national regulator authority Ofcom has not found any mobile network operator to have SMP in the mobile access and call origination market.”<sup>17</sup>

A substantial economics literature has developed around the competition and efficiency issues associated with vertical integration decisions, and the behaviour of vertically integrated monopolies in particular.<sup>18</sup> This lit-

erature shows that monopoly network operators will generally have the incentive to sell airtime to independent service providers where the service providers are able to expand the demand for, and the profits from, the network's services. Critically, it only makes sense to have service providers enter if they are able to carry out the downstream activities more efficiently than the incumbents. In this regard, it should be noted that vertically integrated operators may enjoy significant efficiencies compared with independent service providers, such as being able to improve the incentives for, and coordination of, new product development and deployment. We note that there are many operators, such as Orange in the UK, that do not have SMP and yet do not use independent service providers.

If there are potential service providers in Ireland and France that have not been able to secure access, it may be that they have not been able to pay a commercial price for access given their relative (in)efficiency in carrying out the downstream activities (or that they have not been prepared to pay a sufficient price in the expectation that the regulator may subsequently determine a lower price). ComReg states that Vodafone and O2 have “highly developed distribution and sales networks”, and argues that this is one of the factors that reinforces their market power.<sup>19</sup> This observation does not suggest that there are particular inefficiencies at the service provider level that will disadvantage consumers. Further, there is a distinct tension between an assumption that a firm is maintaining a position of dominance through highly developed sales networks and a subsequent assumption that opening further sales channels would be highly profitable for the operators.

Both regulators point to the existence of independent service providers in other European markets to suggest that the absence of established service providers in their own national markets implies a lack of competition. ComReg's review of the international experience includes an interesting observation: “analysis of a number of European markets has established that the newest and/or smallest MNOs have been most inclined to offer indirect access on their network, however this is not always the case”.<sup>20</sup> This observation does not support the view that an established operator in a compet-

itive market will necessarily find it profitable to offer service provider access. Rather, ComReg's observation indicates that service providers generally add more value exactly where they would be expected to do so – for smaller players needing to build market position – and beyond this they will be employed by major operators only where they can genuinely add value. Indeed, it may be that the additional capacity created by 3G will lead the major operators to turn to MVNOs to help utilise that capacity. If so, regulation would not bring any additional benefits but may result in significant costs - an issue we consider in the next section.

The economics literature does identify a number of circumstances in which monopolies may prefer to deny access even when providing access would improve overall efficiency. It is beyond the scope of this paper to fully test whether these circumstances are likely to be relevant to the Irish and French mobile markets, although we do not believe there are any obvious grounds for concern. Nonetheless, a detailed analysis that is based on the economics literature should be at the core of any regulatory decision on whether to mandate network access. The Irish and French decisions seem instead to reflect a simple presumption that a denial of access must be anti-competitive and warrant intervention.

### **Access regulation – a sensible solution?**

In this section, we briefly assess the impact on consumers of imposing regulated access on the mobile networks. In short, we believe the proposed regulation carries significant risks to efficiency and investment without providing any substantial gains in competition. Indeed, access regulation may even harm the development of the smaller operators.

Debates about regulated access have a long history in telecoms and have traditionally focused on access to the local loops of the fixed incumbents. Generally, access regulation has gained acceptance where there are demonstrable competitive gains in combination with limited risk of deterring investment or harming efficiency. For instance, in relation to local loops, the incumbents' investment is largely sunk and, at least until recently, there was little prospect of new entrants investing in rival local access networks. Imposing access

regulation in mobile markets with multiple networks is a very different proposition.

Based on its finding of collective dominance, ComReg is proposing a number of regulatory obligations comprising: (i) network access on request; (ii) non-discrimination; (iii) cost-oriented prices; (iv) accounting separation; and (v) cost accounting systems. ART proposes a general obligation to respond to reasonable requests for access. While ART does not propose price regulation or non-discrimination obligations at this stage, if an independent service provider does not accept the price offered by a mobile operator then it seems inevitable that ART will be called in to determine a price. Thus, ART's expressed desire to see the development of independent service providers can also be expected to indirectly, or down-the-track directly, affect the prices that operators receive for use of their networks.

Given that access regulation inevitably involves price regulation or at least the threat of price regulation, it is important to understand its implications.<sup>21</sup> In principle, a price can be found that (just) leaves the network operator no worse off from providing access compared with selling the service itself in the downstream market. However, even where a regulator seeks to set a wholesale price that is based on the retail price minus the costs that the operator avoids in selling at the wholesale level, there may be large margins for error in estimating the avoided costs, with the risk that operators will be worse off in practice. ComReg specifically raises the prospect that it may go even further by imposing an access price based on a bottom-up cost model in the future. Such models, based on hypothetical networks, are prone to significant error and carry the risk of prices being imposed that are below the actual costs of an operator. Even the possibility that a below-cost price may be determined in the future can deter investment.

Access regulation thus risks dramatically altering the incentives for further investment in building networks. Why should a potential operator undertake a risky investment in rolling out a new network when it can obtain regulated access to an existing network? How attractive is new entry at the network level if the

investors will be allowed, at best, to recover their cost of capital and, if the investment is not successful, to bear large losses. These should be significant concerns for the regulators, given that comparable countries are supporting higher numbers of network operators and additional operators can increase competition at all levels of the value chain.

Access regulation may have another damaging effect on the development of competition. We have noted that voluntary commercial agreements reached by independent service providers have tended to be with the operators that have been later entrants. In particular, new mobile operators have turned to independent service providers to grow their subscriber bases and utilise the capacity on their networks. For instance, T-Mobile (UK) successfully used Virgin's existing brand to grow its market share. Later entrants have also been prepared to offer relatively low wholesale prices to the independent service providers given the presence of significant spare capacity on their networks.

Regulated access to the large operators' networks can break this relationship. This can occur even if the independent service provider reaches agreements with multiple networks. Why would a customer of an independent service provider use the services of a new entrant, when the service provider is receiving access at regulated prices to the more established networks of the major players? The established network operators can often offer greater coverage, higher quality and a greater range of service features, as well as a stronger brand to be marketed alongside the service provider's brand. Thus regulated access may perversely harm the entrants in their ability to grow market share and become stronger competitors to the established operators. This can act to strengthen the ability of the large operators to engage in coordination and thus perpetuate the need for regulation.

Regulated access can also give rise to more insidious effects. As we have noted, the economics literature identifies significant efficiencies that can be generated by vertical integration. Access regulation threatens these efficiencies. For instance, developing and deploying a new product may add value at both the wholesale and

retail level. However, this investment may not take place if an operator is not able to fully capture the returns from the investment. Access regulation may also deter innovative deals between an operator and a service provider for fear that any terms made available to one service provider would immediately need to be made available to all. Access regulation may prevent operators from recovering their common costs through higher contributions from business customers and lower contributions from pre-pay customers, instead leading to more uniform prices at a potential loss to efficiency and harm to pre-pay customers. Finally, access regulation may force operators to make capacity available even when the operator has genuine capacity problems, if the operator cannot convince the regulator of the risk to quality of service.

In summary, the economics literature gives much reason for caution before deciding that access regulation should be imposed. Interventions to reduce prices and profits of established players may well benefit consumers in the short run, but such interventions can carry large longer term costs in terms of less investment, less innovation, less infrastructure-based competition and lower overall efficiency. The Irish and French proposals are for access regulation on multiple network operators, a situation far removed from the enduring economic bottlenecks or essential facilities arguments that normally justify access regulation. Rather than moving towards deregulation, collective dominance is threatening the European telecoms market with a new wave of pervasive and self-perpetuating regulation.

1 See ComReg, *Market Analysis - Wholesale Mobile Access and Call Origination*, document 04/118, December 2004 and L'Autorité de régulation des télécommunications (ART), *Analyse des marchés de gros de l'accès et du départ d'appel sur les réseaux publics mobiles*, February 2005. The Irish finding has recently been endorsed by the European Commission and so may set a precedent for other market reviews across Europe. ComReg proceeded to formally designate Vodafone and O2 as having Significant Market Power on 22 February 2005.

2 There are some exceptions to this general rule, such as the requirement for all operators to negotiate interconnection with one another.

3 Speech by Mario Monti, Conference on the Economics of Antitrust in the Telecommunications Sector, Brussels 16 September 2002.

4 Framework Directive, paragraph 26.

5 While this condition is sometimes characterised as the need for a credible punishment mechanism, this need not imply a deliberate policy on the part of other firms to punish the firm that has been detected as deviating. For instance, if one firm deviates by cutting its price to seek to gain market share, the other firms may now find that it is in their interest to also cut prices to protect their market share.

6 Under a forward-looking approach required for ex-ante regulation, whether or not there is evidence of past coordination can be informative but only if relevant market characteristics are not expected to change significantly in the near future.

7 Ofcom, *Strategic Telecoms Review – Phase 2 Consultation Document*, 18 November 2004, para. 1.42.

8 OECD, *Roundtable on Oligopoly*, (DAFFE/CLP(99)25), 19 October 1999, p.8. The report elaborates on the problems of price regulation on p. 19.

9 The head of the UK Office of Fair Trading has suggested that there is a case for different thresholds to be applied for intervention in cases involving regulation of conduct (abuse of a dominant position) compared with intervention in relation to mergers. See John Vickers, “How does the prohibition of abuse of dominance fit with the rest of competition policy?”, a paper for the eighth annual EU competition law and policy workshop at the European University Institute, Florence, 6 June 2003.

10 ART’s decision also covered separate markets in France’s overseas territories, although we do not consider that analysis in this paper.

11 Ovum, *EuroView Daily Comment*, 2 March 2005.

12 ComReg, *Market Analysis - Wholesale Mobile Access and Call Origination*, Document 04/118, 9 December 2004, Paragraph 4.138.

13 L’Autorité de régulation des telecommunications (ART), *Analyse des marchés de gros de l’accès et du départ d’appel sur les réseaux publics mobiles*, February 2005, page 66.

14 [http://www.ofcom.org.uk/static/archive/oftel/publications/market\\_info/mobile1003.pdf](http://www.ofcom.org.uk/static/archive/oftel/publications/market_info/mobile1003.pdf)

15 Operators seek to recover the cost of acquiring and retaining their subscribers from the bundle of revenues from calls and other services earned over the life of the subscribers. As termination revenues are reduced, operators need to recover a greater proportion of costs from services sold to their own subscribers. The UK Competition Commission concluded that “most of the reductions in revenue from termination charges being capped will be recovered from the retail market” (*Calls to mobiles report*, 2003, para. 2.563).

16 In pre-pay, the index showed Ireland to have the fourth lowest prices in Europe.

17 ComReg, *Market Analysis - Wholesale Mobile Access and Call Origination*, document 04/118, 9 December 2004, paragraph 4.69.

18 Useful overviews of this literature are provided in J. Farrell and P. Weiser, “Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age”, *Harvard Journal of Law and Technology*, Vol. 17, No. 1, Fall 2003 and P. Rey, P. Seabright and J. Tirole, “The Activities Of A Monopoly Firm In Adjacent Competitive Markets: Economic Consequences And Implications For Competition Policy”, *IDEI Working Paper*, 21 September 2001.

19 ComReg, *Market Analysis - Wholesale Mobile Access and Call Origination*, document 04/118, 9 December 2004, paragraph 1.16.

20 ComReg, *Market Analysis - Wholesale Mobile Access and Call Origination*, document 04/118, 9 December 2004, paragraph 7.22.

21 If there is the potential for firms to call upon the regulator to determine access prices, then firms can be expected to negotiate based on their expectation of the regulator’s view of where prices should be. Should a regulatory decision be expected to involve a significant delay, then the access seeker may be prepared to pay a premium so as to achieve a quicker commercial agreement.

**This article was written by Paul Reynolds and Paul Muysert, Charles River Associates.**

**For further information on CRA's European Competition Practice please contact:**

**Dr Mike Walker tel: +44 (0)20 7664 3726, email: [MWalker@crai.co.uk](mailto:MWalker@crai.co.uk)**

**Nils von Hinten-Reed tel: +44 (0)20 7664 3741, email: [nvhr@crai.co.uk](mailto:nvhr@crai.co.uk)**

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