

Geographically Segmented Regulation: Lessons from the FCC for European Communications Markets

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Abstract: Since telecommunications markets were liberalized, competition has not developed in a geographically uniform manner, and the introduction of NGA networks is likely to exacerbate these geographic differences. Geographic variations in competition have caused European regulators to consider the use of geographically segmented regulation. Unfortunately, geographically segmented regulation is complicated and requires compromises and judgment calls. As a result, there is a danger that inconsistent implementation of geographically segmented regulation by NRAs may threaten the Single European market. This paper examines the experience of the Federal Communications Commission (FCC) in defining relevant geographic markets and in adopting geographically segmented regulation. The paper begins by sketching the statutory and regulatory framework within which the FCC must operate. It then describes the FCC's approach to defining relevant geographic markets for purposes of merger review and dominance determinations. The paper then examines how the Commission has attempted to adjust regulation for geographic differences in the level of competition, both in rulemaking proceedings and in response to petitions seeking forbearance from regulation. Drawing on the U.S. experience, the paper concludes with some observations on the difficulties and tradeoffs that European NRAs are likely to face in implementing geographically segmented regulation.

Key words: Next Generation Networks, geographic markets, geographic remedies, market definition.

In recent years, as competition has developed in telecommunications markets, particularly local markets, incumbent operators worldwide have begun to call for deregulation where they face competition. This has caused regulators to consider introducing geographically segmented regulation, where the level of regulation varies with the level of competition in different geographic areas.¹ OECD (2010), ERG (2008). In general,

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¹ There has also been an increased academic interest in these issues. See, e.g., AMENDOLA & PUPILLO, 2008; BRENNAN, 2006; STYLIANOU, 2011; PATTAL & ZENG, 2009; HOU, 2009.

regulators have adopted one of two approaches to geographically segmented regulation. Under one approach, the regulator will evaluate whether there exist separate relevant geographic markets, and if so, determine whether regulation should be modified or lifted in the relevant geographic markets that are most competitive. Under the alternative approach, regulators may adopt regulations that vary among geographic areas, without formally defining separate relevant geographic markets.

The European Commission's *Recommendation on Regulated Access Next Generation Networks* (EC, 2010a) attempts to set out "a common approach for promoting the consistent implementation of remedies with regard to NGAs." Among other things, it directs NRAs to examine geographical differences in competition and consider whether sub-national geographic markers or geographically differentiated remedies are warranted. As discussed below, implementing these recommendations will be complicated, and, because of the need for compromises and judgment calls, may result in differences in implementation by NRAs. This raises the risk of significant variations in regulatory approach, however, which could threaten the Single European market.

The purpose of this paper is to summarize the FCC's experience in adopting geographically segmented regulation and to draw some lessons from that experience that may be helpful to European regulators. The paper is organized as follows. The first section provides some historical background on how the FCC regulates incumbent telephone companies. The second section describes the Commission's approach to defining relevant product and geographic markets for purposes of evaluating mergers and assessing market power. The third section discusses how the FCC has used its rulemaking authority to introduce geographically segmented regulation. The fourth section examines how the Commission has analyzed petitions from incumbent telephone companies seeking forbearance from regulatory obligations. The fifth section attempts to draw some lessons from the FCC's experience for electronic communications markets in the European Community, particularly as Europe moves to deploy Next Generation Access (NGA) networks.

■ Background

When, in the 1970s, competition first began to develop in long-distance telecommunications services, the FCC responded in two different ways. First, it streamlined the regulation of new entrants that lacked market power. Second, it imposed new regulation on incumbent telephone companies that might have an incentive to discriminate against these new competitors (STOCKDALE, 2003). The FCC, in making these regulatory changes, did not, however, adopt a strict competition law approach to identifying firms with market power.

In the *Competitive Carrier Proceeding*, the FCC, in a series of orders,² distinguished two types of carriers -- those with market power (dominant carriers) and those without market power (nondominant carriers). The Commission did not define relevant product or geographic markets or perform a rigorous market analysis, however. Rather, in a relatively short and perfunctory discussion that did not address relevant markets in detail, it classified certain classes of carriers as dominant. These dominant carriers included AT&T and its 23 affiliated local operating companies, which the Commission found to dominate "the telephone market by any method of classification" and because they had "bottleneck control" over more than 80% of the nation's telephone lines. In addition, the Commission found independent local telephone companies to be dominant because they had bottleneck control over essential local telephone lines. (FCC, 1980). With a couple of exceptions, it classified all other carriers as nondominant, and it freed them from rate regulation among other things (STOCKDALE, 2003). Thus, apparently for reasons of administrative convenience, the Commission chose to classify classes of carriers as dominant or nondominant, rather than defining relevant product and geographic markets and then assessing whether specific firms participating in those markets possessed market power.

At the same time that it was streamlining the regulation of nondominant carriers, the FCC and the Department of Justice were imposing new regulations on dominant carriers, particularly AT&T and its local operating companies. These regulations were intended to prevent these dominant carriers from leveraging their market power in the local exchange and exchange access markets into competitive markets such as those for long-

² See FCC, 2010, summarizing the history of the *Competitive Carrier Proceeding* and providing citations.

distance services. For example, the Department of Justice, after suing AT&T for attempted monopolization of long distance services, entered into a consent decree, pursuant to which AT&T, among other things, agreed to divest its 23 local Bell Operating Companies. The Bell Operating Companies were prohibited from offering inter-LATA services (basically interstate long-distance services) and were subject to equal access obligations, intended to ensure that they did not favor AT&T over competing long-distance companies (HUBER *et al.*, 1999; NUECHTERLEIN & WEISER, 2005).

Similarly, in the *Computer Inquiries*, the FCC, in a series of orders released during the 1970s and 1980s, imposed various competitive safeguards, including both structural safeguards (i.e., separate subsidiary requirements) and nonstructural safeguards (including nondiscrimination requirements) on various types of telephone companies, particularly local telephone companies. These safeguards were intended to prevent them from leveraging their market power in telecommunications markets into emerging computer and data processing markets (NUECHTERLEIN & WEISER, 2005; STOCKDALE, 2003).

In 1996, Congress passed the *Telecommunications Act of 1996 (1996 Act)*, which, among other things, sought to open up local telecommunications markets to competition. The *1996 Act* imposed new obligations on different categories of carriers. The Act required all telecommunications carriers to "interconnect either directly or indirectly" with other carriers, while it required, in addition, that all local exchange carriers (LECs), among other things, provide number portability, afford access to poles, ducts, conduits and rights of way, and establish "reciprocal compensation arrangements for the transport and termination" of telecommunications traffic. Incumbent local exchange carriers (i.e., the traditional local telephone monopolists) were singled out for the most stringent obligations, based on their presumed market power in local telephone markets and control of bottleneck facilities. Thus, incumbent LECs, among other things, were required to provide to requesting carriers: (1) physical interconnection at any technically feasible point in the incumbent's network, (2) "nondiscriminatory access to network elements on an unbundled basis," (3) "physical collocation of equipment necessary for interconnection or access to network elements," and (4) all services that they offer to subscribers that are not carriers "for resale at wholesale rates." (47 U.S.C. § 251; NUECHTERLEIN & WEISER, 2005).

Thus, unlike the European Community's *Framework Directive*, in the United States, the FCC is not required to define relevant product and

geographic markets and perform a market power analysis before it can impose *ex ante* regulations. Rather, under both the *Competitive Carrier* paradigm and the *1996 Act*, obligations were imposed on various types of carriers, particularly incumbent local telephone companies, based on their presumed market power.

■ The FCC's approach to geographic market definition

Since the mid-1990s, the FCC, following the *1992 Department of Justice/Federal Trade Commission Horizontal Merger Guidelines*, has employed the "hypothetical monopolist test" in defining relevant product and geographic markets, whether for purposes of merger review or assessing market power (U.S.D.O.J./F.T.C., 1992). Under the hypothetical monopolist test, a relevant geographic market is defined as a "region such that a hypothetical monopolist that was the only present or future producer of the relevant product at locations in that region would profitably impose at least a 'small but significant and nontransitory' increase in price, holding constant the terms of sale of all products produced elsewhere." Applying this test to telecommunications, the FCC reasoned that the relevant geographic market is the location of each customer, "because a customer is unlikely to physically move its location in response to a small, but significant and nontransitory increase in the price of a communications service." (FCC, 2005a). For reasons of "administrative practicality," however, the Commission then aggregates customers "facing similar competitive choices."³

³ The FCC generally has declined to expand the scope of the relevant geographic market due to geographically uniform pricing because it found that: (1) despite ostensible uniform pricing, carriers use various localized promotions to meet local competition; and (2) assuming that there was a uniform price, the profit-maximizing uniform price cost margin is inversely related to the weighted average own-price elasticities of demand, so local competitive conditions do in fact affect the uniform price (FCC, 2002).

■ Geographically segmented regulation through rulemaking proceedings

Since 1980, the FCC has recognized the need to revisit its regulations as competitive conditions change. Telecommunications competition in the United States has not developed uniformly, however. Rather, competitors in general have first entered (and competition has developed most robustly) in areas with high population density and concentrations of business customers. Accordingly, the FCC has turned to geographically segmented regulation as a means to adjust regulation to varying competitive conditions.

As discussed below, where the FCC has implemented geographically segmented regulation through rulemaking proceedings, it has not adopted a strict competition law approach under which it rigorously defines relevant product and geographic markets and then assesses whether competition had developed to such an extent that the regulated firms no longer possessed significant market power (SMP). Instead of using relevant geographic markets, the FCC has adopted disaggregated geographic areas that attempt to balance variations in competition against administrative convenience. And, instead of trying to SMP directly, it has adopted proxies that attempt to measure the extent of actual and potential entry and investment by competitors.

The Commission first introduced geographically segmented regulation in 1999 when it implemented pricing flexibility for interstate special access services (FCC, 1999). Special access services are dedicated point-to-point transmission services that can be used to carry both voice and data services and that are purchased by other wireline carriers, wireless carriers (for backhaul) and large business customers. In other countries such services are often referred to as leased lines. By the late 1990s, incumbent LECs were complaining that existing regulations unfairly prevented them from competing against new entrants in the provision of these special access services.

Recognizing that "it should allow incumbent LECs progressively greater pricing flexibility as they face increasing competition," the Commission adopted rules allowing incumbent LECs to make "competitive showings" to demonstrate that "market conditions in particular areas warrant[ed] the relief." The Commission offered the incumbents two levels of relief. If the incumbents satisfied the requirements for the Phase I relief, they were allowed to offer "contract tariffs" and volume and term discounts, but their

tariffed rates remained subject to price caps. If they satisfied the more stringent, Phase II triggers, they were freed from price-cap regulation.⁴

With respect to the geographic area for relief, the Commission stated that it "sought to define these geographic areas narrowly enough so that the competitive conditions within each area are reasonably similar, yet broadly enough to be administratively workable," and it chose the Metropolitan Statistical Area as the appropriate area for relief.⁵ The Commission considered, but rejected, using wirecenters – a narrower area – on the ground that the increased level of detail did not justify "the increased expenses and administrative burdens associated with these proposals." As to the necessary competitive showing, the Commission concluded that "irreversible, or 'sunk,' investment in facilities used to provide competitive services is the appropriate standard for determining when pricing flexibility is warranted." The Commission selected competitive collocations in incumbent wire centers as a reasonable proxy for competitive sunk investment, stating that such a proxy "reasonably balances our two goals: (1) having a clear picture of competitive conditions in the MSA [...] and (2) adopting an easily verifiable, bright-line test to avoid excessive administrative burdens."

In response to complaints from competitors and large business customers, the FCC, in 2005, issued a Notice of Proposed Rulemaking, which, among other things, sought comment on whether the MSA was an appropriate area for granting relief and whether the collocation proxies the Commission adopted accurately reflected competitive conditions (FCC, 2005b). In 2009, the Commission released a Public Notice seeking comment on whether it should employ a market power framework in evaluating special access pricing flexibility (FCC, 2009b).

A second example of geographically segmented regulation by the FCC concerns unbundled loops and transport facilities. As previously noted, Section 251(c)(3) of the *Telecommunications Act* of 1996 requires incumbent LECs to provide unbundled network elements to requesting

⁴ For both Phase I and Phase II relief, the Commission set a higher trigger for relief for special access circuits running from the central office to the customer's premises compared with interoffice special access circuits.

⁵ The Metropolitan Statistical Area (MSA), as defined by the Office of Management and Budget, is a core area "associated with at least one urbanized area that has a population of at least 50,000. The MSA comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county or counties as measured through commuting." (Office of Management and Budget, 2010).

competitive carriers. The statute further directs the Commission to determine which network elements should be unbundled, and, in making that determination, to consider "at a minimum" whether failure to provide access would "impair" a requesting carrier's ability to provide service. The Commission's efforts to interpret this "impairment standard" and to identify the elements that should be unbundled generated a series of appeals by incumbent LECs and subsequent reversals and remands by the courts.⁶

In response to a court remand, the FCC, in 2005, attempted to adopt an administratively feasible approach for assessing impairment on a geographically granular basis for dedicated transport and high-capacity loops (FCC, 2005c). With respect to dedicated interoffice transport (i.e., dedicated transmission facilities connecting incumbent LEC wire-centers), the Commission noted that "competitive fiber facilities are located primarily in locations with dense business traffic demands," and it adopted "proxies" to "identify where revenue opportunities are or could be sufficient to justify competitive LEC deployment." The Commission adopted a route-specific approach to measuring impairment, where a route is defined as a connection between two incumbent LEC wirecenters or switches. The Commission then adopted two proxies for actual or potential competitive fiber deployment, using (1) the number of fiber based collocations in each incumbent LEC wire center pair, and (2) the number of business lines served by each incumbent LEC wire center. The Commission took a similar approach to determining impairment with respect to high-capacity loops, using the same proxies for actual and potential competitive investment, but changing the relevant geographic market to be the incumbent LEC wirecenter.

It should be noted that, in both these rulemakings, the Commission did not find that the relevant area for geographically segmented regulation was a relevant geographic market in the antitrust sense. Nor did it find that satisfaction of the proxy triggers necessarily implied that the incumbent LEC lacked market power in the relevant geographic area. Rather, in both cases, the Commission chose geographic areas that it believed adequately balanced administrative convenience and variations in competitive conditions. Furthermore, in both cases, the Commission adopted triggers, which it believed were reasonable proxies for actual or potential facilities deployment by competitors.

⁶ The history of the Commission's efforts to interpret the statute's unbundling requirements is summarized in FCC, 2005c.

■ Geographically segmented regulation through forbearance

The 1996 Act authorizes the Commission to forbear from enforcing statutory provisions or Commission rules if it finds that: (1) enforcement is not necessary to ensure that charges or practices are "just and reasonable and not unjustly or unreasonably discriminatory;" (2) enforcement is not necessary "for the protection of consumers;" and (3) forbearance is "consistent with the public interest." Any telecommunications carrier may file a petition seeking forbearance from specified provisions or rules, but the burden of proof is on the petitioner (FCC, 2009).

In its first major forbearance decision, the Commission forbore from requiring non-dominant carriers to file tariffs for interstate, domestic, long-distance services (FCC, 1996). Building upon the competitive findings of earlier proceedings that employed a traditional market power analysis, the Commission found that neither AT&T nor other long-distance carriers possessed individual market power,⁷ and it concluded that the forbearance criteria had been met.

In subsequent decisions, however, the Commission, as it later acknowledged, sometimes adopted "an abbreviated [market] analysis" that departed from a rigorous competitive analysis (FCC, 2010). For example, in 2005, in the *Qwest (Omaha) Forbearance Order*, the Commission addressed a request by Qwest seeking forbearance from network unbundling and dominant carrier regulation in the Omaha Nebraska MSA (FCC, 2005d). In granting the request in part, the Commission did not carefully define the relevant product and geographic markets or perform a detailed structural analysis, but rather relied primarily on competition from the incumbent cable provider, Cox. The two main factors that the Commission focused on were: (1) Qwest's retail market share for mass market telephone subscribers; and (2) the geographic reach of Cox's network (it granted relief in wirecenters where Cox's networks reached more than a specified percentage of households).

Similarly, in 2007, the Commission addressed petitions by AT&T and BellSouth, seeking forbearance from Title II and *Competitive Inquiry* obligations for certain broadband services, including certain packet-switched

⁷ These factors included high churn rates among long-distance carriers, the supply elasticity of the market, and an analysis of AT&T's cost structure, size and resources (FCC, 1997).

and non-TDM-based optical services (FCC, 2007b)⁸. Finding it appropriate "to consider marketplace conditions for these services broadly," the Commission did not define relevant product markets, but rather considered the services that the petitioners identified in their petitions. It also did not examine specific geographic markets. Rather, emphasizing the dynamic and changing nature of this market, the Commission explained that there were a number of competing providers of these types of services; purchasers were generally sophisticated businesses; and the large revenues these customers generate provide a "significant incentive" for providers to build their own facilities. In light of these findings, among others, the Commission found that the forbearance criteria were satisfied.

In 2010, the Commission, in the *Qwest (Phoenix) Order*, appeared to change its approach to evaluating forbearance petitions (FCC, 2010). In *Qwest (Phoenix)*, Qwest, as it had in *Qwest (Omaha)*, sought forbearance from certain unbundling requirements and dominant carrier rules. The Commission, in light of two appellate court remands of earlier Commission forbearance decisions,⁹ reviewed its prior forbearance decisions and concluded that it should return to a more rigorous market power framework that underlay its earliest forbearance decisions.¹⁰

In *Qwest (Phoenix)*, the Commission determined that neither part of the two-part test established in *Qwest (Omaha)* – a retail mass market share test and a competitive facilities coverage test – "adequately assesses the presence or absence of market power." More specifically, the Commission found that its earlier "nearly exclusive emphasis on Qwest's share of the mass market retail voice marketplace – without meaningful consideration of Qwest's market shares in other relevant retail and wholesale markets, as well as other factors pertinent to whether Qwest, individually or jointly, possess market power in those markets – is not supported by current economic theory." With respect to the second part of the *Qwest (Omaha)* test – competitive facilities coverage by the incumbent cable company – the Commission found that this "focus inappropriately assumed that a duopoly always constitutes effective competition and is necessarily sufficient to ensure just, reasonable, and nondiscriminatory rates and practices, and to

⁸ See also FCC, 2008.

⁹ See *Verizon Tel. Cos. v. FCC*, 570 F.3d 294 (D.C. Cir. 2009); *Qwest Corp. v. FCC*, No. 08-1257 (D.C. Cir. Aug.5, 2009).

¹⁰ The Commission noted, however, that "a different analysis may apply when the Commission addresses advanced services, like broadband services."

protect consumers." The Commission further found that the predictive judgments it had made in *Qwest (Omaha)* had not been borne out or were not supported by economic theory. For example, the Commission found that, after granting forbearance relief in Omaha, Qwest had not offered any new wholesale alternatives to unbundled network elements, and that the only competitor of significant size, besides Cox, had largely exited the market.

Given these findings, the Commission concluded that it would "return to a traditional market power framework." Reviewing the evidence in the record, the Commission, found that Qwest had failed to demonstrate that it lacked market power in the relevant product and geographic markets covered by the petition, and it denied the petition. This decision is currently on appeal.

As the above discussion indicates, the Commission clearly has not been entirely consistent in its approach to evaluating forbearance petitions. At times, it has attempted to employ a traditional market power analysis in evaluating forbearance requests, while at other times, apparently because of data limitations and a desire to simplify the analysis, it has adopted a more abbreviated analysis. These different approaches may be due, at least in part, to the fact that the Commission believes it appropriate to adopt a broader analysis when considering advanced services, including broadband services, where the market is relatively new and there is a need to create incentives for investment. Nevertheless, to the extent that the Commission's most recent decision signals a return to a more traditional analysis (at least with respect to certain forbearance requests), this will likely increase the burden on petitioners in demonstrating that the forbearance criteria have been met.

■ Application of the U.S. experience to the European Community

Although the issue of geographically segmented regulation had come up previously in various Member States within the European Community (EC, 2008a; 2008b; 2009), it gained greater prominence in 2010, when the European Commission issued its *Recommendation on Regulated Access to Next Generation Access Networks* (EC, 2010a). The Recommendation sought "to foster the development of a single market by enhancing legal certainty and promoting investment, competition and innovation in the market for broadband services in particular in the transition to next

generation access networks." (EC, 2010a). The accompanying Commission Staff Working Document notes that the Recommendation responds to the concern that "without general Commission guidance[...] regulatory approaches in the single market will diverge, creating distortions of competition through inconsistent regulation as well as uncertainty for investing undertakings," and that this "may create a barrier to the internal market." (EC, 2010b).

With respect to geographically segmented regulation, the Staff Working Document explains:

"[T]he economics of NGA deployment are likely to render network duplication more rather than less difficult in the immediate future. Already existing geographical divergences in competitive conditions within and between member States may thus become further pronounced. This effect could be exacerbated by the emerging strong – yet geographically uneven – presence of cable operators [...]. As a result, the transition to NGA may well imply heightened differences in the overall degree of infrastructure-based competition in the EU, and as such may create the need for NRAs to develop geographically more flexible regulatory responses to the problems posed by future positions of dominance." (EC, 2010b).

Accordingly, the Recommendation directs NRAs to "examine differences in conditions of completion in different geographic areas in order to determine whether the definition of sub-national geographic markets or the imposition of differentiated remedies are warranted."

A 2008 *Common Position on Geographic Aspects of Market Analysis (definition and remedies)* by the European Regulators Group, provides further insight as to how European NRAs might address the issue of geographically segmented regulation (ERG, 2008). First, in discussing the choice of an appropriate geographical unit, the ERG suggests that "the unit should be small enough so that competitive conditions are unlikely to vary significantly within the unit [...] but] also be large enough so that the burden on operators (with regard to data delivery) and the NRA (with regard to the analysis) is reasonable." Second, pointing to section 56 of the *SMP Guidelines*, the ERG discusses how NRAs should group geographic areas that are sufficiently homogeneous in competitive conditions, and it suggests that, in performing this grouping, regulators should consider such factors as barriers to entry, number of suppliers, distribution of market shares (and trends in market shares) and pricing and price differences. The ERG acknowledges, however, that "there is likely to be a continuum of competitive conditions" and that "it will usually be difficult to draw a clear line between

'more' and 'less' competitive areas." ¹¹ Finally, in discussing whether NRAs should define several geographic markets or instead adopt geographically differentiated remedies, the ERG seems to suggest that, if the market definition exercise suggests that there are separate relevant geographic markets, then the NRA should separately analyze those markets, and that it should consider geographically differentiated remedies only where the analysis suggests the relevant geographic market remains national.

While a thorough comparison between the U.S. experience and the approach proposed by the European Commission and the ERG is beyond the scope of this paper, it appears useful to make a few observations.

First, with respect to balancing precision *versus* burden, the U.S. experience suggests that in many cases, an easy balance cannot be achieved. In particular, it appears likely that, if one disaggregates to the level where competitive conditions are identical (or very similar), the geographical areas may be so small, at least for some relevant products, that it will be difficult to obtain all the necessary data to perform a rigorous market power analysis. In addition, because of the expense of deploying NGA networks, providers, including the incumbent carrier, are unlikely to build out these networks through the entire country. As a result, one should expect to see variations in technology and competitive conditions in different geographic areas, with numerous small, relevant geographic markets. It appears likely therefore that compromises likely will need to be made, which will introduce the possibility of errors.

Second, given the variations in competitive conditions that are likely to be present in the underlying geographic units, the lack of bright line criteria for segregating more competitive from less competitive areas and the likely lack of data, it appears likely that NRAs, for purposes of administrative feasibility, will aggregate geographic areas. But these aggregated geographic areas are likely to include significant variations in competition. More importantly, given the likely data problems and the necessity for judgment calls, it

¹¹ This line-drawing problem may also apply within a single relevant geographic market, at least as the EC has defined it. Instead of relying on the hypothetical monopolist test, the EC defined a relevant geographic market as an area "in which the conditions of competition are similar or sufficiently homogeneous and which can be distinguished from neighboring areas in which the prevailing conditions of competition are appreciably different." (EC, 2002). This ambiguous definition thus requires NRAs to engage in line-drawing and to make judgment calls in determining which areas are "sufficiently homogeneous" and will likely lead to different interpretations among NRAs.

appears likely that determinations about homogeneity are likely to vary significantly from NRA to NRA.

Third, with respect to the choice between defining geographically segmented markets and imposing geographically differentiated remedies, if the experience of the U.S. is any guide, it would appear that in most situations, NRAs, from an economic perspective, should find that there exist separate relevant geographic markets with respect to many relevant product markets. This, in turn, suggests that the NRAs, if they follow the Recommendation, will be required to adopt a rigorous competition approach to defining relevant product markets and then assessing market power before they can begin deregulating. While such an approach is certainly correct analytically and appears to be required under the Framework Directive, it raises questions about the potential burdens that will be imposed on both regulators and firms in implementing this approach. And, given the ERGs and EC's relative lack of guidance concerning how NRAs might aggregate relevant geographic markets, one should expect significant differences in how markets are aggregated.

If, on the other hand, NRAs, in an effort to simplify their task, decide to adopt geographically differentiated remedies without defining the relevant geographic markets or assessing SMP, then the Common Position and the Commission Recommendation provide even less guidance. Accordingly, there may be even greater variations in regulatory treatment among the Member States. As the Commission Working Document notes, these varying approaches to defining geographic markets may undermine the goal of a single market.

Finally, the potential variation in regulatory approaches to geographic segmentation among the NRAs may be exacerbated when it comes to remedies. As Professor Cave notes, the Framework Directive identifies a number of objectives that the NRA should pursue, but does not specify how those objectives should be weighted in determining remedies (CAVE, 2007; CAVE & CORKERY, 2009). Thus, not only may NRAs differ in how they analyze geographic differences in competition, but, where NRAs identify carriers with SMP, they may differ in the remedies they impose.

■ Summary and conclusions

In the United States and most other countries, it is now generally accepted that competition in telecommunications markets should be encouraged and that regulation should be lifted or reduced as competition renders regulation unnecessary. Unfortunately, competition tends not to develop uniformly once introduced. Rather most countries have seen competitors initially enter low-cost urban areas and target higher-revenue business customers. This has led to a recognition among regulators that they may need to move away from nationally uniform regulation. Moreover, the need for geographically segmented regulation is increased as firms deploy NGA networks, both in order to maintain incentives for investment and because the introduction of NGAs is likely to increase geographic differences in the level of competition.

The difficulty with geographically segmented regulation is that it is much more complex than uniform national regulation. One analytically defensible approach would be to employ a market power framework, where the regulator defines separate relevant geographic markets. The difficulty with this approach is that it is complicated and data intensive. Defining the relevant product markets is likely to require extensive data on consumer demand and cross-elasticities of demand among services, while defining relevant geographic markets may result in extremely narrow geographic areas (FCC, 2005a). Once the relevant product and geographic markets have been defined, still more data would be required to evaluate market shares, trends in market shares, and entry conditions, among other relevant factors, and in many cases such data may not be available at the appropriate level of geographic disaggregation.¹²

For these reasons, among others, the FCC at times has adopted alternative, simpler approaches to geographically segmented regulation. It has employed geographic areas for which relevant data has been available, such as MSAs or wirecenters, even though those areas are likely to be larger than the relevant geographic markets generated using the hypothetical monopolist test. And, instead of doing a full structural analysis as one might under a traditional market power analysis, it has used proxies to estimate the extent of competitive investment and entry and potential

¹² For detailed discussions of methodologies for defining relevant product and geographic markets, see for example STUMPF, 2003; COATE & FISCHER, 2007.

entry. In doing so, it has attempted to balance administrative simplicity against a more disaggregated and rigorous analysis.

While such simpler approaches are less burdensome and, in many cases, more feasible given existing data, they require the regulator to consider and balance four potential types of errors. First, if one defines the geographic areas too broadly, one might encounter significant variations in the level of competition within a geographic area. Second, to the extent one relies on proxies as a substitute for a full market analysis, there is a possibility that the proxy may not accurately reflect the level of competition in all areas. Third, there is the risk that one may deregulate prematurely when the regulated firm still possesses SMP. This could adversely affect the development of competition. Finally, it is also possible that use of such a simpler approach may result in a failure to deregulate even where the regulated firm no longer possesses SMP. This also could adversely affect competition by limiting the ability of the regulated firm to respond to competition and by limiting its incentives to invest in new infrastructure or new services.

As NRAs attempt to implement geographically segmented regulation, they will face the same challenges and tradeoffs as the FCC. And, they are likely differ in the way they make the necessary tradeoffs discussed above. This creates a danger that the regulatory policies of NRAs to Next Generation Access networks may vary significantly, which could threaten the goal of a single European market and might require intervention from the Commission. Accordingly, additional guidance from the Commission, both on market definition and remedies, would be useful.

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