

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In re )  
 )  
2000 Biennial Regulatory Review )  
Spectrum Aggregation Limits ) WT Docket No. 01-14  
For Commercial Mobile Radio Services )

**EX PARTE DECLARATION OF PETER CRAMTON**

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**INTRODUCTION**

1. I have been asked by Leap Wireless to critique the proposed alternative to the spectrum cap rule—namely, case-by-case review—from an information economics perspective. The spectrum cap is the best rule for promoting competition in wireless services. Oversight by

the FCC is required to assure that there is not excessive concentration in any markets. Without oversight there is a tendency for the dominant operator to acquire excessive spectrum, since acquiring more spectrum serves to weaken existing competitors and foreclose new entry, making the market more profitable for the dominant operator. In particular, the spectrum cap has two critical advantages over case-by-case review. *First*, the spectrum cap creates a bright-line standard, which enables the low cost resolution of the vast majority of cases. *Second*, in the few cases where acquiring spectrum beyond the cap is procompetitive, it puts the burden on the acquirer to demonstrate why a waiver to the cap is desirable.

#### SUMMARY OF CONCLUSIONS

2. In Part I of this declaration, I provide a critique of a case-by-case review of wireless mergers. Because the spectrum cap mandates that no firm can amass more than 45 MHz of spectrum in one license area, an applicant who proposes a merger that would exceed the cap must prove why its merger is an exception to the rule. By changing the default rule, removal of the spectrum cap would shift the burden of information production from the applicant and toward the FCC. Unfortunately, the most efficient producer of information on merger efficiencies is the merger applicant. A case-by-case review of wireless mergers would result in too many anticompetitive mergers being accepted, and would unduly burden the Commission staff. In addition, I demonstrate that case-by-case reviews of mergers in similar industries have performed poorly.

3. In Part II, I provide a defense of the current regulatory regime. *First*, the spectrum cap places the burden of information production on the most efficient producer—namely, the applicant. Hence, the spectrum cap along with the waiver rule conserves Commission resources and provides a proper screen of merger applicants. *Second*, the spectrum cap protects

opportunities for entrants in the secondary market. *Third*, the spectrum cap preserves the integrity of secondary market transactions. *Fourth*, the spectrum cap undermines the ability of incumbent carriers to warehouse spectrum.

#### **I. A CRITIQUE OF A CASE-BY-CASE REVIEW OF WIRELESS ACQUISITIONS**

4. Acquiring spectrum beyond the cap may in certain circumstances be welfare enhancing, because of the efficiencies it creates. In other cases, such an acquisition would reduce welfare.<sup>1</sup> The problem for the FCC is to design a rule that will accept, as often as possible, welfare-enhancing acquisitions and reject, as often as possible, welfare-diminishing ones. The above formulation admits to making two types of errors, which generate different social costs. Denying a welfare-enhancing acquisition is a “Type 1” error, while accepting a welfare-diminishing acquisition is a “Type 2” error. Once the regulator has established the relevant social costs of each type of error, those costs can be used as relative weights in a complex optimization problem. The optimal rule minimizes the expected value of the weighted-costs of the errors plus the costs of implementing that rule.

5. A common example stems from the criminal law. As a society we have determined that the costs of imprisoning an innocent man are greater than the costs of letting a guilty man go free. We recognize that whatever rule we impose, however, will produce some errors. We therefore have established a criminal justice system that is expected to minimize false convictions, even though we recognize that it allows relatively more criminals to escape justice. A similar trade-off must be made in any enforcement scheme: the rulemaker must understand that any process will produce some errors, and that some errors are more costly than others. The

rulemaker therefore should establish a system designed to minimize the overall weighted-error costs.

6. In addition to the relative cost of Type 1 and Type 2 errors, the rulemaker should consider the relative likelihood that those errors will occur. Again to draw on the example from criminal justice, we recognize that a jury often will be outraged by a heinous crime, and may be inclined to convict whatever man stands accused. Recognizing that this may lead to a system that is otherwise relatively more prone to false convictions, we therefore compensate in the rules that govern the decisional scheme—placing a high burden of proof on the government, for example, and excluding from consideration certain kinds of inflammatory evidence.

7. The spectrum cap serves similar purposes by recognizing the relative societal costs of the two types of errors, and the systemic biases inherent in the process, and incorporating them into a well-tailored scheme. The merit of such an information-based approach to designing regulatory policy is well established.<sup>2</sup> For example, Professors Paul Joskow of Harvard University and Alvin Klevorick of Yale University designed a two-tiered approach to address claims of predatory pricing:

Thus, a claim of monopolization through predatory pricing could be pursued only in market situations in which the structural characteristics suggest that there is a reasonable probability that monopoly power has been or could be sustained by the use of price reductions. The concern about incurring substantial false positive error costs, by labeling as predatory, pricing behavior that is not predatory, would be reduced since instances of alleged predation in which such costs were expected to be greatest would be eliminated by the initial “structural” analysis. Only those situations in which the costs of false negative errors were expected to be high and

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1. We are unaware of any evidence that wireless carriers could achieve efficiencies at spectrum levels between 45 and 60 MHz.

2. See, e.g., Paul L. Joskow & Alvin K. Klevorick, *A Framework for Analyzing Predatory Policy*, 89 YALE L. J. 213, 223 (1979) (“A false positive or Type 1 error results when the standard being applied to a particular case labels as predatory behavior that is not, in fact, predatory.”).

the costs of false positive errors low would make it cross the threshold and into the second tier.<sup>3</sup>

Conditional on moving through the first stage, the standard that a firm subject to second-tier analysis would have to satisfy would be more rigorous, including a detailed analysis of the defendant's pricing in relation to costs. In the following sections, I demonstrate why a case-by-case review of merger applications would not achieve the Commission's objective.

**A. A Case-by-Case Review Will Accept Too Many Merger Applications That Are Anticompetitive**

8. A major impediment to minimizing the error costs is the inability of the regulator to distinguish *ex ante* procompetitive applications from anticompetitive ones. Because the parties to the transaction possess the best information as to whether a transaction is pro- or anticompetitive, there is a large informational asymmetry between the acquirer and the regulator. It is reasonable to assume that each acquirer has an incentive to overstate the potential efficiencies of the acquisition. Under this assumption, the regulator cannot distinguish easily between the legitimate efficiency claims and illegitimate ones.

9. The FCC's problem is no different from the problems faced by insurance firms (each applicant claims he is healthy) or employers (each applicant claims he is productive). Solutions to these related problems, which were recently celebrated by the Nobel Prize committee,<sup>4</sup> can shed some potential solutions to the FCC's problem. The optimal screening rule would place the burden of information production on the parties that can produce such information at the lowest cost—in this case, the merger applicant.

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3. *Id.* at 244.

4. Jon E. Hilsenrath, *Three Americans Win Nobel for Economics For Challenging Theory on Efficient Markets*, WALL ST. J., Oct. 11, 2001. Michael Spence of Stanford University demonstrated that employers often rely on the educational background of job hunters as an imperfect signal of how productive they might be as workers.

10. Like the insurance company and the employer in the above examples, it is in the interest of the regulator to find criteria that allow it to divide the population of applicants into subgroups to attract the “procompetitive types” and discourage the “anticompetitive types” from even applying.<sup>5</sup> To use a crude (yet classic) example of adverse selection, if an insurance firm locates its office on the first floor in a building with no elevators, then all applicants—smokers and non-smokers—can visit with ease. If instead the insurance firm locates on the third floor, then applicants that reach the office (and are not gasping for air) reveal themselves to be non-smokers. Hence, the visit to the office becomes a valuable screening tool for the insurer. Similarly, the FCC would like to rely on some aspect of the merger applications process to screen out anticompetitive mergers. If all merger applicants can reach the final stage of the application process with the same degree of effort, then completion of the application loses all informational content. As I demonstrate below, because the burden of proof (and its associated costs) would be incurred by the FCC, the case-by-case review would not achieve the desired separation among merger applications.

11. The economics of the application process are straightforward. A firm will apply for a wireless acquisition at the FCC if it anticipates that the efficiencies from the acquisition plus any gains from anticompetitive behavior (weighted by the probability of approval) outweigh the application costs. To induce only the procompetitive types to apply, the application process should impose differential costs on merger applicants—that is, anticompetitive types should incur prohibitive costs while procompetitive types should incur reasonable costs. It is reasonable to assume that it is less costly to produce evidence of efficiencies when those efficiencies

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5. *See, e.g.*, JEAN-JACQUES LAFFONT, *THE ECONOMICS OF UNCERTAINTY AND INFORMATION* 133 (MIT Press 5th ed. 1989).

actually exist for the simple reason that is easier to demonstrate the truth than to demonstrate a lie.<sup>6</sup>

12. With a spectrum cap in place, any wireless merger or acquisition that allows a single firm to amass more than 45 MHz of spectrum in a single license area is presumed to be anticompetitive. The burden of proving otherwise is placed on the merger applicant. Wireless mergers or acquisitions that allow firms to accumulate less than 45 MHz of spectrum in a single license area, however, are presumed to be procompetitive. The burden of proving otherwise is placed on the government. If the spectrum cap were removed, the burden of proof for *all* wireless mergers—those that would allow a single firm to aggregate more or less than 45 MHz of spectrum in a single license area—would be placed on the government.

13. The critical effect of this shift in the burden of proof is that merger applicants would incur fewer costs (relative to the status quo) when applying for approval of license transfers in excess of 45 MHz of spectrum in a single license area. Because the costs would be largely incurred by the regulator, anticompetitive and procompetitive mergers would be equally likely to submit an application. In the language of information economics, a “pooling equilibrium” would likely emerge—that is, all types of merger applications would be pooled together. Under a case-by-case review, there is a strong likelihood that many of the anticompetitive mergers would be approved. Because the act of applying for a merger would lose most of its informational content, the Commission would be challenged to distinguish the anticompetitive submissions from the procompetitive ones. As a result, the probability of accepting anticompetitive mergers would be higher than the probability of acceptance if a proper

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6. *See, e.g.*, THOMAS C. SCHELLING, *THE STRATEGY OF CONFLICT* (Harvard University Press 1960).

screening mechanism were in place. Hence, a case-by-case review produces too many Type 2 errors—that is, it allows too many anticompetitive mergers to occur.

**B. By Inducing All Types of Potential Mergers to Apply, a Case-by-Case Review Will Strain the Resources of Commission Staff**

14. Evaluating cases is extremely difficult for the FCC because it must rely primarily on information provided by the parties to the transaction. The agency quickly becomes swamped with cases, and is forced to look carefully at only a few of the most problematic cases. With the vast majority of the cases slipping through the review, still more acquisitions are proposed, making it even more difficult for the agency to effectively review cases. Elimination of the spectrum cap will likely lead to inadequate or unsuccessful review of cases. The result will be a loss of competition, higher prices, and less innovation. The harm to consumers of wireless services will be significant.

**C. Case-by-Case Reviews of Mergers in the Wholesale Electricity Industry Has Created Structural Problems and Weak Competition**

15. Case-by-case review is an appropriate response to antitrust concerns in industries where it is difficult to foreclose entry. In most industries, increased concentration tends to raise the incentives for entry, as industry profits rise. This self-correcting feature greatly reduces the possibility of excessive concentration. Unfortunately, because spectrum is an essential input into wireless communication and is in fixed supply, foreclosing entry is relatively easy. The dominant operators simply buy the spectrum as it becomes available in auctions or secondary markets. This ability to foreclose entry is what makes excessive concentration a real risk in the market for wireless services.

16. The experience with case-by-case review in recently deregulated industries should raise serious concerns about its ability to promote, or even maintain, competition. For example, many wholesale electricity markets in the United States currently suffer from excessive

concentration. As part of the restructuring process, utilities were often required to divest their generating assets. These divestitures were typically full-fleet sales in which a single company bought all of the utility's generating assets. The result was excessive concentration in numerous electricity markets, despite case-by-case review by multiple government agencies (including the Federal Energy Regulatory Commission and the Department of Justice). As a result of this concentration, several markets have experienced market power problems. The consequences have been especially dire in California, where a true market for electricity has been effectively eliminated. In all markets, elaborate rules for monitoring and mitigating market power are in place. Reliance on these obtrusive rules would not be necessary, if structural problems were avoided in initial divestitures. Case-by-case review was ineffective at preventing the full-fleet divestiture sales that led to excessive concentration.

17. The FERC and DOJ could not easily demonstrate that, with electricity restructuring, the full fleet divestitures would have undesirable consequences. In particular, it was difficult for the FERC and DOJ to understand the consequences of these acquisitions in newly created markets. Likewise it will be difficult for the FCC and DOJ to anticipate consequences of spectrum concentration in the rapidly changing markets for wireless communications. For example, in the years ahead, mobile wireless hardware will become sufficiently flexible to allow short-term secondary markets for bandwidth. The development of such markets, which could greatly improve spectrum efficiency, will be undermined by excessive concentration of broadband spectrum.

18. I do not mean to condemn case-by-case review in all industries. I believe that it is appropriate in the vast majority of industries where foreclosing entry is difficult or impossible. In those cases, it is reasonable to presume that the acquisition is procompetitive, and to place the

burden on the government to show otherwise. However, it must be recognized that placing the burden on the government necessarily will result in a significant number of Type 2 errors, in which anticompetitive acquisitions are allowed. In wireless communication, there is an essential input in fixed supply, which dominant operators can use to foreclose entry. Under such circumstances, it is appropriate for the government to set limits on the quantity of the essential input any one party can amass.

19. Under either case-by-case review or the spectrum cap regime, both types of errors will likely occur. The FCC should be less concerned with Type 1 errors (rejecting a procompetitive acquisition), however, for two reasons. First, as the preceding paragraphs demonstrate and as I discuss in my previous submissions in this docket, Type 1 errors impose greater costs on society than do Type 2 errors. Second, the informational analysis set forth above demonstrates that under any regime, Type 1 errors are relatively unlikely to occur: since the incentives and information are such that dominant operators will likely be successful in convincing the FCC or DOJ that a procompetitive acquisition is indeed procompetitive.

## **II. A DEFENSE OF THE SPECTRUM CAP AND WAIVER RULE**

20. In the following sections, I briefly review some of the arguments I made in defense of the cap, and introduce a new justification that takes advantage of the information-based framework explained in the previous section.

### **A. The Spectrum Cap Imposes Differential Costs on Merger Applicants Depending on the Validity of Their Efficiency Claims**

21. The effect of a spectrum cap with a waiver rule is to place, for those mergers that would allow a single firm to amass more than 45 MHz of spectrum in a single license area, the burden of proof on the acquiring party. Under a spectrum cap-waiver regime, the probability of

denying a welfare-enhancing merger (the probability of committing a Type 1 error) is low because procompetitive types are induced to seek a waiver. Moreover, conditional upon the proper completion of the waiver process, the probability of its acceptance will be high.

22. Because the waiver rule imposes differential costs on those firms that actually conform to the waiver process, the current regime serves to minimize the costs of a Type 1 error. As mentioned earlier, the incentives and information are such that dominant operators will likely be successful in convincing the FCC or DOJ that a procompetitive acquisition is indeed procompetitive. Hence, under the current regime, procompetitive mergers will seldom be denied. Likewise, the spectrum cap-waiver rule rarely produces Type 2 errors. Because low-efficiency mergers that would aggregate spectrum in excess of the spectrum cap are discouraged from applying, the FCC will not likely be given the opportunity to accept such waivers. Hence, under the current regime, anticompetitive mergers will seldom be accepted.

23. It is possible to test that hypothesis that the current regime has the desired screening effect. According to Drs. Gertner and Shampine, *at least one* national carrier will hold 40 MHz or more of spectrum in 32 of the top 50 MSAs.<sup>7</sup> If the application process were costless, one would expect a significant fraction of those 32 firm-spectrum pairs to have applied for waiver of the spectrum cap. Remarkably, from the implementation of the spectrum cap in 1994 through October 2001, only a handful of applicants (I estimate the number to be less than ten) have actually applied for a waiver of the spectrum cap. This result suggests that the current regulatory regime, by placing the burden of proof on the applicant, creates the desired screening effect.

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7. Declaration of Robert H. Gertner and Allan L. Shampine, 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, WT Dkt. No. 01-14, on behalf of Verizon Wireless (filed on Apr. 13, 2001).

24. Moreover, the spectrum cap-waiver rule is an ideal complement to the existing screening process used by the DOJ. Whereas the DOJ process prevents mergers that reduce actual competition among competitors in the same license area, the spectrum cap prevents mergers that would reduce competition between an actual competitor and a potential competitor. The bright-line rule resolves the vast majority of cases at little cost. In instances where acquiring spectrum beyond the cap is procompetitive, the rule allows the acquisition after the party demonstrates that it is procompetitive. Without a spectrum cap, the FCC would be required to investigate each case and then demonstrate that the acquisition would be anticompetitive in order to prevent it. Shifting the burden to the FCC would both increase the frequency and cost of investigation. The cost of investigating a case is higher, since the acquiring firm (not the FCC) is in the best position to demonstrate whether an acquisition is procompetitive.

**B. The Spectrum Cap Protects Opportunities for Entrants in the Secondary Market**

25. The spectrum cap preserves opportunities for entrants such as Leap in the acquisition of spectrum in secondary markets, and consumers in Leap's territories are the prime beneficiaries of those transactions. Moreover, the spectrum cap leads to greater choice in *service plans* for every geographic area by limiting the amount of spectrum any traditional wireless carrier can aggregate. Wireless consumers benefit when the set of wireless choices expands. Moreover, as wireless products become more differentiated, any attempt by incumbent wireless carriers to coordinate on wireless prices is undermined.<sup>8</sup> For example, AT&T Wireless announced in October 2001 that it would terminate its fixed wireless offerings.<sup>9</sup> Although Leap

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8. The Department of Justice identifies "the extent of firm and product heterogeneity" as a key factor in determining the anticompetitive effects of a merger. Department of Justice and Federal Trade Commission Horizontal Merger Guidelines 1992, at §2.1.

9. Yukari Iwatani, *AT&T Wireless to Quit Fixed Wireless*, REUTERS BUSINESS NEWS, Oct. 23, 2001. Downloaded at [http://dailynews.yahoo.com/h/nm/20011023/bs/telecoms\\_attwireless\\_earns\\_dc\\_3.html](http://dailynews.yahoo.com/h/nm/20011023/bs/telecoms_attwireless_earns_dc_3.html).

does not provide fixed wireless service *per se*, Leap's fixed pricing plan for local service is the closest offering to the local incumbents fixed wireline services. Without the spectrum cap, innovative carriers such as Leap would not have the opportunity to bring new services to customers. Because it is easier to raise prices collectively in markets with little product differentiation, symmetric competitors, and unlikely entry, the high concentration of spectrum holdings likely induces incumbent operators to offer homogenous services. Elimination of the spectrum cap would only accentuate that tendency.

**C. The Spectrum Cap Preserves the Integrity of Secondary Market Transactions**

26. Uncertainty about a potential buyer's eligibility to acquire spectrum reduces the efficiency of the secondary market for spectrum. As in any auction, bids in a secondary market for spectrum must be binding commitments until they are topped—that is, for a secondary market to function efficiently, it is undesirable for bids to be made conditional on regulatory approval. Stated differently, at every point in a secondary-market sale, it is helpful for the bidders and seller to know what is allowed and what is not. Only a spectrum cap can provide this immediate certainty.

**D. The Spectrum Cap Undermines the Ability of Incumbent Carriers to Warehouse Spectrum**

27. Incumbent carriers can acquire spectrum for pro-competitive and anti-competitive reasons. Pro-competitive reasons for acquiring spectrum include the desire to use it immediately, or the option value of using that spectrum if and when future demand requires it. An anti-competitive reason for acquiring spectrum is to realize the incremental profit by denying entry of a new carrier in the license area.

28. Because that incremental profit derived from foreclosing competition is shared across all incumbent carriers in that license area, the gains from warehousing for anti-

competitive reasons would be shared across carriers in proportion to their share of subscribers in that region. Hence, an incumbent carrier with only 10 percent of the subscribers in the license area would be less willing to engage in warehousing for anti-competitive reasons than would an incumbent with 25 percent of the subscribers in the license area. But a carrier with a significant share of the market might stand to gain sufficient rents to offset and overshadow its opportunity cost from holding the fallow spectrum. In fact, such strategic considerations may have motivated some bidding behavior in Auction #35.<sup>10</sup> Because incumbent carriers are limited in their ability to warehouse spectrum by the spectrum cap, removal of the spectrum cap would only exacerbate this problem.

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I certify that the forgoing is true and correct, to the best of my knowledge, information, and belief.

Executed at Washington, D.C. on October 29, 2001.

  
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10. See, e.g., Steve Labaton, *Big Companies Prove Winners in Airwave Bids*, N.Y. TIMES, Jan. 28, 2001, at A1 (“But if you look at the long-term strategic value of having a lot of spectrum in New York, that’s a different thing. If they have the money to do it, it may be the right move as a longer-term investment,” quoting Eric Kintz, a partner at Roland Berger). See also Mark Wigfield, *FCC Auction of Wireless Licenses Raises a Record \$17 Billion So Far*, WALL ST. J., Jan. 25, 2001, at B5 (“Indeed, Verizon’s aggressive stance apparently drove most of the competition out of the New York bidding, including Cingular Wireless, the joint venture of SBC Communications Inc. and BellSouth Corp.”)