

The spectrum cap seeks to achieve three basic purposes: (1) to prevent carriers from acquiring excessive amounts of spectrum; (2) to promote innovation and diversity by making licenses relatively more available to new entrants; and (3) to encourage the efficient use of the nation's scarce spectrum resources. Competition that exists in the CMRS marketplace cannot be relied upon to achieve these ends.

First, CMRS competition cannot be relied upon to prevent carriers from acquiring excessive amounts of spectrum. Because the supply of spectrum is limited, it is prone to cornering. Incumbent carriers – particularly those with large market shares – are incentivized to acquire and warehouse or “squat” on spectrum by using it in an inefficient manner, such as retaining analog equipment. As competition is thus foreclosed, the incumbent is able to reap monopoly rents. As Dr. Cramton states, “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.”⁸⁰

There is no indication that competition has lessened this tendency. In fact, competition may have exacerbated the tendency to acquire spectrum for the purpose of anticompetitive exclusion. This was illustrated by the behavior of certain incumbent carriers in Auction #35, for example as Verizon successfully excluded Cingular from the New York market by bidding over four billion dollars for 20 MHz of spectrum in one BTA.

Second, competition will not promote innovation and diversity by ensuring that relatively more spectrum remains available for new entrants. Incumbent carriers are incentivized to acquire and retain as much spectrum as they can. And because the anticipation of anticompetitive profits will often allow an incumbent to pay more for spectrum than a start-up,

⁸⁰ Cramton Rep. Dec. ¶ 47.

regulatory intervention is necessary to ensure that spectrum is made available to new entrants, rather than warehoused by incumbents.

Verizon's experts opine that, "[s]ince the majority of CMRS spectrum that is subject to the cap has already been auctioned, concerns about entrants being unable to obtain spectrum in auctions are now moot."⁸¹ But Verizon misses the point. The spectrum cap is at least as important to ensure spectrum availability in the secondary market as it is in auctions. Leap is again an important example: Leap acquired most of the licenses it now holds on the secondary markets, rather than at auction. And it continues to seek opportunities to expand its spectrum holdings through private acquisitions.

Third, current levels of competition are inadequate to ensure the optimum level of spectral efficiency. As previously discussed, carriers may find it more profitable to retain inefficient equipment and instead to invest in spectrum, so long as they are able to reap an anticompetitive profit from the competitive foreclosure that attends spectrum acquisitions. While competition might reach a level where the incremental gain to a single carrier from its competitive foreclosure could not outweigh the cost of retaining spectrum, it has not yet reached that point: The wireless marketplace remains highly concentrated, and the largest incumbents control the overwhelming majority of the market.⁸² Competition has not rendered the spectrum cap superfluous.

VI. THERE IS NO EVIDENCE THAT ANY HARM STEMS FROM THE CAP

The traditional foes of the spectrum cap have once again trotted out their tired old hobby horses. They are capacity constrained; they are prevented from realizing efficiencies of

⁸¹ Gertner and Shampine Dec. at 3.

⁸² For example, the two cellular incumbents retain 75 percent of the entire CMRS market. *Notice* ¶ 24.

scale; they are prevented from implementing “3G” services; they are prevented from receiving critical equity investments. Once again, there is not a shred of evidence to support this nonsense.

As Leap made plain in its initial comments, if any carrier is capacity constrained it is because it retains a grossly inefficient and often archaic network. By upgrading its network to the best equipment now commercially available (the equipment used by Leap):

- Verizon could almost double its network capacity,⁸³
- AT&T could more than triple its network capacity,⁸⁴ and
- Cingular might be able to realize a five-fold gain in its network capacity.⁸⁵

These carriers are not capacity constrained; they are just wasteful.

Nor is there any evidence that carriers are actually using what they are allowed under the cap – let alone using it efficiently. As Dr. Cramton points out, it seems unlikely in the extreme that these carriers, who have only recently acquired spectrum in amounts nearing the 45 MHz cap have actually built that spectrum out.⁸⁶ There is no evidence that any carrier is fully using 45 MHz of spectrum in any market.

Likewise in its initial comments Leap debunked the myth that “3G” services will require additional spectrum. Text-based applications, as it turns out, require substantially less spectrum than does voice telephony: the *monthly* usage of a typical frequent “wireless web” user requires the transfer of about the same number of bytes as a typical Cricket user requires for voice telephony in a *single day*.⁸⁷ And even the most data-intensive applications – high quality

⁸³ Kelley Dec. ¶ 29 (based on estimated 50 percent CDMA and 50 percent AMPS usage).

⁸⁴ Kelley Dec. ¶ 29 (based on estimated 70 percent TDMA and 30 percent AMPS usage).

⁸⁵ Kelley Dec. ¶ 29 (based on estimated 70 percent GSM and 30 percent AMPS usage).

⁸⁶ Cramton Rep. Dec. ¶ 30.

⁸⁷ Kelley Dec ¶ 34.

streaming video and audio – can be accommodated within the existing spectrum cap, as the very equipment that will allow these applications to be implemented will also provide the spectral efficiency necessary to accommodate them. Using one of the first 3G technologies expected to be commercially available later this year, 5 MHz of spectrum could accommodate high-bandwidth usage by over 70 percent of the population in a given area.⁸⁸

Leap has offered specific evidence showing that the conclusory arguments proffered by the large incumbents are not grounded in fact. And the spectrum cap opponents, as is their wont, offer more of the same: conclusions and allegations, but no evidence whatsoever. Likewise they allege that they are prevented by the spectrum cap from realizing “efficiencies of scale,” but provide no support for the theory – either that there are additional efficiencies to be realized, or that the cap prevents their realization.⁸⁹ Finally, the suggestion borders on the ludicrous that carriers such as AT&T, Verizon, and Cingular are insufficiently capitalized, or that they are prevented from raising capital by the spectrum cap.⁹⁰

VII. THE COMMISSION CANNOT JUSTIFY A DEPARTURE FROM ITS SETTLED POLICY

Since 1994, and most recently in 1999, the Commission has adopted and periodically explicitly reavowed the spectrum cap. As a legal matter, the Commission bears a heavy burden to demonstrate that this policy should now be reversed; a burden that on the current record it cannot sustain. But perhaps more importantly, as a policy matter the

⁸⁸ *Id.* ¶ 50.

⁸⁹ *See* Cramton Rep. Dec. ¶¶ 36-37.

⁹⁰ *See id.* To the extent that these carriers purport to raise concerns that other (smaller) companies are prevented access to equity investment by the spectrum cap, this is factually mistaken. The existence and capital structures of affiliates such as “Alaska Native Wireless” demonstrate that the spectrum cap is not a realistic bar to the creation and investment in such affiliates. And the Commission should note well that the hue and cry of small carriers’ access to capital comes not from those carriers but from the incumbent behemoths.

Commission should not abruptly change its rules in a way that rewards those who have ignored the Commission's plain mandate, and at the same time disrupts the settled expectations of parties like Leap who have structured their affairs in accordance with the rules.

A. The FCC Bears the Burden of Justifying Any Departure From its Precedent

Some of the spectrum cap opponents claim that Section 11 of the Communications Act "establishes a presumption that a rule is no longer necessary."⁹¹ This is incorrect. Section 11 does not disturb the basic scheme set forth by the Administrative Procedure Act: agency action, whether adopting or repealing a rule, must be justified by that agency. A validly enacted administrative regulation remains in force unless and until the Commission reaches a reasoned and judicially reviewable decision to repeal it pursuant to an identifiable statutory mandate.⁹²

It would have been simple for Congress to adopt the burden-shifting scheme advocated by Verizon. But Section 11 does *not* say that "all telecommunications regulations must be repealed unless they are shown to be still in the public interest." Instead, Section 11 simply requires the Commission to review its regulations to determine "whether [each] regulation is no longer necessary in the public interest as a result of meaningful competition."⁹³ It is difficult to find support for Verizon's burden-shifting interpretation in the text of the statute.

Nor does the structure of the statute or the circumstances of its passage lend any support to the opponents' interpretation. Rather, the 1996 Act provided mechanisms for the

⁹¹ See *e.g.*, Comments of Verizon Wireless at 5 (without citation to case law or statute).

⁹² See *Atchison, Topeka & Santa Fe Railway v. Wichita Board of Trade*, 412 U.S. 800, 808 (1972) ("Whatever the ground for the departure from prior norms ... it must be clearly set forth so that the reviewing court may understand the basis of the agency's action and so may judge the consistency of that action with the agency's mandate.")

⁹³ 47 U.S.C. § 161(a)(1). Furthermore, biennial review does not authorize a review of all regulations on a public interest analysis. Rather, as discussed above, biennial reviews call for the review or repeal of only those regulations whose *raison d'être* has been displaced by meaningful economic competition.

gradual introduction of competition into telecommunications services, and Congress intended the Commission gradually to eliminate unnecessary regulations as competition rendered them superfluous. Nowhere is there any indication that Congress intended the Commission to torch whole CFR parts and start from scratch. Nowhere is there any indication that Congress intended, sub silentio, to repeal the basic presumptions of the APA.⁹⁴

As a policy matter, the spectrum cap opponents' burden-shifting argument would be untenable in practice. If the biennial review really did require the Commission affirmatively to re-justify and, in effect, re-promulgate, every regulation every two years, the Commission would presumably be required to do so with a level of specificity such that a reviewing court would have enough evidence to uphold each such decision. Indeed, Verizon agrees, boldly arguing that "the Commission must develop a record of current facts . . . to supply the requisite basis for imposing regulation."⁹⁵

This process would cripple the Commission's ability to regulate. Staggering delays would ensue, as notice and comment rulemaking would be required to consider every telecommunications regulation the Commission had ever issued. And interested parties could bring suit under the APA as the Commission struggled to build a new record every two years. This result is not supported in the text of the Communications Act, and could not possibly be what Congress intended. The burden is on opponents of the spectrum cap to demonstrate why it should be modified.

⁹⁴ Cf., e.g., *American Federation of Gov't Employees v. Carmen*, 669 F.2d 815, 823 (D.C. Cir. 1981). Cf. also, e.g., *INS v. Cardoza-Fonseca*, 480 U.S. 421, 107 S.Ct. 1207, 1219, 94 L.Ed.2d 434 (1987) (noting the "compelling" principle of statutory construction "that Congress does not intend sub silentio to enact statutory language that it has earlier discarded in favor of other language").

⁹⁵ Verizon Comments at 7.

B. The proposed departure from Commission precedent is legally problematic

The courts "emphatically require[] that administrative agencies adhere to their own precedents or explain any deviations from them."⁹⁶ "Though the agency's discretion is unfettered at the outset," that discretion becomes constrained once it follows a given policy, and "an irrational departure from that policy" will be overturned upon review.⁹⁷

Because an agency has once determined that a particular course of action best fulfills its statutory mandate, it bears a heavy burden to demonstrate facts or circumstances that lead it to adopt a different course of action.⁹⁸ As the D.C. Circuit has reiterated numerous times, altering or reversing an existing policy requires an affirmative showing of the change in circumstances that justify a departure from prior policy: "[A]n agency acts arbitrarily and capriciously when it abruptly departs from a position it previously held without satisfactorily explaining its reason for doing so. Indeed, where an agency departs from established precedent without a reasoned explanation, its decision will be vacated as arbitrary and capricious."⁹⁹

The Commission, having many times previously determined that the spectrum cap best achieved its statutory mandate to avoid an excessive concentration of licenses, now must explain any change in its interpretation. Yet courts remain skeptical of such changes in interpretation: More than once, the Supreme Court has reiterated that "[a]n agency interpretation

⁹⁶ See, e.g., *Greyhound Corp. v. ICC*, 551 F.2d 414, 416 (D.C. Cir. 1977) (vacating an order of the ICC for failure to explain deviation from the agency's precedent).

⁹⁷ *INS v. Yueh-Shaio Yang*, 519 U.S. 26, 32 (1996).

⁹⁸ See *Atchison*, 412 U.S. 800 at 807 ("A settled course of behavior embodies the agency's informed judgment that, by pursuing that course, it will carry out the policies committed to it by Congress.").

⁹⁹ See *Wisconsin Valley Improvement v. FERC*, 236 F.3d 738 (D.C. Cir. 2001) (finding a sudden change in fee structures lacking a proper supporting explanation arbitrary and capricious) (internal quotations and citations omitted). See also *AT&T v. FCC*, 974 F.2d 1351, 1355 (D.C. Cir. 1992) (faulting the FCC for failing to explain why it "changed the original price cap rules" and concluding that the Commission's "Reconsideration Order is arbitrary and capricious for want of an adequate explanation").

of a relevant provision which conflicts with the agency's earlier interpretation is entitled to considerably less deference than a consistently held agency view."¹⁰⁰ The Commission bears a heavy burden to demonstrate that its prior determinations should now be set aside, and on the current record it cannot sustain that burden.

C. The Record in This Proceeding Can Not Support A Change in Commission Policy

The opponents of the spectrum cap have presented no new evidence that would justify a departure from the Commission's precedent. Levels of competition even in the largest markets remain "highly concentrated,"¹⁰¹ and there is no evidence that market forces in this context (*i.e.*, the existence of multiple firms with no possibility of new entry) likely to achieve the ends sought by the spectrum cap, and thus to obviate its existence. The spectrum cap opponents put forth economic analyses substantially similar to the analyses they have proffered before: expert economists testifying that the spectrum cap is too blunt, that antitrust review works better, that the Commission should not concern itself about the excessive concentration of licenses, and that market forces will prevent any anticompetitive conduct. But these economic analyses, while again arguing the policy decision made and upheld for years, fail to present any new facts that would justify a departure from the Commission's policy.

Likewise, there is no evidence that the spectrum cap causes any *socially relevant* detriment to the carriers who are forced to abide by it; that is, detriment other than that it may deny to them the anticompetitive profits they would prefer to see. The large incumbents continue to make their conclusory and unsupported allegations of capacity constraint and spectrum needs, but offer no evidence to support these allegations – no evidence beyond the

¹⁰⁰ *INS v. Cardoza-Fonseca*, 480 U.S. 421, 446 (1987) (quoting *Watt v. Alaska*, 451 U.S. 259, 273 (1981)).

¹⁰¹ See Hayes Dec. at 7.

same conclusory statements that were considered and rejected by the Commission in previous rulemaking proceedings.

D. As a Policy Matter, the FCC Should Not Favor Those Who Ignore Its Rules

An abrupt departure from the Commission's settled policy would upset the rational expectations of firms like Leap, who have structured their plans in part on the Commission's rules. Because it understood spectrum to be a scarce commodity, Leap has installed an ultra-efficient network that ensures that it is able to succeed with relatively little spectrum. And Leap developed a business plan that calls for further expansion into new markets, on the expectation that the spectrum cap would prevent incumbent carriers from securing all the spectrum for themselves. The Commission should not now penalize firms like Leap that have played by the rules, in the expectation that they would not be suddenly changed.

Nor should the Commission reward carriers who have ignored the rules, secure in the expectation that they would probably be able to get the rules changed. For as long as PCS licensees have existed, they have known about the spectrum cap. Some licensees, like Sprint PCS and Leap, chose to install networks composed entirely of all-digital, highly efficient CDMA equipment. Other licensees, like AT&T and Cingular, chose to install inefficient TDMA and GSM networks, and to retain outdated analog equipment and subscriber bases. Some carriers have chosen to use spectrum efficiently, some have chosen to squander it: if any carrier requires more than 45 MHz, that is because of the decisions it has made. On 30 MHz of spectrum, Leap's network could sustain subscribership (at more than 1,000 minutes per month) by every single human being residing within its signal. A carrier that is capacity constrained merely lies in the bed of its own making.

Perhaps the incumbents are wise to the ways of the Commission. Perhaps they understood many years ago that the Commission might change its rules if enough carriers

preferred not to follow them. But the Commission should not provide them the windfall they seek. The Commission should not reward their wanton inefficiency now by raising the spectrum cap.

VIII. CONCLUSION

It comes as no surprise that the entrenched incumbents would prefer the Commission to abdicate its role in preventing the excessive concentration of licenses. The same reason they oppose the cap is the same reason Leap favors it. By acquiring spectrum in excess of 45 MHz, the wireless behemoths could solidify their dominance, and prevent entry by innovative firms like Leap. Yet the well-documented results of Leap's entry (such as lower prices, more usage and higher penetration) demonstrate that the Commission should foster such innovative entry, not allow it to be squelched.

Leap has built the proverbial better mousetrap – and the mice will now do what they can to exclude it. The Commission should not allow this to happen. The FCC should retain the spectrum cap.

Respectfully Submitted,

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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)

REPLY DECLARATION OF PETER CRAMTON

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Conclusion

INTRODUCTION

1. I have been asked by Leap Wireless to respond to the economic comments filed on behalf of the Cellular Telecommunications & Internet Association (CTIA), Verizon Wireless, Cingular Wireless, and AT&T Wireless in opposition to the spectrum cap.¹ The Federal Communications Commission (Commission) instituted the spectrum cap to enhance competition and protect consumer welfare in the Commercial Mobile Radio Services (CMRS) market. In the absence of a spectrum cap, a wireless carrier could aggregate enough spectrum to foreclose entry by competitors. The very competition made possible by the spectrum cap is putting downward pressure on wireless prices and the associated margins of incumbent wireless carriers. To reverse those declines, certain incumbent carriers would like to consolidate and reduce competition—but the spectrum cap stands in their way. Hence, the spectrum cap has become “enemy number one” for those carriers.

1. Declaration of John Haring, Harry M. Shooshan III, & Kirsten M. Peterson on behalf of Cingular Wireless (filed Apr. 13, 2001) [hereinafter *Haring, Shooshan & Pehrsson Declaration*]; Declaration of Marius Schwartz and John Gale on behalf of the Cellular Telecommunications & Internet Association (filed Apr. 13, 2001) [hereinafter *Schwartz & Gale Declaration*]; Declaration of Economists Incorporated on behalf of AT&T Wireless Services (filed Apr. 13, 2001) [hereinafter *Economists Incorporated Declaration*]; Declaration of Robert H. Gertner and Allan L. Shampine on behalf of Verizon Wireless (filed Apr. 13, 2001) [hereinafter *Gertner & Shampine Declaration*].

SUMMARY OF CONCLUSIONS

2. In Part I of my declaration, I explain why consumer welfare cannot be protected if the spectrum cap is repealed. In particular, I demonstrate that absent the spectrum limitation, market forces might fail to encourage the trend toward lower wireless prices. I examine the three major arguments put forward by the opposing economists, and explain why those arguments are not supported in theory or by evidence.

3. *First*, contrary to the opinions of the spectrum cap opponents, market forces cannot be relied upon to protect wireless consumers. I explain why competition among *national* providers will not discipline the pricing of *local* plans, why mature markets are not insulated from monopolization, and why the CMRS market is different from other markets that are free from regulation. *Second*, antitrust enforcement cannot be relied upon to preserve competition in CMRS markets. The Department of Justice would not prevent a merger unless it reduced the number of actual carriers. *Third*, a static view of concentration based on spectrum holdings cannot be the basis for policy formulation. Even by the opponents' own measurement, the CMRS market is highly concentrated.

4. In Part II, I demonstrate why the spectrum cap does not impose significant costs on consumers. Contrary to the assertion of the opposing experts, the fact that some carriers have *purchased* 45MHz in a geographic area does not imply that those carriers are spectrum constrained—that is, it does not imply that those carriers are *using* 45 MHz of spectrum. Moreover, because popular wireless data applications use less spectrum than does voice communication, it is doubtful whether existing spectrum would be exhausted in the near future. Finally, I demonstrate why the maintenance of the spectrum cap will not discourage investment or innovation by incumbent wireless carriers.

5. In Part III, I point out that the opponents' experts ignore several of the potential benefits of maintaining the spectrum cap. *First*, the spectrum cap protects opportunities for entrants in the secondary market. *Second*, by clearing establishing the set of potential winners *ex ante*, the spectrum cap preserves the integrity of secondary market transactions. *Third*, the spectrum cap is the best available policy for achieving the diversity goals set forth in the Telecommunications Act. *Fourth*, the spectrum cap undermines the ability of incumbent carriers to warehouse spectrum.

I. CONSUMER WELFARE CANNOT BE PROTECTED IF THE SPECTRUM CAP IS REPEALED

6. For some incumbent carriers, too much competition can be a bad thing. To conceal their true motivation, the incumbent carriers and their economic experts have cloaked their arguments against the spectrum cap in the language of deregulation. For example, the opposing experts appeal to basic principles of economics to justify their clients' laissez faire approach to wireless regulation. Dr. John Haring, Harry Shooshan, and Dr. Kirsten Pehrsson, experts for Cingular Wireless, argue that a fundamental tenet of economics is that voluntary exchange is mutually beneficial to the trading parties.² No economist would dispute this claim. The purpose of the spectrum cap, however, is not to protect the incumbent carriers (the trading parties), but to protect the wireless consumer.

2. *Haring, Shooshan & Pehrsson Declaration, supra* note 1, at 1.

A. Absent the Spectrum Limitation, Market Forces Might Fail to Encourage the Trend Toward Lower Wireless Prices

1. Competition Among Nationwide Providers Will Not Discipline the Pricing of Local Plans

7. The inverse relationship between local prices and the number of local carriers is well documented. In the *Fifth Report*, the Commission estimates that the number of wireless carriers per basic trading area (BTA) increased from 2.2 to 4.5 from mid-1999 to mid-2000. During the same time period, the cellular telephone services component of the Consumer Price Index, which is the best available proxy for local wireless prices, decreased by 11.3 percent.³ Although other factors (for example, reductions in marginal costs brought about by technological advances) could have been at work, the major force behind the decline in local wireless prices was entry by new carriers at the local level.

8. The opposing experts recognize the decline in local wireless prices, but confuse the source of that decline. For example, Professor Marius Schwartz and Dr. John Gale, experts for the Cellular Telecommunications & Internet Association (CTIA), attribute the fall in *local* wireless prices to the increased number of *national* carriers.⁴ To compensate for the massive consolidation at the local level that will take place across the country when the spectrum cap is removed—a forgone conclusion across all interested parties⁵—Drs. Schwartz and Gale offer the

3. Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993 Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Fifth Report (released Aug. 18, 2000), at 22 [hereinafter *Fifth Report*].

4. *Schwartz & Gale Declaration*, *supra* note 1, at 2.

5. Drs. Gertner and Shampine, experts for Verizon Wireless, are the only economists to struggle (at least briefly) with this proposition before embracing the consensus opinion. They first argue that if carriers wanted to consolidate, then would have done so already: "Current carriers could consolidate to four carriers each holding 45 MHz. In fact, this has not happened." Later in their declaration, when it is convenient for a different argument, they admit the inevitable: "Over that three year period companies have steadily increased their spectrum holdings within markets and consolidated to create six national players and a variety of large regional players while prices have steadily fallen." *Gertner & Shampine Declaration*, *supra* note 1, at 8,15.

following (risky) insurance policy: the mere presence of a single *national* carrier would discipline the prices of *local* calling plans:

For example, most major local markets now have five or six significant competitors. And even in markets where the number of competitors is smaller, pricing is constrained by the presence of national providers that set uniform prices in all locations.⁶

Drs. Schwartz and Gale would have the Commission believe that consumers of local plans perceive local plans and national plans to be close substitutes. Hence, according to their logic, national plans should discipline the price of local plans. But national and local plans are *not* close substitutes because the type of customer who subscribes to a local plan—namely, those consumers who do not value (or cannot afford) the option to roam—is significantly different from the type of customer who subscribes to a national plan. For example, the typical Leap customer uses her wireless phone (for 1,000 minutes on average) as a substitute for a local landline connection.⁷ It is doubtful that the mere presence of a national carrier would discipline local prices.

9. In addition to producing lower prices for local plans, competition at the local level promotes a high quality of service for local plans. Much local competition involves non-price factors such as wider coverage areas and enhanced vertical features. For example, promotions for local plans are localized, and can be fine-tuned to address the competitive condition of the local market. If consolidation at the local level occurs when the cap is lifted, the remaining national carriers would have diminished incentives relative to a local carrier to maintain the quality of those local features.

6. *Schwartz & Gale Declaration, supra* note 1, at 10.

7. According to an internal survey, 61 percent of Leap's customers are using their wireless phone as their primary phone. See Declaration of Peter Cramton on Behalf of Leap Wireless (filed Apr. 13, 2001) at ¶ 20 [hereinafter *Cramton Declaration*].

10. Finally, it is important to recognize that there is a fundamental difference between providing a national coverage plan and offering wireless service in every local market nationwide. According to Drs. Gertner and Shampine, the presence of six national carriers “makes it highly unlikely that competition could be foreclosed in *any* area since it is highly unlikely that national carriers would willingly sell enough of their spectrum in an area as to be unable to offer voice service.”⁸ The opposing experts would have the Commission believe that every market in the United States is served by each of the six national carriers.⁹ But a carrier can provide a national service plan (through inter-carrier roaming agreements) yet not offer service in many local markets throughout the nation. If a carrier has a coverage gap in Chicago, for example, customers enrolled in that carrier’s national plan may be able to use their phones in Chicago, but residents of Chicago will not be able to purchase a plan (local or national) from that carrier. Hence, many local markets do not have the full complement of six nationwide carriers; that is more the exception than the rule.

11. In my April 13 declaration, I demonstrated that the entry of Leap Wireless in a local market raises consumer welfare by lowering prices of *local* plans.¹⁰ Contrary to the best wishes of spectrum cap opponents, the mere presence of a single national provider would not have the same price-disciplining effect at the local level as would Leap. After reviewing each of the declarations filed by opponents of the spectrum cap, I am not aware of *any* empirical or econometric analysis that demonstrates that local prices are disciplined by the prices of national

8. *Gertner & Shampine Declaration* at 3 (emphasis added).

9. *Id.* at 6. This assertion is directly refuted by the FCC’s own accounting of the number of carriers per BTA.

10. *Cramton Declaration*, *supra* note 7, at ¶ 23.

plans. Until such evidence is presented, the Commission should not consider the presence of a national carrier to be a substitute for the spectrum cap.¹¹

2. **Mature Markets Are Not Insulated from Monopolization**

12. In addition to the mere presence of national carriers in other geographic markets, the opposing experts argue that, even without the spectrum cap, competition would be preserved at the local level because CMRS markets are mature. For example, in April 2001 Drs. Schwartz and Gale argue on behalf of CTIA that CMRS markets are *mature*, and therefore deserve a hands-off regulatory approach:

The cap may have been justified at its inception, as a simple interim measure to prevent the two incumbent cellular licensees from foreclosing entrants by outbidding them for the newly auctioned spectrum. Today, the industry is very different. The transition from nascent entry is clearly over.¹²

Their argument should not satisfy the Commission for several reasons. *First*, the fundamental policy question is whether consolidation at the local level will increase the likelihood of a unilateral or coordinated price response by incumbent carriers at the local level. Maturity of the industry has little to do with this calculus, and if anything, could promote a more hospitable climate for price coordination among long-time rivals. According to Drs. Gertner and Shampine, experts for Verizon, pricing coordination is unlikely because of the “complexities of various pricing plans.”¹³ This comment is especially odd considering the *similarity* in pricing plans across national carriers. In particular, each national carrier requires a commitment on behalf of the customer of a certain number of minutes in return for a given price per minute, and all minutes are treated equally.¹⁴ If a consumer could not perform this (trivial) price comparison

11. Likewise, the repeal of the spectrum cap may diminish competition among national providers, as incumbents could prevent a rising national carrier from filling a critical hole in its footprint.

12. *Schwartz & Gale Declaration, supra* note 1, at 2.

13. *Gertner & Shampine Declaration, supra* note 1, at 3.

14. Bearing in mind the difference between peak, off-peak, and weekend minutes.

himself, he could always reference *Wireless Week's* semi-annual pricing survey available for free on the Internet.¹⁵ In summary, to the extent that the CMRS market is mature, the opportunities for pricing coordination are enhanced.

13. *Second*, because incumbents in all industries tirelessly rely on “stage of development” arguments at *all* stages of development, none of those arguments should be taken seriously. In March 2001, just one month prior to their spectrum cap declaration, Drs. Schwartz and Gale argued on behalf of the National Cable Television Association (NCTA)—incumbents in the multi-video programming distribution (MVPD) market—that the interactive television market is a *nascent* market, and therefore deserves a hands-off regulatory approach:

[H]ow can one design regulation to ensure nondiscriminatory access for ITV service providers when, as is true today, so little is known with confidence about the nature of these services and their access requirements.¹⁶

Drs. Schwartz and Gale should decide whether regulatory forbearance is justified in a nascent market or mature market—they cannot have it both ways. It is one thing to say that regulation is seldom justified. It is quite different to say that regulation is not justified due to a particular stage of development, and then apply that argument at *all* stages of development.

14. Setting aside these dueling policy prescriptions, CMRS markets are hardly mature relative to other regulated telecommunications industries such as local telephone service, long-distance service, or cable television. The very first broadband PCS auction (FCC PCS Auction #4) was completed in March 1995,¹⁷ just six years ago. A majority of the spectrum in the C and

15. According to the most recent price survey, in Washington D.C., as of March 2001, VoiceStream offered the lowest rate per minute for commitments of 60 and 250 minutes, AT&T Wireless the lowest for 100 minutes, and Sprint PCS the lowest for 500 minutes. Information downloaded at <http://www.wirelessweek.com/index.asp?layout=Research&ResearchParam=Air+Time+Pricing&verticalid=445&Industry=Washington+DC&industryid=1693>.

16. *Schwartz & Gale Declaration*, *supra* note 1, at 7.

17. Downloaded at FCC web site (<http://www.fcc.gov/wtb/auctions/>).

F blocks was re-auctioned as recently as January 2001,¹⁸ and will likely not be developed for at least one year. Moreover, according to the FCC's buildout reports,¹⁹ the vast majority of spectrum allocated in the D, E, and F blocks was not "on-line" as of April 2001. Hence, even if Drs. Schwartz and Gale stick with the first version of their theory—that regulation is *not* appropriate for a mature market—the wireless industry might not be as mature as they would have the Commission believe.²⁰

3. Unlike Most Products and Services, CMRS Is Unique Because an Essential Input in the Delivery of Wireless Service Has a Fixed Supply

15. Even if the presence of a national carrier and the maturity of the industry are insufficient, opponents of the spectrum cap argue, market forces in general can be relied upon to protect consumers. Drs. Schwartz and Gale ask rhetorically "whether there is anything so unique about the wireless industry today to warrant a departure from this standard antitrust treatment."²¹ They conclude that the market is not unique, and that if there was ever an argument to institute a spectrum cap to foster competition in the nascent CMRS industry, that argument is no longer valid.²²

16. Unfortunately, Drs. Schwartz and Gale overlook a major difference between the CMRS industry and other industries. In particular, CMRS markets are different because the supply of spectrum—an essential input in the delivery of wireless service—is fixed. Entry costs in the CMRS industry are not only high,²³ as in most industries that are prone to monopolization,

18. *Id.*

19. Buildout Schedule and Technology Report Chosen by D, E, and F Licensees (update Apr. 5, 2001) downloaded at <http://www.fcc.gov/wtb/pcs/>.

20. It is highly likely that undeveloped spectrum holdings will be traded in the secondary market. The spectrum cap is necessary to ensure that incumbent wireless carriers do not warehouse spectrum.

21. *Schwartz & Gale Declaration, supra* note 1, at 2.

22. *Id.*

23. The opposing experts acknowledge the significant entry barriers in the wireless industry. Drs. Gertner and Champagne suggest that, because fixed costs are so large in the wireless industry, an entrant that cannot achieve a

but *infinite* once all spectrum is allocated. Stated differently, entry barriers in CMRS markets are absolute because a necessary input is strictly limited in supply. As Sprint's expert Dr. John Hayes explains, "caution is appropriate because the market for mobile telephone services is unlike most other markets, including most other telecommunications services markets."²⁴

17. The very threat of potential competition—that is, entry by a new carrier—would tend to discipline the pricing of existing CMRS operators. Stated differently, in a contestable market, the threat of entry alone forces the incumbent firms to behave competitively. Allowing incumbents to acquire unused spectrum would eliminate the contestability of the CRMS market. Entry in CMRS is possible only if the FCC makes additional spectrum available *and* if an entrant acquires this newly available spectrum. Hence, incumbent carriers can effectively foreclose entry by warehousing spectrum. Because only the spectrum cap ensures entrants' ability to acquire spectrum, the Commission cannot expect market forces alone to protect wireless consumers to the same degree as the spectrum cap has done.

B. Antitrust Enforcement Cannot Be Relied Upon to Preserve Competition in CMRS Markets

18. Even if market forces cannot be counted on to protect consumers, opponents of the spectrum cap argue, antitrust enforcement has the flexibility to analyze mergers on a case-by-case basis. They correctly point out that the spectrum cap could potentially prevent some consolidations that would not be anticompetitive. In addition, the opposing experts suggest that

certain scale would be induced to exit the market. *Gertner & Shampine Declaration, supra* note 1, at 6 ("The subscribership increases improve the ability of market participants to cover their fixed costs and make it less likely that companies could be forced out of the market"). For an explanation of the relationship between high fixed costs and entry barriers, *see* Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, at n31 ("The minimum viable scale of an entry alternative will be relatively large when the fixed costs of entry are large, when the fixed costs of entry are largely sunk, when the marginal costs of production are high at low levels of output, and when a plant is underutilized for a long time because of delays in achieving market acceptance.") [hereinafter *Merger Guidelines*].

antitrust laws would (always) prevent mergers that are anticompetitive, and would (always) allow mergers that are procompetitive. For example, Drs. Schwartz and Gale explain that the antitrust laws would be sufficient to preserve competition in CMRS markets:

Repeal of the cap would hardly be a license to unfettered consolidations, because of antitrust review. The fact that competition is by now well established removes the original rationale for imposing the cap—to prevent foreclosure of new entrants

...
Once one concludes—as we do—that antitrust can be relied upon to prevent those consolidations that would be anticompetitive, that should settle the matter.²⁵

This line of reasoning is troubling for at least two reasons.

19. *First*, the antitrust authorities do not (always) act with precision. The DoJ is capable of allowing a merger that reduces competition, and preventing a merger that would have enhanced competition. The social cost of those regulatory errors in either direction can be significant. Although the spectrum cap is likely to err as well, it is better to err on the side of more competitors rather than less. Stated differently, the costs of too *few* competitors made possible by errors of the antitrust authorities (in terms of higher wireless prices for consumers) swamp the costs of too *many* competitors made possible by errors of the spectrum cap. Moreover, the costs of the spectrum cap errors are dubious—namely, attenuated incentives to innovate by carriers that are bumping up against the cap.

20. *Second*, as I explained in my April 13 declaration, although the DoJ may prevent mergers that reduce *actual* competition—that is, a merger that reduces the number of carriers that are actually offering service in a given geographic market—the DoJ will typically allow mergers that reduce *potential* competition—that is, a merger that reduces the number of licensees

24. John Hayes, CMRS HHIs From Customer Share Data: An Update, Charles River Associates (Apr. 2001) [hereinafter *Hayes Declaration*].

25. *Schwartz & Gale Declaration*, *supra* note 1, at 2-3.

or potential competitors in a given license area. Hence, it is erroneous to claim that the antitrust laws will protect consumers from wireless consolidation in *all* circumstances.

21. There are currently numerous broadband PCS licensees that have yet to offer wireless service. For example, each of the 422 licenses that was awarded in Auction #35 in February 2001 is a potential acquisition target of an incumbent wireless provider. If the spectrum cap were removed, there would be almost nothing to prevent the incumbent wireless providers from acquiring the set-aside properties (that were not already acquired through fronts).²⁶ The resulting degree of concentration would jeopardize trends toward lower wireless prices, improved quality and service, and innovation.

C. A Static View of Concentration Based on Spectrum Holdings Cannot Be the Basis for Policy Formulation

22. The opposing experts also appeal to the structural analysis of the *Merger Guidelines* for regulatory relief. For example, Economists Incorporated (oddly no principal from the firm signed the declaration) presents market share calculations based on spectrum holdings, and conclude that “the 45 MHz cap would prevent many license transfers that would not raise concerns based on the HHI guidelines used by the federal antitrust agencies.”²⁷ Those arguments are flawed for several reasons.

23. *First*, antitrust policy is not based exclusively on static measures of concentration. Indeed, the structural analysis of the 1980s was replaced by simulation analysis during the 1990s.²⁸ In addition to static concentration levels, the *Merger Guidelines* consider a host of

26. Because of the low standard associated with the construction requirement, I do not consider it to be a binding constraint in the transfer of the license from a designated entity to a non-designated entity. It is so low in fact, that conditional on the construction requirement just being satisfied, the DoJ might consider the acquisition to represent a loss of potential—not actual—competition.

27. *Economists Incorporated Declaration*, *supra* note 1, at 9.

28. See, e.g., Gregory J. Werden & Luke M. Froeb, *The Effects of Mergers in Differentiated Products Industries: Logit Demand and Merger Policy*, 194 J. L., ECON., & ORG. 407-26 (1994).

market-based specifications including availability of substitutes, lessening of competition through coordinated actions, lessening of competition through unilateral actions, and most importantly, barriers to entry:

Entry is that easy if entry would be timely, likely, and sufficient in its magnitude, character and scope to deter or counteract the competitive effects of concern. In markets where entry is that easy (i.e., where entry passes these tests of timeliness, likelihood, and sufficiency), the merger raises no antitrust concern and ordinarily requires no further analysis.²⁹

Applied to CMRS markets, it is difficult to imagine how, given the finite supply of an essential input, entry could be timely, likely, or sufficient to counteract the anticompetitive impact of a wireless consolidation.

24. *Second*, the opposing experts do not explain why capacity should be based on owned spectrum rather than built spectrum. Despite being a vital entry barrier to the CMRS industry, spectrum acquisition cost is certainly not the only barrier. After acquiring spectrum, a wireless carrier has to build a network, which entails significant sunk costs. Market share calculations based on spectrum allocations alone ignore those significant, incremental costs of offering service. Even CTIA's own experts calculate two sets of HHIs for the top 10 metropolitan statistical areas (MSAs) using owned and built spectrum allocations, and show that HHI calculations using owned spectrum (1,522) result in a much lower level of concentration than HHI using built spectrum (1,916).³⁰ The level of concentration associated with built spectrum falls in the region that the *Merger Guidelines* regard as "highly concentrated".

25. *Third*, when market power is measured by subscriber shares, the concentration index in the CMRS market rises further. Clearly a wireless carrier with a large share of existing subscribers could, when considering a price increase, offset the losses on marginal customers—

29. *Merger Guidelines*, *supra* note 23, at § 3.0.

that is, those customers who switch to another carrier—with the gains from the large number of inframarginal customers. As Dr. Hayes demonstrates on behalf of Sprint PCS, when subscriber shares are used as a proxy for market power, the concentration index increases from 1,522 to 2,611.³¹ Subscriber shares are a reasonable proxy for anticompetitive pressures because when considering whether to raise its price, a wireless carrier would estimate the inframarginal gains on its *existing* subscriber base—not on its long-run potential subscribers as proxied by its capacity.

26. *Fourth*, the spectrum-based HHI relied upon by opponents of the spectrum cap likely understates the amount of concentration in the CMRS industry because it considers wireless affiliates to be distinct from their parents. As I demonstrated in my April 13 declaration, at least one incumbent has amassed significantly more than 45 MHz of spectrum through the use of “non-controlled” affiliates.³² If those affiliations were properly taken into consideration, then the degree of concentration—under *any* measure—would increase significantly.

27. In summary, regardless of the metric used to calculate market shares, the level of concentration in CMRS markets remains concentrated. Both HHI calculated using built spectrum (1,916) and subscriber shares (2,611) are designated as “highly concentrated” in the *Merger Guidelines*. Even HHI calculated using owned spectrum (1,522) falls in the “moderately concentrated” region of the *Merger Guidelines*. Clearly, CMRS markets have not developed the level of “meaningful competition” that would alleviate the need for the spectrum cap.

30. *Schwartz & Gale Declaration, supra* note 1, at 38.

31. *Hayes Declaration, supra* note 24, at 7; *Schwartz & Gale Declaration, supra* note 1, at 38.

32. *Cramton Declaration, supra* note 7, at 31.

II. THE SPECTRUM CAP DOES NOT IMPOSE SIGNIFICANT COSTS ON CONSUMERS

A. The Fact That Some Carriers Own 45MHz in a Geographic Area Does Not Imply That Carriers Are Spectrum Constrained

28. Certain incumbent carriers claim that they are facing a “binding constraint” as a result of the spectrum cap—that is, that they have *purchased* the maximum allowable spectrum available to them under the Commission’s regulations, and in the absence of the cap, they would be *purchasing* more spectrum. For example, Drs. Gertner and Shampine note that at least one carrier has “now reached the spectrum cap in large portions of the country covering some 30 percent of the U.S. population.”³³ This fact by itself is devoid of any meaning. While it is true that at least one carrier has *purchased* 45 MHz of spectrum in several markets, there is no evidence that any of those carriers are *using* all 45 MHz of their allotment.

29. Stated differently, a capacity constraint occurs when the existing capacity cannot sustain the existing or expected demand for that capacity. The incumbent wireless carriers opposed to the spectrum cap have not produced any evidence that supports a meaningful understanding of the constraint. Incumbent carriers might have acquired the additional spectrum not because of a true need for additional capacity, but to foreclose entry. Indeed, Drs. Gertner and Shampine admit that 45 MHz is generally not necessary to compete effectively in CMRS markets: “Since firms can offer voice service with substantially less than 45 MHz of spectrum, accumulation by one or more carriers does not mean that the number of voice providers will be affected.”³⁴ Such admissions speak volumes about the *real* cost of the spectrum cap.

33. *Gertner & Shampine Declaration*, *supra* note 1, at 4.

34. *Id.* at 7.

30. Moreover, the “non-constraint” to which Drs. Gertner and Shampine refer is a very recent phenomenon. According to Verizon’s experts, “prior to the auction [in January 2001] national carriers held 45 MHz of spectrum in only *four* of the top 50 MSA markets in the U.S. Post-auction, after the final license grant, national carriers will hold 45 MHz of spectrum in 20 of the top 50 MSA markets.”³⁵ How could the 16 carriers (equal to 20 less 4) that recently amassed 45 MHz possibly be *using* the spectrum? Perhaps those carriers were using the entire spectrum available to them before they won additional spectrum—but that implies that they are no longer constrained.

31. Finally, incumbent carriers that can document their usage constraint have the option to request a waiver from the spectrum cap. Drs. Schwartz and Gale admit that this avenue has been rarely explored:

As for the fact that the cap is not an absolute prohibition but is subject to a waiver opportunity, we understand that the waiver process has not been widely employed.³⁶

If carriers were constrained in any *meaningful* sense, as the opposing experts allege, then we should observe a flurry of applications for relief at the Commission. The incumbent carriers bear the evidentiary burden to change Commission policy, and they have not met that burden.

B. Popular Wireless Data Applications Use Less Spectrum Than Does Voice Communication

32. Opponents of the spectrum cap claim that they require additional spectrum to support wireless data applications. For example, Drs. Gertner and Shampine argue that “this is problematic since the bandwidth requirements of many new services are higher than voice-only

35. *Id.* at 10 (emphasis added).

36. *Schwartz & Gale Declaration, supra* note 1, at 6.

services.”³⁷ Drs. Schwartz and Gale also suggest that “new wireless services may require significantly more spectrum.”³⁸ Drs. Haring, Shooshan, and Pehrsson concur: “as we noted earlier, 3G applications have a big appetite for spectrum.”³⁹ Similar to their other claims, none of those carriers offer *any* proof that this is indeed the case. In fact, Drs. Schwartz and Gale explicitly admit that they rely only on “anecdotal” evidence:

Further, wireless providers may understandably be reluctant to publicly acknowledge constraints on their ability to expand current services or to develop and implement new services. We must therefore depend on third party analysis and anecdotal evidence.⁴⁰

Contrary to these assertions, the data applications in question use a scant amount of spectrum compared to voice calls.

33. Mobile wireless data applications deployed during the past two years mainly involve short message services (SMS) and Wireless Application Protocol (WAP) text browsing. According to Mark Kelley, the Chief Technical Officer of Leap, a typical phone call requires the transmission of data equivalent to the data requirements of about 400 text messages, but even the heaviest SMS users send approximately 5 to 10 messages per hour during periods of peak usage.⁴¹ With respect to the spectrum demands caused by wireless Internet, Kelley reports that DoCoMo’s i-mode technology uses a 9.6 kbps data speed. Because a voice telephone call using a standard digital handset requires about 4 kbps, Kelley explains, system capacity required by DoCoMo’s Internet application is only slightly more than the capacity required by two simultaneous phone calls.

37. *Gertner & Shampine Declaration*, *supra* note 1, at 12.

38. *Schwartz & Gale Declaration*, *supra* note 1, at 32.

39. *Haring, Shooshan & Pehrsson Paper*, *supra* note 1, at 15.

40. *Schwartz & Gale Declaration*, *supra* note 1, at 32.

41. Declaration of Mark Kelley on behalf of Leap Wireless (filed Apr. 13, 2001) at 5.

34. With respect to future data applications, Kelley demonstrates that a two-minute video clip or a three-minute MP3 quality song each will take about 3 Mbits of data.⁴² A single 3-sector site will supply 12 Mbps in each 5 MHz of spectrum, which is sufficient to supply 400 simultaneous users of streaming content at 30 kbps. Hence, under the existing cap, over 70 percent of the population in the coverage area simultaneously could use high bandwidth applications.⁴³ Based on those calculations, I conclude that the incumbents' claims of spectrum shortage for data applications are exaggerated.

35. Finally, according to a May 2001 survey on the status of 3G deployment in *The Economist*, equipment purchases—not more spectrum—represent the major capital expenditure needed to offer the new service: “The case seems stronger with 3G networks, because they will require between four and 16 times as many base stations to achieve the same coverage as existing (2G) service.”⁴⁴ I see no evidence that existing or foreseeable data applications will require additional spectrum.

C. The Maintenance of the Spectrum Cap Will Not Discourage Investment or Innovation By Incumbent Wireless Carriers

36. Verizon, AT&T, and Cingular also claim that maintenance of the spectrum cap would discourage investment by incumbent wireless carriers. For example, according to Economists Incorporated, the cap “distorts resource allocation and harms consumers by reducing achievement of economies of scale and scope, expansion of efficient firms, innovation and competition,”⁴⁵ and “prevents efficient companies from expanding.”⁴⁶ These arguments are not compelling.

42. *Id.* at 5.

43. *Id.* at 6.

44. *The Telecoms Begging Bowl*, THE ECONOMIST, May 5, 2001, at 16.

45. *Economists Incorporated Declaration*, *supra* note 1, at 1.

37. As with the above claims of doom for data services, the opposing experts cannot document any evidence that the cap has caused or would cause investment in wireless applications to decline. Indeed, most innovation in the wireless industry occurred as CMRS markets became more competitive. To the extent that the removal of the spectrum cap would slow down entry by new carriers or lead to greater consolidation among existing carriers, removal of the cap would decrease the rate of wireless innovation. While a monopoly CMRS provider could potentially capture a greater share of the gains from wireless innovations, the Commission has made the correct policy judgment in favor of competition and against regulated monopoly.

D. Consolidation Is Not a Necessary Condition to Achieve Higher Levels of Penetration

38. According to the *Fifth Report*, wireless penetration in the United States has been rising steadily over the past years as the number of carriers per license area has increased.⁴⁷ Economic theory supports this relationship: an increase in the number of carriers lowers wireless prices, which in turn, increases output. Drs. Gertner and Shampine would have the Commission believe that wireless penetration levels would rise at a greater rate if only they would tolerate a little more concentration:

In Germany, the four national incumbents hold between 60.6 and 69.8 MHz each, with two new national entrants holding 25 MHz each. Germany's wireless penetration rate is 38.7 percent. The three Japanese national carriers hold between 50 and 98 MHz of spectrum with an average penetration rate of 42.3 percent. Finally, the four incumbent national carriers in the UK hold between 77.4 and 85 MHz of spectrum each, with a new national entrant holding 35 MHz of spectrum. The average penetration rate of wireless in Britain is 51.8 percent.⁴⁸

46. *Id.* at 17.

47. *Fifth Report*, *supra* note 3, at 6.

48. *Gertner & Shampine Declaration*, *supra* note 1, at 9.

Drs. Gertner and Shampine have presented a false choice to the Commission. Penetration is high in Germany, Japan, and the United Kingdom *despite* the high levels of concentration. Penetration is higher in Europe and Japan because of the cultural characteristics of the population and the inadequacy of wireline telephony in these countries, not because of the state of consolidation in CMRS markets. The Commission should expect the U.S. penetration rate to rise in the face of the spectrum cap.

E. The Spectrum Cap Will Not Hinder the Global Competitive Position of U.S. Wireless Firms

39. Opponents of the spectrum cap also justify their position by appealing to arguments of economic nationalism:

The current spectrum cap places U.S. operators at a disadvantage in deploying 3G services, relative to other countries where operators have flexibility to aggregate more spectrum. As a result, the U.S. faces the risk of falling further behind in the deployment of modern wireless networks and in the use of two-way wireless communications applications.⁴⁹

Drs. Gertner and Shampine concur, and add that failure to remove the spectrum cap “reduces the likelihood that U.S. industry will take the lead in developing wireless technology and applications.”⁵⁰

40. Different variations on this theme have been used by corporate lobbyists to promote a broad range of (ill-conceived) industrial policies including U.S. support for high-definition television, Japanese targeting of steel, European support of aircraft, and Japanese targeting of semi-conductors. Serious economic scholars have exposed the flaws in the “strategic trade theories.”⁵¹ *First*, growth in other countries not only increases competition for U.S. exports,

49. *Haring, Shooshan & Pehrsson Declaration, supra* note 1, at 6.

50. *Gertner & Shampine Declaration, supra* note 1, at 16.

51. For a review of the strategic trade arguments, see PAUL R. KRUGMAN & MAURICE OBSTFELD, *INTERNATIONAL ECONOMICS: THEORY & POLICY* 278-281 (Addison-Wesley 4th ed. 1997).

but also increases domestic real income. *Second*, government assistance to one industry necessarily implies neglect (or taxation) of another and it is impossible to identify *ex ante* that some industries are more socially desirable than others. Even a “high-technology” industry such as CMRS might not justify strategic trade policy—the question of the appropriate level of subsidy depends on the expected size of the technological spillover, which is nearly impossible to estimate.

41. In summary, the objective of the Commission should not be to bolster our competitive position vis-à-vis the world wireless market. More importantly, it is erroneous in any event to assert that the spectrum cap is restraining U.S. wireless service growth, innovation or competitiveness relative to other countries. To the contrary, retention of the cap fosters these goals by stimulating competition and the efficient use of spectrum.

III. THE OPPONENTS’ EXPERTS IGNORE THE POTENTIAL BENEFITS OF MAINTAINING THE SPECTRUM CAP

42. In the following sections, I briefly review some of the arguments I made in defense of the cap that were entirely overlooked by the spectrum cap opponents.

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

43. Drs. Gertner and Shampine mischaracterize the opportunities of entrants to obtain spectrum on a going-forward basis: “Since the majority of CMRS spectrum that is subject to the cap has already been auctioned, concerns about entrants being unable to obtain spectrum in auctions are now moot.”⁵² Had Verizon’s experts appreciated the role of secondary markets for spectrum, Drs. Gertner and Shampine could not have dismissed the *continued* importance of the spectrum cap in promoting entry. Stated differently, by focusing narrowly on the acquisition

opportunities in auctions—that is, in primary markets—Drs. Gertner and Shampine incorrectly conclude that the competition for spectrum ends with the last PCS auction. 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.

B. The Spectrum Cap Preserves the Integrity of Secondary Market Transactions

44. Any uncertainty about a potential buyer’s eligibility to acquire spectrum could undermine the functionality 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, bids cannot be made conditional on regulatory approval. Stated differently, at every point in a secondary-market sale, the bidders must know what is allowed and what is not. Only a spectrum cap can provide this immediate certainty.

C. The Spectrum Cap is the Best Available Policy for Achieving the Diversity Goals Set Forth in the Telecommunications Act

45. The spectrum cap leads to greater diversity 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.⁵³ Unlike most affirmative action policies, the spectrum cap achieves the diversity objective without conditioning outcomes on a carrier’s business characteristics.

52. *Gertner & Shampine Declaration*, *supra* note 1, at 3.

53. The Department of Justice identifies “the extent of firm and product heterogeneity” as a key factor in determining the anticompetitive effects of a merger. *Merger Guidelines*, *supra* note 23, at §2.1.

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

46. 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.⁵⁴

47. 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 50 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 #35.⁵⁵ 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.

54. I have previously demonstrated in my April 13 declaration that maintaining fewer competitors allows the realization of anticompetitive profits. *Cramton Declaration, supra* note 7, at ¶ 49.

55. 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.”)

CONCLUSION

48. The spectrum cap is a well-priced insurance policy that protects against the possibility of anticompetitive behavior by incumbent wireless carriers. Opponents of the spectrum cap offer little in the way of assurances that the cap is no longer necessary. The existence of a national carrier in a local market will not substitute for the protections of the cap because national plans do not discipline the price of local plans. The antitrust laws will not substitute for the protections of the cap because the DoJ will not prevent consolidation among wireless carriers unless the merger reduces the actual number of competitors in the local market. Other (non-specified) market forces will not substitute for the protections of the cap because spectrum—a necessary input for the delivery of CMRS service—is a scarce input and therefore entry costs are infinite once the availability of CRMS spectrum is exhausted.

49. Nor do the opponents of the spectrum cap offer any credible evidence that the retention of the cap would impose costs on wireless consumers. The fact that at least one carrier has 45 MHz of spectrum in a few markets does not imply that incumbent carriers are generally capacity constrained in any meaningful sense. Stated differently, opponents of the spectrum cap cannot document any evidence that incumbent carriers are *using* 45 MHz of spectrum in a given market. Moreover, opponents of the spectrum cap cannot document a shred of evidence that 3G applications will require more than 45 MHz of spectrum. Another purported “cost” of the spectrum cap is the competitive positioning of U.S. wireless carriers vis-à-vis international wireless carriers. The Commission should discard any arguments of economic nationalism in favor of a consumer-welfare standard.

50. When all the irrelevant arguments are tossed aside, the Commission must address the following, simple question: Is there some better alternative to the spectrum cap that would preserve and enhance competition in CMRS markets? If the answer to that question is “no,” then

the Commission must retain the spectrum cap. By facilitating carriers such as Leap to acquire spectrum in the secondary markets, the spectrum cap preserves the opportunities for entrants in the CMRS industry, which in turn, are directly responsible for the continued decline in wireless prices. Why should the Commission upset this wonderful trajectory?

* * *

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

Executed at Washington, D.C. on May 14, 2001.

Peter Cramton