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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

CTIA

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September 19, 1995

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W. - Room 222
Washington, D.C. 20554

RE: Ex Parte Contact - Petition for Rulemaking
Regarding a Plan for Sharing the Costs for
Microwave Relocation (RM 8643)

Dear Mr. Caton:

On Tuesday, September 19, 1995, Mr. Thomas E. Wheeler, President/CEO of the Cellular Telecommunications Industry Association (CTIA), sent the attached letter and supporting documents to Chairman Reed E. Hundt.

Pursuant to Section 1.1206 of the Commission's Rules, an original and one copy of this letter and the attachments are being filed with your office.

If there are any questions in this regard, please contact the undersigned.

Sincerely,


Robert F. Roche

- Attachments

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*Building The
Wireless Future.*

September 19, 1995

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SEP 19 1995

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Thomas E. Wheeler
President / CEO

The Honorable Reed E. Hundt
Chairman
Federal Communications Commission
1919 M Street, NW
Room 814
Washington, DC 20554

Re: Petition for Rulemaking Regarding a Plan
for Sharing the Costs for Microwave Relocation
(RM 8643)

Dear Mr. Chairman:

It has been six months since the conclusion of the FCC's auction of the first 99 broadband personal communications services (PCS) licenses. In the intervening time, the entities who paid \$7.7 billion in the largest auction of public resources in U.S. history have been hard at work to speedily deliver on your vision of additional wireless competition, billions of dollars of new investment in mobile technologies and services, and the creation of tens of thousands of new jobs.

Unfortunately, I am writing to you today regarding a disturbing trend which may thwart the timely realization of the many benefits expected to flow from the licensing these new mobile services. Simply put, many incumbent microwave licensees in the 2 gigahertz (GHz) band are using the public trust of their license to make unconscionable demands of the new PCS licensees as a pre-condition to relocating their facilities.

When the FCC adopted rules governing the relocation of microwave incumbents to accommodate broadband PCS services, the Commission envisioned an entirely different world from the one which now exists. At that time, microwave incumbents assured the Commission of their cooperation toward an orderly transition process. The FCC did not foresee that a well-organized group of microwave incumbents would make excessive and unreasonable demands and leverage these demands with the specious claim that they are under no obligation to negotiate with the new PCS licensees. As you know, the impetus behind the PCS microwave relocation rules was to balance the needs of microwave incumbents with those of

Honorable Reed Hundt
September 19, 1995
Page Two

PCS licensees, not to promote a platform for extortion which, in fact, makes the microwave licensees superior to the new technology providers.

The Commission provided the microwave incumbents with many incentives to fairly negotiate their costs. For instance, all of the costs for relocation, whether negotiated during the two-year voluntary period or the one-year mandatory period, are to be borne by PCS licensees; and the incumbent must be given new equipment and hardware that are equal to or better than their existing facilities. These safeguards were intended to hold harmless those incumbent microwave users having to move to another part of the radio spectrum band. However, these protections have been used by a well-organized segment of microwave incumbents to thwart the Commission's goals and, if left unchecked, will have a negative impact on the timely introduction of the new generation of wireless services. In some cases, incumbents are entering into negotiations and holding the PCS licensee hostage to demands representing four to five times the actual cost of relocation.¹ Clearly, the Commission did not contemplate such blatant, bad faith actions.

The actions of the microwave incumbents have all the hallmarks of a concerted refusal to deal and a joint negotiation to raise the price of microwave relocation. As such, we are, today, asking the Department of Justice to investigate these activities for potential violations of the Sherman Act.²

Additionally, we have today submitted documentation to the Office of Management and Budget that the wrongful actions by the microwave licensees will reduce the value of the remaining PCS spectrum by \$2 billion.³

The FCC has the capability to rectify this situation now. Title III of the Communications Act provides procedures for the suspension or revocation of radio licenses for violation of FCC rules and procedures. Specifically, sections 303(m)(1)(A) and (E) authorize the FCC to suspend a radio operator's license for violation of Commission rules and procedures. In addition, section 312(a)(4) authorizes the Commission to revoke any license or construction permit for willful or repeated violations of the Communications Act, and section 312(b) permits the FCC to issue cease and desist orders to licensees for, among other things,

¹ See attachment hereto entitled "Perverting a Public Trust for Private Gain."

² See attached letter from Thomas E. Wheeler, President/CEO, CTIA, to Hon. Anne Bingaman, Assistant Attorney General, Antitrust Division, Department of Justice, dated September 19, 1995.

³ See attached letter from Thomas E. Wheeler, President/CEO, CTIA, to Hon. Alice M. Rivlin, Director, Office of Management and Budget, dated September 19, 1995.

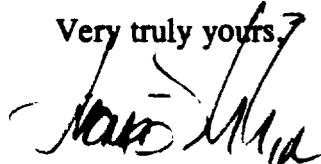
Honorable Reed Hundt
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failure to operate their facilities as set forth in a license or failure to observe the provisions of the Communications Act.

We urge you to publicly reinforce with incumbent microwave operators the fact that the FCC is willing to avail itself of license-related remedies should the unconscionable practices of the incumbents persist.

Mr. Chairman, the time is now to inform those microwave licensees who are abusing their public trust for private gain that the FCC will not tolerate their actions and that their actions place their licenses in jeopardy. Your prompt attention to this matter will discourage the spread of this unfortunate misuse of FCC rules and procedures and safeguard the new wireless competition.

Very truly yours,

A handwritten signature in black ink, appearing to read "Tom Wheeler", written over the typed name below.

Thomas E. Wheeler

Attachments (3)

Perverting a Public Trust for Private Gain



How Microwave Licensees are Thwarting New Wireless Services by Abusing Spectrum Relocation Rules

Background

In the six months since the FCC concluded auctioning broadband personal communications services (PCS) licenses the companies which paid \$7.7 billion for those licenses have been working to deliver additional wireless competition, create thousands of new jobs, and invest billions of dollars in new investment in mobile technologies and services.

But those efforts are threatened by a well-organized group of incumbent microwave licensees who are abusing the public trust by using their licenses to make extreme demands of the new PCS licensees as a pre-condition for relocating their facilities.

What Should it Cost to Relocate a Microwave Link?

Earlier this year, Columbia Spectrum Management estimated that the cost per link of relocating microwave incumbents would be between \$250,000 and \$500,000. This cost reportedly reflected "financ[ing] engineering, hardware and negotiation incentives." Paul Kagan Associates *Wireless Market Stats*, April 21, 1995, at 16. With some 5,000 to 5,100 microwave links estimated nationwide, the total cost of microwave incumbent relocation would be between \$1.2 billion and \$2.5 billion. *Id.*

What is Actually Being Charged -- and Why

"Comparable facilities is your worst case scenario," one law firm has written to the incumbent licensees. "If you relocate voluntarily, you are entitled to anything that is mutually agreeable."

Utilities and local governments are, thus, adopting a policy of delaying relocation in order to extort from the new wireless licensees a payment in excess of the cost of relocating with comparable facilities. The San Diego official responsible for negotiating relocation of the City's microwave links told the local newspaper that the PCS spectrum represented a "once in a lifetime opportunity" for a monetary windfall to cities across the country.

As a result of such strategies, microwave incumbents are demanding compensation far in excess of the relocation costs envisioned by the federal government's relocation rules, and by the bidders who paid \$7.7 billion for the spectrum in the recent auction.

- One incumbent's relocation cost -- estimated by independent analysts at \$225,000 per link -- was initially priced at \$400,000 per link before being raised to \$1.2 million per link.
- \$1 million per link is becoming a typical demand of utilities and municipalities.

Reprisal As a Negotiating Tool

The wireless licensees are in a precarious position -- without the use of the spectrum they bought, their \$7.7 billion investment is producing no return. Thus, they cannot "go public" or seek administrative remedies for fear that the incumbents will, as reprisal, further delay negotiations or increase the price.

The intimidation factor is even worse when the microwave licensee is a local government -- for that government must also grant zoning permits for construction of the wireless antennas. To antagonize these municipalities in one forum would be damaging in another.

"Ski Mask" Examples of Abuse

As a result of the intimidation factor, wireless carriers can only speak generically and anonymously about microwave abuses, similar to the witness who must wear a ski mask to keep from being identified. Below are examples of such abuses:

- An incumbent has demanded relocation of microwave links in another, non-interfering band, as well as microwave links in the PCS band.
- An incumbent is seeking payment for relocation of multiple microwave links, including non-interfering links and links in another non-interfering band. The incumbent has stated that a premium will be required for relocation before the lapse of the three year negotiation period.
- An incumbent originally demanded 178 % of the cost of microwave relocation (and upgrading), before increasing its demand to 578 % of the cost of microwave relocation.
- An incumbent demanded \$ 1 million per link, without reference to actual system costs.
- An incumbent has requested a premium of \$1 million above the cost of relocating.
- An incumbent that has already relocated is demanding payment of a premium to release the PCS band.

- An incumbent that has a licensed but unused microwave system is demanding payment before releasing the PCS band.
- An incumbent is demanding payment for not only the PCS band, but also for links in a non-interfering, non-PCS band.
- An incumbent is refusing to discuss relocation until after the mandatory period starts.



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Thomas E. Wheeler
President / CEO

September 19, 1995

The Honorable Anne Bingaman
Assistant Attorney General
Antitrust Division
Department of Justice
10th and Constitution Avenue, N.W.
Washington, D.C. 20530

**Re: Concerted Refusal to Deal By Incumbent 2 GHz
Microwave Licensees**

Dear Ms. Bingaman:

I am President of the Cellular Telecommunications Industry Association, an international trade association whose membership comprises all commercial mobile radio service providers including cellular, personal communications services ("PCS"), enhances SMR and mobile satellite services.

I am writing this letter to bring to the Antitrust Division's attention a flagrant concerted refusal by certain incumbent 2 GHz microwave licensees to negotiate the spectrum relocations necessary for deployment of newly-licensed PCS services. The negotiations are an important part of a Federal Communications Commission ("FCC") plan for relocating existing 2 GHz microwave spectrum facilities blocking the deployment of PCS. As you know, the FCC has issued licenses for half of the 120 MHz spectrum allocated to PCS. Having paid approximately \$7.7 billion for the right to use the spectrum, PCS licensees not surprisingly are anxious to develop commercial offerings. As the Division noted in its Comments on PCS to the FCC of November, 1992:¹

"The licensing of PCS holds out great promise to introduce substantial competition into telecommunications markets. The availability of additional spectrum, which might be built out using more efficient digital technology, will vastly increase the capacity of spectrum licensees to provide radio

¹ Amendment of the Commission's Rules to Establish New Personal Communications Services, FCC Gen. Docket No. 90-314, Comments of the United States Department of Justice, November 9, 1992.

Honorable Anne Bingaman
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telecommunications, which in a competitive market should result in lower prices for air time and improve service offerings.”

Relocating certain point-to-point microwave licensees to a new place in the spectrum is an important step in developing PCS. Now, however, the concerted refusal to deal threatens to substantially delay the advent of Personal Communications Services and to substantially increase the cost of these services.

By way of background, the FCC issued a Report and Order establishing a procedure to encourage incumbent 2 GHz licensees to negotiate relocation agreements with PCS licensees.² The plan envisions a two year period for negotiation. If at the end of that time period agreement has not been reached on the price to be paid by prospective licensees for relocating the facilities of incumbent licensees to other available spectrum, a one-year period of involuntary negotiation ensues with the prospective licensee required at the end of the three-year period to pay the full cost of relocating the incumbent's facilities.

A number of PCS licensees have attempted to engage in voluntary negotiations with incumbent licensees, many of which are utilities using the spectrum for private microwave networks. In numerous cases their efforts have been flatly rebuffed with the explanation that the member should negotiate not with the individual utility but instead with a “consultant” who, it turns out, also represented a number of other incumbent utilities in the same geographic market. This “consultant” has actively sought the business of numerous incumbent licensees and represented, in effect, that he could secure a better deal for the incumbents than could any of the members negotiating separately. Thus far, the “consultant” either has refused to negotiate at all or has offered terms that would substantially raise the cost of providing these new services to the public. In fact, it is our estimate that the cost of relocating these facilities under the terms proposed by the “consultant” would be approximately \$2 billion over the actual cost of effecting the relocations.

While the FCC sought to encourage good faith independent negotiation during the voluntary period, nothing in the FCC order compels negotiation. Clearly, the order does not sanction joint negotiations. I am having members of CTIA's legal staff contact the Telecommunications Task Force to supply additional information to the Division.

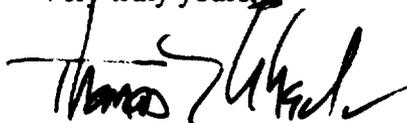
² Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, FCC Third Report and Order, ET Docket 92-9, July 15, 1993, 8 FCC Rcd 6589 (1993).

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I am advised that a concerted refusal to negotiate, or a joint negotiation by sellers, particularly when undertaken in an effort to raise price, is per se violation of the Sherman Act and could be remedied by the Department of Justice. I know that the Antitrust Division has many important priorities. I believe that investigating and prosecuting outrageous anticompetitive conduct depriving the public of current and future cutting-edge technologies is exactly the type of conduct that should trigger the Antitrust Division's enforcement mandate.

I respectfully urge you to act as expeditiously as possible to prevent serious delay in the implementation of a technology that, but for the carefully orchestrated actions of a greedy few, would soon be at the disposal of the American public.

Very truly yours,

A handwritten signature in black ink, appearing to read "Thomas E. Wheeler". The signature is written in a cursive style with a prominent horizontal line across the middle.

Thomas E. Wheeler



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Thomas E. Wheeler
President / CEO

The Honorable Alice M. Rivlin
Director
Office of Management and Budget
252 -- Old Executive Office Bldg.
17th Street and Pennsylvania Ave., N.W.
Washington, DC 20503

Dear Director Rivlin:

The message is urgent. As the attached study by a world renowned expert in auction theory proves, the U.S. Treasury stands to lose two billion dollars, in future Personal Communications Services (PCS) auctions. The value of this spectrum is diminished due to the unforeseen and irresponsible actions of incumbent microwave licensees who are manipulating Federal policy designed to provide for their post - auction relocation. Fortunately, these circumstances can be corrected by appropriate governmental action, which we urge OMB to advocate in the budget reconciliation legislation and at the FCC.

Under the FCC's current rules, PCS licensees must negotiate with microwave incumbents in the newly allocated PCS spectrum band (2 GHz) to relocate these microwave licensees to other spectrum bands. The first two years of negotiations are voluntary and in year three, the final year, parties must negotiate in good faith.

Unfortunately, some incumbent licensees in the PCS band are utilizing this "voluntary negotiation" period to extort the new PCS licensees. The incumbents realize that without their cooperation the massive investment made in the spectrum auction lies producing no return. The incumbents are, therefore, giving the spectrum purchasers a choice -- either spend four, five or six times the actual relocation cost as a premium, or let the \$7.7 billion sit idle and unproductive until some future date.

The effect of this is to telegraph the next round of PCS bidders to reduce the amount they plan to bid.

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Independent bodies forecast relocation costs averaging \$250,000 per microwave link. These costs were factored into the winning bids for PCS licenses. Disappointingly, some microwave incumbents are now seeking \$1 million to \$1.5 million per link. In at least one instance the incumbent is requiring that all its links be rebuilt -- even those with no PCS usage! Even where agreements have been concluded, some microwave incumbents are seeking "most favored nation" status to assure that, regardless of who cuts the best deal with a PCS licensee, they all will get a windfall.

If PCS licensees are forced to comply with this greedy manipulation of the microwave relocation rules, the value of yet-to-be-auctioned PCS spectrum will be lowered significantly to factor in these excessive costs. A recent study conducted by Professor Paul Milgrom of Stanford University underscores the devaluation which will result. Potential PCS licensees must discount their bids to account for either paying a premium demanded by microwave incumbents, or for the delay in implementing their business plans until after the voluntary negotiation period has expired. This translates into not only the lost \$2 billion future PCS auctions will bring to the U.S. Treasury, but also delays in new services for consumers, the development of new businesses creating new jobs and paying their fair share of taxes, and a more competitive telecommunications marketplace.

These losses to the American public can be remedied. Just last week, the Commerce Committee in the House of Representatives approved language that reduced the negotiation period to two years, from the current three years, beginning on the date PCS licenses were issued. We urge the Administration to include such a position in its budget reconciliation positions.

There are also remedies in the hands of the FCC. Short of all parties negotiating in good faith, the FCC could clarify its rules by defining what constitutes a "comparable" replacement system. The FCC rules require PCS licensees to move microwave incumbents at the PCS licensee's expense and to provide them with at least comparable systems. Yet, the FCC rules fail to define comparable systems. Another approach that clearly provides incentives to negotiate is the one adopted by the Canadians. In Canada, if after the initial period of good faith negotiations, no agreement has been reached, the microwave incumbent pays it's own relocation costs.

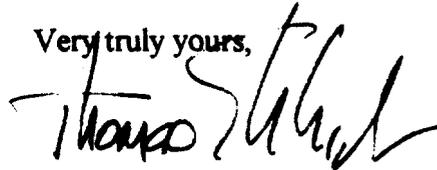
Whatever the remedy, the time for action is now.

Honorable Alice Rivlin
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The value of the spectrum asset to the taxpayers is being devalued right before our eyes because of the manner in which a handful of licensees are abusing the microwave relocation rules. PCS licensees are committed to bring new telecommunication services to the American public. They paid fair market value for the spectrum, and they are committed to provide microwave incumbents comparable telecommunication systems in the other spectrum bands identified for this purpose.

We urge you to utilize the ongoing budget reconciliation process to seek legislation which will close the loophole through which the incumbent microwave licensees seek to devalue future spectrum auction revenues and to encourage the FCC to act within their existing mandate wherever possible to stop this abuse.

Very truly yours,

A handwritten signature in black ink, appearing to read "Thomas E. Wheeler". The signature is written in a cursive style with a large, prominent initial "T".

Thomas E. Wheeler



CTIA Clarification to the following calculations of Paul R. Milgrom

(Revised 15 September 1995, Timothy Rich, CTIA)

In his September 1, 1995, Statement, Professor Milgrom describes the costs to consumers resulting from delays in PCS deployment. Milgrom bases his assumptions on CTIA data, which were reprinted in Donaldson, Lufkin & Jenrette's Winter 1994-1995 *The Wireless Communications Industry*. In calculating his "Consumer Surplus Computations" (See pgph. 11), Milgrom uses a \$6.5 billion figure for "annualized industry revenues."

CTIA data actually reveals that, in 1994, the wireless industry realized \$14.23 billion in annual service revenues. Professor Milgrom did not include six-month revenues of \$7.71 billion for the last six months of 1994.

Using the same methodology as Professor Milgrom, CTIA has determined that the A&B block PCS licensees will contribute an annual gain of \$1.423 billion to consumers. This is a revised estimate from the \$650 million estimate made by Professor Milgrom in his following Statement.

Similarly, C block PCS licensees will increase annual consumer surplus by \$284 million, not \$130 million.

CTIA agrees with Professor Milgrom that these are conservative estimates.

STANFORD UNIVERSITY
DEPARTMENT OF ECONOMICS
STANFORD, CALIFORNIA 94305-6072

Paul R. Milgrom
*Shirley and Leonard Ely, Jr. Professor
of Humanities and Sciences*

Phone: (415) 723-3397
Fax: (415) 725-5702

September 1, 1995

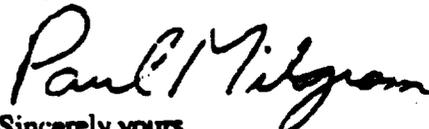
To Whom It May Concern:

I have been asked by Pacific Bell to estimate two kinds of losses that the government and consumers may suffer as a result of the current rules governing microwave relocation. The first is the loss of revenue to the Treasury in auctions for the C, D, E, and F-band PCS licenses resulting from the demands by microwave licensees for premium payments before relocating microwave links. Recent demands from microwave incumbents have called for payments of \$1 million per link, compared to an estimated actual relocation cost of \$200,000 for an average link. Such demands directly reduce the value of the PCS licenses to potential buyers. If recent demands are a fair indication of eventual settlements and if premium costs are shared equally among affected PCS providers, the loss of auction revenues would amount to \$1.9 billion. Smaller demands or compromise settlements could halve the cost to about \$900 million.

The second kind of loss is that suffered by consumers as a result of delays in initiating PCS services. The current rules encourage microwave users to utilize threats of delay to increase their bargaining power, since delays are costless to them but costly to the PCS providers. The loss in consumer surplus from delaying the introduction of PCS services on the A and B bands nationwide, conservatively estimated, amounts to \$55 million per month of delay, while the loss of delays in introducing services in the C band amounts to at least \$11 million per month. Under less conservative estimates, the costs could be several times higher than this.

Additional background for these calculations are provided in the attached statement.

Respectfully submitted,


Sincerely yours,

Statement of Paul R. Milgrom

1. My name is Paul R. Milgrom. I am the Shirley and Leonard Ely, Jr. Professor of Humanities and Sciences and Professor of Economics at Stanford University in Stanford, California, 94305.

2. I received an A.B. degree in Mathematics from the University of Michigan and an M.S. in Statistics and a Ph.D. in Business from Stanford University. My academic specialty is microeconomic theory and comparative economic institutions. From 1990-1994, I was coeditor of the *American Economic Review*. I have also served on the editorial boards of several other economics journals. I am the author of more than sixty books and articles and have been the recipient of numerous awards and honors, including Fellowships in the American Academy of Arts and Sciences and the Econometric Society. I have also received Fellowship grants from the John Simon Guggenheim Foundation, the Center for Advanced Study in the Behavioral Sciences, and the Center for Advanced Studies in Jerusalem. My curriculum vitae is attached.

3. I have devoted considerable time and attention to telecommunications issues, especially ones concerning Personal Communications Services (PCS). Since November of 1993, I have filed nine affidavits or statements with the Federal Communications Commission regarding PCS-related matters, including two that were co-authored with my colleague, Stanford Professor Robert Wilson. I acted as an adviser to Pacific Telesis Mobile Services during the recently completed auction #4 of broadband PCS licenses. In 1994, I filed an affidavit in connection with the motion to terminate the MFJ. In 1984, when the MFJ precipitated a restructuring of certain contracts between AT&T and the Southern New England Telephone Company (SNET), I advised SNET about the renegotiation of its contracts.

4. My other experience with regulatory matters is diverse. It includes testimony given to the Federal Energy Regulatory Commission concerning pricing on the Trans-Alaska pipeline, testimony at trial concerning the economics of the insurance contracting, and written testimony concerning environmental regulation filed with the National Oceanographic and Atmospheric Administration (NOAA).

5. I have been asked by Pacific Telesis Mobile Services (PTMS), the high bidder in auction #4 for the B-band licenses covering the Los Angeles and San Francisco MTAs, to comment on the likely costs to consumers and the government resulting from bargaining with microwave licensees whose operations would suffer interference from PCS operations. These costs include reductions in future government auction revenues and probably also include reductions in consumer surplus resulting from delays in the introduction of PCS services

6. Any such calculations necessarily rest on a forecast of the outcome of bargaining between the PCS providers and the microwave licensees. Data about PCS providers willingness to pay and bargaining postures are confidential and unavailable, so I have had to rely on information about the microwave providers initial demands. A second estimation issue arises from the fact that most existing microwave links are vulnerable to interference from more than one PCS frequency. In those situations, my estimate of the revenue impact on future auctions will depend on how the costs of relocating microwave links will be apportioned among the interfering operations. For these calculations, I have assumed that where multiple services would interfere with a link, any payments to microwave licensees are shared equally among interfering service providers.

Summary

7. In my opinion, the losses associated with any delay in beginning PCS services caused by negotiations between point to point microwave users and PCS licensees would be very large. The financial demands of microwave users reduce the attractiveness of PCS licenses yet to be auctioned. If the recent demands made by microwave licensees are representative of bargaining outcomes, losses in government auction revenues from sales of the C, D, E, and F-bands as a result of payments to microwave users would total between \$930 million and \$1.9 billion. Delays in delivering PCS service as a result of protracted bargaining are likewise costly. I measure these costs in terms of the loss of consumer surplus resulting in a one-month delay in the service initiation for all licenses in the A and B bands or in the C band. Using the most conservative estimation procedure, losses in consumer surplus accrue at a rate of \$55 million per month of delay for the A and B-band services, and \$11 million per month for the C-band service. Less conservative, but

rather more likely estimation scenarios entail losses many times higher: \$225 million per month of delay for the A and B-bands and \$35 million per month for the C-band.

Bargaining with Point to Point Microwave Users

8. PCS service rules provide that licensees must relocate microwave links with which their services interfere. There are about 4,500 such links in the U.S., affecting all six PCS bands, of which some 3227 affect the C, D, E and F bands. The rules provide commercial microwave users a 2-year voluntary relocation period followed by a 1-year mandatory relocation period. For public service entities there is a 3-year voluntary period followed by a 2-year mandatory period. Many microwave users are now requesting payments of between \$400,000 and \$800,000 per link above and beyond the provision of comparable facilities to move before the mandatory deadline.

9. The sequential and multilateral nature of these negotiations makes it likely that bargaining will lead to a large amount of lost value for PCS licensees. Fearing that the first settlements will set a precedent for later ones, PCS providers are likely to resist initial demands for extra compensation, while microwave licensees have little or nothing to lose by delaying their relocation. Initial bargaining is therefore likely to be difficult, making costly delays probable.

10. If the rules governing microwave relocation allow the incumbents to extract premiums, bidders for the C, D, E, and F-bands will factor those premiums into their business plans as a cost of initiating service. For example, a company that expects to have to pay premium costs of \$400,000 per link for 100 links to initiate service in some BTA will subtract the \$40,000,000 in premium payments in calculating the value of the license. Its maximum price would be correspondingly reduced. Since it is the maximum price of the bidder with the second highest value that determines the auction price, the net result would be a \$40,000,000 reduction in the price for this individual license. Assuming that the microwave licensee negotiates a premium payment of \$400,000 to \$800,000 per link in addition to the direct relocation costs and that the premium cost for each link is shared equally among the PCS licensees whose services would interfere, and recognizing that 3,227 links interfere with the C, D, E, and F-bands nationwide, I expect that the

total auction prices of the licenses in the C, D, E and F bands would be reduced by \$930 million to \$1.9 billion.¹

Consumer Surplus Computations²

11. The largest cost of any delay in instituting PCS services would be borne by consumers in the wireless industry, for whom access to PCS services would be delayed and who would pay higher prices for cellular services due to the absence of PCS competition. Estimates of the loss of consumer surplus per month from delayed entry depend on assumptions about the nature of competition and the effectiveness of regulation in the industry, as well as on forecasts of demand. However, even the most rough-and-ready estimates show that the cost is very large. Currently, cellular service is provided by what is essentially a duopoly. If the introduction of the PCS A and B-band competitors into the wireless services market led to price reductions of just 10% with no consequent expansion in demand it would still increase consumer surplus by an amount equal to 10% of the existing industry revenues. As of the summer of 1994, annualized industry revenues amounted to approximately \$6.5 billion,³ leading to an estimated gain for consumers of \$650 million per year. Similarly, if entry of the C-band provider led to price reduction of 2%, the estimated gain for consumers would be \$130 million per year.

12. The preceding estimates, however, are probably too low. Because even conservative assumptions about demand can lead to very large estimates of the loss of consumer surplus from delayed entry, I have constructed my estimates using conservative assumptions about demand. First, despite the persistent growth of demand recently experienced and forecast by almost every pundit, I assume that the scale of the wireless market is fixed at the level attained in the summer of 1994. Second, despite estimates which show that demand for wireless services has tended to be quite

¹This calculation uses information supplied by Pacific Bell Mobile Services about which particular PCS bands would interfere with each particular microwave links.

²These calculations incorporate and extend the ones in my statement to the FCC of May, 1995.

³*The Wireless Communications Industry*, Donaldson, Luftin & Jenrette, Winter 1994-1995.

inelastic, I assume that wireless service demand has unitary elasticity, which is the average elasticity for all products in the economy.⁴ Third, in order to focus on the beneficial effects of competition for consumers, I assume that there is an absence of regulation that either raises or depresses prices. Finally, I assume that the parties have equal costs and engage in Cournot competition, which is a moderate and widely used specification of the intensity of competition among wireless providers.

13. With these assumptions, the eventual effect on consumer surplus of increasing the number of competitors in a market from two to four – the entry of the PCS A and B-band licensees – would be a fifty percent (50%) increase in the volume of wireless calling, a thirty three percent (33%) reduction in the prices of wireless services, and an increase in consumer surplus of approximately \$2.7 billion per year. The entry of a fifth competitor, the C-band licensee, would increase volume by an additional seven percent (7%) and lower prices by an additional six percent (6%) leading to an increase in consumer surplus of approximately of \$420 million per year. Delaying the day when these new entries occur amounts to delaying the time at which consumers first begin enjoying this enormous benefit.

14. The preceding calculation has assumed that the market adjusts immediately to the entry of new competitors and that the size of the market at the time of entry is the same as its current size. More realistically, we would expect a delayed adjustment and a growing market. If, as expected, the rate of growth in the relevant future period exceeds the real rate of interest, then accounting for both of these effects would further increase the consumer surplus estimates.

15. It is most likely that, if the rules remain unchanged, both of the kinds of costs described in this memorandum will be incurred. There will certainly be a loss of auction revenue to the

⁴In an affidavit to the Commission dated September 14, 1994, Professor Jerry Hausman estimated the price-elasticity of demand to be -0.402 with a standard error of .155. As the customer base for wireless services expands, demand may become more elastic. Since more elastic demand leads to lower estimates of the additional consumer surplus from increased competition, I have used such an estimate here.

government amounting to hundreds of millions, or perhaps billions of dollars. In addition, there will probably be a loss of consumer surplus amounting to hundreds of millions of dollars.

Respectfully submitted,


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