BEFORE THE

Federal Communications Commission

WASHINGTON, D. C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of	)	
	)	
Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation	)	WT Docket No. 95-157

To: The Commission

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REPLY COMMENTS OF APCO

The Association of Public-Safety Communications Officials-International, Inc. ("APCO"), by its attorneys, hereby submits the following Reply to comments filed in response to the Commission's Notice of Proposed Rulemaking, FCC 95-426 (released October 13, 1995), in the above-captioned proceeding.

APCO's initial comments strongly opposed most of the Commission's proposed "clarifications" to the current microwave relocation rules because of the adverse impact on existing public safety microwave licensees subject to the relocation rules. Some elements of the PCS industry would have the Commission go even further and are now urging the Commission to adopt even more draconian rule changes. These proposals would further gut the Commission's existing relocation procedures, in contravention of the Commission's earlier commitments to Congress and existing users that all costs of relocation to fully comparable replacement

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facilities would be borne be the new PCS licensee. Having secured the spectrum on the promise of fully protecting the existing microwave licensee, these PCS interests would now have the Commission renege on that basic promise.

I. THE CURRENT RELOCATION RULES SHOULD NOT BE FURTHER ERODED FOR THE FINANCIAL BENEFIT OF THE PCS INDUSTRY.

The Commission's adoption of involuntary relocation rules for the 2 GHz bands, and in particular its application of those rules to public safety licensees, was predicated on assurances that the incumbents would receive "fully comparable" replacement facilities and would not be required under any circumstances to bear any of the costs of the relocation. For example, shortly after the Commission repealed the public safety exemption from involuntary relocation, Chairman Reed Hundt reassured Congress that public safety licensees

> would not have to pay any costs whatsoever associated with the move. New equipment and all other costs would be paid for by the new PCS commercial entity.

Hearings Before the Senate Committee on Appropriations on H.R. 4603, "Commerce, Justice and State, the Judiciary, and Related Agencies Appropriations," 103d Cong., 2d Sess, S. Hrg. 103-795 (Apr. 28, 1994)("Senate Hearing"), at 814.[1/] In responding to further written inquiries from the

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[1/] Relevant excerpts from these hearings are attached hereto.

Committee, the Commission responded that new PCS licensees must

> Guarantee payment of all relocation costs. Relocation costs include all engineering, equipment, and site costs and FCC fees, as well as any reasonable additional costs.

Id. at 838. Chairman Hundt also explained to the Committee during the hearing that

> in each separate negotiation between the law enforcement user and the private sector, there will be many, many different considerations. It was our judgement that it would be very difficult for us to ascertain all of the different circumstances that would bear on these negotiations; and the best thing for us to do was to let the parties negotiate, provided that there was one thing made clear: the law enforcement users would never get less than the cost of moving.

Id. at 817.; See also Memorandum Opinion and Order in ET Docket 92-9, 9 FCC Rcd 1943, 1948 (1994), ¶35.

It is surprising, to say the least, that the Commission is contemplating revisions that could require public safety agencies to absorb many of the direct and indirect costs of relocation -- costs that the Commission had previously promised would be the sole responsibility of PCS licensees. These costs include equipment necessary to maintain state-of-the-art public safety communications operations, as well as the cost of consultants and attorneys retained to assist incumbents in the negotiation process. It is even more surprising that some PCS commentors want the Commission to go even further and propose scenarios that could require public safety incumbents to bear the entire cost of relocation. As discussed in APCO's initial comments, all

direct and indirect costs of relocation must be subject to reimbursement during and after the voluntary and mandatory negotiation periods. Otherwise, taxpayers will be forced to bear the additional burden of relocation.

The Commission's proposed changes appear to be the result of some PCS licensees' complaints that some incumbents are seeking so-called "premium" payments in excess of perceived replacement costs. Yet, the PCS industry and the Commission have always recognized that the payment of financial incentives for rapid band clearing would be necessary and appropriate in many situations. Chairman Hundt described the negotiation process to the Senate Appropriations Committee as follows:

> Mr. Hundt:
>
> ...the private entity which will buy the spectrum block will immediately have a very strong incentive to figure out what law enforcement users are in its spectrum band, and how it should negotiate with them. The private entity will go in there, and if it wants to clear them right away, it will offer more money. It will offer special inducements.
>
> Senator Bumpers:
>
> What if they are not going to offer enough for that particular spot, to allow them to set up another system?
>
> Mr. Hundt:
>
> Well, for 4 years, the law enforcement user, under those circumstances, would just say, "No way," and that would be fine.

Senate Hearing at 815-16. The PCS industry's feigned surprise at this result is no basis for changing the rules midstream. Their campaign to modify the rules is merely an

effort to reduce their relocation costs, which should have been fully anticipated when the relocation rules were adopted and when they placed their bids in the PCS auctions.

The voluntary/mandatory negotiation periods were intended to allow incumbents, especially public safety incumbents, a reasonable transition period. From the beginning, it was recognized and accepted that accelerating that transition period in particular situations may require compensation in excess of relocation costs. More recently, the Commission acknowledged in this proceeding that a PCS licensee "may choose to offer premium payments or superior facilities as an incentive to the incumbent to relocate quickly." Notice at ¶6. A free and open negotiation process, not government regulation of cost reimbursement, was expressly intended during both the voluntary and mandatory negotiation periods. In basic fairness to existing microwave licensees, it must not be restricted. PCS interests have made no showing whatsoever that the process is not working as intended or that the development of PCS service is being constrained.

A few of the PCS industry comments attempt to "push the envelope" by suggesting rule changes even more radical than those contained in the Notice. These proposals include eliminating the voluntary negotiation period altogether,[2/] and forcing incumbents to pay their own relocation costs if they refuse to accept "good faith" offers of comparable

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[2/] Comments of PCIA at 11.

facilities.[3] To the extent that these are serious proposals, they must be rejected as completely contrary to the fundamental structure of the relocation process. The Commission stated in the Notice that

> In seeking comment on these issues, we observe at the outset that the existing relocation procedures for microwave incumbents adopted in the Emerging Technologies docket were the product of extensive comment and deliberation prior to the initial licensing of PCS. We emphasize that our intent is not to reopen that proceeding here, because we believe that the general approach to relocation in our existing rules is sound and equitable.

Notice at ¶3. The Commission should stick to this commitment and ignore proposals that would result in major changes to the relocation rules adopted in ET Docket 92-9.

The PCS industry proposals are not worthy of consideration. The voluntary period is a vital element of the transition period for public safety and other microwave incumbents. To eliminate or redefine the voluntary negotiation period would force public safety agencies to devote scarce personnel and resources to negotiations and the relocation process now, without any realistic potential of being compensated for that effort.

Nor should public safety incumbents ever be exposed to the potential of being forced to relinquish critical communications frequencies without assurances of receiving comparable facilities at no cost to taxpayers. This protection must exist even if negotiations break down and no agreement is reached during the negotiation periods. While

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[3] Comments of CTIA at 9.

the Commission may have an interest in encouraging rapid deployment of PCS, it has a far more important obligation to protect microwave communications facilities used for the protection of life and property. Whatever the negotiation situation, taxpayers should not have to foot the bill for the development of PCS.

II. THE FCC MUST NOT NARROW THE PUBLIC SAFETY DEFINITION

Under current rules, state and local government microwave facilities are entitled to an extended negotiation period only if a "majority of communications carried on those facilities are used for operations involving safety of life and property." 47 C.F.R. §94.59(f). This definition is more restrictive than that originally proposed and adopted by the Commission. The Commission should reject the irrational and irresponsible PCS industry proposals to narrow that definition even further.

PCIA, without any apparent justification, asks that the "public safety" definition be reduced dramatically to include only those systems on which "substantially all" of the communications are for "safety of life and property" operations. PCIA Comments at 26. However, a microwave system on which "only" a "majority of communications" is for police, fire, and other public safety operations is no less critical to the protection of life and property than a microwave system on which "substantially all" of the communications are for such activities. Furthermore, PCIA's

proposal would unfairly and irrationally penalize spectrum efficient public safety communications systems which allow for the use of excess capacity by a number of important but less critical local government operations.[4/]

Pacific Bell suggests in its comments that the "majority of communications" standard be measured based on the percentage of licensed capacity on a microwave system used for "public safety communications." Comments of Pacific Bell Mobile Services at 11. This proposal is equally irrational and insupportable as it would exclude a public safety agency merely because it may not be using all of its licensed capacity. Particularly for networks supporting substantial wide-area mobile systems, it is not unusual for microwave systems to be constructed based on ultimate capacity needs over a long term, rather than existing needs. A microwave system used solely for public safety communications, but which is loaded to only 49% of licensed capacity, is no less important to the safety of life and property than if it were fully loaded. Pacific Bell offers no explanation for this proposal, which is little more than a thinly disguised effort to reduce the number of qualified "public safety" licensees and shorten the relocation process.

[4/] This might include, for example, a microwave system on which 70% of the traffic is for the police department, with the remaining channels used by public works or other departments. Another common arrangement is a microwave network that provides the backbone to a countywide 800 MHz trunked radio system used primarily by police, fire, and EMS, but also utilized by other government agencies.

Finally, the Commission should reject AT&T's recommendation that public safety entities be required to petition the FCC to obtain public safety status or risk being treated like all other incumbents. Comments of AT&T Wireless Services, Inc. at 14. Public safety incumbents must not be exposed to this additional and potentially costly burden, which would also create additional burdens for the Commission. Some public safety incumbents may be unaware of the involuntary relocation rules, and may remain uninformed for some time due to their location and other factors.[5/] Thus, there is a danger that a public safety incumbent could loose its public safety status due to a simple oversight. The rights at issue are far too important for that to occur.

Rather, as previously suggested by APCO, all state and local government microwave incumbents should be presumed to be "public safety" operations as defined by the Commission. This presumption is reasonable as it reflects the prevailing state and local government use of the 2 GHz band. To document this status, the incumbent should be required to do no more than certify its public safety status upon request by the PCS licensee or the Commission. Such a certification should require only a statement from a government official signed under penalty of perjury that a majority of communications on the system are for operations that protect

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[5/] This would include systems in rural areas and/or those on frequencies in PCS Blocks C-F.

the safety of life and property. In this way, the status of the system can be clearly established, without burdening the Commission or licensees with additional filing or approval requirements.

CONCLUSION

For the reasons stated above and in APCO's initial comments, the Commission should not modify its current microwave relocation rules, other than to adopt reasonable cost-sharing rules.

Respectfully submitted,

ASSOCIATION OF PUBLIC-SAFETY
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January 16, 1996

DEPARTMENTS OF COMMERCE, JUSTICE, AND STATE, THE JUDICIARY, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1995

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

ONE HUNDRED THIRD CONGRESS

SECOND SESSION

ON

H.R. 4603

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENTS OF COMMERCE, JUSTICE, AND STATE, THE JUDICIARY, AND RELATED AGENCIES FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1995, AND FOR OTHER PURPOSES

Board for International Broadcasting
Department of Commerce
Department of Justice
Department of State
Executive Office of the President
Federal Communications Commission
Legal Services Corporation
Nondepartmental witnesses
Securities and Exchange Commission
Small Business Administration
The judiciary
U.S. Information Agency

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FEDERAL COMMUNICATIONS COMMISSION

STATEMENT OF REED E. HUNDT, CHAIRMAN

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FISCAL YEAR 1995 BUDGET REQUEST

Senator HOLLINGS. We will now hear from Reed Hundt, Chairman of the Federal Communications Commission.

For fiscal year 1995, the President's budget requests appropriations totaling $167.4 million. Based on the President's budget amendment, submitted last Friday, the entire FCC budget now would be offset by user fees.

Of course, that is what they say. I doubt that, Chairman Hundt, because we are not going to make that information superhighway a tollroad.

We appreciate your appearance here today; and we have your statement, and it will be included in the record. And you can deliver it, if you wish, or highlight it, either way.

Mr. HUNDT. If I can, Senator, I would rely primarily on the written statement.

I would like to make clear, for the record, a couple of things that have been going on recently between the FCC and OMB; and to make sure that the statement is supplemented by my oral expression of this state of affairs.

OMB has agreed that its request, as previously received by you, should be amended to ask for FTE's in a number that amounts to 2,046. That is a higher number than was in the written information that you earlier received; but it does not change the dollar number of $167 million.

Senator HOLLINGS. What would be the total?

Mr. HUNDT. About 82 less than that number. What they have agreed is that, given the $167 million, the FTE could be, and should be, raised.

The second thing that I have been discussing with our friends at OMB recently is my view that the agency, in fact, should be the

So that being flawed, what is your thinking? How many do we need?

Mr. HUNDT. If we have our mission just remaining the way it is now, that is, if there is no additional legislation, I think the FCC's size needs to move back toward the level it was at in approximately 1980. In 1980, the FCC had 2,240—if I remember the number precisely—FTE's. That number was reduced by about 500, between 1980 and 1992.

It was increased by 240, in order to take on the responsibilities of the Cable Act. However, outside the scope of the duties under the Cable Act, the jobs that we have to do which deal with the pace of change, and the great growth in the size of the economic sector that the FCC is charged with regulating has so increased, that I think that that 1,740 number needs to move back up toward that 2,240 number.

That is about a 500-person shortfall; and I think we need to move back up to that 500 additional people. I do not think that that needs to be done in 1 year; and I do not think that it necessarily needs to be the case that, forever, we need to go up to 2,200 and stay there.

I think we are dealing, over the next several years, with a real burst of economic activity; and we should have more people. But I would say it is somewhere between where we are now, and 500 more.

Senator HOLLINGS. That sounds good. Do you want to complete your statement? Then I will yield.

Mr. HUNDT. I will just wrap it up there. I would like to rely upon my written statement.

Senator HOLLINGS. Senator Bumpers?

Senator BUMPERS. Mr. Chairman, I am surprised that even you are here this morning. I thought you would surely cancel this thing today.

Senator HOLLINGS. Well, we are backed up. We have got a lot of communications here, and a lot of appropriations there.

Senator BUMPERS. Mr. Chairman, just to give you a little history.

PRESERVATION OF PUBLIC SAFETY

In 1992, Senator Hollings and I added language to your appropriations bill that said that you would preserve indefinitely the priority of public safety agencies on the bands that they now hold on, I guess you would call it, the 2-gigahertz band of the radio spectrum.

When we went to conference back there, the House was perfectly willing to accept mine and Senator Hollings' language, reserving public safety's position on that band. But the Commission at that time had adopted a rule identical to the legislation; so we dropped it in conference, thinking that the rule would be just as good as the legislation.

Now, all of a sudden, you propose to take them off again; and give them 5 years on the band, after which they would be left to fend for themselves.

Now you may or may not have been told by your staff before you came over here today, for example, in my State, we just got through spending $35 million on a new State police radio system

on this band. And obviously, if we get 5 more years' of use out of it, that will help some; but we were planning on 25 to 30 years usage of this system.

Now, a State like mine does not come up with $35 million easily. So, if you are going to say to the Arkansas State Police—and I suspect that there are a whole host of public safety organizations around the country similarly situated—that after 5 years, they can fend for themselves, how would you suggest that I tell them that?

Mr. HUNDT. This is a very serious issue. I have met with public safety representatives in my 4 or 5 months on the job, and I very much understand that we need to preserve their ability to use the radio spectrum for law enforcement.

The competing concern here is, how can we jumpstart the personal communications business, where we might have as many as 100 million new subscribers over the course of the next 10 years, which could add economic growth to our economy, in every State including Arkansas, in the billions of dollars.

The problem is that the PCS business would have to occupy the exact same spot in the band as some of the public safety uses. I know the law enforcement community does not want to have an interference problem, having nonlaw enforcement users in the exact same band.

Our current plan is that the law enforcement community should negotiate moving to a different spot in the spectrum; and if they cannot consummate after 4 years of negotiations an agreement that would be voluntary, then they would be able to go into what we call mandatory negotiation in that last year.

An absolute condition in that negotiation is that the law enforcement user would not have to pay any costs whatsoever associated with the move. New equipment and all other costs would be paid for by the new PCS commercial entity.

Our hope is that, it is essentially cost free, the law enforcement community can move; and at the same time, there will not be any disruption of their ability to use the radio spectrum for the law enforcement purpose.

Senator BUMPERS. Well, let me ask you a couple of more questions. No. 1, do they lose some of their efficiency and the quality of the system, by being forced to move? And No. 2, can you tell this committee approximately what that is going to cost?

I mean, 5 years from now, Senator Hollings and I may or may not still be around; but you are going to be coming up here asking us for the money, for the Arkansas State Police, and everybody else in the country.

Senator HOLLINGS. The REA, and all the rest of them.

Senator BUMPERS. So, how are we going to know what we are getting into here? Can you give us some idea of what you anticipate the cost of this move will be? We would appreciate that.

Mr. HUNDT. That is a good question. The expenses, the move will be paid for entirely by the business entities that buy the PCS spectrum, in the auctions that will start with the end of this year.

PCS AUCTIONS

Senator BUMPERS. You are planning on auctioning this band off at the end of this year?

Mr. HUNDT. We are actually going to begin the narrow band part of the auction this summer; and then the broad band part of the auction should follow the procurement process. That is, we will obtain the services of an outside firm to actually conduct the auction, because that is not something we do.

When that procurement process is complete, the auction itself will commence. Congress, as I am sure you know, gave the FCC 5 years in which to conduct the auction.

If we are successful, as I just said, starting the narrow band auction this summer, we will have gotten underway in just about 1 year; instead of waiting toward the end of that 5-year period.

This 5-year period is the same 5-year period in which we want to see the law enforcement community be compensated fully by the private sector for any move it might have to make, in which it essentially vacates that spectrum so that the business users for PCS can come in and use it without creating interference.

Senator BUMPERS. Well, Mr. Chairman, you are going to auction these bands off, and I assume it is going to bring a heap of money.

Mr. HUNDT. I hope so.

Senator BUMPERS. That is a very valuable thing you are auctioning off. People like Motorola would pay a fortune to get into that.

But now, Senator Hollings and I have been around here long enough to know that you are going to take that money, and that money is going to go into the U.S. Treasury now; and 5 years from now, that money is going to be gone. You are not going to be able to set that money aside to take care of this.

PCS RELOCATION COST

Mr. HUNDT. Well, the incumbents, the law enforcement users, will actually be using the spectrum until the private entity comes in and pays the incumbent to vacate it.

Senator HOLLINGS. So you are telling me, there are two amounts? The amount you pay at the auction, and then whoever wins that auction also should anticipate at least $35 million, to use the Arkansas State Police part of it?

Senator BUMPERS. You do not seem too enthusiastic about your answer. I want to be sure you agree, you understand this.

Mr. HUNDT. I agree with Senator Hollings. He stated it correctly. The private entity will pay the U.S. Government for the spectrum, but will also incur the obligation to clear that spectrum of law enforcement users; and will have to go into its own pocket to do that.

Senator BUMPERS. Why this 5-year moratorium or period, in which they can continue to operate, after which they are out? Why do we have that language in the rule?

Mr. HUNDT. Well, our thought is that the private entity which will buy the spectrum block will immediately have a very strong incentive to figure out what law enforcement users are in its spectrum band, and how it should negotiate with them.

The private entity will go in there, and if it wants to clear them right away, it will offer more money. It will offer special inducements.

Senator BUMPERS. What if they are not going to offer enough for that particular spot, to allow them to set up another system?

Mr. HUNDT. Well, for 4 years, the law enforcement user, under those circumstances, would just say, "No way," and that would be fine.

Senator BUMPERS. Why do you not change your rule, then, to say, change the 5-year rule to say they can negotiate, but if they do not get enough money out of it, they do not have to leave.

Mr. HUNDT. In the fifth year, they will have to leave eventually; or we just will not have the economic growth out of this spectrum. But in the fifth year, after 4 years of saying no in this negotiation, if it does go that badly and if they do not get offered the right price by the private user, they will actually be able to insist that they get fully compensated for all of the cost of the move. They will have the right to do that.

Now, our thought is that——

Senator BUMPERS. I know. But if there is nobody there to buy it, how do you rule right now they still have to leave?

Mr. HUNDT. No; the private user will have to pay them. Under all circumstances. If there is ever going to be a move of that law enforcement function.

Senator BUMPERS. Are you saying that they do not have to leave, until the private user makes them that kind of an offer?

Mr. HUNDT. That is correct. Until they get their full compensation.

PCS 5-YEAR RULE

Senator BUMPERS. Do you not then have to change the 5-year limitation of your rule, so that that is clear? That is not clear, under the rule right now, as I understand it. You are telling me something I have never heard before; and certainly, you would not interpret the rule to say that.

Mr. HUNDT. I am attempting to explicate the rule. I will certainly be happy to take another look at it, and see if it needs to be clarified in any respect. But I have been, and we have all been meeting with the law enforcement community, and sending the message that I am sending today.

It may well be the case, Senator, and I cannot predict the future in this respect, but it may well be the case that with some law enforcement users that they will find that they get offered more than the cost of the move, in order to expedite the move. This may be of benefit to them.

Senator BUMPERS. Are you going to give them the extra money, if they get bid more?

Mr. HUNDT. It is up to the private sector. If the private sector wants to pay a law enforcement user more than the cost of the move, then the private entity can do that.

Senator BUMPERS. So, for example, if we said, "Well, we have got $35 million invested, but we ain't leaving for less than $50 million or $100 million," or whatever?

Mr. HUNDT. If it is worth it, to the private user.

Senator BUMPERS. Are you telling me that, in my case, and I think there are dozens of cases—I have been using the Arkansas State Police, but there are dozens of cases—as Senator Hollings said, the railroads, the utilities, an awful lot of people are in this band.

Senator KERREY. If the Senator would yield for a minute?

Does that not, Mr. Chairman, create a situation where someone—where you are basically saying that if I happen to have a use in an area that is not considered valuable to a commercial interest, that I am going to get less money to vacate than somebody that occupies, lives in an area, or has a function in an area where the market is valuing it at a higher price?

Mr. HUNDT. Well, you will never get less than your cost of moving. You will always get paid the cost of moving.

Senator KERREY. But I could see a situation where a rural area might end up with a lower price, simply because the market does not bid that price up as high as it would in a metropolitan area, for example.

Mr. HUNDT. It is certainly plausible that, if we are speaking about the prices paid that are above the cost of moving, that someone who happens to occupy a more valuable piece of spectrum might be offered a higher price.

Senator KERREY. If I get the bid on, let us say, Los Angeles or Little Rock, I mean, it seems to me that whoever wins the Los Angeles market is going to be willing to pay a much higher price for that, for the purpose of acquiring that, than they will be for Little Rock—or Lincoln, for that matter. And so, the law enforcement folks in Lincoln or Little Rock might end up with a substantially smaller amount of money to vacate than Los Angeles.

Mr. HUNDT. That is true. But if I could say so, Senator, there will be other factors as well. For example, as Senator Bumpers has mentioned, if you are a law enforcement user who has just invested a substantial sum of money, you are not going to be as eager to move in a hurry; because you will be looking at a lot of useful life for your equipment that you have not yet been able to extract.

If, on the other hand, you are a law enforcement user that has got to buy new equipment anyhow, you might as well move. You might be more eager to do so.

And so I think that, in each separate negotiation between the law enforcement user and the private sector, there will be many, many different considerations. It was our judgment that it would be very difficult for us to ascertain all of the different circumstances that would bear on these negotiations; and the best thing for us to do was to let the parties negotiate, provided that there was one thing made clear: the law enforcement users would never get less than the cost of moving.

PCS RELOCATION COSTS

Senator BUMPERS. Well now, Mr. Chairman, there are a couple of questions that we need to really nail down.

No. 1, if they cannot negotiate a price equal to that, they do not have to leave the spectrum?

Mr. HUNDT. In that last year of the 5-year period, they will be able to demand, and have a legal right to, the cost of moving. But in that last, fifth year, they would have to settle for nothing less than 100 percent of the cost of moving.

If they had been previously insisting on 150 percent of the cost of moving, they would have had to strike that deal before the end of the 5 years.

Senator BUMPERS. Do you mean, before the end of the 4 years?

Mr. HUNDT. Well, that is right.

Senator BUMPERS. You are saying, in the fifth year then, they could demand, they could demand whatever amount it is going to take for them to move?

Mr. HUNDT. That is exactly right. And we would step in then, and make sure that they got that.

Senator BUMPERS. OK now, in the first 4 years—let us assume that it is going to cost them $50 million to move. And let us assume they say, "We have got this band; we do not have to give it up for another 4 years. We will get off now for $100 million."

Mr. HUNDT. Yes, sir?

Senator BUMPERS. Are they entitled to the entire $100 million?

Mr. HUNDT. If they can persuade the private user to give them the money.

Senator BUMPERS. I am saying, if they can strike a deal with the private user that wants that band, for twice what it would cost them to move, do they get the extra money?

Mr. HUNDT. Yes.

Senator BUMPERS. And then, the fifth year, if a private user is not willing to give them a sufficient amount for them to move—and incidentally, get a system equal to or superior to the one they have; and you can get into all kinds of negotiations over what kind of a move this is going to be: Is it going to be a good move for them? Is the system quality going to be higher? And that sort of thing—but what I am saying is, if they do not get enough to move off that system and get another system that they think is as good or better than the one they have, they do not have to move. Is that not correct?

Mr. HUNDT. The rule states that the new licensee will pay all of the costs of the move. And the facilities to which the incumbent is to be moved must be comparable to the existing facilities. Those are the two rights the incumbent has; and those, we would step in——

Senator BUMPERS. What do you mean, when you say, comparable to the present system?

Mr. HUNDT. Well, it is spectrum that is just as usable. That would be a way of deciding whether it was comparable or not.

Senator BUMPERS. Well, would it be fair to say the quality would be as good or better?

Mr. HUNDT. Yes, sir; but there is more than one parameter associated with spectrum use. There are interference issues; there are questions of whether it is much more expensive to exploit the spectrum. There are a lot of different questions; and it would not be possible for us to answer them all in advance, for something that is 5 years out. Because technology is evolving so much.

So what we have is a standard that we would then apply in that fifth year; and make sure that the standard was met, taking into account whatever was the technological capability at that time.

Senator BUMPERS. Well, Mr. Chairman, I am not going to belabor this any further. I just want to be sure, for example. I am not trying to say the Arkansas State Police system can hijack some private user, to double their money.

But I practiced law long enough to know that a lot of these words are terms of art. When you talk about comparable, that means a lot of things. And I do not want them to just get their $35 million back. I want them to get enough to also pay them for their inconvenience.

They just put this system in; it has been on the line 2 years, and it took them about 4 or 5 years to build it. Now all of a sudden, somebody comes in and says, "Well, we will give you a system just as good," and they have to start all over again.

Just to say, "We will compensate you for what you had," is not enough. To say, "We are going to compensate you for your system," is not enough, because they have been terribly inconvenienced by all of this. I do not want them to make a profit, but I want them to be treated fairly.

Mr. HUNDT. I follow you.

Senator HOLLINGS. And who determines enough?

Senator BUMPERS. That is a very good question.

Senator HOLLINGS. I mean, suppose I am a lawyer out there in Little Rock; and I want to hold up everybody. And I just say, "By God, we are just going to sit tight." Because, what? I can appeal. And you say, instead of $35 million for the loss of service and inconvenience, we will give you another $20 million. So that is $55 million.

I still say, "No; that is not enough." What happens? Do we appeal it to you, or the court?

Senator BUMPERS. That is a good question. Who is going to have the final say?

Senator HOLLINGS. I am delighted to see both of you gentlemen. Senator Kerrey?

REGULATORY POLICY

Senator KERREY. Mr. Chairman, thank you. I would like to talk a little bit about the regulatory policy in general; and your approach and, indeed, our approach to changing the regulatory environment.

I appreciate very much your willingness to do that; the administration, the President and the Vice President, and Chairman Hollings' willingness, as well.

As I look at the period of time from 1934 to today, it seems like we basically said for 50 years we provided a regulatory monopoly; and we built the finest telecommunication system in the world, AT&T. And that is how I view it.

Now, maybe I am wrong. Maybe there is some dispute about whether that is what we did. But for 50 years, we built the best telecommunication in the world.

Then we began to change the regulatory environment, with divestiture in 1984; and Judge Greene and the FCC have been dividing authority ever since. And the question occurs today: How should we regulate it? And how do we regulate, and what are our purposes for regulating it?

It seems to me one of the battle cries still in the works is this idea of universal access needing, of course, to be defined; because dial tone is obviously not an adequate definition any longer. We have to define what universal access is.

PERSONAL COMMUNICATIONS SERVICE

Question. The FCC adopted rules to issue licenses for personal communications services (PCS) last year. The FCC is facing a Congressional mandate to auction these licenses beginning in 1994. But the Commission has lately indicated that it is reconsidering all of its PCS rules. Some are concerned that this delay could cause harm to the industry. When do you expect to conduct auctions for PCS?

Answer. There are different classes of Personal Communications Service (PCS). In particular, we have two different proceedings that address "narrowband PCS" and "broadband PCS" respectively. The reconsideration and auction rules for narrowband PCS have been adopted and the auction for these 3,554 licenses will begin this summer. The broadband auctions are scheduled to begin by the end of the calendar year. The primary factors which are having an impact on the scheduling of the broadband auctions are the requirements of the competitive procurement process necessary to obtain the services of auction specialists, and the need to provide potential participants ample notice following the Commission's rulemakings to prepare for the auctions and arrange financing. The Commission is moving forthwith to implement the Congressional Mandate enacted in August 1993.

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

PERSONAL COMMUNICATION SERVICES (PCS)

Question. I am very concerned about one aspect of the FCC's recent decision on spectrum allocation for the PCS industry. In 1992, Senator Hollings and I added language to the Commerce, State, Justice Appropriations bill which would have required the FCC to preserve indefinitely the priority of public safety agencies on the bands they currently hold on the 2 GHz band of the radio spectrum. That language was unequivocal and it was approved by voice vote. The FCC then adopted similar language in its proposed rule. Therefore, we allowed the language to be deleted in conference, though the House would surely have accepted it. It was clear to us that the Commission had acted in accordance with the clear intent of Congress and the issue was settled. Last month I was surprised to learn the Commission had completely changed its position on this issue and now preserves priority for public safety users on the 2 GHz band for only five years, after which they can be booted off the band against their will, regardless of the effect on public safety. Why?

Answer. Throughout its emerging technology proceedings the Commission has recognized that public safety entities face economic and operational considerations distinct from commercial microwave operators. Initially, the Commission exempted public safety facilities from any required relocation.[1] At that time the Commission believed that frequency overlay technologies that were under development would allow for some frequency sharing between the 2 GHz incumbents and the new providers of new emerging technologies. Therefore, the Commission believed that allowing public safety to remain in the 2 GHz band indefinitely would not prohibit or delay the implementation or development of new technologies in the band.

Upon reflection, however, the Commission concluded that it underestimated the difficulty that emerging technologies, such as PCS, may have in permanently sharing spectrum with the incumbent public safety licensees. It now appears that overlay technologies are not as promising as originally hoped and that there is little possibility that this type of frequency sharing is feasible for PCS purposes. While we believe that sharing based on avoidance will allow for both incumbents and new providers to use the 2 GHz band, we are convinced that as PCS demand increases this sharing will limit the development of emerging technologies if all public safety operations are allowed to continue operating in the band indefinitely. Especially where there is a large number of public safety facilities in populated areas, PCS service will be limited unless public safety licensees relocate. Further, distribution of many planned unlicensed PCS devices will be precluded unless all incumbents are required to relocate from bands designated for unlicensed use, because these devices are nomadic in nature and therefore unable to share spectrum with incumbent operations without causing interference. Additionally, we concluded that to have allowed all public safety facilities to remain in the band indefinitely, even when there would be no disruption to their communications and no cost to them in relocating, would have unreasonably imperiled the objective of providing spectrum for emerging technologies.

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[1] The Commission later clarified that the public safety licensees eligible for the exemption is limited to those licensed under certain rule parts and for which the majority of communications is directly for police, fire, or emergency medical services.

In the context of the overall regulatory scheme, the Commission concluded that eliminating the grandfathering for public safety licensees was consistent with the intent of Congress that public safety operations be fully protected while adequate spectrum be provided emerging technologies such as PCS. Specifically, the Congressional intent appeared to be that the Commission ensure that public safety incumbents not suffer any degradation of service; that new facilities provide the same grade of service and reliability; and that any relocation be at no cost to the public safety licensee.

To ensure that the development of emerging technology is not impeded, the Commission devised relocation scheme specifically for public safety entity. Under the Commission's rules, the public safety entity is required to relocate only if all the expenses of the relocation are paid by the new emerging technology licensee, the new facility is comparable to the existing public safety system, and there is no disruption in service.

Moreover, public safety entities will have five or more years to negotiate agreements with emerging technologies providers. The transition period is bifurcated to ensure that all incumbents will have a chance to negotiate voluntary agreements. Specifically, the first period is a four year voluntary negotiation period which will begin in the immediate future when the Commission receives applications for PCS licenses. The second period is a one year mandatory negotiation period that will begin after the first period and then only when an emerging technology licensee needs the spectrum and requests relocation. For example, if an emerging technology provider does not need the spectrum until the year 2005, then the emerging technology provider would not request relocation until that time and the public safety licensee may continue using the band on a primary basis even though this is 10 years after the initial period commenced. Further, the entities still will have a one year mandatory period to negotiate a relocation agreement. The first negotiation period is two years longer than that provided other incumbent licensees. This policy provides an orderly transition to emerging technologies without disruption or cost to any relocating public safety licensee.

Question. Was there any discussion at the Commission, in reaching this decision, of the fact that you were clearly acting contrary to the intent of the Congress and in contradiction of the plain understanding of all concerned that public safety would be indefinitely protected?

Answer. The concerns of Congress, and specifically the provisions of the Senate amendment, were carefully considered during the Commission's deliberations. Our understanding of the Congressional concern is that the communications of all interested fixed microwave operations at 2 GHz, particularly public safety, must be protected; that the new provider should bear any burden of eliminating any harmful interference; that the Commission should permit voluntary negotiations between incumbents and new providers; that any mandatory relocation of commercial incumbent facilities not take place for eight years after adoption of rules; that no relocation adversely impact the service provided or the entity owning that operation; that the Commission retain jurisdiction to resolve all remaining disputes; and that the public safety operations be fully protected, both financially and technically.

In adopting rules to allocate this spectrum for emerging technologies, the Commission broadly complied with the intent of Congress as it was understood. As mentioned earlier, the Commission provided a regulatory framework that allows the 2 GHz spectrum to be shared by new services and existing services. The rules provide new licensees with access to 2 GHz spectrum in a reasonable timeframe and, at the same time, prevent disruption to existing 2 GHz operations and eliminate any economic impact on the existing licensees.

Where both services cannot share the 2 GHz spectrum, the rules protect incumbent operations. When clear spectrum is required, a new licensee can force public safety entities to relocate only if it provides facilities that are technically equivalent to those being replaced and that fully support the communications requirements of the existing licensees. All relocation costs will be paid by the new licensee. This procedure protects the integrity of all existing public safety operations at 2 GHz. The Commission's decision complies with the broad intent of Congress that no adverse effects be felt by any public safety entity.

Question. When public safety agencies have communications problems the consequences are measured not in dollars but in human terms and risk to life and property. How can this process of forcing public safety agencies off the 2 GHz band be carried out without substantial disruption and possible interruption of service?

Answer. To ensure that there is no disruption to service, the Commission's rules encourage agreements among the parties themselves that comprehensively address all the details of the relocation. The Commission concluded that this is the best means to guarantee that the operations of the existing licensees are fully protected.

Should the parties not conclude an agreement, relocation will not be required until the expiration of a four-year voluntary negotiation period and an additional one-year mandatory negotiation period. These periods have not yet begun. The four-year period commences only when the Commission receives license applications for the frequencies in question. To ensure that all parties are aware of this date, the Commission will issue a public notice specifying it. After the four-year period has expired, the one-year mandatory period may be initiated when an emerging technology licensee requests negotiation in writing. This might be immediately after the four-year period, or it may be years afterwards. If, after this additional year an agreement is not reached, the new licensee may submit a relocation plan to the Commission and request that it order relocation. Such a plan must ensure that no disruption will occur to existing operations and that all costs and services, including new equipment and necessary facilities, are provided free to the fixed microwave operator. In addition, the new facility must provide fully equivalent communications capacity with the same or better reliability. Finally, if for any reason the facilities prove inadequate in operations, for one full year the relocating operator may return to its original system.

In summary, the new licensee must:

—Guarantee payment of all relocation costs. Relocation costs include all engineering, equipment, and site costs and FCC fees, as well as any reasonable additional costs.

—Assure relocation must be to a fully comparable facility.

—Assure that the new microwave (or alternative) system must be fully built and tested. All activities necessary for placing the new facilities into operation, including engineering and frequency coordination, must be completed before the relocation can be required.

—Assure that should the new facilities in practice prove not to be equivalent in every respect, within one year the public safety operation may, at the new licensee's cost, relocate to its original facilities and stay there until complete equivalency (or better) is attained.

Question. I read about this in the newspaper, as a fait accompli. The slightest glance at the record of the Senate debate on this issue would have made it clear that I took the lead on this matter and that I was very concerned about it. Why wasn't I notified of this action or given an opportunity to comment on what I believed to be a settled question?

Answer. The staff of the Senate Commerce Committee's Subcommittee on Communications was informed that the Commission was contemplating altering the treatment of public safety entities and raised no significant objections to our doing so. Unfortunately, the Commission's staff did not consult with your staff, and I apologize for this oversight. I have instructed the staff to make every attempt to ensure that your office is fully informed of all decisions in which you are interested.

Question. On March 8 a journalist asked FCC Chief Engineer Tom Stanley why the FCC had changed its position on public safety relocation after it had reached an apparent understanding with Senator Hollings about his concerns, the same concerns I had raised. He replied that Senator Hollings' concerns were "far broader" than public safety, that "his concerns were the general incumbency situation * * * but public safety having no unique role in that analysis." He went on to say "the very important nature of public safety services is that they in a sense be as minimally disrupted as possible, perhaps no disruption versus prompt initiation of personal communications. I think that particular calculus we have reevaluated."

Mr. Stanley's recollection is at odds with the complete record, but my question is this: hasn't the Commission reevaluated the importance of public safety concerns simply because they would in some small way impede the policy objective of full deployment of personal communications services and some other technologies? Doesn't this represent a clear judgment that those economic and policy objectives are more important than preserving the effectiveness of the communications component of the public safety? In view of your obligation to serve the public interest, are those proper priorities?

Answer. As described above, the Commission's rules assure the continued effectiveness of public safety communications. The Commission requires that public safety entities asked to relocate their operations be provided the same or better capacity and system reliability without disruption to their communications and at no cost to them. As an additional safeguard, within one year of any relocation, the public safety operator can return to its original system at no cost to itself, if in actual operation some aspect of the new system proves to be insufficient. There will be no disruption to public safety communications; on the contrary, in many if not most situations, public safety operations will be improved significantly and will receive new up-to-date digital equipment to replace aging analog equipment. In return, spectrum

will be made available to support new technologies and services that are vital to our national infrastructure, our economy, and our continued world leadership.

Question. Under the current FCC proposal, those private interests that have public safety users ordered off the 2 GHz band will be obliged to pay the expense of their move to a higher band. How will it be determined when that obligation has been met? Who will make that determination? It's not hard to imagine a real tragedy resulting from only the smallest disruption in public safety communications. What recourse will public safety agencies or the public have if things go wrong? What recourse will be available to citizens who are harmed as a result of those disruptions?

Answer. The requirements of each particular system and operator are different, and our rules encourage the parties to conclude voluntary relocation agreements in which the parties themselves establish their own process and requirements. We believe that in most instances this voluntary process will work well. For example, organizations representing both sides of the relocation issue have scheduled or held conferences to discuss details of negotiating relocation agreements. However, if disputes that cannot be resolved by the parties themselves do arise, the Commission will resolve the issues after established negotiation periods have expired. As noted above, if incumbents are forced to relocate, they will have one year to test out the new system to ensure that it is equivalent in every respect to their original facility. If the new system is not equivalent, they may move back to the original facilities and stay there until complete equivalency (or better) is attained. We believe that these protections ensure that public safety licensees new systems will be equivalent to their existing systems and that citizens will not be harmed as a result of our actions.

Question. You have made clear the FCC's policy of promoting the deployment of PCS systems as quickly as possible. Is the FCC in a position to command the confidence of public safety users, whose presence on the band is viewed as an obstacle to deployment of the 2 GHz band, that it will be a completely fair arbiter of what constitutes full coverage of the costs of moving a public safety user off the band?

Answer. As noted above, the Commission has strongly encouraged parties to conclude voluntary agreements, but if agreement cannot be reached, the parties may bring the case to the Commission. The Commission has a good relationship with the public safety communications interests, and given that the rules under which specific cases would be decided are clear—no cost to the fixed microwave provider, fully equivalent facilities that are tested and proven during a one-year period of actual operation—the interested parties will have confidence in the Commission's decisions. Indeed, initial reaction of the fixed microwave community to these provisions has been that the rules sufficiently protect their interests.

Question. Before March 8, 1994 the previous rule was in place, indefinitely "grandfathering" incumbent public safety users of the 2 GHz band. Up to that time the facts hadn't changed. Why was that policy abandoned before it was ever tried? Why was it changed without any opportunity for public comment?

Answer. Upon reconsideration, the Commission concluded that it had underestimated the difficulty PCS will have in permanently sharing spectrum with incumbent fixed microwave licensees. This is particularly true for "nomadic" unlicensed operations. An example of a "nomadic" unlicensed device is a device that permits small computers such as "lap-tops" or "PC's" within the same immediate area to communicate with each other. Unlicensed PCS advocates consistently have argued that their operations require clear nationwide spectrum. The commenting parties included Apple Computer and the Unlicensed PCS Ad Hoc Committee for 2 GHz Microwave Transition and Management (UTAM).

The Commission also concluded that its process for relocation fully protected the communications and facilities of the fixed microwave users where there is actual, not just theoretical, demand for the spectrum. As indicated above, in many cases fixed microwave users will obtain improved communications through this process by replacing aged analog equipment with new digital equipment at no cost to themselves. In fact, the Commission and the parties recognized the potential for taxable gain for incumbent fixed microwave parties from this process, and the Commission authorized tax certificates to facilitate relocation by permitting deferral of any taxes owed on the gain represented by the increased value of the new equipment. Further, the bands identified for relocation currently support fixed microwave operations over equivalent distances with comparable reliability, including those of public safety operations. Given the conclusive evidence that relocation can be accomplished reliably, and that the introduction of new communications services that would benefit the public could be precluded unless clear spectrum could be obtained, the Commission provided for long term relocation subject to the safeguards already set forth in its rules. These safeguards include a one-year period after the relocation for proving the

equivalency of the communications and the ability of parties to invoke Commission consideration of disputed issues in specific cases.

Question. Although Apple Computer and Rolm had criticized the first Report and Order, the record indicates that the Commission took this action on its own motion, without any formal request from any party. PCS advocates and the public safety community were satisfied with the previous arrangement. Who was the Commission trying to serve by making this change?

Answer. As noted above, a number of parties addressed the difficulty of operating on encumbered spectrum. Given that no harm could come to the communications of the public safety operations subject to relocation, the Commission concluded that it must do more to ensure the availability of spectrum to new entrants to ensure its viability.

Question. In his separate statement accompanying the Opinion and Order, Commissioner Quello declares that the public safety community should have been apprised of this change and then goes on to say that it might be feasible in rural areas for public safety agencies and emerging technologies to share the band. Commissioner Barrett raises similar concerns. Why can't some accommodation be made in the rule for rural areas where spectrum sharing might be possible?

Answer. Accommodation for sharing has been made where spectrum demands are not mutually exclusive. Sharing will occur in some areas for the indefinite future. Under the regulatory scheme adopted by the Commission, public safety operators will be required to relocate only if the spectrum actually is required for new service in that specific area. Whether to request relocation is an option of the new provider. The Commission does not expect frivolous relocations to occur, because the new provider must pay all costs associated with the relocation and guarantee the comparability of the new system. In areas where new service providers do not require all of the available spectrum, which we anticipate is especially likely in rural areas, incumbents may remain in the band indefinitely. Under all circumstances, however, no public safety licensee may be required to relocate without a minimum one-year negotiation period to address details of the relocation. For example, if an emerging technology provider needs the spectrum in 2005, an affected public safety facility will have the benefit of the mandatory one-year negotiation period beginning at the time when the request is communicated to the fixed microwave licensee.

Question. The Commission has granted "pioneers' preferences" to two PCS providers on the basis of the spectrum sharing technologies they have developed. How is that practice consistent with the Commission's position that sharing of the 2 GHz band is not a viable option?

Answer. Sharing may be crucial to the start-up of new services during the first three to five years while necessary relocation of existing facilities is being accomplished. At a recent Commission staff hearing on PCS issues held on April 11, 1994, parties emphasized the importance of initiating service within the next year or two. The record indicates that in many instances the ability to share spectrum while pursuing relocation of incumbents will be important, particularly in the higher-demand urban areas. In the longer term, sharing capabilities may delay indefinitely or even eliminate the need to relocate fixed microwave facilities. The Commission's award of a pioneer's preference for developing sharing technologies, however, does not undermine our view that, especially in areas of dense population, long-term sharing of the band may impede the introduction of new technologies and services. The amount of clear spectrum needed by new providers will depend upon the demand that develops for their services and will vary from area to area. The Commission adopted a flexible approach that encourages sharing to the maximum extent technically feasible, while recognizing that because of expected capacity demands sharing on the long term is unlikely in the most populated geographical areas.

Question. The arbitrary selection of a five year transition period seems inadequate, especially since there can be true arms-length negotiation only during the first four years. Why five years? Why not ten or twelve or more? Wouldn't freely negotiated deals be likely to occur in the early years?

Answer. We believe that the length of the transition period is balanced by other protections provided the incumbents. In past proceedings we have provided somewhat longer transition periods, but in those cases the incumbents were responsible for relocating themselves including all cost. Further, as noted above, none of the transition periods has begun to run. While the first four years is fixed from the time that an application for license is filed for the spectrum at issue in a specific case, the one-year mandatory negotiation period begins only (a) after the initial four-year fixed period, and (b) a new licensee initiates the request to the fixed microwave operator. While licensing of PCS is expected to begin later this year and service to commence next year, in some areas spectrum will be shared, while in others fairly

ices increases, the necessity for relocations is likely to increase. There is a great disparity in requirements from market to market and from one area to another that is difficult to address efficiently on the broad national level. We therefore have adopted an extended transition period of five years for public safety operations. Other licensees will have a minimum of three years. As you note in your question, one might hypothesize voluntary agreements can be expected in less than four years in those cases in which negotiations are initiated immediately, but the Commission preferred to provide an extended negotiation period to public safety licensees so they will have ample time to negotiate and conclude voluntary agreements.

QUESTIONS SUBMITTED BY SENATOR J. ROBERT KERREY

TELECOMMUNICATIONS SERVICES FOR EDUCATIONAL INSTITUTIONS

Question. How can public policymakers establish incentives for all competitors to wire and connect schools, homes and libraries with educational technology and products?

Answer. I believe that by promoting effective and vigorous competition throughout the telecommunications industry, public policymakers can foster the deployment of advanced educational technology and services to all Americans. Competition generally stimulates service and technological innovation, fosters lower prices and costs, and improves service quality. Through competitive policies, policymakers can create incentives for competitors to provide these public benefits while ensuring that universal service remains a cornerstone of our national telecommunications policy.

As you have pointed out, the students of today are the citizens of tomorrow. Currently, there are approximately 45 million students in grades K–12 in this country. I believe that telecommunications industry competitors recognize that the values, education and technological aptitude that our students obtain will be the future strength of our nation. Presently, there are numerous efforts underway to serve the educational and technological needs of our schools. For instance, approximately 60 percent of American schools have received coaxial cable connections and the Cable in the Classrooms project now permits roughly 34 million students in 63,000 schools to access cable programming. Likewise, many telephone companies, including Pacific Bell and Bell Atlantic, have initiatives to enhance the ability of students and teachers to access information through distance learning and other educational applications.

As competition increases throughout the telecommunications industry, public policymakers must also be mindful of the evolving nature of markets and technologies in pursuing universal service objectives. While universal service policies have traditionally focused on making voice telephone service generally available, the pending Senate and House legislation recognizes that educational and other institutions may also have a role in the advancement of universal service goals. Further, as competition emerges, traditional universal service policies must be adapted to ensure that all competitors are obligated to contribute equitably to attaining the universal service objectives. I support pending legislation that would give the FCC broad regulatory flexibility to address this critical area in the future.

Question. Market demand for advanced telecommunications services will increase as more people have the capacity to communicate with these new media. As we increase the demand for advanced telecommunications services, the average costs of these services will go down, making them more affordable to everyone. All of these factors must be an integral part of any cost-benefit analysis in determining public policy.

I'd appreciate your views on the role that policymakers can play, if any, in establishing policies that encourage all telecommunications carriers to provide telecommunications services to educational institutions at affordable rates.

Answer. In general, policymakers can act to promote competition among providers of telecommunications services. Competitive markets foster lower prices, technological innovation, and responsiveness to consumer demand. One role for regulatory agencies is to remove unnecessary barriers to competitive entry. A key role for the FCC and for state regulatory officials is to ensure that the principles of universal service remain an integral part of their telecommunications policies. We also must be prepared to revise our universal service policies in light of changes in technology and the marketplace.

Question. How can we promote public policy that encourages and permits all providers of telecommunications services, whether they be local phone companies, long distance phone companies, or electric utilities, to compete to provide advanced telecommunications services for educational institutions?