That's the reasons behind our more conservative forecasts.

THE CHAIRMAN: Do you -- and understand, please, I realize that both of these are a lot more than zero and both represent tremendous economic growth for our country, but still an interesting difference, unless you both agree that it's not interesting and can explain that to me as well.

If I could follow up on this, Mr. Kerr. You say: "In its current format, PCS will not realize its full potential on a timely basis." I'm reading from your written submission. "And most importantly, the public will not be best served with the diverse range of cost-effective products and services."

Would it be correct for me to infer that you, in effect, are saying that you might be closer to the 29 million projection if there were a different format?

MR. KERR: That is correct. In fact, our baseline scenario we had drawn for PCS, and in an environment with two, or at most three, strong MTA competitors, would suggest a market potential up in the 30 million range -- 30 plus million.

At the end of a day do I believe that PCS can attain 29, 30 million subscribers? Absolutely. My debate is when they will achieve that.

THE CHAIRMAN: Well, I suppose everyone would agree the sooner the better. That's a fair statement, isn't it?

MR. KERR: That is a fair standard, and the issue I guess, therefore, is what mix of regulatory and technological environments will get us there at a timely fashion.

THE CHAIRMAN: Just to close this loop, has he given you any better insight on his 17 million? Did you want to comment on that?

MR. HAMILTON: No, I really wouldn't want to comment on his forecast. I guess I just want to emphasize that of all the forecasts we've been hearing, even though there may be great ranges, as you mentioned, they are very higher -- greater than zero.

I think that is really due to of the cellular, SMR, PCS, and even narrow band paging, they'll all have some equal capabilities, so there really will be a réal fight, and I think what's more clear is how big the numbers are versus which industries are going to get which, and that will be left to the competitive market.

I do agree with some of the other comments, in that if you look at where the subscribers will have to come from to meet any of these demand projections, it will have to be on the consumer side. Our research has shown that 70 percent of the new cellular users are predominately personal users, and even 50 percent of the paging users today are using the pagers for personal use.

Some of the other -- I think GTE has said that they have found price elasticities being the key, and we also see that. These consumers, they'll have a choice between a lot of different technologies to serve their basic needs, whether it be in a two-way paging or whether it be in a PCS or cellular or digital SMR.

THE CHAIRMAN: Did you agree -- just as my last question -- do you agree with Mr. Kerr's statement that in its current format PCS will not realize its full potential on a timely basis?

MR. HAMILTON: No. Again, if PCS is licensed in 1994 -- the end of '94 -- that'll be a key point. As far as the seven licenses, we see it very rapidly consolidating between three and four. We don't see seven being out there on the market for long. So even thought there might be seven licensed, our predictions are based on three to four PCS providers in each market.

THE CHAIRMAN: So you think that he's right, that that's the way to maximize the potential, but you think it will --

MR. HAMILTON: It will happen.

THE CHAIRMAN: -- it will reduce to that quickly, anyhow?

MR. HAMILTON: Yes.

MR. LOWENSTEIN: Can I add something here?

THE CHAIRMAN: Sure.

MR. LOWENSTEIN: As the third kind of consultant, or market research-type on the panel here --

THE CHAIRMAN: I haven't run your calculation yet. 17, 29, and what number do you have?

MR. LOWENSTEIN: The one point that I think is a little bit, a demarcation between these two speakers is, I think one is looking at ESMR as part of the mix and the other isn't, and I'm not remembering which one is and which one isn't.

I think that is a fairly key issue, particularly in terms of the business market opportunity. Business customers are largely unserved by wireless services right now, or the types of wireless services that they would like, as Mr. Twyber mentioned in his testimony.

I think that the longer there is a delay in the allocation of licenses for PCS, the more of an opportunity it creates for digital SMR services, such as those being proposed by MCI Nextel to come in and offer enterprise-wide solutions that integrate voice data as well as paging technologies.

I also think the one issue that hasn't been addressed today, and I think it's interesting to potentially explore, is the non-2 gigahertz PCS type services but extended range wireless services that will be offered by enhanced cordless phones.

There's a lot of development work taking place by those who are manufacturing cordless phones right now that will significantly expand the range of today's cordless devices from 100 or 200 yards, out into the 1 to 3 mile range, from a home base station.

Clearly, even if that's not of the 2 gigahertz band, which it probably won't be, that has a significant potential for taking a part of what is the forecast for newly-licensed PCS as part of basically an enhanced cordless telephony service that has rates closer to land line rates and has a fairly broad appeal to consumers who are already very much used to. As we mentioned, 50 percent of households have cordless phones right now.

They're used to that form factor, they're used to the structure, et cetera. So I think it's important to recognize that as well.

I think we're all in general agreement here as to the size of the wireless opportunity. If you look out in the 5- to 10-year time frame, I think all of our numbers kind of converge upon somewhere around 30 to 40 percent of individuals having a wireless service and a fair approximation in terms of number of households, I think, where the disagreement is is in terms of where it will come from.

DR. PEPPER: You've predicted, if I read this correctly, by '98 about 2.5 million new PCS voice customers?

MR. LOWENSTEIN: Yes. Just on the newly-licensed PCS.

DR. PEPPER: All right. Then about 15 percent of the forecast base of 32 million from cellular.

I guess one of the questions is: there seems to be distinctions being made between cellular and PCS and advanced paging services, extended cordless phone. Are those correct market segmentations going forward, to maintain? To what extent will cellular operators be able to provide and provide a full range? To what extent would a 30 megahertz PCS provider be able to provide the full range of services?

One of the implications from what we're hearing, is that once a cellular operator has a customer, it appears that your assumption is that that customer is locked in, that they cannot move or be moved to one of the other new service providers?

MR. LOWENSTEIN: Well, we think that the cellular companies are extremely well positioned to offer PCS-like services over the existing cellular spectrum, as the complementary set of services to what will emerge in the 2 gigahertz band.

As they digitize their network, as they put in more microcells, particularly some of the B side carriers, for example, that R-BOX subsidiaries, have already increasing levels of intelligence land line network to connect to and offer that fall and retype services, they're very well positioned to offer much of what we see as a PCS type of services.

That's not to say that they're not interested in and will not bid for some of the licenses in the 2 gigahertz band, but we think that, given that market is not yet a certainty and it's a new market, that they will be continuing to deploy network infrastructure to facilitate competitive services over the cellular spectrum that are very much PCS-like in nature. That's one of the reasons why we have forecasted and segmented the market in the way we have.

MR. HALLER: I'd like to get some expansion on that, if I could. Again, since we didn't give directions on how you had to present your charts, it's a little difficult to compare two people, but I'll just give you an example.

I know that there's disagreement here, but I'm curious as to why both of you feel that way.

Mr. Stroup, you indicate that in the year 2003 that cellular will have about 17.4 percent penetration, whereas PCS is only going to be about 10.4, so it's not double but it's still highly balanced towards the cellular side.

Mr. Hamilton, you have similar projections. Yours is 32 percent for PCS and 56 percent cellular.

Others may have similar projections, but those are the two I happened to pick out. Why is that? I know, Mr. Lowenstein, you've indicated that cellular is already in there, they're well positioned.

Are there things the Commission should be doing to assure that PCS, when it comes on line, is going to be an aggressive competitor to cellular? Anything we can do to make that balance a little different than 2:1, at the year 2003 or 2004?

Tom, do you want to start?

MR. STROUP: Sure, I'll jump in. I think a major factor that has to be considered, and that may explain some of the discrepancies that you've heard, is definitional. We deal with six services in our study.

I think that one factor that has to be considered is the year of licensing, and that may explain the difference between 17 and 28 or 29 or ours of 31. The longer the Commission delays in getting onto licensing, the greater the advantage the incumbents have, whether they are cellular carriers or ESMR carriers.

That's a very important factor, and that's a primary reason why cellular will continue to have a dominant market share, or a major market share, is that they are out there operating, adding 14,000 customers per day.

I think it's extremely important that the Commission fashion rules that allow the new entrants to be able to provide a competitive service, but that they be able to do so quickly, because one of the comments that's already been made is that this is seen as opportunity that's slipping away. And that's absolutely right.

We can debate the market structure, the number of licensees, the size of the spectrum grants for the next two years, and not have any better idea of what the right answer is.

I think the advocates of each position have made their points quite clear. The record is full of all of the arguments. I don't think that we're going to hear anything new, but it will be irrelevant if it takes two years to be able to answer those questions, because the opportunity will have slipped away.

DR. PEPPER: I don't think anybody has suggested that it's going to take two years to answer those questions. In fact, we're moving quite rapidly. The purpose of this hearing -- these sets of round tables today and tomorrow -- is so that we can more efficiently collect information from the competing parties who usually come in on one on ones and do it much more efficiently so it can move much more rapidly. THE CHAIRMAN: Could I ask you, and you only need to take two minutes to answer this.

"In its current format, PCS will not realize its full potential on a timely basis." That's Mr. Kerr's statement. Do you agree with that?

MR. STROUP: No. I believe that the market will make corrections. I believe that if the Commission allows companies to aggregate the spectrum, that if there are inefficiencies that are made or incorrect decisions that are made in the allocation, it will be corrected.

I don't think that there is a system that will work well in the urban markets and in the rural markets. I don't think that there are areas of the country where I grew up where there are going to be seven new PCS licensees, in addition to two cellular and an ESMR license.

However, in New York City, that may be a completely different situation. I think rather than continuing to debate that issue, the market will correct for any inefficiencies that occur in the licensing process.

THE CHAIRMAN: Let me see if I have this right. What you're saying is, it may well be that Mr. Kerr is exactly right, but it doesn't really matter?

MR. STROUP: I think that, again, if we let the debate go on, it won't.

But, most importantly, we've found a couple of things, one is that the customer, the buyer, when we did our real market trial, and sold services to them, was interested in the value of what they got, and pricing did influence their buy decision substantially.

We -- we, in a four month period, penetrated 15 percent of our target market, and we clearly were able to influence that a great, great deal. So I think that we need to make sure we understand that the assessment of demand, very quantified, depends upon a set of assumptions, and we -- we're none of us are clairvoyant enough to know 10 years downstream what the real application will be.

We see cellular, and PCS, and wireless data, and imaging, and other kinds of things all coming together, and being part of personal communications.

We think the marketing will determine that more than will some of these other factors, although they're important, and they have -- they have to create an equal opportunity for the service provider to do it, ultimately, what the customer says, if it's met, we'll allow the penetration to be pretty much controlled, to be whatever depth we want it to be.

MR. PEPPER: Can we pursue this pricing question ,for a moment. You talked about the importance of pricing and price sensitivity is really critical here.

Could you pursue that in terms of the entry, the

-- the cost of the handset, and also then in terms of the monthly service charge, and the extent to which it goes back to a question asked earlier that the incumbent cellular operators have been able -- or, in your mind, are they being able to lock in customers, instead of migrating them or moving them to a new PCS service, as it's priced more aggressively, and if they can maintain and keep their customer base by lowering price, then, you know, what does that tell us today about the price of cellular service today.

MR. WAYLAND: Well, I think you can get in to a commodity offering and lower price, and certainly that is the strategy that some may choose to use. That's not, I believe, the best strategy for providers to provide, to use.

Providers should look to the market needs in developing a new an unfulfilled and under-fulfilled market need, and develop offerings to satisfy them, and charge the fair amount that the customer is willing to pay for that.

What we found in our telego trial was that the customer doesn't want to put up that large one time cost for the phone. They don't want to sign a one year term agreement. They don't want a large entry cost, but they are willing to pay some numbers of dollars per month as perceived as equal to the value of what we provided them.

And we found what they were willing to pay, in our trials, was something under cellular monthly revenues, but certainly greater than what they pay today for the local exchange services, so there's a substantial amount of per-customer per-month revenues.

And we could influence that a great deal by putting features, and characteristics, and functions into the offering that met their real needs.

MR. PEPPER: Mr. Lowenstein, or Mr. Hulak, Mr. Hamilton, in terms of your market research study, what have you found on pricing service?

MR. LOWENSTEIN: I would agree with what Mr. Wayland said with one thing, a very important caveat. Any wireless service that includes some sort of a wireless capability from inside the home, a cordless type capability inside the home, or near the home, that one could normally approximate with today's cordless phone or enhanced cordless phone, consumers are not willing to pay more than traditional land line rates for that type of service.

So, for example, we conducted the survey, and found that 33 percent of the respondents were either very or somewhat interested in the type of follow me type services where the terminal cost would be between $2 and $300, which we think is a fairly reasonable entry point for the type of premium levels of mobility that would be accessible from a follow me type service, and then in terms of the usage charges, they would be charged land line rates when they're in or around the home, they would be charged 25 land line, plus 25 percent when they're in kind of the neighborhood, a kind of five mile radius of their home or their office, and then when they're in a higher speed or wider -- wider levels of mobility, more approximating a cellular type services -- service, it would be a 50 percent land line, plus 50 percent.

All of those rates for the wireless elements of that and for the mobility elements of that are about half of what today's cellular rates are. The average cellular call today, at peak time, you know, during the day, is approximately twice the equivalent cost of a land line call.

We think that PCS prices will have -- will have to settle in somewhere between typical land line prices and today's cellular prices to be attractive to that next wave of potential users.

MR. PEPPER: Is it he next wave? So you're looking at attracting customers today who are not customers for wireless services like cellular, as opposed to trying to move people from a cellular to a new -- a new service provider?

MR. LOWENSTEIN: Well, mainly -- mainly, yes. There will be some of the -- some migration, as well, to a more follow me type service because of the fact that that's not undertaken by cellular, but it is both -- it is the consumer market, but also the -- the business market, to the extent that companies implement a wide solution such as the type of solution Mr. Twyver mentioned, something that might be hanging on from the wireless PBX base, for example.

So a business, an employee, can take their terminal, and they use it in their office, but then they can use it also when they leave the office, and connect on to another -- to a wireless network and use it in their home, or while they're commuting to and from work, for example.

MR. PEPPER: If a provider can offer that, maybe I'm missing something. I don't understand then why more customers wouldn't migrate from today's cellular service to a new service provider if cellular did not provide that kind of follow me service. The enterprise service, you're saying that they will be able to?

MR. LOWENSTEIN: Yes, but -- but these services I'm talking about right now aren't really offered by cellular.

MR. PEPPER: No, I understand that. Therefore, if they're desireable, why -- why will cellular maintain at least, depending upon which projection, at least a two to one penetration over any of the new entrants for the foreseeable future if the new entrants are going to provide the new kinds of services that you're talking about, as well as lower pricing, which we've heard is terribly important?

MR. LOWENSTEIN: Because of the installed base, and because of the fact that a lot of users are business users, and there's a little bit less price sensitivity in the business model than a consumer model, which is the next wave of adopters that we're looking at in terms of the new services, and also because of the fact that the cellular providers will probably lower their prices, as well, in response to their potential competitive service offerings of the new -- of the new entrants of the market and the new services. We do forecast that cellular prices will fall over time. They have already, and they will continue to do so.

MR. PEPPER: Is the installed base issue, the customers' investment in their own equipment, I assume, what you're talking about?

MR. LOWENSTEIN: Yes, and rate plans, and the fact that businesses are -- are starting to adopt cellular type solutions a little bit more aggressive for their employees.

MR. PEPPER: So what you're saying is that there is a real head start advantage for cellular today with the customer -- their existing customer base?

MR. LOWENSTEIN: There definitely is somewhat of a head start advantage for -- for cellular providers, absolutely.

MR. PEPPER: Can anybody quantify that, Mr. Hamilton?

MR. HAMILTON: Well, as far as the -- talking about the installer base, and what that means to the competitive environment, it's much harder for the PCS providers to take away a customer from a -- if they're already on a system, cellular SMR paging, than competing for that customer as a new customer.

It's not only related to price, it's related to things brand loyalty and education about the product. PCS is going to be growing out, and the consumers, it may be in a very confusing environment in the future.

There will be, from all directions, advertisements about these new mobile services, however they're defined and promoted, and they're going to have to try to educate the consumer about what's different about their service and the services they already have.

And I think that also goes back to the delay issue. Why is that so important? It's because if growth in the cellular and other mobile industries were very low or moderate at this time, delay will not mean as much, but k at it over the past two years, both the and paging industries have met with pheromenal I mean, more growth in that two years in the r industry than in the previous seven years.

So when we look at our demand forecasts, we see -- if we look at demand as, you know, the traditional rve, are you in the beginning, rising steep, or in the ure markets. The growth that we've seen over the next this last two years, have meant that we will reach that aturity at sooner levels, and that really impacts any delay that a new service provider has of getting into the market.

MR. KATZ: This is a, I think, very powerful argument in favor of the FCC moving as fast as possible, and you would agree with that, also?

Let me ask you if you also envision what Mr. Hulak was talking about, because I think, and you also Mr. Stroup, and that is the sort of devolution from seven to three to four entities. Does that process have in it any potential for delay or do you think not?

MR. HAMILTON: We think the -- whatever the market structure or the FCC provides, as long as it allows again for aggregation and no restrictions upon what you can do with your license, that consolidation will happen quickly.

MR. KATZ: But do you think that the necessity to move through that consolidation is and element of delay that we should try to avoid, or, by contrast, do you feel that that's not the sort of delaying process that you would be concerned about?

MR. HAMILTON: I would be concerned about it. I wouldn't -- if it meant delaying the licenses and trying to get a better scheme, in order to prevent some consolidation, no, then I'm against it. Go ahead with the licensing as it is in the market.

MR. STROUP: If I could comment on this delay issue. I think that there was a widely held belief in the industry, approximately six months ago, that auctions would be commencing this summer. And, now, based on discussions that have taken place, the expectation, it's probably going to take place later this year or maybe even into 1995, and that's the delay that's being discussed.

I'm delighted to hear the comments that have been made on planning now to move them forward quickly.

But bearing into the expectations of approximately six months ago, there -- there already is delay that is occurring.

MR. HALLER: I would like to ask each of you to respond simply to a question. If we make no changes in the decision -- if the commission makes no changes in the decisions that were made previously, we avoid a recon cycle.

If we make changes, then we wind up with another with another pleading cycle. Now, which is better, to try to make other decisions, assuming that there are some in the last decision that were incorrect, or could be changed for the better, or is it better simply to affirm the previous decision, given it wasn't an illegal decision, you know, it could be affirmed, just as it was.

What is the better choice, to go forward, and affirm the last decision, or to try to refine it, and risk another pleading cycle? Let's start on this side.

MR. TRAMPUSH: In terms of no changes in the decision -- I'm representing the rural telephone companies. No changes would basically preclude that segment of the industry's participation in the new technology. The main rural companies that are interested in pioneering their own PCS serving area, and, in fact, they may be the only ones interested in providing that service.

MR. VAUGHAN: Excuse me again. You're saying we should make the changes?

MR. TRAMPUSH: I think you should make changes, yes, Mr. Vaughan, and the nature of the changes would include examining cellular ownership restrictions. There are many small companies that own more than 20 percent of rural cellular partnerships that have no control whatsoever over those partnerships, they're more of an investment.

So if you want to foster competition between rural and PCS, one way to do that would be to look at relaxing those ownership restrictions.

Another important thing to look at, which has been added here by the coalition is to allow partitioning of licenses. Small companies can't afford to buy BTAs and MTAs, yet they are interested in serving the wire line territories. That would also speed deployment of the service to rural areas quicker than it would under BTA and

MTA through a licensing scheme.

The third area to look at would be the build-out restrictions in the rural areas if partitioning is allowed to make the economics work, so the service can be provided to customers as soon as possible.

MR. VAUGHAN: Simply affirm the current decision.

MR. WAYLAND: We believe a re-look at this is certainly in order. I believe that it's very, very important that the commission carefully examine the nature of meeting the consumers' needs, and time to meet those needs is part of it, but to be able --

MR. VAUGHAN: You're suggesting that, right now, the way the commission's order is written, that if the commission has to fix this, we need a full year to do so is because if the commission makes a major change, we're going to go back in to the recon again, and that's what you're saying. It's better for this commission to take another full year before it acts, based on what you've read in that order?

MR. WAYLAND: Yes. I think it's much better to do the right thing than to do something that isn't