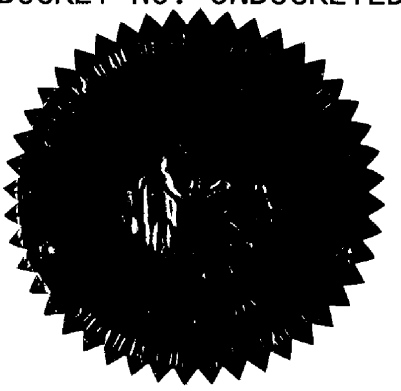
BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. UNDOCKETED

In the Matter of

INTERNET PROTOCOL TELEPHONY.
_____/



ELECTRONIC VERSIONS OF THIS TRANSCRIPT ARE A CONVENIENCE COPY ONLY AND ARE NOT THE OFFICIAL TRANSCRIPT OF THE HEARING, THE .PDF VERSION INCLUDES PREFILED TESTIMONY.

AUDIOTAPED PROCEEDINGS:	WORKSHOP
DATE:	Monday, January 27, 2003
TIME:	Commenced at 9:00 a.m. Concluded at 12:30 p.m.
PLACE:	Betty Easley Conference Center Room 152 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	TRICIA DeMARTE, RPR LINDA BOLES, RPR Official FPSC Reporters

PARTICIPATING:

JIM BURT, representing Sprint-Florida, Incorporated.

STEVE INMAN, representing BellSouth Telecommunications, Inc.

WAYNE FONTEIX, representing AT&T Communications of the Southern States, LLP.

CHRIS SAVAGE, representing Florida Cable Telecommunications Association, Inc.

DON PRICE, representing MCI WorldCom, Inc.

NORMAN EPSTEIN and CHRISTINE HUFF, representing Verizon Florida, Inc.

JOHN FONS, representing Northeast Florida.

RICK MOSES, representing the Florida Public Service Commission.

P R O C E E D I N G S

MR. MOSES: To my left is Samantha Cibula with our legal services. To her left is David Dowds who's in communications also, and to my right is Paul Vickery who is in communications. I'd like to begin this morning for thanking you to come to this workshop. We've got a lot of information to cover this morning, so we're going to try to stay on track as much as possible with the agenda that's out there.

If you haven't already, please sign the sign-up sheet on the left-hand side. There's also copies of the agenda. If we run out, we can get some more copies made.

The purpose of the workshop today is to discuss the voice over the Internet protocol. It's an exciting new technology that seems to be emerging quite rapidly. And the purpose of being here today is just to gather additional information so staff and the Commissioners can become aware of the different types of services that are being provided, how they're being provided, and how it compares to the existing switched circuit network.

In order to get as much information covered as possible today what I would like to ask is any of you that are making presentations -- not presentations necessarily but comments or answering questions or asking questions, for that matter, is please don't try and duplicate comments that have been made by previous presenters. This way we can at least

save as much time as possible and get as much material covered as possible.

We'll be taping the workshop today. If you need a copy of the tape, we can certainly get one provided from our records department. And with that, Sprint wants to make a short presentation this morning to kick it off. And from that point, we will get back on the agenda. And the first one is to describe what the VOIP is and the network elements.

And who's -- go ahead. Also, is there anyone on the call-in number? It doesn't appear so. In case someone does start calling in, whenever you do make a presentation or comment, if you'd identify yourself and the company you represent, that way it will help everyone that can't see the presentation. Thank you.

SPEAKER: Excuse me, Rick?

MR. MOSES: Yes.

SPEAKER: Can our subject matters or myself ask questions during a presentation if there's an appropriate opportunity?

MR. MOSES: Certainly.

SPEAKER: Okay. Thank you.

MR. MOSES: There's a microphone there if you would like to use that. It'd be a little bit more mobile.

MR. BURT: I tend to speak pretty loud. Can everybody hear me okay?

MR. MOSES: We're taping it, so we need you to talk into the mike.

MR. BURT: Okay.

MR. MOSES: Thanks.

MR. BURT: My name is Jim Burt, and I am director of regulatory policy for Sprint. And I appreciate the opportunity this morning to spend just a few minutes going through some of the issues that we see relative to voice over IP. It is a new issue, I think, for a lot of us. And we've been spending some time over the last few months looking at this issue. And some of the information that we've compiled is going to relate to some of the services that we see being provided over IP from a retail perspective. And I just want to say up front that this is Sprint's perspective of these services. And if there's anybody here that actually are from a company that offer this type of service, you know, there might be some differences in how we view that, but this is really how we see it.

I'm going to talk a little bit about what voice over IP is. I think it's important from a regulatory legal perspective that we look at what voice over IP is and try to distinguish between it and other types of services because I think that's really the issue that we're faced with. Then I'm going to spend some time, as I mentioned, talking about different applications, talk about numbering a little bit, and then look at it from a competitive perspective and primarily

how should companies that offer these types of services be regulated, and then I'll summarize that.

And again, as I put things up here, if I've defined something, this is my definition. It's not necessarily a textbook definition. So there may be others that have differing opinions. But to start it off, what is voice over IP? And basically that's voice communications that is using the Internet protocol, you know, and that's in its most basic sense.

The Internet protocol itself is just a standard that's used to route packets throughout a network. Now, it's the standard that's used over the public Internet, but IP communications can also take place over private networks as well. So there might be some distinctions there that are interesting to look at. And then just to contrast that with what we typically deal with which is the public switched telephone network. You know, that is a TDM, or time division multiplexing. It's been around for a long time and it's circuit switching. So rather than sending packets around, you typically nail up circuits between two points.

And then really getting into the issues, you know, how we implement or how voice over IP is implemented may have an impact on the resale or the retail services, how they're regulated, and then of course an important issue to a lot of us is intercarrier compensation. Some of the issues, is it

phone-to-phone like we traditionally think of in the PSTN, computer-to-phone, et cetera, et cetera, and a lot of different ways in which it can be implemented. Is it over the public Internet, truly the public Internet, or is it over a private IP network? And then this last issue which can get quite confusing, is there a net change in protocol?

And I have -- I should say Sprint, we have tried to put together a definition of phone-to-phone IP telephony when there is no net change in protocol. And this is how we have been looking at the issue that is before the state of Florida, as well there is a petition before the FCC, and we are trying to confine it very narrowly to phone-to-phone voice over IP when there's no net change in protocol. And the first aspect, we're saying that's real-time voice communications. Phone-to-phone suggests that there are what we call traditional telephones in both ends. There are a lot of things out there that may look and act like a telephone but they may not be telephones actually even though there is voice communications taking place over them.

No net change in protocol. This one is a little bit tough. And the FCC has looked at this, but we're saying that if it's -- if the signal is leaving the originating customer premise in TDM and then it is terminated to the public switched network in TDM, there is no net change in protocol. It's TDM in, it's TDM out. Regardless of what goes on between those

points, there could be a lot of IP on the network or there could be just -- you know, some people have referred to it in some comments, and you could have back-to-back switches converting it to IP, and it might only be IP for a few feet.

MR. MOSES: Why did you select TDM and not just, say, an analog signal coming from a normal telephone?

MR. BURT: I would use those synonymously. The reason I didn't say "analog" is because there's a lot of digital being utilized today in the PSTN.

MR. MOSES: So TDM meaning time division multiplexing?

MR. BURT: Yes.

MR. MOSES: Okay.

MR. BURT: Whether it be analog or digital. Okay. And then the last bullet, and I mentioned this before, is use of a private IP network or a public Internet. And here is my first typo as far as I'm aware. It has no bearing on the definition, B-E-A-R-I-N-G. I did have some Sprint proofreaders of this last week and they didn't catch this either. I caught it yesterday. Yes.

SPEAKER: Is it okay to ask questions?

MR. MOSES: If you can come up to a microphone because we are taping it.

SPEAKER: My question is just, I was thinking TDM and I was thinking the wireless --

SPEAKER: Your mike is not on.

SPEAKER: It's not on? Oh, I'm sorry. Are we on?

SPEAKER: Yes.

SPEAKER: Okay. I was wondering how you classified a cellular phone that uses either a CDMA or some other nontraditional thing, and I had just a question as to whether you thought cellular, which is regulated in a different way anyway, would count as part of the PSTN for this.

MR. BURT: Well, I think you mentioned the key. Cellular is regulated differently by statute, so I'm really putting it outside of the context of my discussions here.

Okay. Now we're going to have some diagrams. And I've tried to simplify these as best I can but show some of the major components.

This first one which I'll just call a retail toll service using voice over IP, and if we want to start at the left-hand side down on the lower portion, there's a couple of ways in which end users access this type of service. They would either call an 800-number or possibly dial a local access number, 7, 10 digits, whatever that might be, to get access to the service provider's platform. That's where their account number authentication and all that stuff might take place.

If you look at the 800-number, obviously that's going to go to a carrier who is probably paying originating access for that. If there's a local number being dialed, that

theoretically could be provided over a local retail service, so there may not be access -- originating access on that call. It may just be a flat-rated local service. It might be a B1 or a PRI or something. But then once it gets up there to the service provider, that's where they will have a device generically called a media gateway which is making that conversion between TDM and IP. And then that's transmitted over a private IP network or the public Internet, and then you see basically the reverse on the other end of the call, on the terminating side of the call. At some point, it has to go through a media gateway converting it from IP back to TDM, and then it's terminated to the PSTN one of two ways here again.

On the right-hand side, that shows that it's being handed off to a CLEC who then in turn hands it off to which would probably be the ILEC local tandem at that point over an interconnection trunk or PRI and then terminated. And you could have multiple offices here just depending on who is providing the service to the end user. And then on the left-hand side is showing more -- again, this is retail. It's probably a PRI going directly to the ILEC, flat-rated. So this is, you know, one I'll -- I guess I'll raise it on this particular slide. This is the issue from a carrier perspective. Intercarrier compensation where, if you look on the right-hand side there, reciprocal compensation is probably being paid rather than terminating access.

The next one is very, very similar except this is a prepaid card application. And I won't go through all of the detail again, but it's basically the same. The end user prepaid cards typically dial that 800-number, and it's going to be routed through the 800-number service provider up to the prepaid card platform, then converted to IP, and then the termination is very similar to what I mentioned in the last slide.

As a matter of fact, I was watching television last night, and I saw an advertisement for a company, and what they were really doing is selling Internet access terminals. And they were really promoting the idea of the fact that they are using voice over IP. And it was really -- it was a computer screen, and they talked about making, you know, low cost, local long-distance international toll calls from this terminal. So it's almost like they were trying to sell to the public -- or not the public but to investors, go out and buy these terminals and, you know, plop them down in various places and take advantage of this type of technology.

The next one here is really quite interesting, I think. And this is broadband access model for both local service as well as toll service. And starting up in the upper left-hand corner, you have the subscriber of the service who has broadband access to the Internet whether it's cable modem or DSL service, and he has his telephone plugged in. And I

have marked one box. I try to keep this stuff generic, but this Cisco 186 box, it's, you know, relatively inexpensive, $100, $150, and that takes a standard analog phone in and it's Ethernet out, plug it into your cable modem service or DSL, go out over the public Internet. And what's unique about this is it is a local service as well. So they will assign a telephone number to that end user so that they cannot only make telephone calls but they can receive telephone calls. And I'll explain here in a minute how I think that happens. Again, over the public Internet, then it's got to go through this media gateway again, and I believe the way they are terminating this service is through a CLEC into the PSTN who again has interconnection facilities with the ILEC, typically the local tandem, and then it will go from the local tandem off to the appropriate end office, be it, an ILEC end office or a CLEC end office.

And then what's interesting again is because there's a telephone number assigned and they can receive telephone calls, over on the right-hand side, I've identified this -- what's called a private ENUM database. An ENUM database translates telephone numbers into IP addresses because that computer out there, that Cisco box out there really isn't hooked up to the PSTN. It's got an IP address, so you have to make that conversion between the two, and this private ENUM database is what does that. So anytime a call is going the other direction, being terminated to the subscriber of this

service, that translation has to be made. There is work being done in some of the standards groups, and internationally they have approved an ENUM standard. Here in the United States, to my knowledge, we have not approved that particular standard yet. But this, I think, is a very interesting service when you start looking at all the different aspects of voice over IP, not just the intercarrier compensation but the fact that, you know, we now have local service being provided over a service like this.

MR. MOSES: Let me ask you a question. On that numbering, I've heard various -- or read various articles that you could get, say, a New York telephone number assigned to you here. I understand how they get the number here and everything, but say you are in Florida and you get assigned a New York telephone number, does that mean you have a New York City local calling scope?

MR. BURT: Yes. If you're using a New York number here, what it really means is that people in New York calling you would be making local calls.

MR. MOSES: And then your next-door neighbor here in Florida would be dialing you long distance.

MR. BURT: Correct.

MR. MOSES: Okay.

SPEAKER: If I could interject for a second. In a way, that's like cellular. When I'm down here from Washington,

D.C. -- I mean, it isn't as unprecedented. I mean, if someone dials a 202 number next door, it will be a local call to them even though it will ring right here.

MR. BURT: Yeah. It is -- yeah, the mobility aspect of that telephone number is a lot like what we have in wireless today. I'll talk a little bit more to that. I have a slide on numbering.

Okay. Some other applications of voice over IP. This is getting out of the residential except when we get down to the bottom, but these first two are more business applications where you have a digital PBX with a media gateway in front of that. And that communication then, typically what's referred to as on-net, when it goes from company to company may be all IP, but you can also make outbound calls to the PSTN. So you have the media gateway on both sides of this IP network.

The middle one is truly an IP PBX. There are several manufacturers. All the major PBX manufacturers now have IP PBXs, and all of that protocol conversion takes place within the device rather than having that media gateway. So in the top one, you know, really the difference there is, you know, obviously there are a lot of PBXs out there in service today. All you have to do is pop a box down in front of that, and you can now have outbound calls over IP rather than TDM, a very simple application and quite popular.

The bottom one then is cable TV voice over IP. And on the left-hand side, you have the home with, it's hard to see, but a computer hooked up to the broadband access to the Internet, telephone and of course the television. You know, at the home they have got this network interface device. You know, the node is just a distribution point within their network, and up at the head end, you know, that's where the IP or voice over IP functionality would be present. And again, I'm just showing that generically as this media gateway, and then they would again have interconnection facilities with other local carriers.

Another one which is IP Centrex. At the customer premises -- again, this is typically a business application. I've tried to just show a number of different things. You might have some analog phones; you might have a local area network attached to it; you might have IP phones. These are phones that have the IP protocol coming right out of the back of the phone rather than analog or traditional TDM type going to some kind of router. Then it's going over a dedicated facility to whoever the service provider is of that IP Centrex, and that could be an ILEC, it could be an interexchange carrier, or it could be any other type of service provider. I shouldn't say "any other," but maybe a value added network service provider. And they're providing these hosted services which include local service, data services, toll services,

et cetera, et cetera, connecting them to the Internet, and then also again to the PSTN through this media gateway.

This next one is a little bit busy. And up until this point I've been talking only about retail offerings whether it's residential or business. This is really a wholesale offering of voice over IP. And what happens here is on the originating side, the originating end user would be presubscribed to -- let's say it's Sprint long distance as their interexchange carrier. That call is routed in the traditional way through the ILEC end office tandems, however that is configured. The IXC would pay originating access. Then from the IXC switch, we could simply route that to a wholesale service provider who has an IP network. So we have to go through this media gateway onto their network, and then it's terminated on the right-hand side typically through a CLEC relationship where that wholesale provider has probably an ISDN PRI with a CLEC. And then it's terminated again over interconnection trunks to the ILEC end office local tandem, et cetera.

And again, on this right-hand side, this is where reciprocal compensation is being paid rather than terminating access. And there are a number of wholesale providers that are doing something very, very similar to this. You can look through some of the trade magazines and you'll see their ads in there. At some of the conferences, they're promoting their

service there as well.

Now, there's nothing that would stop an interexchange carrier from doing this themselves. Typically those networks today are TDM-based, but there's obviously a migration to packet-based networks. So there's nothing that would prevent an interexchange carrier from just putting some IP in their backbone and then making this claim on the terminating side and paying recip comp rather than terminating access charges.

MR. MOSES: Is there anything stopping the ILECs from switching out their network to an IP network instead of having it switched network?

MR. BURT: No, there isn't. As a matter of fact, that's going to be the natural progression, I think, of all networks. It's going to go packet. As a matter of fact, Sprint has made some public announcements of migrating some of its local network to packet where the actual end user service will be packet-based.

Numbering issues, I probably don't want to get into this too deeply, but it has been a concern that's been raised, but if you assume that a voice over IP provider who is providing local service, if they themselves are not a carrier and they're using numbers like that one broadband access service that I showed you, they must be getting their numbers from a carrier. And we've looked at the issues and we're thinking, well, if they're getting the numbers from a carrier

who has to follow the NANC guidelines, then there probably aren't any numbering issues per se as far as number administration goes. The number utilization reports are still going to have to be completed, and you'll have to -- before you can get new numbers, you have to have certain utilization, et cetera, so there doesn't appear to be any issues there. And I think that was the statement from the Chair of the NANC committee last week. They talked about this issue, and I think he kind of concluded that doesn't appear to be any issues here.

The second bullet though from a regulatory perspective is important. If there are local service providers using voice over IP, what do they do about N11 and in particular 911? Do they have those same obligations as local service providers, or providing a service that looks like local service? You can make a local telephone call, but if you can't dial 911, what do we do about that?

Then there's also been an issue, and I think this has really been dealt with, and you mentioned it, the New York numbers being assigned to Florida end users. There's been some concern, well, now we have a Florida customer using up New York numbers and the pain when New York numbers exhaust is felt in New York, is that right or wrong? I'm not taking a position, it's just one of those issues.

MR. MOSES: And if that same person dialed 911, they'd hit a PSAP in New York City.

MR. BURT: Well, I would say that the providers of the local service are probably going to block that call rather than have it go to New York, I would hope so. But I think that's one of the issues that we have to deal with. And then any other types of calls, like, I mean, maybe it's an operator call, you know, what do they do with the operator calls as well?

Then way down at the bottom, from a toll service perspective voice over IP, I really don't see any numbering issues per se. And we've been talking about this, but the -- the competitive impact, and primarily up to this point, we've been talking about the intercarrier compensation, and this really adds that other issue back in as to regulatory treatment. And, you know, should there be some kind of regulatory parity among wire line providers when they're providing alternative local or toll services? And I think that's the big question that we all have before us.

You know, what's the difference if you are regulated or aren't regulated? You know, I believe I have these cites correct, Florida 25-4 and 25-24. And do any of those rules apply to voice over IP providers? Service quality, billing, reporting requirements, customer care, and I think sometimes we assume that, well, if they don't apply, we don't have any control over them, but I think I'm suggesting that whether or not they apply doesn't necessarily mean that the quality of

service is going to suffer. In a competitive market, you have to provide what the customer wants or you won't be successful. And then potentially taxes based on jurisdiction are potentially avoided. USF funding, I know there isn't a Florida state fund but federal funding for USF. Should these services contribute? And if you look at it from a regulatory perspective, and I guess more from a business perspective, you know, having people with more regulatory freedom might bring them into the market where they may not have come in otherwise.

Okay. Last slide, just a very quick summary. We talked a lot about intercarrier compensation and the regulatory treatment of voice over IP from a retail perspective. And is it possible to make a distinction in how we treat these services or these service providers based on this technology? Because that's really all we're talking about. It's an evolution of the network, and can we make a technology distinction? You know, given that we have voice over IP today, it might be something different tomorrow. Certainly it will change over time. And then even if we do, can we police it? How do we know? From a -- I represent Sprint and, you know, we're a local exchange carrier, we're an IXC, we're a wireless provider, and when there's a call terminated to us, do we even know where it's coming from, who it's coming from? It may be coming over an interconnection trunk. We may or may not be able to determine the jurisdiction of that call, so how do we

know what we're supposed to charge even if we do decide that voice over IP should be treated differently? It makes those issues very difficult for carriers like us that are trying to deal with this intercarrier compensation issue. And that's all I have unless there are any questions.

MR. MOSES: Thank you. Does anyone have any questions? Has anyone else got anything to add as far as the network elements and how they function? Because we're going to get back on track with the agenda.

MR. INMAN: Yes. I'm Steve Inman with BellSouth.

MR. MOSES: Yes, sir.

MR. INMAN: I had just briefly seen Mr. Burt's presentation, and I developed a presentation to address issues that he didn't get to or didn't address. We can either do that through the question or it's actually a presentation I could go through in about 15 minutes.

MR. MOSES: Okay. What I was trying to avoid is having multiple presentations, but if you can do it without duplicating anything that he's already said, then go ahead.

MR. INMAN: Okay.

MR. MOSES: (Tape recorder paused.) -- things that are different so we don't go through the entire thing so there's quite a bit of duplicative information in your presentation.

SPEAKER: I'm sorry, Rick?

MR. MOSES: I said, if you can, just stick to the differences that you've got so we don't end up covering the same material again.

MR. INMAN: Certainly.

MR. MOSES: Thank you.

MR. INMAN: If you look at the first page, I won't go through all the definition, but let me say the VOIP is not -- shouldn't be viewed as one service. It's not the VOIP. VOIP rather is a collection of services. These services have different characteristics, and they need to be looked at individually. But I will point out on phone-to-phone IP telephony, which is the issue that CNM raised, that it's service to end users. The end users use traditional telephone sets, and one or more segments of the call uses Internet protocol.

Then also let me point out, under Internet protocol, Internet protocol is one of the many packet services that computers use to talk. It's not the only packet protocol. It's the one that was chosen to run the Internet; therefore, they added the word "Internet" protocol. But you have a number of protocols that are packet that don't have the word "Internet" in the title. So any favoritism we might choose to give Internet protocol, logic would say you would give it to any packet network.

Next is a couple of figures. I won't spend much time

on them except to say that there are two different ways phone-to-phone IP could be provided. The second diagram at the bottom Mr. Burt didn't address. This is an example where a customer in Tallahassee on the left at the bottom left, Customer A, makes a 1+ call. It goes through a LEC switch, possibly LEC and CLEC. It goes to an interexchange carrier POP. The interexchange carrier uses their traditional network to carry the call. In this case it's going to New York let's say at Atlanta or Charlotte. For some portion of the call, maybe between two cities, between two buildings, or even between two switches once in a building, they convert it to IP and then convert it back to circuit switched and then they complete the call.

Now, is this a phone-to-phone IP telephony call? Now, certainly under any definition circuit switched is used for part of the call. So how much of a call has to be circuit switched, and how little can be IP to be IP?

Skipping to, what are the economics? You know, why would carriers even make an issue out of this? I mean, we've introduced technologies into the network before. We went from open wire to cable. We went to microwave. We didn't even ask when we went to microwave, is this a different service? Should it be regulated the same? We've gone to fiber. Satellite certainly is a new technology, and it's quite different than most transmission paths, so we don't ask if that should be

treated as telecommunications. But because of this word "Internet," some carriers are keying in on the word "Internet" and asking to avoid treating their telecommunications as telecommunications. They could avoid hopefully access charges, contributing to universal service fund, gross receipts, federal excise tax, also government wiretap rules don't apply, consumer protection rules don't apply, certification is not required and so on.

Next, current state of law. I am not an attorney. I don't pretend to be, but some of these laws are pretty clear. The 1996 Telecom Act defines telecommunications, its transmission between and among points specified by the user, its information of the user's choosing without change in form or content, meaning voice in and voice out. Now, there's no exclusion -- you don't see IP in there, but you also don't see microwave, you don't see fiber, you don't see anything. It's just a general definition. Then the Act defines telecommunications as the offering of telecommunications for a fee. That's a key. They charge the end user. It's directly to the public, and let me highlight, regardless of the facilities used. So the federal law does not favor IP transport over any other technology regardless of the facilities used.

The report to Congress, let me say up front, when I read the report to Congress, I felt -- it was clear to me that

the FCC was saying, phone-to-phone IP telephony appears to be telecommunications, but they decided not -- at least in the report to Congress, they decided not to make a final decision and not to issue an order at that point. Some people had picked up on that and said, well, the FCC decided not to regulate it; therefore, it can't be regulated. I don't think that's what they decided.

These four points are where the FCC said you would probably be able to determine if the service is telecommunications. Now, these four points do apply to phone-to-phone, not all VOIP services. First, does the provider hold itself out to be a telecommunications provider? Do they tell the customer, I'm going to sell you telecommunications service? I'm going to sell you phone service? Does the customer use ordinary CPE, the regular telephone sets? Does the customer use the North American Dialing Plan, just seven-digit or ten-digit dialing? And is the information transmitted without net change, voice in, voice out?

Let me skip to the New York PSC decision. I did read the New York PSC decision, and I brought copies of it. Do you want to pass them out or leave them here? I brought copies of that decision. Frontier Telephone complained to the Commission that DataNet, a phone-to-phone IP provider, was refusing to pay intrastate access charges. In the conclusion, they found that

DataNet holds itself out to provide voice telephone service. It does not provide enhanced functions. It doesn't provide pages on the Internet. It doesn't store data. It doesn't look things up in a database and retrieve them. The customer is not required to have any special equipment. It uses the North American Numbering Plan for dialing. Internet protocol is not what they're selling. They're selling telecommunications and they're using Internet protocol to provide a piece of the transmission. And they concluded that DataNet should pay all applicable and appropriate charges paid by other long-distance carriers, including access charges.

And in conclusion, for phone-to-phone IP telephony, which again is what CNM brought up, it should not be confused with other types of VOIP. Phone-to-phone IP telephony is a telecommunications service. Really, phone-to-phone IP telephony is where these services intersect. It is telecommunications; it's also VOIP. There may be VOIP services that possibly aren't telecommunications but this service is. Telecommunications service are independent of the facilities or the technology, and we hope that regulators will not favor one technology, such as IP, over other technologies. If phone-to-phone IP is going to win in the marketplace, it should win or fail on its own merits. It shouldn't get an economical regulatory favoritism. Thank you.

MR. MOSES: Questions? Yes, sir. Can you come to a

microphone, please?

MR. FONTEIX: Is this on?

MR. MOSES: It should be.

MR. FONTEIX: Wayne Fonteix with AT&T. Just one quick observation on the presentation we just heard. One of the pages that was skipped over on the report to Congress, the statement on the handout says that the FCC -- quote, we note that to the extent we conclude that certain forms of phone-to-phone IP, et cetera, are telecommunication services. The last statement in the quote on this page that BellSouth handed out says, we must find it reasonable that they pay similar access charges. The FCC, in fact, said we may find it reasonable that they pay similar access charges. And that, frankly, is the whole crux of the issue with the AT&T petition at the FCC. At this point, the FCC has held that it appears that phone-to-phone IP telephony is a telecommunication service and have not made a final ruling on that.

MR. INMAN: Is this a question?

MR. FONTEIX: That it appeared that it was a telecom service, but at this point even if it were --

MR. INMAN: Was there a question there? Sorry.

MR. FONTEIX: I'm clarifying what the FCC were to find may be reasonable and applicable -- (inaudible).

MR. MOSES: Thank you.

MR. INMAN: I don't have it with me to check.

MR. MOSES: I believe that is what it says. They haven't made an official determination yet.

MR. INMAN: I will say, as I said, they didn't make a decision. It's clear they didn't make a decision, and I don't believe that can be interpreted that they forbid regulation or they forbid it from being classified as telecommunications. I'm sorry if I've hit a typo there, but I will check it in the -- it is in the New York order, so I'll check it there as well.

MR. MOSES: Okay. Thank you. Yes, sir.

MR. SAVAGE: My name is Chris Savage; I'm a lawyer working for the FCTA today. I have a brief presentation -- I don't have any handouts -- with respect to some of the policy issues that have been addressed by these. And what would your preference be? I mean, I could --

MR. MOSES: I would prefer not to have multiple presentations. What I'd like to do is get back on the agenda --

MR. SAVAGE: Well, that was my question.

MR. MOSES: -- and then just answer them as you get to the subject matters of which you -- when we come up to them.

MR. SAVAGE: That was my question, was how you wanted to do it because we just had two in a row, I was wondering.

MR. MOSES: I understand. And that was -- okay.

MR. SAVAGE: So as you go through the agenda and we

have something to say about a particular topic --

MR. MOSES: Exactly. Right. Otherwise, we're going to be jumping around all day long and not get anything done.

MR. SAVAGE: Okay. That's fine.

MR. MOSES: All right. Getting back with the agenda, has anybody else got anything to add to the functionality of the network elements? And hearing nothing, let's move on to the next section of it.

MR. SAVAGE: We're going piece by piece. The one point I would make about that on behalf of cable operators and some of the presentations, there's a lot of detail behind the cable system to here. Our only observation on that particular point would be that in regulatory terms, normally when you talk about network elements, that has a connotation of being sort of pieces of an ILEC network. And just if a cable operator is providing a voice over IP service using their cable system, it's technologically very, very different whether you're talking about a phone-to-phone IP or what have you.

MR. MOSES: When I'm saying "network today," what I mean is any piece part of whatever makes a VOIP work regardless.

MR. SAVAGE: Okay. Then I guess just -- we can go into more technical detail if you want, but if we want to start on that piece just to say that the way a cable operator does it, there is no -- you can go to the cable lab's Web site.

There are detailed specifications for how this is done laid out there. There is no identifiable loop or switch or that sort of thing. What happens is you have this massive bandwidth coming downstream on the cable system, more limited bandwidth going upstream. Most of the downstream bandwidth, of course, is used for video, but you can dedicate some of that bandwidth in a packet mode to voice communications and then dedicate some of the upstream bandwidth as well to voice communications which, you know, in a sense performs a loop like function, but it doesn't look anything like the sort of traditional telephone company loop. And I just wanted that to be clear for --

MR. MOSES: I understand. What type of telephone do you use on the cable? Do you have to go through a cable modem, or do you have a telephone that can interface directly with a coax?

MR. SAVAGE: The short answer is I think you -- and the way it's envisioned and the technical specification is that there's a device that would essentially -- the back end of it plugs into the cable system just like a cable modem, but one of the outputs is something you can plug a normal telephone in, because if you have to buy special non-phone gear, nobody is going to buy it, you know. So you want to have something you can go to Kmart and buy your phone and stick it in. But that conversion is done by a piece of CPE that's designed for that specific purpose.

MR. MOSES: Okay. Thank you. Moving to the numbering issues. Does anybody -- yes, sir.

MR. PRICE: Don Price with WorldCom. Before we get away from the technical, I wanted to respond a little bit along the lines of the previous gentleman with respect to nontraditional LEC applications because much as is the case with the cable architecture. For example, CLECs may have an all-fiber network and may have something that looks very different than the traditional loop and switch architecture.

And with respect to the phones, the product that is out there today that we are offering, called the connection, allows a business customer -- and I think the architecture is closest to what was in the Sprint presentation I think at Slide 11 -- I'm sorry, Slide 8 with the digital PBX and the media gateway. There's actually -- and I think Sprint would acknowledge that there's probably a lot of different variations, and these were intended to kind of be examples that we're simplifying in order to help make the point. But you could have a digital PBX, for example, that would have a plain phone, if you will, behind it, okay, that does utilize the media gateway capability and then interact with intelligence in the network.

For example, the product that we have today is based on something called the session initiated protocol which is a specific protocol that was designed to mimic traditional

telephony features and functions without having any TDM architecture to it and, furthermore, that doesn't interact per se with a feature in the switch, for example. So these are network-based features that operate within the signaling protocol that are used there in the digital PBX and the media gateway.

By the same token, you could take the digital PBX and the media gateway out of the example, have -- I don't know if I said this a minute ago, but the session initiated protocol is called SIP, S-I-P. You can have SIP-enabled devices, for example, that can act both as PDAs, personal computers and telephones all in the same device, and the SIP protocol is native in that device. So it plugs into the LAN through an RJ45 on the customer's premises, goes to the router and then goes to the world. So there's -- in that sense, there's no traditional --

(Tape continues on Tape 1, Side B.)

MR. SAVAGE: -- dials 911, you know, where do you tell the fire department or the ambulance to go? That, that arises with a shared tenant service issue if you're serving a big building and all you know is it's at this location. Someone has to populate the E-91 database, E-911 database so that when that particular number is dialed, the emergency personnel know go to apartment, you know, 3G and not apartment, you know, 21.

MR. MOSES: But in a shared tenant situation you're not routing the call from another city, you're going to be buying trunks coming in to it, so you're going to have the proper PSAP for it to be routed to. Now how are you going to deal with that if you've got a New York telephone number?

MR. SAVAGE: Well, no. I was drawing two distinctions. One is if you've got a local entity that's providing service in this way but that isn't a carrier, the issue of the broader, you know, the nongeographic nature of this, you know, on some level that, that just reflects the fact that technology is making geography and location less important than it used to be. The analogy there would be it's not as common because historically it's been extremely expensive.

MR. MOSES: Uh-huh.

MR. SAVAGE: But simple things like, you know, any kind of interstate FX service. I mean, they exist. I mean, many years ago when I was at a, a law firm brick-based in Los Angeles, we wanted to make sure the customer, you know, clients in New York could just pick up the phone and call us, so we had a local New York number.

Well, you know, if we dialed out on that number, I suppose, to 911 at that time, it might go to the New York fire department. I mean, precisely how that -- it's the sort of thing that does have to be dealt with, but I don't think it's utterly unprecedented.

And, again, I'd just point to wireless. You know, if I dialed 911 on this phone, it'd probably go to Washington, D.C., and that's a problem.

SPEAKER: Is that, is that Chris Savage speaking?

MR. SAVAGE: That is. Who is this?

SPEAKER: I'm sorry. It's (inaudible.)

MR. SAVAGE: Oh, hi. How are you?

So, in any event, it's an interesting, interesting development.

MR. MOSES: Okay. Thank you.

Yes. Go ahead.

MR. PRICE: Mr. Moses, Don Price with WorldCom. The, the conclusion that was reached by the NANC chair last week is one that we agreed with and we thought it appropriate.

In talking with our folks that attended the meeting, one of the things that intrigued me that is sort of a general fact that I think I was unaware of, and I'm not sure how many others are unaware of as well, but because of the rather well-known decline, if you will, in the telecom industry overall in the last few years, the number of codes that have been returned to the North America Numbering Administrator have far exceeded the demand in the last couple of years. So any, any concern that somehow we're, we're nearing exhaust because of this new technology, I think, is greatly exaggerated.

MR. EPSTEIN: Excuse me. This is Norman Epstein for

Verizon. Could I just make a comment on that?

MR. MOSES: Can you please identify yourself, please?

MR. EPSTEIN: Norman Epstein with Verizon.

MR. MOSES: Okay. Thank you.

MR. EPSTEIN: Yeah. I think the point is not a matter of using up all the phone numbers, but some technology like this could indeed put pressure on certain resources in specific locations, thereby causing relief, code relief to occur in certain areas that wasn't figured out beforehand, that priority.

If there's a large demand for phone numbers in a given location, that could indeed cause code relief in a particular spot. Thank you.

MR. MOSES: And in thinking that, I don't mean to be picking on New York, but there's a lot of folks come down here for six months from the New England states and everything. That could put an extreme demand on that particular geographic area if they're going to be using the numbers down here.

Yes, sir.

MR. INMAN: Yes. I had a comment as well. This is Steve Inman with BellSouth. Just to expand a little on what has been said. As far as numbering issues, for phone-to-phone IP telephony, let me speak to that one first, we don't see any numbering issues because the end users are buying POT service from a CLEC or an ILEC and they'll -- they keep their numbers.

For some of the new services where the phones are controlled more by computers, there are issues about numbering. BellSouth did urge the NANC, the North American Numbering Council, to examine the impact of VOIP on numbering. We didn't draw a conclusion. We asked them to examine it.

One of the problems, as we see it, is that when it's VOIP service, an end user can get as many numbers assigned from as many areas as, as they want to the extent they can find CLECs or interexchange carriers who will give up -- or, excuse me, CLECs or ILECs who will give up the -- I'm sorry -- ALECs or ILECs who will give up the numbers

So, for instance, a hardware store in one city might decide they want to, to expand into a mail-order business and they could get 50, 100 numbers and, local numbers in different cities and then advertise in those cities. Or since there's no real guidelines, if, if VOIP providers can, can pass out numbers, you know, what's the criteria for a number? Does it even have to be for a telephone? So we're concerned that there needs to be more guidelines and some kind of rules.

Also, number portability becomes very problematic. If a customer in Tallahassee with a New York number wants to move to another carrier like BellSouth, we cannot continue to use that New York number for their, for their service. So number portability will be difficult.

MR. MOSES: I think you lost me on that. Would you

please explain that?

MR. INMAN: If a Tallahassee customer using VOIP asked for a New York number for their only number, then they decided that VOIP wasn't really for them and they wanted to switch back to an ILEC or an ALEC, then BellSouth at least would be unable to accept a New York number and have it be local in Tallahassee.

MR. MOSES: Okay. Thank you.

MR. INMAN: Now it's -- we don't necessarily have to have number portability for this service, but we need to decide if we want to or not. It should be a decision, not just accident, an accidental happening.

So we have expressed a number of concerns. We would like the NANC to look at it. Now the NANC, of course, is composed of members of the industry, and so there are some possible interests other than getting to the, all the number solutions within that group.

We did find strong opposition, and we were told that we were trying to kill VOIP because we asked to have this issue examined. We certainly are not trying to kill VOIP.

MR. MOSES: And if you were to transition your network to VOIP, then that issue would go away though, would it not? You would be able to port a New York number, for instance.

MR. INMAN: Possibly. I don't see us doing this fast

and I don't see us just replacing our current network. It will probably start at the tandem between offices just as a transmission medium, and eventually it could move to end users.

MR. MOSES: Okay.

MR. INMAN: We're still studying this issue though.

MR. MOSES: Okay. Thank you. Yes.

MR. BURT: Just -- Jim Burt with Sprint, just to comment on that. I think what we'd be requiring at that point would be geographic number portability, which hasn't been approved yet; that is, the New York telephone number being used by a wire line provider like BellSouth here in Florida. So that would require some additional work from a regulatory perspective.

MR. MOSES: Okay. Let's move on to the 911 issue, if possible, because we've got a lot of material to cover and I don't want to get too bogged down.

We've touched on it lightly. There are --

MS. HUFF: Comment on that?

MR. MOSES: Certainly.

MS. HUFF: I think in the short --

MR. MOSES: Can you identify, identify yourself?

MS. HUFF: Oh, Chris Huff from Verizon.

MR. MOSES: Thank you.

MS. HUFF: In the short-term on the phone-to-phone scenario that we've been discussing, 911 shouldn't be an issue

because on each end you're back to the PSTN. But in the longer term when you have a zip phone, and this is something that we've been thinking about, and you can take the phone and move it somewhere else, when you have that kind of portability, that is a concern and something that we're looking into, how we might address that in the long-term.

MR. MOSES: Okay. Thank you. Yes, sir.

MR. PRICE: Don Price with WorldCom. That's something that we had to address as part of the product (inaudible) I described earlier. And I agree that where you do have a purely IP-based product, that that, that that does present challenges because essentially you're no longer dealing with the traditional numbering allocation that is part of what we know of as the, as the PSTN.

You know, essentially, I mean, reading the trade pubs, everybody understands the issues that have been raised with cellular because there is no physical address that's associated with that number; whereas, with any landline number that you're assigned, as part of the assignment of that number when it's assigned to you, whether it's from the traditional ILEC or whether it's from an alternative carrier, there is a database entry that is made into the local 911 PSAP or whatever that's, whatever that database application is that identifies specifically an address, a physical address with that ten-digit phone number.

With, with IP and the mobility that you have, because I could -- I don't have a zip phone. But, for example, if I did, I could go to, you know, one of our offices in a city far distant from where I'm based, plug that thing in and my network would recognize me. But the, the intelligence that we've developed and the protections that we've implemented as part of our product are that the user has to sign in, for example. And where that user signs in in a remote location, there, there are network protections that are done that would preclude me, for example, from dialing 911 in that remote location. I can draw a picture and show that perhaps, you know, at some later point.

But I think it -- the problems are not insurmountable, they do exist and they do require that the carrier pay attention to providing the traditional capabilities that customers, you know, deserve and need as part of their, their service that they, that they obtain.

MR. MOSES: I've seen quite a few companies that are advertising the service as a second line only, and they notify them that 911 is not available. But my concern is if you get a second line, say, in a residential home and you, somebody has a heart attack, you're going to remember which phone to pick up. I mean, it's, it turns into a safety issue to me. Anyone else?

MR. PRICE: Just to clarify -- I'm sorry. Just to clarify, the product that I've been talking about here in the last few minutes is not a residential product. It's only a

commercial product.

MR. MOSES: You can have a heart attack in a business.

(Laughter.)

MR. PRICE: Understood. Understood. And as I said, we took --

MR. MOSES: Some businesses give you heart attacks, you know.

MR. PRICE: Absolutely.

(Laughter.)

MR. MOSES: Okay. On -- anyone else have anything as far as the technical aspects of the 911? Then we'll get into the funding. I don't think we need to talk a whole lot about it. I think that's fairly clear that if you're not providing it, you're not going to be funding it. But, yes, sir.

MR. PRICE: I'm sorry. Don Price again. Just one last comment with respect to 911. The NINA organization, which is the national association of 911 providers, the folks that actually man those stations and have the networks that pick up those 911 calls, has been looking into the issues of IP telephony as part of their national organization. And so this is not something that's coming as a surprise to them. It's something that they're already trying to work both with the industry and among themselves to resolve.

MR. MOSES: Okay.

MR. PRICE: And comments are being filed on, in response to an NPRM on this at the FCC, I think later this month or perhaps early next month. I'm sorry.

MR. MOSES: Well, I was fortunate enough to attend a 911 coordinator's meeting not too long ago in Jacksonville and, surprisingly, it opened my eyes to the fact that even with a circuit-switched network, they're having a tremendous problem trying to identify correct addresses. And with a new technology that doesn't even give the information to them in a plug (inaudible) type situation that you just described is going to be more difficult for them. So I'm hoping the industry will work together to solve those problems, not just leave them hanging out there by themselves, because they've got a tough service to try to provide.

With that, on the funding of the 911, has anybody got a comment on that? Again, I guess that kind of is based on whether or not it's ever determined that this type of service is telecommunications service as far as a regulated type of entity, whether that would apply or not.

We can move on to the next item. This kind of goes hand in hand with the numbering issues that we were discussing. If you end up, say, in a BellSouth territory in Florida with a New York telephone number, I assume that you're not going to be in BellSouth's telephone directory with a New York telephone number.

SPEAKER: (Inaudible.)

MR. MOSES: So it would be an additional cost to the end user?

SPEAKER: (Inaudible.)

MR. MOSES: Could you identify yourself, please?

SPEAKER: I'm sorry. This is (inaudible.)

MR. MOSES: Okay.

SPEAKER: And what you would do is pay for a listing for a number out of the normal range of numbers for that (inaudible) and it would be an additional cost to the end user.

MR. SAVAGE: This is Chris Savage again. If I could just make a comment about that.

MR. MOSES: Certainly.

MR. SAVAGE: I think that -- it's sort of giving the customer what they want. If someone is, you know, down here in Tallahassee with a New York number on, on their phone, you know, by choice, presumably that's because they want all their friends up in New York just to be able to pick up the phone and give them a call without a toll call.

And so it would kind of -- you would logically assume that that person wouldn't be that interested in having a local, a local listing here in Tallahassee. On the other hand, if -- because otherwise why would they go to the trouble of maintaining a New York number?

On the other hand, if they did, then, sure, as the

previous speaker just said, you can always pay for an additional listing for some other number to reach you.

MR. MOSES: Okay.

MR. SAVAGE: Keeping the customer satisfied is what I think most of these providers are going to be trying to do on that one.

MR. INMAN: One more comment on numbers. This is Steve Inman, BellSouth.

Presumably if someone asks for a New York number, certainly if they ask for, say, 50 numbers for 50 different places they wanted to sell product, they would like those numbers to be put in the local books in those cities even though they, in fact, are not in that city.

If the numbers were from a CLEC and the CLEC sent us a note to put those numbers in our directories and they appeared to be local, we would not question it, I don't imagine, we'd just put them in there.

MR. MOSES: Now how would it work on directory assistance? Would they have to actually dial the long distance directory assistance, the 555 number or something, or would you be able to do this same listing with your local directory assistance?

MR. INMAN: Well, we would basically know what we're told. So if someone gave us the New York number in New York and said, put it in the New York directory, we would put it in

the directory as well as DA as being a New York, a New York customer, even though they may physically be here.

MR. MOSES: But say you're my neighbor here in Tallahassee and I just dial 411, would it be there or could it be there?

MR. INMAN: You'd have to dial -- you'd have to get to the New York DA.

MR. MOSES: So I would have to know that my next-door neighbor has got a New York telephone number before I could contact them?

MR. INMAN: That is if the CLEC, assuming it's a CLEC number, chose to put it in the New York directory. I believe -- I'm not sure about putting it in a Florida directory. I don't know that we've dealt with that since it would appear to be a nonlocal number. Certainly they could pay an extra charge and get it in.

MR. MOSES: But they could pay an extra charge to put it in the phone directory.

MR. INMAN: Because we would see it as a New York number being put in a Florida directory.

MR. MOSES: Okay. Anyone else have anything on the directory information?

MR. PRICE: Don Price with WorldCom. I don't really see any difference between what we're talking about here and traditional FX. I mean, I agree with the gentleman from cable.

I mean, what, what one would hope to see in a market that is hopefully moving towards more competition is product innovation and product differentiation where you don't have, you know, y'all say any kind of phone you want as long as it's a black rotary dial phone kind of mentality. I mean, you, you really do want to see products that meet customers' needs. And presumably that's done in order to -- research is done in order to determine what customers actually need.

But with respect to this numbering issue, I don't, I don't see a distinction between that and traditional FX.

MR. MOSES: Well, the only distinction I would see is it's, it may apply to residential; and FX, you may or may not can purchase it for a residential. But it may be an issue, if that's the only service that person has chosen to have. And I'm just -- we're just trying to flush out all the information to see what the pitfalls are and what the advantages are. So just trying to get all the information out there.

Okay. Let's move on to the billing format and content. Can anybody express how these folks are billed for this type of service other than just the permitted usage? What kind of a bill do you produce?

MS. HUFF: Voice over IP service in a business environment -- this is Chris Huff again. Sorry.

One of the network elements that hadn't been mentioned is the call controller, and that might sit in the,

like an IP Centrex, and in that case we bill in the call detail record that's generated in the call controller.

MR. MOSES: Is there any other information? I mean, normally on regular telephone bills you've got taxes broken out and different things like that. Are they following the same type of format or is there just a lump sum at the end of the page, call detail only or --

MR. INMAN: Steve Inman, BellSouth. We haven't worked out all the VOIP billing issues, but certainly on a phone-to-phone IP telephony it would be billed as a normal long distance call. Either they would use, in our case, BellSouth's billing system, or another option would be to use a prepaid call, a prepaid card. So the, the call would be paid for up front with phone-to-phone.

But if they send -- once the call leaves our network, we have no idea how it's carried. We just know it, it leaves. So if they send us billing records and tell us to bill the end user for a long distance call, we'll bill the end user for a long distance call.

MR. PRICE: Steve -- this is Don Price. Steve, a question about your comments about the billing. Were you talking about how BellSouth would bill for that product or were you speaking generically about all providers billing that way?

MR. INMAN: I was talking about phone-to-phone IP telephony, both how, how we would do it, and prepaid calling

cards would not be sold by us for phone-to-phone IP telephony.

MR. MOSES: All right. Let's move on to the TDD compatibility. That has been an issue that has been raised to us by the hearing-impaired community. They have tried to use various services out there. A lot of times they're using it and don't even know about it, and they're finding that the TDD device will not operate with voice over the Internet protocol.

Yes, sir. You look like you had a question.

SPEAKER: Yeah. I mean, I guess there are, there are different types of TDD devices and it, I think, you know, your typical traditional TDD device is a very, very low bit rate, bit rate analog modem essentially. And my understanding is that -- I mean, again, this gets down to the technical details, but that the, at least the cable, the packet cable specification that cable lab has worked up, if you plug in -- just like you plug a TDD device into a standard phone, if you plug your TDD device into this, the very low bit rate will certainly be accommodated.

MR. MOSES: Well, the bit rate doesn't seem to be the problem. It's some of the way that the, that the TDD does the handshake; it stays silent unless it's trying to do a transmit, and sometimes it ends up dropping off at the other end because the other end looks at it as a disconnect.

SPEAKER: Oh, and doesn't, and doesn't see the, doesn't see the carrier.

MR. MOSES: Exactly.

SPEAKER: Okay.

MR. MOSES: It doesn't have a holding carrier tone or anything of that nature. So they're having a tremendous problem with that.

Are any of you aware of any work that's being done on any of these industry forums to work on this issue?

MS. HUFF: I'm aware of the work that's being done. In fact, ATIS is sponsoring a voice over IP TTY forum, and one of the goals of the forum is to get carriers to do some testing on the TTY compatibility features. So -- and that's really basically just gotten underway.

MR. MOSES: Okay.

MS. HUFF: I do have some information from several manufacturers who have been, have been looking at it and haven't -- who think that this -- that we'll be able to find a solution.

MR. MOSES: Now would that be the manufacturer of the TDD or is that the carrier that's going to be providing the service?

I guess my question is are the TDDs going to have to be redesigned in order to be able to be compatible with VOIP?

MS. HUFF: As far the information we've got to date, no, they think that it can be solved --

MR. MOSES: Okay.

MS. HUFF: -- over the network.

MR. MOSES: Okay. Thank you. Okay.

What services can VOIP provide that wire line services cannot? Can someone elaborate on that, please? Go ahead.

MR. PRICE: Don Price of WorldCom. One of, one of the things that's, that's out there is unified messaging such that voice mail messages could be inputted as voice mail and received as text, E-mail, pager and vice versa. In other words, you could get, you could get an E-mail that would come to you over your cell phone. You could get a voice mail that would come to you in the form of an E-mail. The capabilities of the intelligence in the network would do whatever necessary transformation on the format of that message so that it would come to you in the way that you wanted it as opposed to the way in which it was inputted into your, your mailbox, so to speak.

MR. MOSES: Now is that necessarily a function of the IP protocol or is that just the type of switches that you happen to be using the IP on?

MR. PRICE: I think the answer may be none of the above. I don't know that that is something that is specific to IP. It is something that is, is possible using the Internet protocol that is not in the way that, that we have chosen to implement it. Anything that has to do with any switching at all in our network, it would all be IP router -- it's an

intelligent device that hangs out there in the cloud, if you will, that enables that, that service to be provided.

MR. MOSES: Okay.

SPEAKER: If I could address that for just a second. I think one of the -- a much overused word, I think I'm afraid to say it anymore, in the 21st century is convergence.

But I, I think the question isn't necessarily, you know, what can it do that wire line can't? I mean, if you define wire line -- I mean, if you give me an OC12 and a couple of tandem switches to work with and some -- I mean, I can do some pretty cool stuff with a wire line network.

I think the issue is that, you know, what works -- one of the things that the Internet protocol broadly conceived does is it's the great leveler. It sort of democratizes all these different functions and it's all just processing bits in some computer somewhere. And what that allows you to do in, in principle is to create combinations of services that might be a little awkward to provide given a traditional TDM circuit switched network or might be expensive to provide given a traditional TDM circuit switched network, and maybe you can find ways to, to create service packages that are just cheaper and more efficient to do.

Now whether, you know, whether in the future or even now on the drawing boards there's some really, you know, great new things that I can't even imagine. You know, I'm a great

believer in the ingenuity of both technical people and marketing people. So that wouldn't surprise me.

But I think the reason that this is, is gaining traction today isn't so much that it's doing radically new things, it's just doing old things a little bit more efficiently in combinations that are a little more customer friendly maybe for less money. It's building a better mousetrap as compared to building a different kind of trap.

MR. MOSES: Okay. Anyone else have anything? All right.

SPEAKER: I'll just say the obvious, that at least as I understand it, with phone-to-phone IP telephony it's just a standard long distance call. There's no extra features.

MR. MOSES: Okay. Thank you. Now this is kind of a pie in the sky question on this next one, but what do you believe that the future is going to hold for VOIP? Do you think that will be the standard or is this going to be just the, the first entry and there will be other protocols introduced? And I guess I'm looking at it from the standpoint, do you believe the Commission, if it is decided that they regulate it or if it's not, do you think it's something that's going to be -- let me back up.

Do you think we should be looking at this thing from a service, from an end-to-end point or do you think it should be technology-driven in between, every time we come up with a

different technology, we need to go through this process, I guess is where I'm going?

I mean, traditionally the Commission has looked at everything as a service. For example, there was a decision made on a pay telephone that was using cellular for the pay telephone, but it was decided that the service was regulated, which is pay telephone service.

So do you believe that if VOIP, say, transitions in, do we need to be looking at this from a technology basis or a service basis? Yes, sir.

MR. PRICE: Well, I'm Don Price with WorldCom.

I guess that's sort of the $64 million question because what we've seen, I think, in part in the slides is the notion that some, and I'm really thinking more of the BellSouth presentation, somehow or the other this is something that needs to be suspect because it doesn't fit into the traditional classifications that the, that the, that the incumbent LECs have, have grown up with. And --

MR. MOSES: But how does that differ from when they started using satellite for long distance, for instance? That was a different technology?

MR. PRICE: It was a different technology. But that technology was introduced in an environment where you had regulated monopolies, you did not have competition and you did not have the same public policy interests, I think, that the

Commission should have, which is to try to foster innovations, to try to foster competitive entry in a way that takes advantage of technologies, economics, whatever, so that people can get the most bang for their buck, if you will, in what they're spending for telecommunications dollars.

I kind of alluded earlier to the problem, you know, historically with the black rotary dial telephone. I don't think that it's the appropriate public policy for this Commission to try to force things into traditional buckets, if you will, or fence things off in traditional ways just because a particular technology or particular service provider looks a little bit different than, than what we've come to expect in the past.

MR. MOSES: Can you come up to the microphone, please?

MR. FONS: I think I can talk loud enough. I think --

SPEAKER: Can you get that person to move closer, please? Thanks.

MR. MOSES: You're not speaking loud enough.

(Laughter.)

MR. FONS: My name is John Fons, and I'm representing Northeast Florida.

The analogy to satellite, I think, was incorrect. Satellite was not a regulated monopoly; satellite was

competition from the get-go. That was the whole reason that satellite was introduced was one of the ways of implementing technology and in a competitive environment.

The -- none of the -- there were several different companies that were putting up satellites, not just the Bell system.

SPEAKER: Can I take the -- oh, go ahead.

MR. MOSES: Go ahead.

MR. BURT: Jim Burt with Sprint. I think the question he asked, that you asked is really the heart of the issue. You know, I identified the intercarrier compensation, that's one aspect. But as a Commission I think you have to look at it from a service perspective. You know, I think if you try to, you know, regulate based on technology, there will always be a loophole that somebody will be able to jump through to, you know, avoid intercarrier compensation or to avoid some form of regulation. So I think that's very, very difficult to do. So I think if you step back and look at the services that are being provided, and unless there is a, a solid policy reason to give one technology an out over another technology, then I think you have to focus on the services. And I think the whole issue of, of the Internet, the magic "I" word, is what got us to where we are today.

The FCC did say that, you know, enhanced services should be treated differently. I think there's, there's some

justification for that. I think if you put a lot of, you know, governmental oversight on new services, I think that naturally it's not going to be developed as quickly and as, maybe as broad as far as the services that you're going to be able to provide over it. So, you know, I think it's the heart of the question that we have.

And I think where it leads you to is the term that I use, which is regulatory parity. If you have different carriers, different companies -- I shouldn't use the word carriers -- but different companies offering essentially the same service, how do you choose to regulate them? Do you regulate them all the same or do you regulate them differently because one is using one technology over another technology? And I think that's the difficult question that we have to answer.

MR. MOSES: Okay. Thank you. Yes.

SPEAKER: I guess I would maybe agree with most of that, but I'm not sure that I, that there's some -- let me step back for a second.

The power of government regulation in the abstract is very extensive. I mean, you know, the old saying, you know, no man's property is safe when the Legislature is in session. I mean, people joke about that, but the reason is that the government has the authority to do all kinds of things to, from promoting businesses to destroying business. It can do

whatever it wants to do within some broad constitutional limits.

So the question you've got to ask is what is it, what is the purpose of the regulation? And to my way of thinking, it sort of comes down to long-term versus short-term. Big picture, you always want to protect consumers from abuse by whoever would abuse them. We have hosts of laws about unfair advertising and, you know, antitrust and, you know, traditional utility regulation designed to do that.

In the longer term, if you take a broader view, you know, I don't want to sound corny, but sort of our nation is where it is today because we have always had a tendency of wanting to reward and encourage new and innovative ways of doing things. And I think the historical record actually doesn't support, for whatever it's worth, this notion of regulatory parity.

Let me just throw out a couple of examples. The classic example of, of competing things being regulated differently, of course, is trucks and automobiles on the one hand versus railroads. The railroad monopoly was destroyed over time by free roads, free to the user and individual cars.

Moving more into our neck of the woods, I keep harping on wireless. Wireless was an innovative technology; it used a completely different way to do things. And it kind of limped along in a duopoly for a little while. But when they

really opened things up with a congressional act in '93 saying, no, you won't regulate this, you can regulate some things, but no entry regulation, no rate regulation, do whatever you want to do, wireless took off and now, now it's a major thing.

Closer to home of the, you know, the cable industry, the direct broadcast satellites are regulated in a radically different way, essentially from our perspective not at all, as compared to traditional cable. And isn't it interesting that since that very relaxed regulatory treatment of direct broadcast came in, they've nationwide captured 15, 16 percent, you know, a substantial fraction of this business. So -- 25 I'm told. It's worse than I thought.

(Laughter.)

But the point being that if you look at history of the deployment of things, if you really want to encourage new developments, regulatory parity has not been the way the nation has traditionally done it over a wide class of things. And that's not to say that -- I'm not saying so, therefore, no regulatory parity. I mean, that's a different question. But just historically that's not the way to go if what you're trying to do is encourage the development of new and innovative technology.

MR. MOSES: Let me, let me ask you a question. Do you think that it would be in favor of promoting competition if there was just enough regulatory oversight to say that you make

sure that the service works, in other words, that the customer is getting what they're paying for, that the advertising is not misleading or false, things along that line? I mean, not (inaudible) price regulations or anything like that on it, but at least doing some oversight to make sure that the customers aren't being harmed. Because what I've seen happen in the prepaid industry on some of the cards -- for instance, we chased a guy around Miami at the docks down there with a wheelbarrow full of them, but none of them worked. That harmed the real producers of the cards out there because people that bought those, they didn't work, they probably got a bad taste in their mouth and will probably never buy another one.

SPEAKER: Yeah. I don't -- I mean -- now we're getting sort of into the next layer down. I mean, I think, for example, false advertising is illegal. And in Florida, nationwide, I think it would be illegal if, you know, tomorrow the Public Service Commission went out of business. There are independent laws that protect that.

Now which does not say that you shouldn't have jurisdiction over this piece of thing. But, absolutely, you know, sort of good business practice is something that is enforced on every business everywhere.

If someone sells you a prepaid calling card that doesn't work as advertised, fundamentally that's no different from a regulatory perspective than someone selling you a lawn

mower that doesn't work as advertised. Now obviously it's a little more complicated and a specialized agency might be the place to do it, but lying to your customers is not good business and nobody wants to do that except for people who are trying to make a quick buck. And so no, no responsible member of this industry is going to say, oh, no, you know, let us go lie to our customers. That's not what, what any of this is about.

MR. MOSES: Okay.

SPEAKER: But in terms of the economics of it, I mean, it won't be a surprise to this body to say existing incumbent providers with literally billions of dollars invested in a particular technology that now, depending on how you look at it, might kind of be getting obsolete are obviously going to have an interest in making it hard for that new technology to come in and erode the value of their assets. And that's sort of a, you know, realpolitik of regulation that you need to think about when you go forward.

So, of course, take all these comments with a grain of salt, but that's -- if you're really going to look for forward-looking technology, you have to take steps to make that happen because the natural inertia is going to slow it down

MR. MOSES: Okay. Thank you. Let's take these last two items together and then we'll take a ten-minute brake.

About the impact to the economy, the economy on

Florida and concerning the state taxes in particular, someone mentioned earlier in their presentation that there are certain taxes that are not applicable depending on whether this is treated, whether it's telecommunications or not.

SPEAKER: I mean, the tax, the tax law in Florida is written based on whether it's a local and intrastate service based on the jurisdiction. If you're saying that voice over IP or phone-to-phone IP telephony is not a service under Florida law, then you may not be paying taxes on it. So I think it's going to depend a lot on how it's defined.

MR. MOSES: Okay. Yes, sir.

MR. PRICE: Don Price with WorldCom. I don't take issue with, with BellSouth's comment on, on that. I do think that part of the problem that really underlies that question is the problem of whether or not historical distinctions that are in effect artificial are an appropriate basis on which to be determining the future of any, any particular technology or any particular service that might be provided using that technology. I mean, the distinctions between state and interstate in terms of telephony are -- they have nothing to do with the underlying technology. BellSouth's switch doesn't act any differently when a plain old telephone user dials across the city or dials across the state or dials, you know, internationally. That switch does exactly the same function.

The distinctions that have existed historically and

the pricing of functions based on these artificial distinctions were designed for one purpose, and that purpose was to make sure that a revenue requirement could be calculated and that revenues for the various services, even though they were artificially distinguished between each other, were sufficient to meet a regulated monopoly revenue requirement.

What you have today is a very different kind of scenario, and I would argue that the only thing that's really relevant is not the artificial distinctions about whether the call is going across town or across the world, it's what's the cost of that functionality and what kind of compensation is BellSouth entitled to as, as it provides that functionality to the extent that it does.

And where that leads me on the question of taxes is that if you have a tax code that is based on these same artificial distinctions, yes, there are going to be some problems. But that's not a problem that I believe regulators should step in and try to, to foreclose, if you will, by continuing to impose artificial distinctions that have nothing to do with technology and, and the services actually provided.

SPEAKER: Well, I mean, every distinction that's been made from the beginning of telephone service is an artificial distinction and we can do away with all of them.

All I was doing was asking -- answering your question on a factual basis. The tax code of Florida is based on these

distinctions, artificial or not. And, therefore, depending on how this service or technology or whatever you want to call it is defined, it could have an impact on the payment of taxes to the State of Florida.

MR. MOSES: Okay. Thank you. With that, let's take a ten-minute brake. Be back here --

(Recess taken.)

MR. MOSES: We're here a little bit earlier than what we had anticipated.

The next subject matter we'd like to talk about is the service quality. We have heard various rumors, I guess I could say, that whenever you're using VOIP -- can y'all take a seat? Hello. Marco.

We have or I should say I have been doing some reading on this, and I've seen various articles say that whenever they're trying to put the VOIP over the public Internet backbone, that you're having a hard time trying to manage the bandwidth because -- yes --

SPEAKER: Rick, is your mike on?

MR. MOSES: It's on. Can you hear me?

(Inaudible.)

MR. MOSES: All right. Hang on one second.

SPEAKER: I can hear you on the phone.

(Inaudible.)

SPEAKER: It's on VOIP.

(Laughter.)

MR. MOSES: Oh, that was cruel.

Can you hear me now?

(Laughter.)

MR. MOSES: Don't go there. I won't even comment on that. All right. Can you -- is the mike on now? Is anybody out there?

Okay. All right. What I was trying to say before we couldn't hear, we've heard some things in various articles that I've read and it says that you're having a hard time trying to manage bandwidth whenever you place the VOIP call, say, over the public Internet. So a lot of companies have chosen to put the calls over a private network.

What I'd like to get into here is what the companies are doing. Are you actually putting it over the public Internet? If you are, how are you managing the service quality of it and also the reliability of it? And anyone want to start? Go ahead. That's just somebody dialing back in

MR. PRICE: Don Price with WorldCom. One of the things I think that is difficult about this, this issue is that there are, as some of the diagrams that we've seen this morning in the presentations showed, there are various piece parts that can be on different providers' networks that can all be used or various pieces of which can be used as part of a, an end-to-end call. So it's difficult and we need to be, I think, at least

aware of that fact because you can, you can focus on what happens just in the backbone, but there may be a weak link somewhere else, you know, by the fact that the carrier relies on, say, leased facilities or something for part of that transmission.

MR. MOSES: You've got that today. But what I want to focus on is the IP portion. How reliable is it? How do you keep the reliability there?

MR. PRICE: And in, in that regard, one of the things that appears to be the case with at least a lot of providers, and I can't speak for all of them obviously, but there is a protocol called UDP that is a protocol that is favored for voice over. That UDP protocol is not specific to voice over IP. It's actually a broader protocol. I looked on the Internet and I think the definition on that was defined like back in 1980 or thereabout. So it's obviously not anything brand new.

That is a faster transmission protocol, if you will, by virtue of the fact that there's less error checking that goes on with respect to each of the packets.

MR. MOSES: But getting back to IP telephony, which is what we're talking about now, what is the reliability of it? How do you --

MR. PRICE: But that's what I'm trying to get at. If, if the carrier uses this UDP protocol as part of the

provision of voice over IP, there's less error checking on those packets, so there's less latency that occurs at various checkpoints as those packets get routed through an IP network.

MR. MOSES: Now is it true that whenever you're transmitting using IP over packet switching that you cannot do a retransmit? In other words, if a packet is lost, it can't be, ask to be retransmitted, that it just is lost?

MR. PRICE: It's my understanding, and I can certainly check on this, but it's my understanding that that is one of the reasons that the UDP protocol is utilized is because without the error checking you don't have the ability, as you just said, you don't have the ability to request that another, a lost packet be retransmitted.

MR. MOSES: But that will ask for it to be retransmitted?

MR. PRICE: I'm sorry. I didn't say that very well. It will not. And that's why --

MR. MOSES: So it's still lost?

MR. PRICE: And that's -- yes. And that's why the UDP protocol is, quote, faster and there's less latency is because there is no error checking and because there's no capability to ask for the retransmit.

Now, now the question is, and this is something I don't know, but I could, I could go check with our engineers, the question is if you lose a packet, is that something that

you would (inaudible)? And I don't, I don't know the answer to that. It may be that that's, you know, with the voice signal being sliced up as, as, as, as many times --

(Tape continues on Tape 2, Side A begins.)

SPEAKER: -- ask and most of the time the call went through. I couldn't tell any difference in the service quality, as I could any other telephone call. But every once in a while you would get a clipping of the voice, similar to what you experience with cell phones whenever you're about to lose your signal. Is that the packet loss that I'm experiencing at that point?

SPEAKER: The short answer is that I just don't know. Obviously different providers have, you know, different quality in their networks. And it could be a network issue. It could be, it could be that lost packet that we were talking about.

MR. MOSES: Okay. Yes, sir.

MR. SAVAGE: This is Chris Savage for FCTA. I think the point about different networks doing different things is important here. Focusing in on the packet cable specification for voice communications, one of the issues that the folks at cable lab spent a lot of time addressing was how to make sure that there was adequate quality of service and essentially the amount of, you know, bit rate needed between the customer premises and the cable head end where the (inaudible) would be deployed. And so from the perspective of a cable operator

offering this kind of a service, the responsibility that the technical people are trying to be clear is that within the network that the cable operator controlled, the service quality would be managed.

Now what happens when you go out into the world so that the long distance -- I mean, today, right now, the VOIP --

(Tape damaged. Unable to transcribe.)

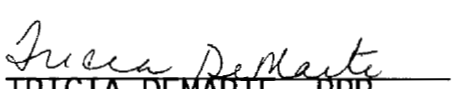
- - - - -

STATE OF FLORIDA)
: CERTIFICATE OF REPORTER
COUNTY OF LEON)

We, TRICIA DEMARTE, RPR, and LINDA BOLES, RPR, Official FPSC Reporters, Office of Hearing Reporter Services, FPSC Division of Commission Clerk and Administrative Services, do hereby certify that the foregoing proceedings were transcribed from cassette tape.

We FURTHER CERTIFY that we are not a relative, employee, attorney or counsel of any of the parties, nor are we a relative or employee of any of the parties' attorneys or counsel connected with the action, nor are we financially interested in the action.

DATED THIS 4TH DAY OF FEBRUARY, 2003.



TRICIA DEMARTE, RPR
Official FPSC Reporter
(850) 413-6736

LINDA BOLES, RPR
Official FPSC Reporter
(850) 413-6734