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Case Number: 96-899-TP-ALT

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April 17, 2000**

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PUBLIC UTILITIES COMMISSION

14 pgs.

STATE OF OHIO

In the Matter of the)
Application of Cincinnati Bell)
Telephone Company for Approval)
of a Retail Pricing Plan Which) Case No. 96-899-TP-ALT
May Result in Future Rate)
Increases and for a New)
Alternative Regulation Plan.)

Hearing Room 11-D
Borden Building
180 East Broad Street
Columbus, Ohio 43215
Wednesday, March 3, 1999

Met, pursuant to assignment, at 1:00 o'clock p.m.

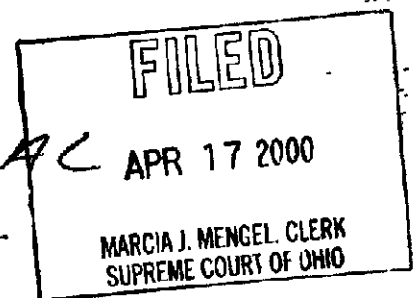
BEFORE:

Paul Duffy, Attorney Examiner.

00-0507

VOLUME III

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EXHIBITS



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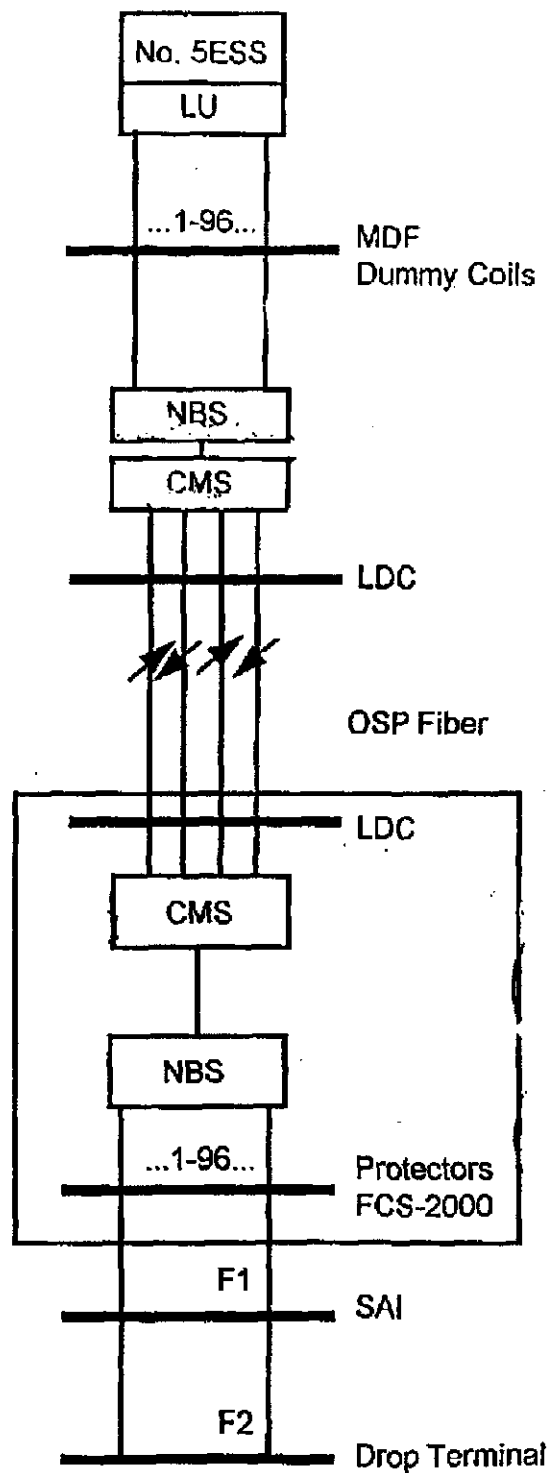
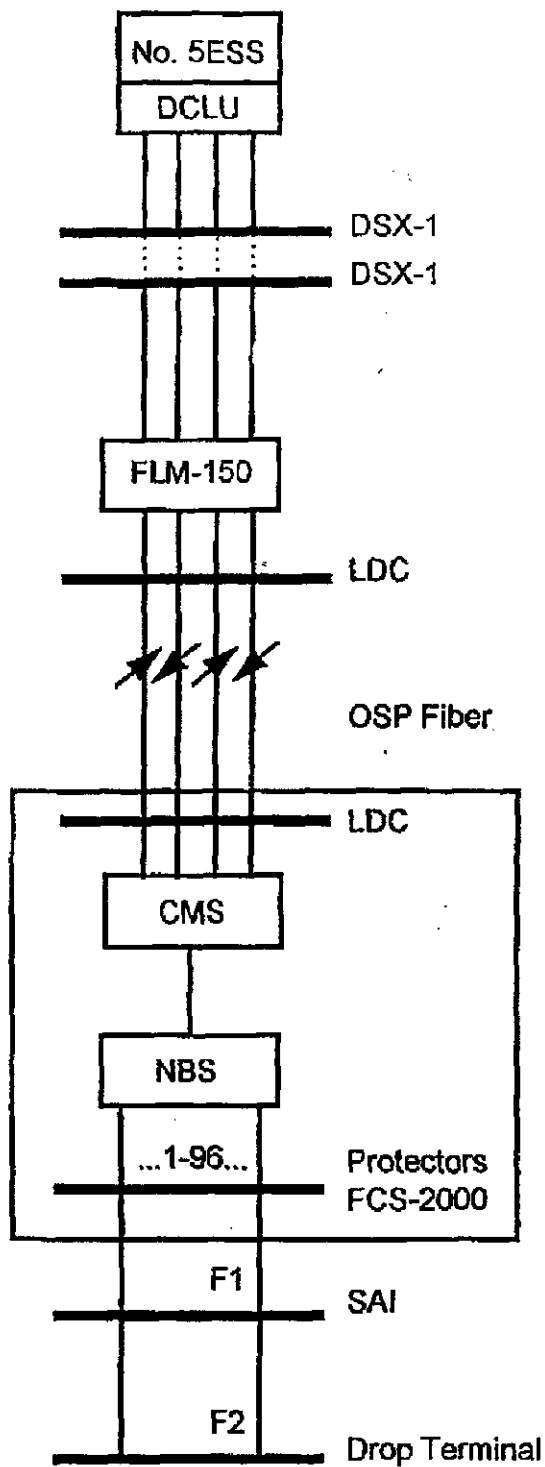
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CBT #4
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**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of)	
Cincinnati Bell Telephone Company)	
for Approval of a Retail Pricing Plan)	Case No. 96-899-TP-ALT
Which May Result In Future Rate)	
Increases and for a New Alternative)	
Regulation Plan)	

DIRECT TESTIMONY

(TELRIC)

OF

PAUL W. MEIER

(UNREDACTED VERSION)

Dated: September 28, 1998

1 Q. Please state your name and outline your qualifications.

2 A. My name is Paul Meier. I am employed by Cincinnati Bell Telephone (CBT) as an
3 Integrated Planning Specialist for the Network Engineering and Construction
4 (NE&C) Department. I have been in this planning position for seven years. This
5 position develops plans for placing copper and fiber optic cable and electronics to
6 provide telephone service. These plans include identifying the costs associated with
7 completing the outlined plan. Prior to this position I served as an Outside Plant
8 Engineer from 1985 to 1991. This included planning and engineering cable
9 placements and the structure associated with those cable placements. Prior to my
10 engineering position I was an Outside Plant Cable Splicer from 1977 to 1985. I have
11 been with CBT for 25 years.

12
13 Q. Please describe the purpose of your testimony?

14 A. The purpose of this Testimony is to explain how CBT's forward-looking cable fills
15 were established and to provide testimony to support the cable fills used in cost
16 studies for copper distribution cables, copper feeder cables, fiber optic cables, and
17 loop electronics.

18
19 Q. Are you familiar with the use of fill factors in the cost studies conducted by Mr.
20 Mette?

21 A. Yes. A fill factor measures the utilization of a facility or piece of equipment. For
22 example, a 70% fill factor means that 70% of the capacity of a facility or piece of
23 equipment will be utilized by customer demand. A fill factor is used to assign the

1 cost of the facility or equipment to the users of that facility or equipment.

2

3 **Q. Are fill factors used as an input to the engineering design process for outside**
4 **plant facilities and equipment?**

5 **A.** No. When an engineer designs for the placement of an outside plant cable or a piece
6 of electronics, the engineer uses established engineering and economic principles to
7 design the facilities and equipment in order to minimize the overall cost of placing
8 the facilities or equipment. For example, as I explain below, there are only a limited
9 number of fiber optic cable sizes that an engineer can choose from when designing
10 for the placement of a fiber optic cable. The cable size is chosen to meet expected
11 customer demand while minimizing the overall cost of placing the cable, including
12 any considerations for reinforcement in the future. The end product of the
13 engineering design process is a facility that will be constructed to provide telephone
14 service in a given geographic area. The usage of the facility then allows the
15 calculation of the fill factor. As a result, the fill factor is best viewed as an output of
16 the engineering design process and not as an input to this process.

17

18 **Q. What are distribution cables?**

19 **A.** A distribution cable is the cable that originates at a Serving Area Interface (SAI) and
20 terminates at a drop terminal near the customer. The SAI is a cross connect box that
21 allows a feeder cable to be connected to any distribution cable pair.

22

1 **Q. How are distribution cables designed?**

2 **A. First, the geographic area to be served must be defined. Next, a projection is made**
3 **of the demand for telephone lines in that area. Several industry engineering**
4 **guidelines are used to aid in that process. For example, CBT plans for two pairs to**
5 **serve every household in the area. CBT plans for business pairs based on the size**
6 **and the types of businesses expected to locate in the area. In addition, we also have**
7 **to plan for future growth and development in the area and attempt to determine the**
8 **maximum need for loops.**

9
10 **Q. What are some of the factors that will impact the fill factor for distribution**
11 **cables?**

12 **A. There are several factors that will impact the fill factor for distribution cables. As I**
13 **just mentioned, CBT's policy is to provide a minimum of two distribution pairs per**
14 **living unit and to plan for adequate pairs to meet expected business demand. These**
15 **plans will be based on the ultimate living units or business lines, representing both**
16 **the existing and future needs because the goal in planning distribution cables is to**
17 **never have to reinforce distribution cable once it is placed.**

18
19 **At street intersections, distribution cables generally split into multiple cables of**
20 **smaller sizes. The size of cable needed on each street is dictated by the nature of the**
21 **customers served on that street and the services they demand. Working backwards**
22 **from the various streets, the larger size distribution cables must be large enough to**
23 **serve each of the spliced pairs that extend down each street. Thus, any given pair**

1 has a dedicated path back to the SAI.

2
3 There are additional factors that are considered when designing cable placements
4 which impact the expected fill factor for distribution cables. These include structure
5 limitations, cable size limitations, and timetable delays in developments.

6
7 Structure refers to whether the cable is placed in conduit, on a pole, or is buried. In a
8 buried area, CBT places cable of a sufficient size to limit the need to reinforce the
9 distribution area. The sizing of a distribution cable can be difficult due to
10 developments that continue to grow beyond their original concept. With the high
11 costs of reinforcing at a later date, generally through well-landscaped yards or under
12 concrete or asphalt driveways that are very expensive to dig up and replace, CBT
13 may increase a buried cable to the next largest size, especially when one or more of
14 the streets do not dead end. In an aerial area, it may be necessary to place a larger
15 cable on poles due to space limitations on the pole line because the space limitations
16 do not permit a smaller initial cable with a second cable installed at a later date.

17 Distribution cables in the underground, like aerial, have basically the same
18 limitations when conduit space is limited. With underground, good engineering
19 practice dictates that the last duct in a conduit section should not be used unless
20 another conduit can be vacated.

21
22 Another factor impacting the cable fills is the limited size of cables that are available
23 for placement. The telephone industry has standard cable sizes available to

1 purchase. Those sizes are 25, 50, 100, 200, 300, 400, 600, 900, 1200, 1500, 1800,
2 2400, 2700, and 3000 pair cables. However, not every type of cable is readily
3 available in all sizes. These size limitations can have a significant effect on cable
4 fills especially when the number of pairs needed is slightly larger than the closest
5 available cable size. For example, a 210 lot subdivision will require 420 cable pairs.
6 Since a 400 pair cable is too small, a 600 pair cable would be the minimum choice of
7 an engineer. The same situation could occur along a side street of a development. A
8 street may have 28 lots requiring 56 cable pairs. This street would require the
9 placement of a 100 pair cable.

10
11 Time delays in completing a development occur on nearly all subdivisions or
12 business parks when a developer only completes a section at a time. The first section
13 will often be completed with new buildings before the second phase is started.
14 However, from the beginning of the development, the total cable requirements are
15 placed in order to save the future cost of placing additional cable. Also, it may
16 happen that a developer's plans are later changed which could increase or decrease
17 the amount of facilities ultimately required.

18
19 **Q. Are you aware of any studies performed by CBT that support the use of a**
20 **forward looking fill factor of 35% for distribution cables.**

21 **A. Yes. In 1992 CBT conducted a random sample of 79 working SAI's. Individual**
22 **distribution cable fills were calculated by comparing total working distribution pairs**
23 **to the total number of distribution cable pairs available. The result of this study was**

1 a distribution cable fill of 35%. This cable fill was for CBT's entire operating area.

2
3 To obtain an accurate measure of cable fill in a given area, CBT measured the cable
4 fill for all distribution cables at a radius of 600 feet from the SAI. At this point the
5 distribution cable size is generally smaller than at the SAI and gives a more accurate
6 measurement of the actual cable fill. CBT did not measure the cable fill at the
7 distribution side of the SAI due to the fact that the total distribution cable pairs
8 available may only go to the top of a pole or adjacent manhole and such a
9 measurement would artificially decrease the fill ratio. Thus, a cable fill measured at
10 the SAI would be lower than at the point where CBT measured cable fill in its study.

11
12 **Q. Are you aware of any more recent studies that CBT conducted to measure the**
13 **fill factor for distribution cables?**

14 **A. Yes. I am aware that a study was conducted during the first quarter of 1998.**

15
16 **Q. What were the results of this study?**

17 **A. Unlike the previous study which computed the distribution fill factor for CBT's total**
18 **operating area, the recent study calculated the fill factors separately for Ohio and**
19 **Kentucky. The Ohio distribution cable fill was 36% and the Kentucky distribution**
20 **cable fill was 31%. Since Ohio represents approximately 80% of CBT's access**
21 **lines, the composite distribution fill factor is still 35%, the same as it was in 1992.**

22

1 **Q. What conclusions do you reach from the results of these two studies?**

2 **A. The first conclusion is that the distribution fill factor is very stable. This is**
3 noticeable since the number of access lines in service increased from 820,518 to
4 1,004,829 during this time period, representing a 22.4% increase. Also, the
5 percentage of residence second access lines increased during this time period from
6 4.9% to 10.1%. Nevertheless, due to ongoing expansion of the network as a whole,
7 the fill factor for distribution cables has not changed. CBT's network construction
8 has been based on the same prudent engineering assumptions that we would expect
9 to use for the foreseeable future. Thus, looking forward, I have no reason to believe
10 that the network usage we would expect to see would vary materially from our
11 current experience.

12

13 **Q. What are feeder cables?**

14 **A. Feeder cables are the cables that originate at the central office and terminate at the**
15 SAI.

16

17 **Q. Please explain how feeder plant is designed.**

18 **A. CBT's planning engineers use a Feeder / Loop technology selection guideline that**
19 provides guidelines to assist the planner in identifying the least-cost technology. The
20 planning engineer looks at the costs of installing copper cables versus using fiber
21 optic cables with the appropriate loop electronics. Feeder plant is studied for
22 possible reinforcement when a route out of a central office reaches 85% of its
23 capacity, or growth cannot be handled by the existing facilities.

1

2 **Q. Considering the case where fiber optic cables and electronics are placed in the**
3 **feeder plant, please provide any factors that will impact the fill factor for the**
4 **electronics equipment.**

5 **A. Prudent engineering practice for digital loop carrier (DLC) electronics is to install all**
6 **plug-in equipment and activate a complete DLC system at the same time. Each DLC**
7 **system consists of 96 channels with 4 shelves containing 24 channels per shelf.**

8 **Activating a complete system at a time reduces return visits and provides for greater**
9 **flexibility for CBT's personnel meeting service on demand. If CBT activated only**
10 **one shelf at a time, i.e. 24 lines, this would create delays by having to order plug-ins,**
11 **issue paperwork to install these plug-ins, and require additional field visits to**
12 **perform the installation. An additional factor in determining the electronic fill factor**
13 **is that each channel plug-in supports four channels. Plug-ins used for POTS are well**
14 **utilized, but those used for services other than POTS may only use one or two**
15 **channels per plug-in and thus have considerably lower fill factors. This, of course,**
16 **reduces the overall electronics fill factor. Plug-ins used to provide service to some**
17 **coin phones and digital data circuits are examples where reduced utilization occurs.**

18

19 **Q. Are you aware of any studies that support the use of a forward-looking fill**
20 **factor of 70% for loop electronics ?**

21 **A. Yes. The fill factor for loop electronics equipment can be calculated through an**
22 **automated process using our loop assignment system known as OS-Plant. The OS-**
23 **Plant Assignment System generates a quarterly report that identifies available pairs**

1 and working pairs the have been associated with a Digital Loop Carrier (DLC)
2 installation. CBT's most recent quantity report shows electronics fill of 67%.

3
4 **Q. What is the trend of future electronic fills?**

5 **A.** The level of the electronic fill factor has been relatively constant and I expect this to
6 continue in the future since CBT currently deploys DLC on a cost effective basis and
7 is not planning any changes in its engineering design practices for this equipment.

8
9 **Q. Please explain how fiber optic cables are used in loop plant.**

10 **A.** Fiber optic cables are used in the loop plant to feed electronic installation sites,
11 known as remote terminal sites. Remote terminal sites require four fibers for each
12 multiplexer activated. Multiplexers convert optical pulses, (e.g. OC-3), to electrical
13 signals, (e.g. 1.544 Megabit per second).

14
15 **Q. Please explain how fiber optic cable plant is designed.**

16 **A.** Each remote terminal site is designed to have a minimum of 12 fibers. This is the
17 smallest cable that CBT purchases. The route from a central office is designed for
18 the maximum number of fibers required. For example, suppose a central office route
19 has a new fiber remote terminal planned for installation, with three additional remote
20 terminals also planned for the future. CBT would place a 48 fiber cable to handle the
21 currently planned new site and the 3 future sites. However, only 4 fibers would be
22 utilized initially.

23

1 **Q. What factors impact the fiber optic cable fill factor.**

2 **A. There are several factors that impact this fill factor. First, CBT purchases seven**
3 **standard size fiber cables. These cable sizes represent those used most often in**
4 **CBT's area and are considered stock cables by CBT's distributor. Next, engineering**
5 **and installation costs account for the majority of the cost of placing a fiber cable. In**
6 **order to avoid having to incur these costs again, it is most efficient to install**
7 **additional cable capacity at the time of the initial placement. When a new fiber optic**
8 **cable is placed in a wire center route, the fiber optic cable is sized to satisfy the**
9 **ultimate expected demand in the area, even though only 4 fibers may be required for**
10 **immediate use. Finally, by having additional fibers, CBT's engineers have greater**
11 **flexibility when deciding how to increase a route's capacity. Capacity can then be**
12 **increased either through the use of higher speed electronics or by using additional**
13 **fibers. This flexibility allows for cost effective management of CBT's cable plant**
14 **because the relative cost of upgrading electronics versus additional electronics**
15 **changes over time.**

16
17 **Q. When design practices do not require fiber optic cables for feeder plant, how**
18 **are copper feeder cables designed?**

19 **A. Copper feeder cables are designed for a specific route from the central office. In**
20 **order to do this, a projection of the number of households and business pairs required**
21 **for the entire route is made. This projection is based on the existing lines and the**
22 **expected growth for the next 5 to 7 years. The feeder plant is then designed to meet**
23 **this projection. The size of the feeder plant may have to be increased due to structure**

1 limitations.

2

3 **Q. Are you aware of any studies performed by CBT that support the use of a**
4 **forward-looking fill factor for copper feeder cable of 60%?**

5 Yes. The copper feeder cable fill factor is provided by a quarterly report that is also
6 an output of CBT's OS-Plant Assignment System. This is the same report that is
7 generated for the electronic fill. The report identifies the total copper feeder cable
8 pairs available and is the basis for CBT's calculation of the feeder cable fill factor.

9

10 **Q. What is the trend of the copper feeder cable fill?**

11 **A.** The trend has been showing a slight decline, but significant changes are not
12 anticipated.

13

14 **Q. Why not?**

15 **A.** On a forward-looking basis, we would only expect to provision feeder on copper for
16 relatively short loop lengths. Most newer installations will be on DLC. When
17 copper is the medium of choice, it would be planned using the same sound
18 engineering principles that we have used in the past. Also, the feeder fill factor is
19 impacted by the same issues that I discussed for distribution cables related to
20 available cable sizes and structure.

21

1 Q. Does that conclude your testimony?

2 A. Yes.

3

4

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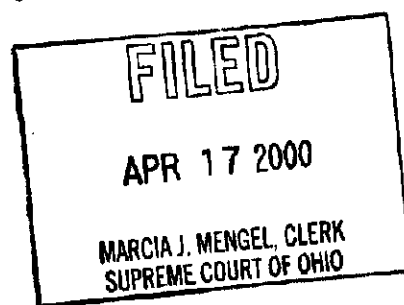
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Box 4
Under Seal

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1 (Confidential transcript under seal.)

2 PAUL W. MEIER

3 of lawful age, being previously duly placed under oath, was
4 examined and testified further as follows:

5 CROSS-EXAMINATION

6 BY MS. SANDERS:

7 Q. Good afternoon, Mr. Meier. I'm Judi Sanders and I'm the
8 attorney for MCI.

9 Just to begin with, I don't think Mr. Chorzempa got into
10 this too much with you yesterday, could you tell us a little bit
11 about what your role was in the development of the TELRIC
12 studies or how you became involved in this investigation?

13 A. My job as a planner, I was brought in to do -- come up with
14 costs on a forward-looking basis for our network and Cincinnati
15 Bell.

16 Q. What kind of costs were you asked to come up with?

17 A. I was asked to do cost on electronics used in a loop, costs
18 for feeder, costs for distribution, and costs for fiberoptic
19 cable.

20 Q. Now, when you say "costs", what do you mean by "costs"
21 again?

22 A. Cost is material and labor to install that product.

23 Q. Okay. And who was it that asked you to provide this
24 information, or to compile this information?

25 A. Norm Mette from our service cost group.

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1 Q. And I understand from your testimony that you were also
2 asked to provide information about fill factors; is that
3 correct?

4 A. Norm Mette went to our distribution -- or, our network
5 engineering department, which I am part of, with a sampling of a
6 number of cross-connect and said, "Give me a loop sample at the
7 600-foot range".

8 Q. A loop sample of the fills at the 600-foot range?

9 A. That's correct.

10 Q. And that's what we talked about yesterday, that was the 600
11 foot from the SAI to the loop distribution portion?

12 A. Yes.

13 Q. And I assume he also asked you to provide information about
14 the feeder fills, correct?

15 A. Yes.

16 Q. And the electronic fills?

17 A. Yes.

18 Q. Okay. Did he give you any direction as to how you were
19 supposed to derive this information for him?

20 A. The information as far as electronics or cable?

21 Q. Well, for each category. What were your instructions?

22 A. The electronics, I was asked to look at what product we are
23 currently using to develop those costs, for -- based on an
24 individual line what it cost, either universal or integrated.

25 Q. And once again -- Okay. And this was to provide input to

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1 Mr. Mette's loop study, correct?

2 A. That's correct.

3 Q. Okay. And what about electronics? That included
4 electronics, correct?

5 A. Yes.

6 Q. Okay. Well, what I'd like to talk about right now is how
7 you developed the fill factor for the electronics, okay?

8 A. Okay.

9 Q. And I believe that you started talking about that issue on
10 Page 8 of your testimony; is that correct? Are you with me
11 there?

12 A. Yes.

13 Q. And at the top of the page you refer to electronics for the
14 feeder plant; do you see that at the top of the page there?

15 A. Yes.

16 Q. And then you go on and at the bottom of the page in your
17 second question, you talk about a 70 percent fill factor for
18 loop electronics once again.

19 Is your -- Did you provide any input for electronics in the
20 central office that would be a portion of the interoffice
21 network as well, or was this just for the loop?

22 A. This was just for the loop.

23 Q. Okay. Would you anticipate that there might be a
24 difference in fill factors between electronics -- the
25 electronics associated with interoffice transport as opposed to

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1 the electronics associated with the loop?

2 A. I don't know if there's a difference. I was not
3 responsible for looking at the interoffice network.

4 Q. Do you know whether anyone looked at all at fill factors
5 for the electronics for the interoffice network?

6 A. I believe Mr. Mette was part of that.

7 Q. Besides Mr. Mette, was there anyone else that you're aware
8 of in your organization who looked into that?

9 A. I do not have a name of anybody.

10 Q. Okay. So at the bottom of Page 8, once again, you're
11 talking about studies supporting the 70 percent fill factor for
12 loop electronics.

13 Can you tell me -- And you say that you're aware of studies
14 that were done supporting that figure; is that correct? That's
15 what your testimony says?

16 A. This 70 percent in the loop electronics?

17 Q. Yes.

18 A. Yes, I am.

19 Q. Can you tell me what studies those were?

20 A. We have a system called OS plant that monitors the amount
21 of derived pairs we have in our network, which are pairs that
22 are associated with a digital loop carrier site.

23 In that report it also monitors the amount of working lines
24 behind those digital loop carrier pairs, and that printout is
25 available to us quarterly -- or generally on a quarterly basis,

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1 and that has shown us that the 70 percent fill is what we've
2 seen over the past six years.

3 Q. So you went back and reviewed the printouts from the OS
4 plant database to determine what the fills had been over the
5 last six years; is that a fair characterization of your
6 testimony?

7 A. Yes. We reviewed those and there was very little change
8 over that time period, and looking forward we figured it would
9 probably be very similar to that fill.

10 Q. Okay. Now, since you were looking at information from this
11 database, that would include equipment in addition to the
12 Fujitsu FACTR system, would it not?

13 A. That's correct. It does include information from a Lucent
14 SLC-96 Lucent Series 5 and Fujitsu FACTR system.

15 Q. Now, you say here that you looked pretty much at the
16 information about your current plant and that showed you that
17 you have a 70 percent fill factor for loop electronics, correct?
18 That's what your study did?

19 A. Yes.

20 Q. Is it possible to operate loop electronics at a higher fill
21 factor, say 85 percent?

22 A. If you would take any one system without any -- just look
23 at one system, that system is working generally -- could be
24 working at a higher rate, but what we're looking at is overall
25 all of our systems have a 70 percent fill factor.

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1 And the reason for that is, as I explained in some of my
2 testimony, maybe not here, is that when you have a POTS service,
3 you can utilize every channel associated with that digital loop
4 carrier site. However, as we know, the industry has more than
5 just POTS service out there, we have coin, we have SPOTS, DID,
6 coin, and data circuits.

7 All of those circuits will work in a digital loop carrier
8 site. However, you cannot utilize all the pairs associated with
9 that particular slot. So what happens, say, for instance, you
10 have a coin line in a SLC-96 Series 5 type system, when you pull
11 out a dual channel which could use two POTS customers and put a
12 coin plug in, you can only feed one coin line out of that
13 system -- or, out of that slot.

14 So what you run into, let's take -- go the broad end of
15 this, that if you have a digital loop carrier system and you
16 want to put all coins in it, those coins would go into that
17 system and you could only work that system to a capacity of 50
18 percent because you could only work 48 coin lines out of that
19 system.

20 Now, with the new FACTR system, it is even -- that
21 potentially can even be worse because now you have a card a
22 FACTR system that has a capability of four POTS channels. When
23 you pull that card out and put in a coin plug, you're only able
24 to get one coin plug out of that.

25 So in reality, in a FACTR system, if you wanted to put

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1 coins in a complete FACTR system, you could only get 24
2 customers or 24 coins lines out of that and actually the maximum
3 capacity of that system would be 25 percent.

4 Q. Okay. So I think what you just told me is that as you see
5 it on your current network, the fill factor for loop electronics
6 is affected by the type of loop that's being connected, or being
7 served by that digital loop carrier system, is that correct,
8 whether it's a coin line or et cetera?

9 A. Yes. It all depends on the type of service that you have.
10 Also, because we are wanting to provide service on demand, you
11 have this system out there that you not only have to have
12 vacancies for POTS, but you also have to have vacancies for
13 coin, you also have to have vacancies for all the other services
14 that I've mentioned.

15 So it's not like a copper pair where you could put any --
16 potentially any type of service on that copper pair; you
17 actually have to have vacant slots or vacant channels sitting
18 out there waiting for those type of services.

19 Q. All right. But let's go back to my question, which was:
20 Given that there's different fills for different types of loops,
21 it's certainly possible to operate this electronic equipment at
22 a higher fill factor than 70 percent, say 85 percent; would you
23 agree with that?

24 A. You could operate a digital loop carrier system, once
25 again, above 85 percent, you could do that across the company,

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1 but you run into the situation where when someone wants a
2 particular type of service, we would have to send a specialized
3 craftsman out to put the proper channel unit in.

4 And I would even have a concern that if you -- like I said,
5 if you have a system that has all coins in it, you never can
6 achieve that 85 percent line on that system. You can only reach
7 a maximum of 24 percent or 50 percent depending on what type of
8 system you're using.

9 Q. Are you saying that for certain types of loops you would
10 have to -- I mean, strike that.

11 Given that you might have to send a technician out to do
12 certain things given the type of loop that a customer
13 requested -- Let's go back to my fill factors.

14 Is it possible to run electronic equipment at an even
15 higher fill factor than 85 percent given the concerns that you
16 have just explained to me?

17 A. If we only had POTS customers, plain old telephone service,
18 you probably could achieve something greater than that.
19 However, because of all the other services that we are having to
20 provision over the various type of equipment that we have, I
21 have a concern that you would ever be able to achieve that.

22 Q. Okay. Would your concerns be equally applicable for the
23 interoffice network electronics?

24 A. I do not work in cost associated with interoffice, so I
25 couldn't tell you that.

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1 Q. Would you agree with me that they probably wouldn't have
2 the same kinds of concerns for that kind of electronics?

3 A. Once again, if I would answer that it would just be a guess
4 on my part, so I don't wish to answer that unless you force me
5 to, and I would say no, or yes, either way.

6 Q. All right. Fair enough.

7 Just let me ask you this: To your knowledge, do you know
8 of any systems that are completely filled with pay phone lines?

9 A. Yes, we have that situation at shopping malls, airports,
10 that type of deal.

11 Q. What percentage of your total lines are represented by pay
12 phone lines?

13 A. I have no idea. This also, not only entails pay phones,
14 but it could be two-wire data circuits, it can be any type of
15 alarm circuit. You run into the same situation. So it's not --
16 Coin was an example I used, but there are other circuits out
17 there besides coin that actually leave that pair or multiple
18 pairs unusable.

19 Q. Once again I'll ask you the same question: Do you know
20 what percentage of your lines would represent alarm loops?

21 A. I do not.

22 Q. Well, would you agree with me that given the concerns that
23 you have about the practical applications of the different types
24 of loops, that it would be more efficient to operate electronics
25 at higher and higher fill factors?

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1 A. The electronics you say may be running more efficient;
2 however, the people that we are -- or, the customers we're
3 required to provide service for and the craftsmen would be
4 working inefficiently by having to go out and replace plugs on a
5 day-to-day basis at any given site.

6 What I'm saying is the electronics -- you're saying the
7 electronics, yes, they work efficient; in other words, there
8 would be more customers working on electronics possibly.
9 However, I would be sending a person out to change a plug every
10 time I had someone want a service that I did not have vacancies
11 for. That also requires us a lot of times where, let's say for
12 instance, I have a channel unit where I have a vacant line on
13 that channel unit, and I have another channel unit over here
14 with a vacant line. I would have to move a customer, if I had a
15 service like a coin or data circuit, I would have to move one
16 customer from one channel unit to another so I could pull a card
17 out and put in a special circuit card, which are rearrangements
18 that take central office people and outside craftspeople.

19 Q. Well, Mr. Meier, are you aware of the extent to which
20 Cincinnati Bell's proposed nonrecurring charges include the time
21 and the costs associated with the technician going out and
22 changing the line cards that you just described to us?

23 A. When we develop nonrecurring charges, I believe you're
24 talking about installation cost -- is that what you're saying,
25 nonrecurring?

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1 Q. Yes.

2 A. Okay. We would hope, or we -- our general network is
3 designed that that installation cost is to send an installer out
4 to install the line at the house or business. We design our
5 network where the SLC systems are there, the vacancies are there
6 for them to go out and install the service, or that the
7 craftsman -- no craftsman has to visit that digital loop carrier
8 site every time a new circuit goes in.

9 Q. Let me ask you this, Mr. Meier: Were you involved in the
10 development of the nonrecurring charge study?

11 A. I may have had some involvement in it, I cannot recall at
12 this time.

13 Q. So you were not one of the people that -- who were
14 interviewed as far as providing information as to how much time
15 is involved in, as you say, installing a circuit, or testing it?
16 Were you one of those people that was interviewed during this
17 process?

18 A. I remember sitting down with Mr. Mette and talking about
19 this same issue about what it would take to change a plug out,
20 or do we send a craftsman out every time, and I remember talking
21 to him about it; but as far as numbers or anything, I don't
22 recall anything.

23 Q. So you didn't provide him with any time estimates as far as
24 how long it takes a technician to change a plug or change a line
25 card?

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1 A. Not that I remember.

2 Q. Now, Mr. Meier, on Page 9 of your testimony you make the
3 comment that you expect the level of electronic fill factors to
4 remain constant in the future because CBT deploys DLC on a
5 cost-effective basis. Do you see that testimony there?

6 A. Yes.

7 Q. I'd like to explore that a little bit. Do you mean by cost
8 effective the most efficient manner of deploying your DLC?

9 A. What I mean by that, let's say for instance I have a
10 location that has a capacity of 10 digital loop carrier systems,
11 but I only need two. I'm only going to put plug-ins in two of
12 those systems, and that's -- those 192 lines is where -- that's
13 what we start counting. I'm not counting the 960 lines that
14 that site is equipped with, I'm only counting the systems that
15 we actually have equipped. And that's what I mean by
16 cost-effective basis.

17 At some point where we reach a threshold where it's now
18 becoming hard to provision the circuits or we don't have any
19 capacity left to provision those circuits, that's when we look
20 at putting another digital loop carrier system in as far as
21 plug-ins.

22 Q. Well, Mr. Meier, you're also an outside plant engineer,
23 you're also involved in deploying types of network equipment,
24 are you not?

25 A. Could you give me a definition of a type of network

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1 equipment?

2 Q. Well, for example, deploying the integrated digital loop
3 carrier system.

4 A. Yes, that is one of my responsibilities, yes.

5 Q. And it's my understanding that Cincinnati Bell uses the
6 integrated digital loop carrier system to provide retail bundled
7 services; is that correct?

8 A. We use that for switched or POTS services, yes.

9 Q. And on a going-forward basis would you agree that
10 Cincinnati Bell would deploy integrated digital loop carrier
11 technology whenever possible?

12 A. Once again, if the switches that we're speaking of, which
13 are generally the digital switches which are in our Urban 1 and
14 Urban 2 areas which have the digital interface with them, we
15 designed our cost going forward that all POTS services, switched
16 POTS lines would be on integrated digital loop carrier.

17 Q. And you designed it that way because it's more cost
18 effective, did you not?

19 A. That's correct.

20 Q. And can you just tell me briefly why it's more cost
21 effective, that's the integrated digital loop carrier?

22 A. Okay. The integrated digital loop carrier, the T-1 lines
23 that feed that site actually are connected directly into the
24 digital switch at a T-1 rate. I'll leave it at that.

25 Q. Well, we're going to get into that.

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1 A. I figured we would.

2 Q. Yeah, not a surprise.

3 MS. SANDERS: Your Honor, at this time I'm going to
4 mark a diagram as MCI Exhibit 5.

5 - - -

6 Thereupon, MCI Exhibit No. 5 was marked
7 for purposes of identification.

8 - - -

9 BY MS. SANDERS:

10 Q. Now, Mr. Meier, do you recognize the document that I've
11 just handed you?

12 A. Yes.

13 Q. And this was a document that was made a deposition exhibit
14 during your deposition, was it not, for the purpose of this
15 case?

16 A. That's correct.

17 Q. Okay. Could you just give us a brief description as to
18 what is being portrayed by MCI Exhibit 5?

19 A. On the left side going top to bottom you have a simple
20 block diagram of an integrated system being installed in
21 Cincinnati Bell's network.

22 And on the right side you have a simple block diagram of a
23 universal system being installed in Cincinnati Bell's network.

24 Q. Now, I'd like to direct your attention to the diagram of
25 the integrated system on the left. The box midway down that

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1 says "FLM-150. Is that an on DC."

2 A. That is a OC3 -- OC3 DS1 multiplexer, yes.

3 Q. And if you look at your diagram there, the lines coming out
4 of the FLM-150 going towards the switch, are those at the DS1
5 level?

6 A. That is correct.

7 Q. And then following those lines, can you tell me what the
8 two DSX-1 lines represent?

9 A. That is a DSX-1 cross-connect panel.

10 Q. They are both DSX-1 cross-connect panels.

11 Q. Mr. Meier, is it technically feasible to unbundled a IDLC
12 loop?

13 A. In Cincinnati Bell's network, we do not unbundle a DSO loop
14 on an integrated system.

15 Q. Okay, but my question was is it technically feasible to do
16 so?

17 A. I have talked to our switch people about that and what you
18 have to do if you would want to take or groom a DSO circuit out
19 of a T-1. You would, in the switch, you would have to nail up
20 or hairpin in the switch. Now you have a switch that is
21 designed at a six-to-one concentration.

22 However, as soon as you start nailing up or hairpinning
23 customers in a switch module, you have now given that customer
24 basically a one-to-one connection through your switch, which is
25 actually reduced or increased the concentration on the other

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1 customers who are using that same switch module.

2 Q. Is hairpinning the only way that you know of to unbundle a
3 IDLC loop?

4 A. Yes.

5 Q. Are you familiar with Bellcore standard GR303?

6 A. Yes, I am.

7 Q. Are you familiar with the term multi-hosting with respect
8 to GR303 compliant equipment?

9 A. I have not heard that term before, no.

10 Q. All right. Just one last question and that may be it with
11 our diagram here. When we -- Going back to the diagram, when we
12 compare the integrated system to the universal system, isn't the
13 efficiency of the integrated DLC system the fact that it avoids
14 the what's labeled as the NBS CMS on the universal side of the
15 picture, that would be the narrow band shelf and the common
16 shelf?

17 A. The efficiency is there for the integrated which is
18 associated with the OC3D V1 multiplexer and the digital
19 interface in the switch, where with the universal, you have to
20 have that NBS CMS and an analog trunk unit in the switch, so you
21 really can't talk about one without including the switch.

22 Q. So it's not just the avoidance of these two pieces of
23 equipment?

24 A. That's correct.

25 MS. SANDERS: That's all I have. Thank you.

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1 THE EXAMINER: Mr. Petrilla?

2 MR. PETRILLA: Thank you, your Honor.

3 . . .

4 CROSS-EXAMINATION

5 BY MR. PETRILLA:

6 Q. Good afternoon, Mr. Meier. My name is Tony Petrilla and I
7 represent CoreComm.

8 You're an engineer, correct?

9 A. My job title is integrated specialist, or planning
10 specialist, but I was an engineer.

11 Q. Okay. Did I hear in the testimony yesterday have you a
12 two-year degree?

13 A. I don't think I said that in my testimony yesterday, I
14 think that was maybe in a deposition.

15 Q. Okay. I'm sorry.

16 Do you have a two-year degree?

17 A. Yes.

18 Q. Okay. Where from?

19 A. University of Cincinnati.

20 Q. Okay. When did you get that degree?

21 A. 19- -- I graduated in 1981.

22 Q. Okay. They have a four-year program there?

23 A. That's correct.

24 Q. Okay. But you did the two-year program?

25 A. That is correct.

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1 Q. And then you started working at Cincinnati Bell sometime
2 shortly thereafter?

3 A. I actually was -- started working for Cincinnati Bell in
4 1973 and was going to night school to earn that degree.

5 Q. Okay. Have you had any training since getting your degree
6 in 1981 in engineering?

7 A. I went in 1984, I went through outside plant engineering
8 courses developed by Bellcore.

9 Q. How long were those courses? Was it a weekend seminar, or
10 was it something weeks, months?

11 A. There are many courses I went to, but the particular course
12 I'm referring to was a two-week program.

13 Q. Okay.

14 A. Most of your training for engineering -- and the type of
15 engineering I'm referring to is putting up cables or designing
16 the network -- is done through experience of other people who
17 have done that and through Bellcore practices.

18 Q. Okay. What was the total amount of time you spent in those
19 seminars, assuming each day is a business day, something like
20 that?

21 A. I've probably been in training for over 200 hours or more.

22 Q. So approximately 25 business days?

23 A. That's an estimate, yeah. I did not bring my list of all
24 the courses I've attended with me.

25 Q. Okay. Have you ever attended a course on unbundling?

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- 1 A. No.
- 2 Q. How did you learn about unbundling?
- 3 A. Through information provided to me by vendors.
- 4 Q. Okay. Do you agree out and seek that information?
- 5 A. It generally is made available to me as they come in to
- 6 look at products.
- 7 Q. Okay. So if there's a product out there that has to do
- 8 with unbundling, say IDLC, it would be possible that you
- 9 wouldn't know about it because you haven't gone out and looked
- 10 for it, have you?
- 11 A. I'm in a planning group which I implement plans for
- 12 equipment that is approved by our company. So I don't go out
- 13 and seek information on all the various types of equipment.
- 14 Normally that equipment is identified to me and then we -- they
- 15 may discuss with me how that equipment fits into our network.
- 16 However, I do not go out and seek every type of equipment or
- 17 vendor available to that -- that does every type of service.
- 18 Q. Okay. Just to make my question short and simple, it's
- 19 possible that there's an unbundling technique out there having
- 20 to do with IDLC and you may not know about it, correct?
- 21 A. That is possible, yes.
- 22 Q. Okay. Do you do studies in your job as an engineer for
- 23 Cincinnati Bell?
- 24 A. Yes.
- 25 Q. Okay. Did you ever have any statistics when you were in

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1 school?

2 A. No, I did not.

3 Q. Okay. Do you know anything about statistics?

4 A. I would say no.

5 Q. Okay. So if I asked you if you could take a sample and
6 tell me if it was a statistically significant sample, could you
7 tell me?

8 A. I could not tell you that, no.

9 Q. And you couldn't do a calculation for a 95 percent
10 confidence level on that sample, could you?

11 A. No, that was not part of my scope of looking at
12 information.

13 Q. Okay. Mr. Meier, as an engineer, the word "efficiency" has
14 a meaning to you, doesn't it?

15 A. Yes.

16 Q. What does it mean to you?

17 A. It means trying to get the best or the best value out of
18 the piece of equipment I'm trying to use.

19 Q. Okay. Most bang for the buck?

20 A. I would agree with that, yes.

21 Q. Does the term "most efficient" then mean the same thing,
22 does it have any different meaning?

23 A. I would probably even put that most efficient at a higher
24 standard than the previous one.

25 Q. Okay. What about the term "lowest cost", how does that

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1 relate to most efficient?

2 A. I don't look at lowest cost being the most efficient. And
3 the reason why I say that is because we could go and put some
4 equipment in at the lowest cost; however, it may not be the most
5 efficient. What I mean by that is you may have to continually
6 go out and put a lot of that low-cost equipment in, which takes
7 additional manhours, engineering associated with that. So I
8 would put -- it could be both in my book.

9 Q. What if I used the terms "most efficient" and "lowest cost"
10 in the same sentence and I said, for instance, Mr. Meier, I want
11 you to build me a network that is composed of the most efficient
12 telecommunications technology currently available and the lowest
13 cost network configuration; what meaning would that have to you?

14 A. I think just what you've said, lowest cost and most
15 efficient.

16 Q. Get the job done, but do it as cheaply as possible?

17 A. Yes.

18 Q. Earlier Ms. Sanders asked you about what instructions
19 Mr. Mette gave you when he asked you for distribution fills, and
20 I believe your response was that Mr. Mette told you to give him
21 a sample at a 600-foot range from the SAI; is that correct?

22 A. Actually, Mr. Mette contacted some people in my department
23 with a list, and it may not have even been Mr. Mette, it may
24 have been someone else, with a list of 102 cross-connects in
25 Ohio, we'll say, for the latest study done in the first quarter

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1 of '98, and gave that -- made contacts with someone in my
2 department which did that sampling at 600 foot.

3 Q. Okay. So he didn't ask you?

4 A. No.

5 Q. Okay. When he asked this other person in your department,
6 if I hear you correctly, Mr. Mette did not ask that person,
7 "Tell me which cross-connect SAI is to sample", he told that
8 person which SAIs to sample, correct?

9 A. I would like Mr. Mette to possibly address that because I
10 don't believe that Mr. Mette himself picked out those
11 cross-connects, I think it was a random sample, but I cannot say
12 that for sure.

13 Q. Okay. Are you aware, however, of Mr. Mette having
14 instructed you, or someone in your group, to use your or their
15 engineering judgment as to what fill would represent the most
16 efficient -- I'm sorry, would be present in a network composed
17 of the most efficient telecommunications technology currently
18 available without regard to what's in your network currently,
19 and the lowest cost network configuration?

20 A. Could I have that read back?

21 Q. I can rephrase it if you want. It got --

22 Let me rephrase that. When Mr. Mette gave instructions to
23 your group to determine the fill on distribution cable, are you
24 aware whether or not he said at any time, "Please use your
25 engineering judgment as to what fill would be present in a

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1 network composed of the most efficient telecommunications
2 technology currently available and the lowest cost network
3 configuration"?

4 A. When Mr. Mette went to our department with 102 samples of
5 cross-connects and asked for them to do a sample at the 600-foot
6 range, the most efficient, the most cost effective was not part
7 of their study. What they looked at was if I had a 600-pair
8 cable, how many pairs in that 600-pair cable are working. That
9 was their only purpose in that.

10 Q. Okay. We're talking about industry standard here,
11 essentially, is that a fair statement; or, we're talking about
12 what's happening at CBT currently?

13 A. We're talking about a sampling of what was happening in
14 CBT's network.

15 Q. Okay. So you wouldn't even call that industry standard,
16 this is just what is happening in your network?

17 A. I don't know what the industry standard is, so I can't say
18 it is or is not.

19 Q. Okay. That's fine. There was nothing written about those
20 instructions, were they? There's no documents out there that
21 exist in which these instructs are memorialized?

22 A. Once again, I would have to defer that to Mr. Mette because
23 I don't know. I was not part of taking the actual samples.

24 Q. Sure. Mr. Meier, I want to talk about how the proposals in
25 Cincinnati Bell's cost study for fill factors relate to what

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1 exists in the network currently.

2 On distribution cable, the proposed fill factor is 35
3 percent for the cost study, correct?

4 A. That is correct.

5 Q. For the loop cost study, to be specific?

6 A. Yes, just distribution side of the cost study.

7 Q. And it is also your testimony that in your network the fill
8 and distribution is approximately 35 percent?

9 A. I would say yes, since we have said it's 35 percent, it's
10 an approximate 35 percent.

11 Q. Give or take.

12 For copper feeder, the proposed fill in the loop cost study
13 is 60 percent, correct?

14 A. That is correct, for copper feeder.

15 Q. In your network, what is the actual fill of copper feeder?

16 A. Are you talking about at the central office, or are you
17 talking about along the complete network?

18 Q. At the central office.

19 A. At the central office it is 60 percent, or actually lower
20 than 60 percent.

21 Q. Lower to any appreciable degree?

22 A. Two percent, something like that. It varies month to
23 month, year to year.

24 Q. Okay. Digital loop carrier, the proposal in the study is
25 70 percent; is that correct?

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1 A. That is correct.

2 Q. And in your network, is it lower than 70 percent?

3 A. It is at the present time lower than 70 percent, and has
4 been that way for quite a few years.

5 Q. About 67 percent?

6 A. I believe it's -- it varies between 67 or 65 percent and 70
7 percent, yes.

8 Q. Okay. Fiberoptic cable, the proposed fill in the study is
9 33 percent, correct?

10 A. That is correct.

11 Q. And in your network, do you know what the fill is on
12 fiberoptic cable?

13 A. The information that we have looked at on the fiberoptic
14 cable has shown a fill of around 30 percent.

15 Q. Okay. So the 33 percent was drawn from your network?

16 A. It was -- We looked at the cables that were actually
17 terminated in the central office through our TIRKS system,
18 T-I-R-K-S system, and looked at those numbers. However, only
19 fiberoptic cables that actually begin at the central office and
20 terminate at a remote terminal site are identified in that
21 system. Any fiber groups or 12 fiber groups or whatever that
22 have not been terminated or out in the network for a future
23 remote terminal site, those are not inventoried in our system.

24 Q. So to determine the fill, you had to figure out what were
25 the total number of strands in these fibers going out into the

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1 remote terminals, and then you took the number of active strands
2 identified in TIRKS, and just divided those by the number of
3 total, is that how you came to the fill?

4 A. We looked at the total fibers in our network and looked at
5 the fibers that were active in our TIRKS system.

6 Q. Okay. You seemed a little hesitant giving your answer. Is
7 there anything that you need to tell me about this process?

8 A. I was not sure on your question, and I had to rethink it as
9 far as you were identifying the number of fibers identified in
10 our TIRKS system, or the total fibers in our network, so I
11 wanted to clarify it, that it was done by looking at the total
12 fibers in our network along with the working or active fibers in
13 the TIRKS system.

14 Q. Okay. In your testimony you stated that Cincinnati Bell
15 experienced 22.4 percent growth in access lines between 1992 and
16 1998. And this would appear on Page 7; is that correct?

17 A. That's correct.

18 Q. Can you tell how many calendar years this was for? Was it
19 for seven or for six and a half?

20 A. I don't recall if it was for seven or six and a half.

21 Q. Okay.

22 A. I don't think it was a part of year, I think they were
23 whole years.

24 Q. I noticed that the '98 study was done in the first quarter
25 of 1998, so I don't know if you can remember when the '92

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1 study --

2 A. I don't know where I got those numbers as far as whether it
3 was a first quarter or second quarter.

4 Q. Okay. Any idea, you know, wasn't December, it was wasn't
5 Christmas time, it was maybe before summer?

6 A. I think it was probably done looking at the end-of-year
7 reports.

8 Q. So it would have represented all of 1992, then?

9 A. I really don't recall.

10 Q. Okay. Was that growth concentrated in any particular area
11 of Cincinnati Bell's service territory?

12 A. It was the -- Looking at the Cincinnati Bell operating area
13 in total.

14 Q. Okay. So would you say that that growth was evenly
15 distributed?

16 A. I would say probably a majority of the growth was in our
17 Urban 1 offices.

18 Q. Okay. So that was in the City of Cincinnati?

19 A. And some of northern Kentucky, yes.

20 Q. And when you say Urban 1, do you mean Band 1 as that term
21 has been defined in this proceeding?

22 A. Yes.

23 Q. Okay. Do you think the fill factors would differ based on
24 the bands? Would there be a different fill factor in Band 1
25 than there would be, say, in Band 3?

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1 A. I really don't know. I have not looked at that. I would
2 think when you have a larger growth area, you're out there
3 replacing or putting in additional cables more often than I am
4 in the rural areas, yes.

5 Q. So additional cables could offset, for instance, additional
6 usage, may not affect the fill factor at all?

7 A. If you're on a continuing process like we are of putting in
8 additional facilities, it really does not have a lot of effect
9 on your fill factors. In a rural office where you'll have a
10 cable that you don't have as much growth and you don't have as
11 many cables going out of an office, you will see the fill factor
12 in that office at some point in time generally go up until it
13 actually goes down; but if you're in an urban office where you
14 have various cables going out in various different areas,
15 putting in a new cable or one cable filling up does not really
16 have that much effect on the total fill factor.

17 Q. When you said that a majority of that 22.4 percent growth
18 was concentrated in Band 1, do you think in Band 1 that the
19 growth was evenly distributed?

20 A. I wouldn't have any idea. I would say it probably was
21 evenly distributed; but if you're talking about a cross central
22 office or something like that, I would say I could very easily
23 say no, it wasn't evenly distributed because this one had one
24 more than that one. But I would say it was probably pretty well
25 evenly distributed as an estimate.

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1 Q. Okay. And if we took a longer period of time, say instead
2 of seven years we took 20 years, would you expect over 20 years
3 the distribution to become more even?

4 A. Well, I think if we looked back 20 years, we probably would
5 see that with the migration out of the core Cincinnati area to
6 the more -- or, the suburbs, there probably were different
7 numbers associated with that. So I would -- And I wasn't doing
8 this 20 years ago so I really can't identify how that has
9 changed, if anything.

10 Q. Okay. And it wouldn't matter if you looked forward, it
11 would be the same answer, instead of looking back, looking
12 forward?

13 A. I would say we would be comfortable with the way the growth
14 is occurring now in the Urban 1 and potentially some Urban 2s on
15 a going forward, or Band 1 and Band 2.

16 Q. Is that the same as your answer that you gave for looking
17 back 20 years?

18 A. I don't know if I gave an answer looking back 20 years
19 because I was not around.

20 Q. Okay. Well, I thought you had initially said if it was 20
21 years, you said, well, looking back over the last 20 years,
22 we've seen the growth going out towards the suburbs.

23 A. And what I want to clarify here is that what is an Urban 1
24 office today, number one, we probably did not have that
25 definition 20 years ago.

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1 Q. Sure.

2 A. And it may have been Band 1 -- or, Urban 2, I may mix that
3 term sometimes, back 20 years ago, but it's now moved up to
4 being an Urban 1 office. So if we had the same definition 20
5 years ago it would have looked a lot different than what it does
6 today.

7 Q. Okay. In interfacing with Mr. Mette about this cost study,
8 did he ever explain to you that this cost study is supposed to
9 examine a five-year period into the future?

10 A. When I do cost studies, I generally look three to five
11 years out.

12 Q. Okay.

13 A. And so the question came to me what equipment are you using
14 today, or actually I guess I asked we are using this equipment
15 today, is that what you want your cost on, and the question of
16 will we be using this same equipment in three to five years.
17 And the answer was yes, so that's what we based our cost study
18 on.

19 Same thing with engineering the distribution and the feeder
20 copper plant, we identified that -- the techniques or the
21 reasons why we do things today, we're going to continue on the
22 three- to five-year plan, and that's the reason why we costed it
23 the way we did.

24 Q. Did Mr. Mette ever explain to you that in a five-year
25 study, in a forward-looking five-year study, Cincinnati Bell

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1 costs the amount of facilities to serve demand that occurs
2 during that period of time in that five years; did he ever
3 explain that to you?

4 A. That's a new look that I have never heard before so I don't
5 think so.

6 Q. Okay. So when fill factors were gathered by you and your
7 group, these fill factors were not gathered to provide enough
8 capacity for five years into the future, correct?

9 A. The fill factors were -- We looked at the fill factors as
10 an overview of our existing network, and therefore, I cannot say
11 that because we design our network starting at that point and
12 the fill factors were 35 percent, that we don't have to do
13 anything else for the next five years, and I think that's what
14 you're asking.

15 Q. Well, not just that, but you haven't provided more capacity
16 than you would need for the next five years, have you?

17 A. In our distribution network we have designed for the
18 ultimate two lines per -- or, potentially two lines per
19 residential line and ultimate business lines. In the copper
20 feeder we're providing service for -- in that feeder route for
21 five to seven years. So when we put our distribution plant in,
22 we are not designing for it five years, we have to go in and
23 reinforce it, we're designing what we feel is a practice we have
24 viewed for many years and have been very cost effective for us,
25 and on the feeder we are actually designed for five to seven

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1 years, and so we don't cut that necessarily off at five years.

2 Q. It could go to seven?

3 A. Could go to seven.

4 Q. Sure. Well, let's take distribution, for example. You
5 said you provide distribution for ultimate demand, and I think
6 in your testimony at Page 3 you describe that as maximum need.
7 Maximum need or ultimate demand is much longer than five years,
8 correct?

9 A. Yes, it could be.

10 Q. It could be 25 years or 30 years?

11 A. It depends on what the demand is, yes.

12 Q. Right. We talked earlier about the 22.4 percent growth
13 that Cincinnati Bell has experienced between 1992 and 1998.
14 Would you agree with me that if that is seven years that that
15 period represents, then the growth per year was about 3.2
16 percent?

17 A. Yes.

18 Q. I'll represent that I did the math and it's 3.2 percent.
19 And 3.2 percent using the distribution fills of 35 percent, if
20 we assume that growth in the future occurs in an even
21 distribution and it may not be even in any particular year,
22 because say over a 30-year period it's going to be relatively
23 even, would you agree with me that there's enough distribution
24 there to last about 33 years?

25 A. If that growth only occurred where we have existing

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1 distribution facilities that were built the way I have proposed,
2 yes. However, if you have new subdivisions going in under your
3 plan we would not be able to serve them because we're not
4 putting any new facilities in.

5 If you have old facilities that were not built to the
6 standard that we're building now, you would not be potentially
7 able to serve customers, especially second-line customers if it
8 exceeded the capacity on that cable

9 Q. The 35 percent measures the amount of distribution cable
10 you've got out there currently, vis-a-vis the amount of
11 customers you've got out there?

12 A. It is a cross section view of what facilities that are
13 working via the sampling. One of the things that's important
14 here is when you put a cable in, and I think I talked about this
15 yesterday, when you put a cable in down the street, let's say
16 it's a hundred-pair cable, you may have let's say, 50 pair of
17 those in use at some point along the line. Of course, you
18 actually have potentially 50 dead lines that are not -- 50 lines
19 that are not working, along with 50 pair that have been used
20 already back further in the network.

21 So when you look at the complete hundred-pair cable, at the
22 very beginning, yes, your fill may be 50 percent. You dropped
23 off two customers at the first terminal so now that is -- the
24 fill has actually gone down at that next point along the cable.

25 Likewise, when you get out to that hundred-pair cable, at

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1 the end we'll say where that hundred-pair cable is maybe only
2 serving two customers, the reality, if you looked at the fill at
3 that section where you have two customers out of a hundred
4 working in that section, your fill is very, very low.

5 Q. I definitely understand the concept that fill is relative
6 depending upon the cable that you're measuring it in, and that's
7 why you guys had to pick a point, and with 600 feet I guess
8 radius from the SAI that you measured the fill.

9 My point, however, goes to something different, and that
10 is: You said earlier, you said, well, we have got this 35
11 percent, but if new people come along we have got to have new
12 facilities for them, and my point goes more to well, if those
13 new people are going to come along, they are going to come along
14 after this cost study, and when we have another cost study we'll
15 have a lower distribution fill factor if we need to, to
16 accommodate those new folks. But at this point in time since we
17 don't know who those folks are, we have got a 35 percent
18 distribution fill proposed by CBT and that's the best we can do
19 right now, correct?

20 MR. HART: That's all one question?

21 MR. PETRILLA: It's a conjunctive question.

22 MR. HART: Or was that a speech? Object to the
23 question as compound and more of a speech than a question.

24 THE EXAMINER: I think he tapered it off to one
25 question. If the witness can understand it, I'll allow him to

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1 answer.

2 THE WITNESS: I would agree that what you're saying is
3 you're coming to us and this is what our network has built at or
4 what we see our network being built at, and therefore you, like
5 us, are responsible for -- or, we're responsible for recovering
6 that cost, whether it's you or it's us

7 BY MR. PETRILLA:

8 Q. Another way to say it is: Earlier I said well, if you take
9 3.2 percent as your growth rate and you have even growth, then
10 you would have enough distribution to last 33 years, and you
11 said well, there could be additional people to come along in
12 that period of time.

13 Another way to say this would be well, the 33 years could
14 be viewed as a floor because if I've got to add more facilities
15 for the new people that come along, you might have even more
16 distribution -- I'm sorry, distribution might even last longer
17 than 33 years; is that correct?

18 A. I'm not sure where you came up with the 33 year number and
19 I kind of lost it after that.

20 Q. Sure. Let me explain that to you. If you take 35 percent
21 as your fill, and if you assume that every year that goes by,
22 3.2 percent, you multiply it by 1.032, if you multiply it by
23 that 33 times, you'll come out to about 99.5 percent, something
24 like that, which would be approaching a hundred percent fill.

25 So that's how many years you're going to make it until you

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1 hit a hundred percent fill in that.

2 A. And I think that goes back to what I said earlier, that
3 maybe what you see as a fill and I see as fill are two different
4 things because that last customer at that last terminal, I only
5 have two lines working there. I have a hundred-pair cable.
6 Now, how can I say that that cable is going to be a hundred
7 percent? I can't. It never will be.

8 In other words, the only way that you could achieve a
9 hundred percent in your distribution network is let's say you go
10 down the street and you have 50 customers. The first customer
11 takes two lines. That cable tapered to a 98-pair cable. The
12 next goes -- a 98-pair cable goes down to the next pedestal.
13 Two customers take service, so that tapers to a 96-pair cable.
14 They do not make cables that way.

15 So in the network, over a distance of X amount of feet, you
16 are going to have dead sheath that you will never be able to
17 utilize. However, we have to recover that cost. And that's the
18 reason why your fill -- I disagree that your fill ever could
19 reach a hundred percent or 99 percent.

20 Q. Let's use a consistent definition of fill. I have used
21 fill so far to mean fill measured 600 feet radius from the SAI,
22 which is what is in Cincinnati Bell's study. Do you believe
23 that under that definition fill could never reach a hundred
24 percent?

25 A. At the 600-foot mark?

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- 1 Q. Yes.
- 2 A. I would say it could never reach a hundred percent.
- 3 Q. Okay.
- 4 A. And the reason for that is you have customers working in
5 that cable, I would say potentially between zero and 600 feet.
- 6 Q. Okay.
- 7 A. If you --
- 8 Q. I'm going to --
- 9 A. -- had no customers within 600 feet of your serving area
10 interface, that would be true; plus you put your serving area
11 interface in the wrong spot.
- 12 Q. To simplify this line of questioning, it's a fair statement
13 that the distribution fill of 35 percent could provide enough
14 distribution to last the next, say, 20 years; that's fair, isn't
15 it?
- 16 A. I can't say it's fair.
- 17 Q. If there were tremendous growth in the future, that could
18 exhaust 35 percent distribution fill; is that what you're
19 saying?
- 20 A. I would say there are potentials -- points along that
21 distribution cable where they could reach a hundred percent.
22 However, the composite of all the cables along that, it would
23 never reach a hundred percent.
- 24 Q. Okay. To try to simplify this line of questioning, it's
25 going to be a long time before that distribution cable comes

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1 anywhere near being used up?

2 A. All of it?

3 Q. All of it.

4 A. Every single piece, every single foot of cable?

5 Q. We've already established that you believe that the fill
6 will never reach a hundred percent; so I'm not trying to say all
7 of it, but nearly all of it then. Something less than a hundred
8 percent that is possible.

9 A. If you have that perfect customer that we talked about
10 yesterday and he moved into the areas where you only had vacant
11 pairs and you did not have any new growth, or if you had growth
12 they did it and filled that cable up perfectly, it would take a
13 very, very long time before you could reach a hundred percent in
14 your network.

15 However, I would not want to be the engineer, nor the
16 splicer, nor the customer trying to make sure that Cincinnati
17 Bell achieves that efficiency in their cables because you are
18 taking something away from every one of them.

19 Q. Okay. Let's move on.

20 The digital loop carrier fill of 70 percent, my first
21 question is: When we have a fill of 70 percent of the digital
22 loop carrier, are we paying for those digital loop carriers to
23 be fully equipped with channel units?

24 A. You are paying for a hundred -- those 70 -- say if you take
25 a system, okay, and I design that system to be fully utilized,

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1 Mr. Mette, I believe, puts that 70 percent in there. I break it
2 down per channel per customer, and I believe he puts in that 70
3 percent.

4 So how that relates to the cost I give him, I'm not really
5 sure, but I think you could be correct on that.

6 Q. Basically, this study presumes that from the very
7 beginning, every one of these digital loop carriers is ready to
8 go. All you guys have got to do is either flip it on or make
9 sure that the channel unit is actually wired; is that correct?

10 A. When you say "every one of", the -- we only --

11 Q. Every one of the line cards in the digital loop carrier is
12 ready to go.

13 A. That's right. When we design our system, it is designed
14 for every card to be in there. However -- Let me back up.

15 Our cost associated for this -- what we're talking about
16 here, cost associated with this study was done on POTS service.
17 However, because of other services that are in that equipment,
18 or other services that Cincinnati Bell is required to provide,
19 that equipment cannot work at a hundred percent efficiency or
20 every system cannot have 96 working lines on it.

21 Q. Let's talk about what a line card is. A line card is a
22 piece of electronics that looks like one of these, you know,
23 computer chips that goes into, say, a personal computer, and you
24 put that inside the digital loop carrier cabinet; is that
25 correct?

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1 A. You put it in a -- You put a -- slide a card in a shelf in
2 that cabinet.

3 Q. In a slot.

4 A. This way (indicating).

5 Q. Right. And that thing is about, say, eight inches, nine
6 inches long, four or five inches wide, something like that?

7 A. They come in various sizes.

8 Q. That's approximately the size that they're -- they come in?

9 A. Which way are you measuring, height, width or length?

10 That looks --

11 Q. This book that I'm holding up, which is about
12 five-by-eight, is this about the size of a line card?

13 A. That is about the size of a line card.

14 Q. Okay. How long does it take to put a line card into a
15 digital loop carrier shelf?

16 A. Are you talking about a universal system, are you talking
17 about an integrated system, are you talking about a Series 5
18 system, are you talking about a FACTR system?

19 Q. Why don't we start out with integrated and we'll talk about
20 the remote terminal.

21 How long does it take to put a line card in a remote
22 terminal?

23 A. An integrated system is, by definition, in Cincinnati Bell,
24 is we use that for switched services. We put POTS cards in an
25 integrated system. We don't anticipate ever having to remove or

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1 change that card out except for repair.

2 Q. If I'm standing in front of the cabinet and I want to put
3 that card in the cabinet, how long is it going to take me from
4 the minute I unwrap the card from its packaging, how long does
5 it take to put it in the cabinet?

6 A. Once again, are you talking about a Series 5 system, are
7 you talking about an integrated system?

8 Q. Let's talk about the --

9 A. Where did you --

10 Q. -- the remote terminal for an integrated system; how long
11 does it take?

12 A. Are you talking about a Series 5 -- Okay. A Series 5
13 system, number one, where did you get -- are you replacing the
14 card because of maintenance, or are you replacing because you
15 want to change services?

16 Q. The slot's empty, I want to put the card in.

17 A. Okay. You have to get a card from somebody.

18 Q. Sure.

19 A. Okay. An order has to be issued, let's say for instance
20 that is a vacant slot, it had a data circuit in it at one time
21 and now you want to use it for POTS service. In a Series 5
22 system, the engineering department will have to cut an order to
23 our PICS, P-I-C-S, department to pull a card out of stock.

24 That stock -- or, that card has to be either mailed through
25 our interoffice mail or it is put on a truck, generally mail, to

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1 the garage. The technician goes and gets that card in the
2 morning, drives it out to the site, and that can vary in any
3 given amount of time.

4 The actual time to put that card in the slot, once he opens
5 up the cabinet, is probably five seconds. That's once he puts
6 his ESD strap on, which he probably should have tested that in
7 the morning before he went out to make sure -- it probably takes
8 five minute -- five seconds to do it.

9 Q. Okay. The PICS system, that's plug-in inventory control
10 system, correct?

11 A. I believe that's the acronym for it.

12 Q. And --

13 A. Go ahead.

14 Q. Okay. And plug-in is a synonym for a line card or a
15 channelling unit, all of those things mean the same thing?

16 A. Yes.

17 Q. Okay. Would you agree that it takes a lot less time to
18 replace the cards in a digital loop carrier's remote terminal
19 than it does to dig up the ground and put more distribution
20 cable into the ground?

21 A. I will agree with you, but I have a concern about you are
22 mixing terms. Digital loop carrier is for feeder.

23 Q. I agree with you.

24 A. Okay.

25 Q. I agree with you.

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1 All I mean to suggest is that one of the rationales in this
2 case for having a low distribution fill is that you don't want
3 to go back and dig it up again because digging up people's yards
4 is very upsetting to them, very costly to Cincinnati Bell, and
5 in the opinion that has been expressed so far in this case,
6 costs more for Cincinnati Bell to do that than to provide less
7 capacity in the first case.

8 And I'm -- I want to compare that to digital loop carrier
9 and say, well, that rationale is not the same in the digital
10 loop carrier context, it's not as difficult to go out there
11 and -- and put those cards in, correct?

12 A. That is correct.

13 Q. Okay.

14 A. But one of the things you -- Putting a card in is the least
15 amount of time.

16 Q. Or --

17 A. And that's one reason why when we put a system in, we equip
18 it at 96 lines at a time. You can imagine if you put in a
19 digital loop carrier system and put no cards in it --

20 Q. Sure.

21 A. -- and every order -- in the Series 5 every other order
22 that would come in, you would have to send a technician out
23 there to put a card in. And the disadvantage to that is on an
24 integrated system, when we put in an integrated system, we
25 actually do what I'll call board-to-board tests. We call back

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1 and forth on every channel unit to make sure it's working
2 properly with that switch.

3 In reality you would put those cards in and if you wanted
4 to reuse that investment somewhere else of those cards because
5 you didn't need it right away, you would have to have the
6 technician remove all those cards, wrap them up in the special
7 wrap and send them back to our PICS department. And we don't
8 feel that's efficient.

9 Q. Sure. Basically what you're saying is it doesn't make
10 sense to run out there for every single card; you want to do it
11 in groups of some large number and you suggested 96?

12 A. That's right. And that's one reason also why we try to not
13 only make sure on a universal system that not only do we have --
14 we have services -- or, plugs available for all the various
15 types of services that may be required.

16 Q. Okay. But in an instance where, for example, you have
17 installed all the primary lines for a neighborhood and someone
18 orders a second line and they're not served by digital loop
19 carrier, they're served copper the whole way through from the
20 central office out to their premises, and you have to go out and
21 grab a pair because they've never had a second line put in their
22 house, can you tell me what you would have to do to put that
23 pair into their house?

24 A. The only question I would have, number one, they're going
25 through a serving area interface, I would believe, that that

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1 pair gain system in those -- I would question whether you -- or,
2 I will say that I am anticipating that those pair gain pairs and
3 those vacant copper pairs appear in that serving area interface
4 and, therefore, a technician would have to go and run a jumper
5 from the vacant main pair, whether it's on digital loop carrier
6 or whether it's on copper, to the vacant distribution pair.

7 Then they would have to go out to the drop terminal, I'll
8 say in the case of buried pedestal, and connect their drop to a
9 vacant binding post that appears in that terminal, and then go
10 to the house and test it to make sure that it's working.

11 Q. So the customer in my example is going to require a field
12 visit from Cincinnati Bell's engineering folks, correct?

13 A. For a second line?

14 Q. For a second line.

15 A. That is correct.

16 Q. Okay. Would it take more time or less time to configure
17 somebody's house for that second line over all copper than it
18 would to put the card in the digital loop carrier system that we
19 talked about earlier in a remote terminal?

20 A. Well, Cincinnati Bell has done cost studies and has looked
21 at a threshold for where digital loop carrier is used and where
22 copper cables are used. Any line beyond 12,000 feet, it is more
23 cost effective to use digital loop carrier, especially in the
24 integrated mode. So you may have a cross-connect box -- If
25 you're talking about digital loop carrier, you're probably going

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1 to have a cross-connect -- cross-connect box or a serving area
2 interface that does not have copper pair in it. Those copper
3 pairs are for use within the 12,000-foot loop of the central
4 office.

5 So I don't think I answered your question.

6 Q. I was going to get to that, but --

7 A. But I wanted to clarify it.

8 Q. -- if you insist.

9 A. But I wanted to clarify that.

10 Q. Well, I guess my question is this: There is a customer,
11 they have a house, they only have one line going to their house
12 currently. They need another pair to be configured for their
13 house. You said earlier that requires a field visit.

14 And my question is: Would that field visit take more or
15 less time than the field visit to put a card in the digital loop
16 carrier in a remote terminal?

17 A. We have -- Because of the sophistication of digital loop
18 carrier, we have a special crew that does the work at the remote
19 terminal sites. So you are actually, if you would -- if I would
20 have to send a craftsman out to put a card in a digital loop
21 carrier site, he would not be installing the line into that --
22 those people's house. That would be a --

23 Q. I don't mean to confuse the two.

24 A. Okay.

25 Q. You have on one hand a guy going to the digital loop

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1 carrier at the remote terminal, how much time for him; on the
2 other hand a guy that goes to somebody's house and installs the
3 second line, the loop, or actually goes to the serving area
4 interface and gets them a loop for their house -- I'm sorry, I'm
5 actually wrong on that. They don't go to their house. They
6 would go to the serving area interface and they would configure
7 a loop so that it's available at that house.

8 Which takes more time, the DLC technician on one hand or
9 the copper technician on the other hand that's gone to configure
10 that loop for the customer?

11 A. Okay. The copper technician is going to spend X amount of
12 hours. You -- to get that service for that customer to -- for
13 that second line over digital loop carrier, if I do not have a
14 channel unit in that digital loop carrier system, is going to
15 take X hours from that installer who uses copper.

16 He -- An installer -- When an installer turns up a service,
17 he really, even though it's written on -- written on his order,
18 he doesn't know when he runs his jumper at his serving area
19 interface and connects the drop at the drop terminal, whether
20 it's copper or whether it's under digital loop carrier system.

21 So you're going to have that time, if it's provisioned over
22 DLC, and the time for a technician to put in the plug. So it's
23 going to take longer if you have not provisioned a system for
24 that customer -- or a slot for that customer, it's going to take
25 longer to do the digital loop carrier installation to the

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1 customer for a second line.

2 Q. What you're basing that conclusion on is that you have two
3 activities in the case of a customer that's served over digital
4 loop carrier; one, putting the card into the slot, and, two,
5 getting a loop that's part of the copper distribution configured
6 so it will actually go to the guy's house; is that what
7 you're --

8 A. And I'm -- Yes, I am saying that, and I'm also using the
9 scenario that you start off with is that we have a vacant slot
10 at that digital loop carrier site. There's no plug in it, and
11 I'm going to have to put a plug it in it.

12 Q. Okay.

13 A. But once again, Cincinnati Bell tries not to do that,
14 especially for POTS lines. We make sure that plug's there.

15 So now I don't have to send a person out to put that plug
16 in because it's there already, and we do that in 96-line
17 complements.

18 Q. But for that same customer that, say he was served over a
19 digital loop carrier, would you have to go to the serving area
20 interface and configure the copper portion of it?

21 A. If it was a new second line going in --

22 Q. Yes.

23 A. -- yes.

24 Q. How close is the remote terminal typically to the serving
25 area interface?

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1 A. It could be within ten feet, it could be 600 feet.

2 Q. So we're not talking more than a five-minute walk at the
3 outside?

4 A. I don't think our guys walk -- I'm sorry.

5 Q. Sure. But, nevertheless, the same technician that works on
6 the serving area interface could also work on the remote
7 terminal, correct?

8 A. You would have a higher skilled tech -- let me -- Yes, you
9 could do that; however, you would have a higher skilled
10 technician running a jumper at a serving area interface along
11 with putting a plug in.

12 Q. I don't mean to suggest that Cincinnati Bell would do this
13 and is currently, but -- probably specialize these functions,
14 but I want to think about a future network, a forward-looking
15 network where we're trying to think about ways to bring down
16 costs as much as possible.

17 Would it be possible to have a technician who could do both
18 of those functions for the same person? You know, they --
19 someone orders a line, the technician goes out, they configure
20 the DLC, they configure the copper at the serving area interface
21 and then they're done.

22 A. You could have a technician like that. However, now you
23 have to have, instead of having A technicians are skilled, B
24 technicians are not skilled -- and I don't like to use that term
25 but it's the only one I can think of because I feel all of our

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1 guys are skilled -- now you have to have all of our technicians
2 as A technicians. And that's where I have a concern with that.

3 Q. Okay. I want to talk about the capacity of the fiberoptic
4 cable itself without regard to the -- any particular set of
5 electronics.

6 A. Okay.

7 Q. Would you agree with me that the capacity of a fiber strand
8 depends on what electronics are on each side?

9 A. That's correct.

10 Q. Okay. So in the future, if you had an existing fiberoptic
11 strand placed in the field and you had no other strands
12 available but you needed extra capacity because you had more
13 customers coming on line, would it be possible to change the
14 electronics so that you would be able to place more voice lines
15 over that same fiberoptic strand?

16 A. When you say "strand", are you referring to four strands,
17 or a strand?

18 Q. Yeah, I realize that there's send, transmit, receive and
19 protect, I think is the --

20 A. That's close enough.

21 Q. Yeah. Why don't you tell me. Why don't you tell me.

22 (Laughter.)

23 A. Okay. In a SONET system you have a transmit and receive
24 east and a transmit and receive west.

25 Q. Right. Digital loop carrier is not SONET, correct?

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1 A. Digital loop carrier Lucent is not SONET, that is correct;
2 however, that could go to a SONET multiplexer.

3 To get back to your original question --

4 Q. Let's assume it's four strands.

5 A. Okay. Thank you. I just want to make sure that we weren't
6 doing something new here.

7 Q. Sure.

8 A. When -- You could -- Yes, you could increase the band width
9 of your existing electronics. However, a lot of cases there's
10 cost associated with that which may be higher than if you had
11 four vacant strands out there. And we --

12 Q. These --

13 A. -- do that cost analysis, for an example, a FACTR system
14 has OC3 SONET capacity. It is actually cheaper if that system
15 would become full; in other words 1,920 lines working, 84 total
16 DS1s across that band, it is actually cheaper to put in a new
17 system, another OC3 system, than trying to upgrade that system.

18 And the reason why I'm saying that is your shelves only
19 have a capacity for the OC3 band width when you're talking about
20 DS1, DS0 levels, so you have to put a new shelf in anyway. Your
21 cards -- Your cards for your OC3 to upgrade to an OC12 are about
22 five times greater than an OC3 card and you still have that new
23 shelf that you put in that you still have to put all those
24 common costs associated with it, whether it's an OC3 or an OC12
25 system.

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1 So we look at it, and I have looked at it, it is cheaper
2 for us to put an additional system in if our OC3 band width is
3 maximized, as long as the vacant strands of fiber are there.

4 Q. The costs you're talking about are electronics costs,
5 correct?

6 A. That is correct.

7 Q. Would you agree with me that in the electronics industry,
8 there has been a declining cost trend, that electronics have
9 become less expensive, either because the prices have come down
10 or the capacity of those electronics for the same price has gone
11 up?

12 A. There has been a decrease in electronics cost, yes.

13 Q. Okay. You mean --

14 THE EXAMINER: Did you say there has or hasn't?

15 THE WITNESS: Has.

16 BY MR. PETRILLA:

17 Q. I mean, when I went to college, I thought it was a big deal
18 that my folks bought me a laptop and I thought it was a 58 8086
19 and I thought that was fantastic. It was a thousand dollars.
20 And today, isn't it correct you could get something dramatically
21 more powerful than that computer for a thousand dollars,
22 couldn't you?

23 A. Am I answering this as an engineer, or Cincinnati Bell,
24 or --

25 Q. If you know.

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1 A. -- as a personal consumer?

2 Q. If you know.

3 A. You can get a lot more bang for your buck right now.

4 Q. Right. And would you say that the electronics industry
5 that develops digital loop carrier has similar characteristics
6 to the electronics industry that develops computer chips, for
7 example?

8 A. The cost on electronics has gone down; but, once again,
9 when you're looking at upgrading or adding additional capacity,
10 you need to analyze at that time what your cost is of upgrading
11 compared to putting in additional system. And that's what we
12 look at doing. We try to maximize -- or, minimize our cost,
13 maximize our efficiency of the money that we have available to
14 use.

15 Q. And the judgment you've made about using two systems rather
16 than upgrading the one system is based on the costs that are
17 present today?

18 A. That is correct, and what we see in the next three to five
19 years.

20 Q. But you don't know what the costs are going to be in five
21 years?

22 A. We have a Fujitsu contract which actually identifies those
23 costs to us.

24 Q. Are you bound to buy from Fujitsu, even if another supplier
25 has a lower cost in the future?

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1 A. No, we are not.

2 Q. Okay.

3 A. But that is the only thing we have that we can put our hand
4 on that today.

5 Q. Sure. Sure. But, for instance, it's fair to say that
6 digital loop carrier was not deployed with the 12,000-foot
7 threshold, say, when it was first developed because it was too
8 expensive; correct?

9 A. That is correct.

10 Q. And eventually the cost came down and so as the cost came
11 down, the parameter of having the 12,000-foot crossover point
12 between copper and fiber came about?

13 A. That is correct.

14 Q. Engineers at Bellcore published, I think, a publication
15 that you may be familiar with, called "BOC Notes on the
16 Network".

17 A. No, I --

18 Q. Are you familiar with that?

19 A. No, I'm not.

20 Q. Okay. We'll skip it.

21 Are there any factors, Mr. Meier, that you can point to
22 that -- that drive fill; for instance, density?

23 A. Are you talking about density of equipment, or cable or --

24 Q. Customers. Customers.

25 A. Okay. Are you talking about -- Density, are you referring

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- 1 to number of units per square mile or acre or -- Density, I --
2 Q. I'm referring to it in a general sense of the closer the
3 customers are together, does that have any impact on your fills;
4 is there any correlation between when the customers get closer
5 together, do your fills change in any way?
6 A. Are you talking about in a distribution network, or are you
7 talking about in the feeder network?
8 Q. It could be both. If you think there's an impact on
9 either, please tell me.
10 A. Okay. Your density in the distribution network, whether
11 you -- or, the fill in a cable -- distribution cable, whether
12 you have a large area or a small area, you're probably going to
13 see, because of that distance I was telling you about, how your
14 distance is, where you have vacant pairs not being used, if you
15 are just looking at that geographic area, not looking at
16 anything else, you will probably find a higher fill than if you
17 compare that to the two or three blocks down the street if it's
18 a less-dense development.
19 Q. For instance, an apartment building is going to have a
20 higher -- it's going to be easier to have a higher fill if you
21 served, say, a portion of a city that had only apartment
22 buildings in it and large businesses compared to a portion of
23 the city that was much more spread out, you know, it's a
24 single -- it's an area where people have built single detached
25 homes with yards, the yards are each a half acre, that sort of

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1 thing. It's going to be easier to have a higher fill for the
2 apartment building district, isn't it?

3 A. Well, once again, the way we are designing our network two
4 lines per living unit, if you would put both customers on the --
5 in the same -- where the second line take rate would be the
6 same, you would probably find a higher cable fill looking at the
7 overall network of your urban apartment buildings than you would
8 of your suburban subdivisions.

9 Q. You don't have to do two pairs per living unit when it's a
10 multi-dwelling unit, do you?

11 A. That is our parameter, we still do two lines per living
12 unit in an apartment complex.

13 Q. You wouldn't have to, though, would you, because you can
14 manipulate a pair that serves the customer on the tenth floor
15 and move it to the customer it serves on the second floor if
16 that customer, for instance, doesn't need the second line that's
17 assigned to him, you can move it down to the guy on the first
18 floor who wants two extra lines, correct?

19 A. We're talking about those perfect customers again?

20 Q. No, we're not. I'm definitely not.

21 A. Okay. The reason why I'm bring -- I'm concerned about
22 that, because one of the things that we have happening in
23 Cincinnati is a lot of work at home, and I don't know this but I
24 think some of those second line -- we're not seeing possibly all
25 those second lines associated at residence because they're

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1 business lines, they look different to us.

2 So -- But getting back to -- if you had -- if you wanted to
3 reduce the size of your cable going into an apartment building,
4 yes, on the second line you could make rearrangements; but once
5 again, you have a threshold of some sort, whether it be 35
6 percent, 50 percent, you --

7 Q. Sure.

8 A. -- someone has to give me what the total take rate is going
9 to be. And if that person gives me that total take rate, I want
10 to make sure that they're here if we ever have to replace that
11 cable.

12 Q. One way to look at it is in your testimony you said there
13 was about a 10 percent take rate on second lines, and you said
14 if that's the average, we're going to assume that, all right --
15 we may be getting into statistics here.

16 Do you understand what a bell curve is?

17 A. Yes.

18 Q. Okay.

19 A. I worked for the Bell -- used to work for the Bell system,
20 I guess I should.

21 Q. On a bell curve you know that the middle of the bell curve
22 represents the average, correct?

23 A. That's correct.

24 Q. And if the middle of the bell curve represents the 10
25 percent average for the take rate, then as we move out of the

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1 bell curve in either direction, the chances of someone taking at
2 a higher rate become less and less.

3 For instance, if one standard deviation away is a 20
4 percent take rate, the chances of that -- that take rate
5 occurring are statistically much less probable than the 50/50
6 chance at the middle of the bell curve. Does that make sense to
7 you?

8 A. I can't disagree with you on that. But, once again, I have
9 a concern that we -- the cost, as I said yesterday, the cost for
10 that distribution is probably the highest cost that we have per
11 pair and is probably the shortest -- it is the shortest
12 distance. So by putting two lines per living unit in, we're
13 making sure that I don't have to show that drawing to some
14 customer or some engineer that I can't give them service, that
15 they weren't in that statistical section.

16 Q. So the two lines per living household is designed to make
17 sure that Cincinnati Bell never has to explain to a customer why
18 there's not an available pair?

19 A. In the distribution network, yes.

20 Q. In the distribution network.

21 A. Yes. And also why we're tearing up their front yards --

22 Q. Sure.

23 A. -- or why there is a delay and things like that.

24 Q. But if you were trying to design a most efficient network
25 and you were serving, say, an apartment building, do you believe

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1 that a most efficient network would use two lines per living
2 unit in this apartment building?

3 A. Once again, I have a concern that, you know, let's look at
4 a couple things. How many people are living in an apartment
5 building? Give me a number that makes it work for you.

6 Q. Say the apartment building has ten floors and there are ten
7 apartments on each floor, so there's a hundred living units.

8 A. Okay. What size cable would you put into that building?

9 Q. I'm not an engineer --

10 A. Okay.

11 Q. -- but I would suggest 200 pair.

12 A. That's fine. And this gets back, we have limited size
13 cables available to us.

14 Q. Oh, sure.

15 A. In your situation there -- and these are the numbers you
16 came up with and it's what we face every day -- that maybe we
17 say only half of the people are going to take a second line, so,
18 therefore, we have a hundred customer -- or, a hundred
19 residents, 50 of them are going to take, we need a 150-pair
20 cable. They do not make that. Well, do I put in a 200-pair
21 cable or do I put a 100-pair and a 50-pair cable in?

22 Well, what happens if I decide to take the latter where I'm
23 putting a 100-pair cable and a 50-pair cable in? My cost may be
24 a little bit lower, I have two sheaths, it would probably be a
25 little bit lower. However, what happens if that 51st customer

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1 wants that second line? I'm going going to be in trouble. It
2 may never happen.

3 Q. I understand the problems of the cable sizing.

4 A. Okay.

5 Q. And I don't mean to implicate those here.

6 A. Okay.

7 Q. Certainly that is an issue that has to be resolved at some
8 point.

9 But in terms of on average, say on average it could work
10 out to where you could have -- Strike that. Let's skip this
11 line of questioning.

12 You agreed earlier that density is a factor in fill,
13 correct?

14 A. I don't have anything to back that up, but I would kind of
15 agree with that.

16 Q. In your experience as an engineer working at Cincinnati
17 Bell for 25 years, that's what you base your statement on?

18 A. Well, the other thing is -- other thing is you will find in
19 a lot of areas, and I kind of thought of this when you were
20 talking, that you have a lot of areas that have houses in them
21 and they may be older homes and you're designed for two lines
22 per living unit, and all of a sudden the density goes up
23 because, guess what, now those single-family homes, those old
24 mansions are now being changed into multi-family. And I
25 associated that with an increase in density and, therefore, my

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1 fill went up because I only had two lines planned for that house
2 and now I need more than -- potentially more than two lines to
3 feed that house.

4 So that's -- when you said density increase, that's what I
5 associated that with.

6 Q. Think about it in this context: Imagine if we were
7 building a network from scratch today, okay. You know who all
8 your customers are, all right, you want to serve all those
9 customers, and you're going to lay this cable down and serve
10 them.

11 In that instance, could you get higher fills on folks that
12 live in the middle of the city than you could on folks that live
13 out in the country?

14 THE WITNESS: Could you repeat that back, please? I
15 missed one word; I want to hear it.

16 (Question read back as requested.)

17 BY MR. PETRILLA:

18 Q. Your answer?

19 A. Okay. You're -- Once again, when we're looking at
20 higher -- or, higher fills on an urban compared to a rural, you
21 will probably see some change in an urban area or a higher fill
22 in an urban area compared to a rural area only because a rural
23 area, you don't have a good idea about where -- how many
24 customers you're going to have. In an urban area, I would think
25 we have a better idea of where or what customers are going to be

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1 there.

2 Once again, it's an average -- or, we've done a look at
3 that 600 foot. In a rural area you have potential that the
4 terminals are further away from the serving area interface but
5 there's probably a lot more dead cable out there than in an
6 urban area where you have potential for they're closer to the
7 serving area interface and there's more dead cable out there.

8 But as far as the 600-foot measurement which we used, I
9 feel very confident that that's within that 35 percent range,
10 there would not be that much change.

11 Q. Would it be fair to say that you would expect fills to
12 increase in the middle of the city than you would out in the
13 middle of the country in the future?

14 A. Are you talking about percentage fills or number of lines?

15 Q. I'm just talking about percentages.

16 A. Okay. In the urban area I would anticipate we're going to
17 have a larger cable than we do in a rural area, so I would say
18 there is an increase. Whether there's proportion, I really
19 couldn't tell you. I'm sorry I can't really -- It would be a
20 guesstimate.

21 Q. That's fine.

22 Do you think fill is technology specific? Do you think the
23 technology involved in providing a loop matters for fill?

24 A. I think that could come into play and maybe does come into
25 play. And the reason why I say that is our copper -- if we did

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1 not have digital loop carrier, if we didn't have it, there is a
2 potential that our copper fill could be different than what we
3 had today. It could be higher, could be lower because we're
4 going on lot longer distance. So I would say it -- I would
5 agree with that.

6 Q. Okay. I mean, for instance, you talked about yesterday
7 taking a recommendation from an AT&T manual dated in 1994 about
8 providing the two lines per living unit for distribution. That
9 manual is an AT&T manual. It didn't matter, though, did it,
10 because they were talking about distribution cable?

11 A. That's correct.

12 Q. And you're installing distribution cable?

13 A. Yes.

14 Q. So whether it's Cincinnati Bell's territory or wherever
15 AT&T got that from, you can go ahead and use that because it's
16 for distribution cable?

17 A. It was a general Bell system practice years ago, yes.

18 Q. Okay.

19 THE EXAMINER: Are we changing topics here? Are we
20 changing topics?

21 MR. PETRILLA: Do you want to take a break?

22 THE EXAMINER: I was going to say, is this a good
23 point for a break?

24 MR. PETRILLA: Yeah, I think it would be a fine point.

25 THE EXAMINER: Okay. Why don't we recess until 3:15.

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1 (Recess taken.)

2 THE EXAMINER: Let's go back on the record.

3 And let us resume our cross-examination.

4 BY MR. PETRILLA:

5 Q. Mr. Meier, in addition to the two lines for each living
6 unit, did you use any other industry standards in determining
7 ways to design your network or build -- or to come to a certain
8 fill for the elements?

9 A. When you're looking at residential, that was one of the
10 parameter -- or, the only parameter we really looked at on
11 recent deposition.

12 We have looked at some -- in some cases whether -- in some
13 areas whether it's necessary to actually include a third line
14 per residential, and it has been found as long as we design our
15 network for two lines per living unit, even if some of those
16 customers on that street are a -- take a third line or a fourth
17 line, we're able to meet their needs without going back and
18 increasing the size of the distribution cable.

19 Q. You do not use industry standards in determining any of the
20 other aspects of the fill factors in CBT's loop cost study,
21 correct?

22 A. I don't know myself if there are any industry standards out
23 there for what you're speaking of.

24 Q. Okay. So it was just the two-to-one for residential and,
25 as far as you know, no other standards were used?

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1 A. That's correct.

2 Q. Okay. Have you ever heard of a wire out of bounds, or the
3 wire out of bounds principle?

4 A. I've heard of WOR, wire out of limits.

5 Q. What is that?

6 A. Which I think is the same thing.

7 Q. What is that?

8 A. That's where if you have a situation where you have a
9 problem, whether feeder or distribution, you try to, especially
10 if you're on a boundary of the two distribution areas, you may
11 pull a line out of a different distribution area on a temporary
12 basis.

13 Q. Is it only on a temporary basis?

14 A. I was -- The ones I'm familiar with, it's only been on a
15 temporary basis. Mainly when you had a -- potentially a new
16 development going in is a situation I can think of off the top
17 of my head where I did not have feeder facilities available. I
18 put the distribution cable in because they were digging the
19 cable at that time. However, without any feeder facilities, I
20 had a WOL, the feeder pair from another area temporarily.

21 Q. But there could be circumstances where wire out of limits
22 is used on a more permanent basis than a temporary basis?

23 A. There probably could be.

24 Q. Okay. When you're moving this wire --

25 A. Can I go back? Probably the reason why the WOL was used

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1 may be on a per-minute basis or a temporary basis because that
2 was probably the most efficient way for Cincinnati Bell at that
3 present time to get service in.

4 Q. You didn't have -- You did not have a distribution pair to
5 serve the customer, for instance, you needed to pull one from
6 another area; is that what you're saying?

7 A. Possibly because there was no -- that cable's not in the
8 ground yet, or what I have seen is we have done that on the
9 feeder side, not necessarily on the distribution side. But it
10 could happen on the distribution side.

11 Q. Okay. You stated earlier that Cincinnati Bell has done a
12 cost/benefit analysis for copper feeder versus reinforcement and
13 that tells you to provide enough feeder for five to seven years
14 and then reinforce, correct?

15 A. That's correct.

16 Q. Are you aware of any other cost/benefit analyses besides,
17 by the way, the three to one pairs for residential unit that
18 were done for fill factors?

19 A. No, I am not.

20 Q. Okay. To be specific, Cincinnati Bell has not done any
21 sort of cost/benefit analysis comparing the costs of placing
22 enough distribution cable to meet ultimate demand and the costs
23 of reinforcing that cable at some point down the road, wherever
24 that point may be?

25 A. I think, once again, the point here is that Cincinnati Bell

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1 feels what we are doing today for the two lines per living unit
2 is the most efficient way of providing service.

3 Q. My question is: Did you do a study?

4 A. We have looked at going back and reinforcing distribution
5 cables. And believe me, I have had to do that, and it is a cost
6 labor process, mainly because when you go back to reinforce
7 cables, not only are we talking about those plush lawns as
8 everyone is concerned about, you have driveways that weren't
9 there originally, you have to dig out -- dig down and find the
10 crossovers at every street location. It's very labor intensive.

11 You actually, when you originally go through there, when we
12 go through and dig a trench for cable, there are no utilities in
13 your way. Now you're going down that street where you have
14 electric in your way, you have cable TV, you actually have your
15 own telephone cables in the way. So you are doing a lot of hand
16 digging when you go to reinforce it. So your labor costs are
17 much greater than if you would have spent a few dollars more and
18 put the right size cable in, which is what we do today.

19 Q. My question was: Did you do a study?

20 A. We have not done a study to say that we should not put any
21 more than -- or, any less than two lines per living unit.

22 Q. How often do cable reinforcement jobs occur during an
23 average calendar year in Cincinnati Bell for distribution?

24 A. I'm not sure if I can answer that.

25 Q. Is it -- Would you refer to it as a relatively rare

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1 occurrence?

2 A. It is -- It is based on how the network was designed at the
3 time when that last cable was put in. If it was designed with
4 the two lines per living unit and everything was stable, that is
5 a rare occurrence that you would have to go back, potentially
6 because a development changed of some sort; was zoned
7 residential, became commercial, anything like that.

8 However, I have seen it where the area, when it was
9 originally designed, there was no forecast of what growth was
10 going to occur and we have had to go back and reinforce that.
11 If that is the case, if you have an area that you had no
12 forecast and you put a cable up just to handle the customers you
13 knew were going to be there in the next five years, yes, that
14 happens some -- it happens more often than seldom. How's that?

15 Q. It happens often enough that you would not regard it as
16 being abnormal?

17 A. I would say -- What I'm thinking of when we're talking
18 about this is I'm thinking of an aerial area because generally a
19 buried area is more defined, it's a development. So I'm
20 thinking more of an aerial area. And it's generally easier for
21 us to go back and reinforce an aerial area than it is a buried
22 area.

23 So I won't say it's a rare occurrence, but I have seen it
24 happen more often than I have seen us have to go back into our
25 buried distribution plant.

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1 Q. So you would agree that the cost/benefit analysis for
2 reinforcing an aerial area compared to a buried area would be
3 different to a significant degree?

4 A. I think it could be.

5 Q. Because the wire is right up on a pole, you just climb up,
6 add another wire, right? Maybe that's an oversimplification.

7 A. One of the things you have concern with in an aerial area
8 is that there is limited space on poles, and in some cases if
9 you don't put the right side -- right size distribution cable up
10 initially, when you go back, there may be limited space where
11 you may have to remove your existing distribution cable and
12 reinforce it or replace with a larger cable.

13 Q. Okay. The cost/benefit analysis that Cincinnati Bell did
14 do for copper feeder, has Cincinnati Bell submitted the
15 documentation for that analysis in this case, to your knowledge?

16 A. This is a -- something that we have done for years, and
17 there is no analysis that I know that is currently available to
18 you.

19 Q. Okay. Do you have any idea when that analysis first was
20 done or when that practice was first adopted?

21 A. That's an engineering practice that I was involved with
22 from since 1984 and I have never had to try to support it with
23 documentation.

24 Q. Okay. Mr. Meier, if a piece of a copper loop, say the
25 distribution portion of a copper loop, has become fully

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1 depreciated, would Cincinnati Bell rip that copper loop out of
2 the ground, rip that distribution out of the ground?

3 A. I have nothing to do with depreciation. If a cable -- But
4 I will say that I can tell you that if I have a cable in the
5 ground and if there is no maintenance problem on it, whatever
6 the depreciation life may be -- and I will clarify again, I have
7 no idea what that is -- I will not go in there and remove that
8 cable until -- or, there is a problem with that cable or it is
9 no longer usable.

10 Q. Have you ever heard of Cincinnati Bell ripping cables out
11 of the ground that were functional, didn't require maintenance,
12 didn't have repairs that needed to be done, but were perfectly
13 decent, fine cables?

14 A. I have not heard of that or seen that.

15 Q. Okay. I think you stated earlier that you provided costs
16 to Mr. Mette regarding digital loop carrier; is that correct?

17 A. That's correct.

18 Q. Okay.

19 A. I will clarify, digital loop carrier, we're using that as a
20 generic term.

21 Q. For the Fujitsu FACTR system; is that the system that you
22 provided costs for?

23 A. Yes, that's correct.

24 THE EXAMINER: Could we go off the record for a
25 moment?

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1 (Discussion held off the record.)

2 THE EXAMINER: Let's go back on the record.

3 Please continue.

4 BY MR. PETRILLA:

5 Q. Where did you obtain the costs for the FACTR system?

6 A. That cost was provided to me by our purchasing department.

7 Q. Okay. Do you know where they got the costs from?

8 A. Cincinnati Bell has a contract with Fujitsu for those
9 costs.

10 Q. Okay. Do you know if those costs came from existing FACTR
11 systems that Cincinnati Bell purchased?

12 A. Those costs were based on the current contract at the time
13 when I developed those costs.

14 Q. And when you say "the current contract", the current
15 contract reflected prices for FACTR equipment that Cincinnati
16 Bell actually purchased, correct?

17 A. I do not -- do not have a purchase order for that cost;
18 however, that was identified to me as the cost that they charge
19 us for individual pieces of equipment.

20 Q. Have you bought -- Has Cincinnati Bell bought the FACTR
21 system before?

22 A. Before I came up with cost, or before today?

23 Q. Before the study was done actually.

24 A. Yes, Cincinnati Bell had purchased FACTR equipment prior to
25 the study.

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1 Q. Okay. Do you think the contract that the purchasing
2 department looked at was for the FACTR equipment that Cincinnati
3 Bell had purchased?

4 A. It was for cost at that present time. Whether it was cost
5 for previous FACTR equipment, I don't think so, but I cannot
6 guarantee that.

7 Q. So the previous FACTR equipment could have cost something
8 else?

9 A. It may have.

10 Q. Did you know if there was any attempt to go to Fujitsu and
11 come up with the price of the FACTR equipment as of the date
12 that this cost study was conducted or finished?

13 A. I can tell you that it was -- Let me just -- I don't know
14 when this -- when you say "cost study", what date you're
15 referring to; the date I got done with it or the date it was
16 filed.

17 Q. How about the date you got done with it.

18 A. The date that I got done with my section was the true cost
19 associated with that equipment at that time.

20 Q. That cost reflected what Fujitsu would have cost -- would
21 have charged you had you approached them for the first time on
22 that day?

23 A. I don't know if it would have been the first time because
24 sometimes when you enter into a contract with a supplier, they
25 are generally a little bit generous -- more generous with their

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1 costs compared to if you are a first-time customer.

2 Q. Okay. What services does Cincinnati Bell use the Fujitsu
3 FACTR to provide?

4 A. In an integrated mode, we use it for POTS service, plain
5 old telephone service, only. In a universal mode we use it for
6 the broad spectrum of services, even up to a DS1 level.

7 However, the DS1 level does not use the narrow band shelf.

8 Q. When you say you use it to provide up to a DS1, is that a
9 DS1 to a customer's premises?

10 A. That's a DS1 that could go to a customer premise; however,
11 the signal out of the FACTR system at a DS1 level is at a DSX1
12 level, which means it does not have any power to get to a
13 customer unless they're sitting right next to the equipment. It
14 has to go through another conversion or a ORB shelf before it
15 can be sent to a customer if they're beyond 300 feet.

16 Q. The FACTR plays a part in providing the service, but not
17 all the parts?

18 A. Right. It changes the OC3 to a DS1 level.

19 Q. What determines the kinds of services, and more
20 specifically the kinds of band widths, that Cincinnati Bell can
21 provide over the FACTR system?

22 A. Presently, at the time, we are only serving a DS1 level
23 down on FACTR system. And it's based on what service
24 requirements are required in that area.

25 Q. It's mainly the line cards, though, isn't it? If you put

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1 in line cards for a higher band width service, then the system
2 will do it, correct?

3 A. If you're referring to a 64 -- When you say a higher band
4 width, if you're referring to a 64-kilobit circuit or below,
5 yes.

6 Q. If you wanted to provide the DS1 over the FACTR, what would
7 you have to do to the system to enable it to provide a DS1
8 service?

9 A. Number one, you would have to have the middle-speed card of
10 the FACTR system deployed, which is a service and protect on --
11 in the CMS shelf for that. You would have to put in a DS1 card,
12 which is in the Group 5 of the CMS shelf. The first card in
13 there also has a protect card associated with it.

14 You would have to get the cards, someone would have to
15 order them, they would have to be -- the order would have to be
16 cut after they're received from the company -- from Fujitsu, the
17 order would have to be cut to take those plugs out of PICS.

18 Someone would have to pick up those cards or have them
19 delivered to them, take those cards out to the site. Those
20 cards would have to be installed. A laptop computer has to be
21 connected to the system, those cards have to be recognized by
22 the shelf, and then the services provisioned across the DS1 card
23 to handle your AMI and B8ZS type services.

24 Now, that is at one location. You would have to go in and
25 do the same at the central office or the other location, the

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1 other termination.

2 Q. You wouldn't have to replace the FACTR system shelf though
3 to do that, you would just order the cards, correct?

4 A. The only time that you would have to -- I don't want to use
5 the term replace -- you would have to put additional equipment
6 in is if that complete FACTR system was using more than 1,300
7 lines in it.

8 And the reason why I mean by that is a FACTR system is
9 designed with three groups, Group 3, 4 and 5. Each group is
10 able to handle 28 DS1s. Twenty-eight DS1s then convert to 672
11 lines.

12 The FACTR system has a total capacity up to 20 systems, or
13 1,920 lines. However, if you get to a point where you have more
14 than 14 systems working in there, which is Group 3 and 4,
15 Group 5 is only able to be used for DS0 services, another 6- --
16 actually less than 672 lines, but a number that equals up to
17 1,920 lines, or DS1s, it cannot do both.

18 So if you had a system that had more than 1,920 lines, or
19 is that -- 1,344 -- between 1,344 and 1,920, if you had a DS1
20 requirement, you would not be able to use the FACTR system,
21 itself, you would have to put in either another system or maybe
22 just a DS- -- or OC3 DS1 FLM-150 to handle that DS1.

23 Was that long enough for you?

24 Q. Well, to summarize, you can do DS1 pretty quickly, but when
25 you go beyond DS1, it gets a little complicated?

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- 1 A. When you say beyond DS1, you're talking about DS3?
- 2 Q. Yeah, anything above.
- 3 A. The FACTR system is able to provide you electrical DS3. I
- 4 have not installed one in the FACTR system, that's kind of
- 5 beyond my scope as a loop planner. But that's an electrical
- 6 DS3, and therefore you probably have to have some other
- 7 equipment, unless the customer is sitting right next to you, to
- 8 convert that from electrical to optical.
- 9 Q. Okay.
- 10 A. The system is basically designed to provide DS0 services
- 11 and DS1.
- 12 Q. DS1 is 1.544 megabits per second, correct?
- 13 A. That's correct.
- 14 Q. And that's the highest speed that Cincinnati Bell offers in
- 15 its ADSL service ZoomTown, correct?
- 16 A. I believe that's correct.
- 17 Q. Do you think that 1.544 megabits is a broadband service
- 18 offering?
- 19 A. Out of the Fujitsu FACTR system, I don't see it as
- 20 broadband. However, my limited knowledge of the term broadband,
- 21 you may be able to do some type of broadband services using that
- 22 type of signal.
- 23 Q. The Fujitsu FACTR could do much more powerful, but for
- 24 layman's terms 1.544 megabits per second is reasonably
- 25 considered to be broadband?

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1 A. Once again, I don't know that I would -- I don't know the
2 true definition of broadband and I don't know if 1.544 fits into
3 the FACTR system as broadband like you're interpreting it.

4 Q. Or another way to put it would be over the FACTR system you
5 can't use the narrow band shelf for a DS1, can you?

6 A. That is correct.

7 Q. Okay. Do you have any idea how Cincinnati Bell decided to
8 use the Fujitsu FACTR system as opposed to a system made by
9 Lucent or one of the other manufacturers?

10 A. There was, I believe it's called, a RFQ or RFP that was put
11 out to various vendors, and I think even Litespan 2000 or some
12 term of that nature was even part of that. SLC-2000 was looked
13 at and the FACTR system. There may have been other vendors that
14 that was sent to and after doing an analysis of the systems and
15 what costs savings there were, or cost benefits and their
16 compatibility with our existing network, Fujitsu FACTR was
17 chosen.

18 Q. Okay. Do you know when that RFP went out?

19 A. I do not know the date. I was part of the team that chose
20 FACTR.

21 Q. Do you know when FACTR was selected?

22 A. I don't recall the date, but I was part of the team.

23 Q. Okay. Was it last year?

24 A. I would say no, it was probably in 1995 or '96 as an
25 estimate.

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- 1 Q. Okay. That RFP, Cincinnati Bell has not submitted that RFP
2 in this case to your knowledge, correct?
- 3 A. Not to my knowledge.
- 4 Q. You stated that one of the factors in choosing the Fujitsu
5 FACTR was its compatibility with your existing network; is that
6 correct?
- 7 A. That's correct.
- 8 Q. Wouldn't any digital loop carrier system be compatible with
9 your existing network?
- 10 A. There were some that were not compatible and that's the
11 reason why I clarified that. There were some systems that did
12 not interface with other switches, some only possibly interfaced
13 with a NorTel switch.
- 14 Q. Right. You were constrained in selecting the FACTR because
15 you couldn't change the switches that Cincinnati Bell had
16 already purchased, correct?
- 17 A. I would say that's a good reason, yes.
- 18 Q. But if you were building a network from scratch, and you
19 could choose the switches all over again, then you would give
20 further consideration to digital loop carrier systems that may
21 not be compatible with Cincinnati Bell's existing switches; but
22 in this new future network where you could pick any switch you
23 want, those digital loop carrier systems might be compatible?
- 24 A. I'm not a switch person. I'm sure there is more involved
25 with choosing a switch than it being compatible with a digital

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1 loop carrier site, or type of equipment. We have -- Cincinnati
2 Bell has a large amount of switches, I'm not a switch person.
3 We have a large amount of AT&T No. 5 switches in our network.
4 And I cannot see myself coming forward to our company and
5 saying, "I have a great idea, we have this company out here can
6 save me \$5 a line on digital loop carrier, but guess what, you
7 have to replace your 30 No. 5 switches", I can't see me staying
8 around long if I do that.

9 Q. Assume it wasn't replacement, assume you've got to build
10 the network from scratch, you get to pick the switches, you get
11 to pick the digital loop carrier. In doing so, that would open
12 up a broader range of digital loop carriers you could choose
13 from, I think as you testified, and you might have a cheaper
14 overall system?

15 A. I think the key here is what we're talking about is
16 Cincinnati Bell today has a FACTR system that is compatible with
17 its existing No. 5 switch. It is cost effective for us to put
18 this in, so I think if I start trying to second guess, or this
19 perfect world type of effect for the future, we're talking about
20 costs today.

21 I can't predict what's going to happen in the future.
22 Maybe in the future that will happen, and I can't predict
23 whether that cost will be a savings or not. But today the cost
24 that I have provided was the best and the most-efficient system
25 that we could provide with the network we have. And I think

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1 that's what we are charged to do, is to provide the best benefit
2 to our customers at the least cost, and we have done that.

3 Q. Sure. Maybe one way to sum up what you've said is: If
4 conceivably you could do this and conduct studies on it, who
5 knows what the results would show, but you dealt with the facts
6 of Cincinnati Bell's existing network?

7 A. That's correct.

8 Q. Okay. In your opinion, which is more efficient, universal
9 digital loop carrier or integrated digital loop carrier?

10 A. What type of service are you speaking of?

11 Q. If I wanted to provide POTS, plain, old telephone service,
12 would you in an ideal world want to provide it over integrated
13 digital loop carriers or universal digital loop carriers?

14 A. As a cost-saving method, I would want to provide it over
15 integrated digital loop carrier.

16 Q. Okay. In terms of the functionality, integrated digital
17 loop carrier will provide you pretty much the same functionality
18 as universal, correct?

19 A. No. Are you referring to a POTS line?

20 Q. Yes.

21 A. Actually, the -- I would say it gives you a little bit
22 better efficiency. What I mean by that is there is less
23 analog/digital conversions in an integrated system compared to a
24 universal system, so potentially a customer has a better chance
25 of getting a higher band width on an analog modem.

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1 Q. You might reach 56K on your 56K modem -- You're shaking
2 your head?

3 A. No, you will not.

4 Q. Well, I think there's a FCC rule on that, I think it caps
5 it at 53 or something.

6 A. I'll disagree with you and leave it at that.

7 Q. Please elaborate on what you meant by getting a higher band
8 width.

9 A. Digital loop carrier systems, the maximum I've seen out of
10 a digital loop carrier system is 28.8. You understand these
11 systems are designed for POTS services, plain, old telephone
12 service, which the voice band, and I may be wrong on these
13 numbers, like 3,000 hertz, and therefore, these systems have
14 been designed for that.

15 So any time you get beyond what, 3.0, you -- kilohertz or
16 baud, you may have a problem. In other words -- I may have said
17 that wrong, but we find with a universal digital loop carrier
18 system, the maximum a customer is going to get is 26.8
19 kilohertz, or baud, whatever you want.

20 Q. Bits per second?

21 A. Bits per second, yeah. And with an integrated, there's
22 times when it can increase up to 28.8.

23 Q. Okay.

24 A. But I don't know of any product on the market that allows
25 people to get anywhere in the 50s over digital loop carrier.

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1 Q. Okay. So integrated provides a higher-quality service than
2 universal?

3 A. Yes, it can be.

4 But I will say also it's quality we're talking about, is
5 only if someone is trying to run a modem and there are other
6 parameters associated with that. A universal system, the lines
7 are across multiple units of a No. 5 switch, multiple analog
8 line units, where integrated is confined to one digital
9 interface on that switch. And so some cases you may -- you
10 could experience some blocking on an integrated more than if you
11 were on a universal.

12 Q. There are fewer points of failure; is that correct?

13 A. On an integrated?

14 Q. On an integrated.

15 A. I don't think I said that. But I would say yes, you do
16 have less channel units. You don't have a NBS shelf in the
17 central office, which could be a point of failure in the
18 universal system.

19 Q. Is Cincinnati Bell deploying integrated or universal
20 digital loop carrier in a forward-looking basis?

21 A. We're providing both.

22 Q. You do integrated for POTS on a forward-looking basis, you
23 do universal for other services on a forward-looking basis?

24 A. That's correct.

25 Q. Is there any particular reason why you are not using

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1 universal for other services on a forward-looking basis?

2 A. I think if you would re- -- have someone repeat that
3 question, I think you answered your own question. You said you
4 used integrated for POTS services and universal for other
5 services; is there any reason why we -- you're using universal
6 for other services, or something to that effect.

7 We use universal for services other than POTS. A universal
8 system may have POTS on it, and there very well could have POTS
9 on it, but integrated is used for POTS, universal is used for
10 POTS, SPOTS, DID, coin, four-wire circuits, two-wire circuits,
11 digital datas.

12 Q. I guess to rephrase my question: Is there any efficiency
13 reason for using universal digital loop carrier for services
14 other than POTS?

15 A. The efficiency is you can't use the integrated for
16 anything -- the efficiency is there, that is the only means of
17 providing universal or services other than POTS on the FACTR
18 system.

19 Q. Is that just FACTR, or is that any digital loop carrier?

20 A. To my knowledge, that's any digital loop carrier system.

21 Q. Okay. Does Cincinnati Bell deploy the FACTR system to
22 serve those other lines in universal mode?

23 A. Other than POTS?

24 Q. Yes.

25 A. Yes, we do use universal mode for other than POTS services.

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1 Q. On a forward-looking basis?

2 A. Yes.

3 Q. Now, the digital loop carrier assumed in the least cost
4 study is a universal digital loop carrier, right?

5 A. The forward-cost study for POTS service was integrated
6 digital loop carrier, in the offices are the Band 1, Band 2
7 area. Band 3 area does not have the No. 5 switches, and
8 therefore that was done -- that area was done on universal type
9 services, our universal SLC system.

10 Q. In the cost study?

11 A. Yes.

12 Q. So the FACTR is not throughout the entire cost study?

13 A. FACTR is throughout the whole cost study. Band 1 and
14 Band 2 we used integrated FACTR for the going-forward cost for
15 POTS services. In the Band 3 area we used universal FACTR
16 system as the going-forward cost.

17 Q. I'm a little bit confused, Mr. Meier, because I have heard
18 Mr. Mette state in various depositions that the cost study for
19 loops assumes that the digital loop carrier will be deployed in
20 universal mode because it's not possible to unbundle a loop from
21 an integrated digital loop carrier.

22 A. Thank you. I was thinking more of --

23 Q. What's actually done?

24 A. -- what's actually the cost, what we do in our network
25 today. Thank you for clarifying that.

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1 Q. In the cost study it's universal, isn't it?

2 A. That's correct because we are unable to groom a DS0 off
3 and -- to central office on a T-1.

4 Q. Did you ever state in a deposition that it was also the
5 inventory management system at Cincinnati Bell that prevented
6 Cincinnati Bell from operating the FACTR system in integrated
7 mode for new entrant carriers that sought unbundled loops?

8 A. I think what you're referring to back in December of 1996.

9 Q. December 16, 1997, to be precise.

10 A. Okay. There was something provided to me at that time
11 where a web page of Fujitsu FACTR was brought to my attention
12 where it identified where it could do DS0 cross-connects. At
13 the time I had very little knowledge of doing DS0 cross-connects
14 in the FACTR system.

15 After looking at that further, there are other concerns
16 that I had after talking to Fujitsu people. Number one, when
17 Cincinnati Bell builds an integrated system, we design our
18 cross-connects basically in the FACTR system on a one-for-one
19 basis.

20 In other words, you have a customer -- integrated digital
21 loop carrier system that has 96 customers. They work on four
22 T-1s. When they install that system, they design a T-1 to go to
23 the first six slots, or 24 customers.

24 The problem I was speaking of back then is we have no
25 inventory management system to keep track of that if, per se,

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1 customer No. 2 was no longer going to go back to that T-1, he
2 was going to go to another T-1.

3 The other concern I have is that those DS0 cross-connects
4 are built when the system is initially installed, straight
5 across. If I have to go in and change those DS0 cross-connects,
6 number one, I have to tell the person which cross-connect to
7 take down, I don't have an inventory management system except I
8 know it's straight across today.

9 He has to go out with a laptop computer, take down that
10 cross-connect. Now I got to tell him where to groom that DS0
11 cross-connect. I don't have an inventory management system that
12 tells me where he can put it.

13 So all that information has to be provided to our craftsman
14 who is going to go out to that site and to provision that
15 circuit. Likewise, all those DS0 cross-connects are only
16 maintained in that equipment. There's no backup system for it.
17 If something happens to that system, if the cross-connection is
18 straight across, no problem, we can go out and initialize the
19 system and it will put them right back up.

20 But if we have done a lot of moving around, and if I have
21 no management system to tell me how to put them in, or even if I
22 do, the exercise of initializing the system, then going back and
23 taking down cross-connects and putting up the new ones, would be
24 labor intensive. I don't have remote access to that system, I
25 have to do it from a node on that ring.

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1 So those are some of the concerns I have had, just a few of
2 the concerns I've had with trying to do DS0 grooming in the
3 Fujitsu FACTR system. There's other ones also associated with,
4 if you'd want to take it back to your switch, what happens --
5 or, how many T lines are you -- am I going to require you to
6 have in order to have that GR303 system or that TR-08 system to
7 go back to your switch. You know, we turn our systems up in
8 96-line complements, so therefore I'm going to require you to
9 have -- in TR-08 modes, I'm going to require you to have 96
10 lines provisioned, or four T-1s; on a TR-303 mode you need two
11 T-1s by the definition of GR303 to provide your primary and your
12 secondary TMC -- and let me think of what it's called -- time
13 management channel, which is TMC, and EOC, which is embedded
14 operation channel. You need two T lines for that.

15 Now what happens if one of my customers -- or, your
16 customer calls and says, "I have a problem". If that T- -- all
17 the testing and all the alarms for that system, if it goes back
18 to your switch, Cincinnati Bell, if it's at a DS load level or
19 below, we don't see an alarm. All those alarms come into your
20 switch.

21 I'm not able to do any MLT testing from my call center to
22 verify or check and see if it's the loop that's bad or if it's
23 the equipment that's bad because I don't have the access through
24 LMOS or MLT to test your loop.

25 So those are things that are all a concern for grooming out

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1 D S0s to a T-1 to someone else's switch, and there probably are
2 more that I don't know about.

3 Q. Is the inventory management system concern still an issue
4 today?

5 A. To my knowledge, it still is.

6 Q. Okay.

7 A. That's one reason why Cincinnati Bell has elected to keep
8 their cross-connects straight. I used an analogy or -- Fujitsu
9 vendor, an engineer from Fujitsu used the analogy the way we do
10 it today is like taking a box of spaghetti that you get raw out
11 of a box, you know, it's easy to pick one of them out, no
12 problem at all. However, if we start doing DS0 cross-connects,
13 can you imagine you have 1,920 -- 1,920 DS0 cross-connects
14 possible, it's like after you've cooked that spaghetti for five
15 minutes, it's very hard to pick one out.

16 Q. In terms of the loop testing, you've heard of mechanized
17 loop testing, haven't you?

18 A. MLT, yes.

19 Q. That's provided out of a switch, is it not?

20 A. That's correct.

21 Q. You give -- You sell an unbundled loop to a new entrant
22 carrier, you would not provide the mechanized loop testing,
23 would you?

24 A. I would think if it was on a universal system, I would, or
25 if it was on an integrated system. However, I cannot do

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1 unbundled loops on an integrated system.

2 Q. You could unbundle a DS1 loop, couldn't you?

3 A. DS1 level, I would say you could unbundle it; however, that
4 goes through a DACS system, and therefore, I have remote access
5 for testing on the DACS system on that T-1 level.

6 Q. Okay. So both parties could test in that case?

7 A. I would hope you could, and we could.

8 Q. I won't make any representations.

9 If I am CoreComm and I've decided that I'm going to serve
10 only customers that want what to have 24 lines, and so from you
11 what I want are unbundled DS1s, can you unbundle those DS1s for
12 me with the Fujitsu FACTR system working in integrated mode?

13 A. Are both ends, your end and the customer ends, at a T-1
14 level?

15 Q. Yes. Say it's a -- this customer has a PBX on their end so
16 it doesn't really matter what their phones are, but the PBX will
17 take the signal in.

18 A. There would be no problem --

19 Q. Private branch exchange, I'm sorry.

20 THE EXAMINER: Come on, I even know what POTS is.

21 MR. PETRILLA: Okay. We forget.

22 THE WITNESS: There would be no problem, because that
23 DS1 is no different than a DS1 we provide today. The key to
24 that is that DS1 is not going down to a DS0 level on our narrow
25 band shelf, it actually would exit that FACTR system on Group 5

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1 which could be at a T-1 level, and it could go to other types of
2 equipment.

3 So it -- I don't like to call it an unbundled loop. I
4 look at it as being a standard T-1 that we do -- we do today for
5 that various service you're talking about.

6 BY MR. PETRILLA:

7 Q. But it is essentially 24 channelized loops, it's just in a
8 DS1 signal, correct?

9 A. It could be 12 ISDN lines, I don't know.

10 Q. Sure. It could be channelized into whatever?

11 A. It's a 1.544 megabit service, and I don't know what the
12 customer puts on, and it could be idle, they could not even be
13 using it for anything. I wouldn't know that.

14 Q. Sure. The Fujitsu FACTR system is compliant with GR303,
15 correct?

16 A. That's correct.

17 Q. What is GR303?

18 A. GR303 is a integrated system that allows you to move some
19 of the concentration that was normally at the switch out to the
20 remote terminal site.

21 Q. Okay. Can you explain to us what concentration is?

22 A. A switch is generally what I call a six-to-one
23 concentration where one-sixth of the customers can talk without
24 a problem. Concentration, like you just spoke of, is where you
25 design a network that utilizes the passing of your switch to

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1 allow the reduction of the total cost for that network. In
2 other words, not all customers will be using the telephone at
3 the same time; therefore, you don't design a network that allows
4 everybody to talk at the same time because then it would be cost
5 prohibitive to provide.

6 So concentration actually reduces the amount of usable
7 lines available to people, therefore saving cost. And it's a
8 standard -- it's industry standard is -- six-to-one
9 concentration on a switch is industry standard.

10 Q. Concentration is a concept that's used all throughout the
11 industry, isn't it?

12 A. Yes.

13 Q. I mean, it pervades everything, not just loops, it's in
14 switching, it's in the interoffice network?

15 A. Long-distance network.

16 Q. Everywhere, because we can't keep open circuits for
17 everybody's phone 24 hours a day, seven days a week?

18 A. That's correct.

19 Q. And it saves you money, too, because you can use many fewer
20 facilities to serve a much larger group of customers, correct?

21 A. I think that's the purpose behind it, yes.

22 Q. Okay. The concentration that you refer to is six to one.
23 That means effectively you could have six distribution pairs out
24 in the network for each one feeder channel on the digital loop
25 carrier, correct?

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1 A. Do we have a serving area interface on this or not?

2 Q. Tell us about both cases.

3 A. What you're referring to, I think, is if you had one
4 channel -- Let me clarify something.

5 A FACTR system, we do not run that at six-to-one
6 concentration.

7 Q. Okay.

8 A. It's -- Because you will be experiencing blocking very
9 easily for a six-to-one concentration. So I'll ask you to
10 answer that question -- ask that question again differently.

11 Q. What kind of concentration ratio would you use for a
12 Fujitsu FACTR system?

13 A. We are designing it in the overall network at six to one.
14 However, the remote terminal site is somewhere between three to
15 one, two to one.

16 Q. Okay. Does the FACTR system utilize concentration by using
17 the time slot interchange at the remote terminal?

18 A. It actually uses -- There's a call cluster controller
19 that's put in the system that allows it to talk TR-303, time
20 slot interchanger, by my definition, is DS0 cross-connects.
21 Once that DS0 cross-connect is installed, yes, it uses it.

22 Every universal system and every integrated system uses the
23 time slot assignment capacity of the FACTR system; however,
24 Cincinnati Bell, when it's talking universal or TR-08 and 303,
25 or cross-connects on the time assignment card are straight

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1 across.

2 Q. Are you aware of a Fujitsu software product called FLEXR?

3 A. Yes.

4 Q. That allows you to use those cross-connects in a manner
5 other than straight?

6 A. That was what I identified probably 15 minutes ago when a
7 craftsman has to go out and plug his laptop computer in to put
8 up those cross-connects. Those are the same cross-connects that
9 identified that are straight across. If you want to change
10 those cross-connects, you have go out to that site.

11 However, that software change is maintained only in that
12 equipment at that site; there's no remote capabilities of going
13 in and looking at those cross-connects.

14 Q. So what you're saying is you can't access FLEXR remotely?

15 A. You can't access FACTR remotely.

16 Q. FLEXR, I'm sorry, the software program.

17 A. FLEXR is a software program that you have on your computer
18 that you use to access FACTR through an interface cable that's
19 connected from your laptop to a card on the FACTR system.

20 Q. There's no way to access FACTR remotely rather than having
21 a technician run out there and plug his laptop in, there isn't a
22 way to connect that FACTR system to the central office so that
23 the technician inside the central office effectively has his
24 computer plugged into that remote terminal and can perform the
25 functions that FLEXR is designed for?

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1 A. You can access FACTR via the FLEXR program on your laptop
2 computer at any node on that ring. In other words, yes, if
3 you're in that central office and you had a piece of equipment,
4 and you wanted to access the remote terminal, you could go up to
5 that FACTR system in the central office and say, "I want to talk
6 to this node", and yes, you could do that.

7 Q. Tell me about the concentration -- You stated that the
8 FACTR system employs concentration at the central office and
9 also at the remote terminal. Did that concentration impact the
10 factor for fill on the digital loop carrier in Cincinnati Bell's
11 cost presentation?

12 A. Once again, the fill that Cincinnati Bell is putting on its
13 system is a fill across all the systems in our network. The
14 amount of lines that you can take out of an integrated GR303
15 system is no different, nor do we treat it any different, the
16 amount of lines we take out of a TR-08 integrated system.

17 It's transparent to the assignment people, it's transparent
18 to the customer, and, therefore, TR-303 has not changed in any
19 of the methods that we have in place for deploying digital loop
20 carrier as far as amount of lines we can get on a system. We
21 get 96 lines on a system if you need it.

22 Q. When Cincinnati Bell calculated 70 percent as the fill in
23 digital carrier electronics, did it take into account the cost
24 savings and the line savings, literally, of being able to
25 concentrate more customers onto a finite set of lines, or in

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1 reality, channels on the digital loop carrier?

2 A. What you have to understand is GR303 is very new to
3 Cincinnati Bell. We have only been doing it for probably less
4 than a year. We probably have less than 2-, 3,000 lines working
5 on it right now. We're still kind of in the development, going
6 through the process.

7 Our cost, when we provide our cost, was based on universal
8 FACTR system. And when it came to the actual cost on the normal
9 way we provide service for normal loops, it was based on TR-08.
10 So there was no cost for 303 in our cost studies. The next time
11 there probably will be.

12 Q. I was going to say, ten years from now, do you think that
13 there would be cost savings because of the concentration?

14 A. There could be, yes.

15 Q. Okay.

16 A. On an integrated-type system.

17 Q. You stated earlier that a lot of your customers, a lot of
18 Cincinnati Bell's customers, are working at home now and so they
19 need a second phone line; is that correct?

20 A. That's a potential, yes. And I stated that because
21 sometimes that does not show up as a second access line on a
22 residential customer, especially if the main business is paying
23 for it. In other words, if I have a POTS service in my house
24 and Cincinnati Bell elects to install a line for me, that will
25 not show up as what I refer to it as a AFH line or additional

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1 line, that will look like an additional business line in my
2 house, like I'm running a business out of my house.

3 Q. These business lines, or second lines that people are
4 installing, are they used primarily for accessing the Internet,
5 transferring data, connecting the computer at home with the
6 computer at work, that sort of thing?

7 A. I didn't bring any crystal ball with me. I have no idea.
8 It's a telephone line. It's someone wants dialtone. What their
9 use is, I have no idea.

10 Q. Okay. It's a fair statement, though, that a large
11 percentage of the people getting second lines are using them to
12 access the Internet, correct?

13 A. I will agree with you because I have no knowledge other
14 than that.

15 Q. Would you say that ten years ago the demand for second
16 lines was nowhere near what it is today?

17 A. I will agree with you.

18 Q. That, say, after about 1991 when the Internet started
19 coming on line and people started getting on the Internet,
20 Cincinnati Bell, like virtually every other incumbent local
21 exchange carrier in the country, experienced a climbing number
22 of second lines that people were purchasing?

23 A. We have experienced that increase of second lines, and I --
24 without any statistics, I would say that was probably due to
25 people requiring additional lines for Internet access so they

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- 1 don't tie up their main line, yes.
- 2 Q. Okay. Cincinnati Bell has a ADSL service, doesn't it?
- 3 A. That's correct.
- 4 Q. It's called ZoomTown?
- 5 A. That's correct.
- 6 Q. And it's currently available, right?
- 7 A. In some areas, yes.
- 8 Q. If I live in downtown Cincinnati and I call up Cincinnati
- 9 Bell, I can order ZoomTown, can't I?
- 10 A. Yes.
- 11 Q. Okay. What's the purpose of ZoomTown?
- 12 A. ZoomTown is to allow high-speed Internet access to a
- 13 customer at a higher cost than a regular POTS line, but it is
- 14 a -- you can use your line like a regular line and actually
- 15 use -- be on the Internet at the same time.
- 16 Q. Does Cincinnati Bell install a physically separate loop for
- 17 the customer to be able to talk on the phone at the same time as
- 18 they are on the Internet on ZoomTown?
- 19 A. What I would like to do is give you an example on that. If
- 20 you have a line, one line going into your house, and you wish to
- 21 subscribe to the ZoomTown service and you are within the
- 22 parameters of being qualified for that, you can have that
- 23 service installed on that same line you have. What I want you
- 24 to understand is that there is a premium, or do you pay extra
- 25 for that.

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1 Q. Sure.

2 A. And, therefore, that may deter or may be an advantage to
3 some customers who may do that in lieu of having a second line
4 installed, a separate second line.

5 Q. When you get ZoomTown, you pay the base rate for your
6 telephone line, correct?

7 A. Yes.

8 Q. And then you also pay the premium for having ZoomTown?

9 A. I believe that is correct.

10 Q. Okay.

11 A. I'm not a marketing person, nor do I know that much about
12 the ZoomTown service.

13 Q. Okay. Do you know how much local phone service costs from
14 CBT if you are a residential subscriber?

15 A. I don't want to quote it because I have not looked at it.

16 Q. If I represent to you that this morning I called up
17 Cincinnati Bell Telephone's customer service center and I said
18 to them, "How much would it cost me as a residential subscriber
19 to get a telephone line", and they told me \$23 per month, and
20 they also gave me a quote on a bunch of other things which --
21 does that sound about right, \$23 a month?

22 A. I would think if you're -- I don't know, but I would think
23 if you're talking about touch-tone services and all the FCC
24 charges and whatever, depending on what area you're working --
25 you're talking about, I say that could be possible.

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- 1 Q. Okay. So you know that there are FCC access charges -- not
2 access charges, but charges that apply to a telephone line in
3 the order?
- 4 A. I pay them.
- 5 Q. Okay. Do you know what a PICC?
- 6 A. No.
- 7 Q. It's a presubscribed interexchange carrier charge. Have
8 you ever heard that term?
- 9 A. No, I have not.
- 10 Q. The point I'm getting to with ZoomTown is that it uses the
11 same copper loop, and it is a copper loop?
- 12 A. Yes, it can only be done on copper from a central office.
- 13 Q. It uses the same copper loop that the day before you
14 ordered ZoomTown, ZoomTown is going over that copper loop, isn't
15 it?
- 16 A. The day before you ordered it?
- 17 Q. I'm sorry, that's confusing. The day before you ordered
18 ZoomTown, you had a copper loop that was providing you with,
19 say, POTS service?
- 20 A. That's correct.
- 21 Q. The day after you order ZoomTown, you still have a copper
22 loop, but now it's providing you POTS service and ZoomTown.
- 23 A. If you subscribe for that service and paid the premium,
24 yes.
- 25 Q. Do you know what the cost is for the base ZoomTown

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1 offering?

2 A. I would like for you to tell me that since you called them.

3 (Laughter.)

4 Q. I will represent to you that the cost is 29.99. Does that
5 sound about right?

6 A. Probably for the low end service, yes.

7 Q. Okay. Now, do you know what the low-end service gives the
8 customer?

9 A. You tell me.

10 Q. Does 384 kilobits per second downstream and 90 kilobits per
11 second upstream sound about right?

12 A. If that's what they told you, I believe you.

13 Q. If you want, I can give you a printout from Cincinnati
14 Bell's website which describes the ZoomTown product. Would that
15 be helpful?

16 A. I think if it's -- I'm not an expert on that, and I'm not
17 sure where this is leading as far as cost. I'm not -- I was not
18 part of the ZoomTown product.

19 Q. Sure.

20 A. And I don't want you to think because I work for Cincinnati
21 Bell that I'm a ZoomTown expert.

22 Q. Okay. And I don't.

23 A. Okay.

24 Q. One of the things I'm concerned about is that in developing
25 a fill factor for the cost study, did you take ZoomTown into

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1 account? Do you need as many spare pairs when you can take a
2 customer's existing pair and provide Internet access over that
3 same pair as well as POTS service for approximately 29.99 as
4 compared to, say, 23 bucks for an additional phone line?

5 A. My only concern is I don't know what the penetration of
6 ZoomTown is today compared to the total lines we have. I would
7 say since it just kicked off the end of last year, it's probably
8 very low.

9 To get back to your first question, no, I did not take that
10 into consideration because it wasn't available at the time, nor
11 was it probably perceived at the time.

12 The other thing is I have talked to customers who subscribe
13 to the service who had the second line even in their house and
14 they have not taken the second line out of service.

15 Q. Okay. So the current customers have left the second line
16 in?

17 A. Some of them have.

18 Q. Okay. Do you know anything about ADSL? I mean, is it fair
19 for me to ask you a question about ADSL?

20 A. You could try, I couldn't even tell you what it stands for;
21 how is that?

22 Q. Does asynchronous digital subscriber line sound about
23 right?

24 A. That sounds about right.

25 Q. If you were looking at putting in a second line to access

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1 the Internet, say you get on the Internet and you download, you
2 know, large files, large computer programs from the Internet,
3 which would you do? Knowing all that you know about Cincinnati
4 Bell's network, knowing the limitations of digital loop carrier,
5 if you happen to be served by a line like that, and you might be
6 able to get an all-copper line, would you subscribe to ZoomTown,
7 or would you put in a second line and use a modem?

8 MR. HART: Objection. I think the relevance of this
9 is far afield from what we're here for, and his personal opinion
10 what he would do for his on service is further afield.

11 MR. PETRILLA: I have a great defense, your Honor.

12 (Laughter.)

13 MR. PETRILLA: If the assumption is that Cincinnati
14 Bell has to put out a lot of distribution cable because its
15 customers are going to ask for second lines to get access --

16 THE EXAMINER: I know where you're going; overruled.

17 BY MR. PETRILLA:

18 Q. Which would you do, ZoomTown, or second line with a modem
19 operating at the most with 56K?

20 A. I would say I'd probably, if everything -- I weighed
21 everything, the amount of time that I spent on the Internet,
22 that there may be that advantage, that maybe I want to let my
23 kids have a second line so I can get phone calls in, you know,
24 there's different advantages and disadvantages.

25 A DSL, you have one line come in the house, so when you're

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1 kids are talking on that line, guess what, mom and pop don't get
2 any phone calls.

3 So you could possibly give a second line out there to --
4 or, order a second line and tell the kids this is your line, but
5 when dad is on the computer, you can't have it? And I will
6 agree with you that ZoomTown, by what they are saying, gives you
7 a lot quicker downloads, so there's advantages of both.

8 If I had an option, I would say I probably would look at
9 the ZoomTown service if it was available, and if that's what the
10 purpose of the second line was just for Internet access, I would
11 say I would look at ZoomTown.

12 Q. If you were going to define a voice channel in terms of
13 kilobits per second, do you know how many kilobits per second a
14 voice channel would take up?

15 A. Three -- 3,000, is that right.

16 Q. Does 64 kilobits per second sound about right for a voice
17 channel?

18 A. Voice channels, what you talk over, is much lower than
19 that. The DS0 signal that is available through special designs,
20 FACTR system, digital loop carrier system or special modems for
21 two-wire, four-wire circuits, yes, you can get up to 64 kilobit,
22 but I don't think that is a voice circuit.

23 Q. Let me be more specific. I realize you have analog on the
24 one hand and you have digital on the other. If you were going
25 to do voice over digital, would you need about 64 kilobits per

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1 second to do voice over digital medium?

2 A. When you say "digital", are you talking about a digital
3 loop carrier system?

4 Q. For instance -- But the digital signal is a digital signal,
5 correct?

6 A. Not if it's on a copper pair, unless it's being transported
7 as a digital signal.

8 Q. Unless it's being transported as a digital signal, that's
9 right. But once you're being transported as a digital signal, a
10 kilobit is a kilobit, right?

11 A. This is kind of beyond my copper loop, digital loop carrier
12 planning field.

13 Q. Okay. How about this, though: We have already established
14 that ZoomTown has 384 kilobits per second downstream and 90
15 upstream; there's a lot of band width there, isn't there, much
16 more so than a normal voice line?

17 A. Yes.

18 Q. And it's not just twice or three times, it's actually
19 somewhere maybe five or six or seven, isn't it?

20 A. Compared to a 64 kilobit?

21 Q. Well, whatever a voice channel works out to be, if you took
22 that amount of band width and you said how many voice channels
23 could we put over that, it's a lot more than just two or three?

24 A. I don't know if ADSL is designed for voice channels.

25 Q. I agree with you; the ADSL may be channellized in a

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1 different way. But the point I'm trying to get at is that
2 copper loop can carry a lot more band width when you put a
3 digital-type system or service on it like ADSL, and it's much
4 more than just a couple voice-grade loops at that point, we're
5 talking a lot more band width.

6 A. I will agree with you that ADSL has a lot more band width
7 on a copper pair than a plain old copper pair without any
8 equipment on it.

9 I don't know of any equipment that allows me to put voice
10 over all that band width, and this is where I'm having a problem
11 in trying to look where you're going to.

12 Q. ZoomTown already puts one conversation on there, and then
13 they say, well, you also get 384 downstream and 90 upstream,
14 correct?

15 A. That's correct.

16 Q. So conceivably if they take away some of that 384
17 downstream and some of that 90 upstream, you could have a couple
18 more conversations on there, couldn't you?

19 A. The way I understand ZoomTown works, and I'm not an expert
20 on this as I said earlier, your voice circuit runs about 3,000
21 hertz, or is in that very low range. ZoomTown operates at a
22 much higher range

23 Now, if you start to add -- I would think if you start to
24 add more band width down in the lower range, it's going to get
25 into that upper range very quickly, but that's -- I don't think

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1 I'm really the person to address that, and I hope this is all --
2 because I don't know that much about how it actually works.

3 Q. We can move on.

4 Well, one last question and this is on a slightly different
5 topic. To configure ZoomTown, if a customer has already got
6 their loop continuous all the way to the premises, you wouldn't
7 actually have to go out into the field and do anything to their
8 loop, would you, as long as it met the conditioning requirements
9 of ZoomTown?

10 A. If the person was on a copper pair from the central office
11 and had met the parameters identified for that type of ADSL, the
12 only thing that would have to occur, I believe, is someone would
13 have to -- somebody would have to visit the premise to probably
14 put some type of special modem out there, potentially put some
15 type of filters on the existing telephone line to make sure that
16 when you pick up the phone -- or, when you pick up the phone,
17 you don't hear the ADSL noise.

18 There would also have to be someone to probably do some
19 work in our central office. And once again, some of these
20 offices are manned, some of them aren't manned, or person,
21 whatever is correct this late in the day.

22 Q. Okay. But it's not the same kind of work as would be
23 involved with a loop -- with a dispatch to configure a new
24 second line, for instance, it's just different?

25 A. It's different.

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1 Q. Yeah.

2 A. And I don't know everything -- And I would think that that
3 work -- I couldn't even tell you whether provisional line for
4 ADSL is -- takes longer or if it's shorter than putting a second
5 line in, I couldn't even tell you that.

6 Q. Okay. That's fine. You stated earlier that you can't do
7 ADSL over digital loop carrier. That's because ADSL is for
8 copper only loops, correct?

9 A. I believe that's correct.

10 Q. Is there anything else you meant by that?

11 A. Well, there's been some talk that some vendors have said
12 that they can do ADSL over a digital loop carrier, but I'm sure
13 there's an adjunct box or something that you would have to do
14 because ADSL basically, from my understanding, actually when you
15 get on the modem you're no longer dialing through a switch -- or
16 into the central office, you're somehow bypassing that, and
17 therefore the digital loop carrier site is talking potentially
18 to the switch and, therefore, there has to be something done to
19 allow that line to work both ways.

20 Q. When you heard about this possible fix to put ADSL over
21 digital loop carrier, did you ever hear of something called a
22 bright card?

23 A. A bright card is an ISDN card; and, yes, I've heard about
24 it.

25 Q. It's to put a digital service traditionally designed for

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1 copper over a digital loop carrier system, correct?

2 A. Right. It's to put a ISDN circuit over a copper pair
3 beyond a digital loop carrier site.

4 Q. If you wanted to offer services comparable to ZoomTown over
5 a digital loop carrier, you could do it, couldn't you? It's not
6 ADSL, but it would be a high band width service over the FACTR
7 system or whatever digital loop carrier you had?

8 A. I guess if a customer would want a ISDN circuit for access
9 to the Internet, yes, that could be provisioned as a 128-kilobit
10 circuit.

11 Q. But could you do higher than that over digital line
12 carrier, like for instance, we were talking earlier, you could
13 deliver DS1 to the customer's premises, couldn't you?

14 A. At a T-1 rate, yes.

15 Q. Okay.

16 A. But that would not be over digital line carrier. Digital
17 line carrier only does DS0.

18 Q. It would be the FACTR system?

19 A. Right. It could be part of a FACTR system, or a DS1 could
20 be part of a FACTR system where some other DS1 providing
21 service. It would not go through a channel bank or narrow band
22 shelf.

23 Q. When I've used the term digital loop carrier, I mean it
24 generically to refer to the Fujitsu FACTR system, but to be more
25 specific, you could provide that DS1 over the same Fujitsu FACTR

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1 system as you could provide a normal POTS line, the difference
2 is you don't use a narrow band shelf, you have to provide a few
3 more cards to get the DS1 configured, but it's essentially the
4 same Fujitsu FACTR system?

5 A. It's part of that system, yes.

6 Q. Okay.

7 MR. PETRILLA: That's all I have. Thank you.

8 THE EXAMINER: Mr. Nourse.

9 MR. NOURSE: Thank you, your Honor.

10 - - -

11 CROSS-EXAMINATION

12 BY MR. NOURSE:

13 Q. Good afternoon, Mr. Meier.

14 A. Good afternoon.

15 Q. I don't have a whole lot for you. There's not a whole lot
16 left, is there?

17 Let me first ask you to clarify something I thought you
18 said earlier, and by the time I can review the transcript it
19 won't be here so I want to clarify. Talking about the fiber
20 feeder, and you said something to the affect that it's not SONET
21 technology but it could hook into a SONET multiplexer; does that
22 sound familiar?

23 A. I don't remember saying that.

24 Q. Is the fiber feeder part of what you would consider a SONET
25 system?

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1 A. Okay. The cost that we provided Mr. Mette and in his cost
2 study was a FACTR system with SONET OC3 capabilities, or
3 multiplexer on it. However, the SONET is in what I would say a
4 collapsed ring.

5 In other words, the service and protect east and west --
6 I'm sorry, the transmitted and receive east and west would
7 probably be under the same sheath or fiber sheath.

8 So it is a SONET with all the necessary overhead; however,
9 it's not a diversified ring. And I want to clarify that.

10 Q. Yeah. You want to further clarify?

11 A. No, that was my clarification.

12 Q. I understand.

13 A. That it's a -- was designed as a collapsed ring, not a ring
14 with diversity.

15 Q. Okay. Let me ask you on Page 2 of your testimony, Lines 15
16 and 16, you make the statement that the fill factor is best
17 viewed as an output of engineering design process not as an
18 input process; do you see that?

19 A. Yes.

20 Q. And I wanted to try to clarify what you meant by that. Can
21 you restate it or let me ask you more questions about it?

22 A. Okay. I'm having to read the whole paragraph, I'm sorry.

23 Q. No, take your time.

24 A. Okay. What I meant by that is when we put a cable in, we
25 look at what we see the facilities are going to be needed in

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1 that route. We don't try to say well, I'm going to put a cable
2 in that's going to achieve X amount of fill. We try to do it --
3 We look at how many lines we're going to need over the period of
4 a year when it comes to fiberoptic cable.

5 We look at how many remote terminal sites we're going to
6 have; if it's four sites I've used the example here that we'll
7 put a 48 fiber in. So it's more or less what I've said there --
8 Lost my train of thought, I'm sorry.

9 Q. Go ahead.

10 A. It's an output of what we have elected to put in, not an
11 input.

12 Q. Okay. And the engineering design process that you referred
13 to there, that would be a forward-looking, in your view,
14 engineering design process?

15 A. Yes, because, you know, the cost associated with going back
16 and reinforcing a route with additional fibers, because not
17 knowing what new technology is going to be required out there in
18 the future, we want to make sure that we have spare capacity to
19 meet those future needs without having to come back and do some
20 high cost of engineering and labor because we elected not to
21 spend some minor cost on material at the time when we initially
22 put that, like fiber cable in.

23 Q. Okay. Let me ask you a general question about that, then.
24 Does the engineering design process, you said it's
25 forward-looking, does the prospect of increased facilities-based

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1 competition affect that design process?

2 A. I don't think I've considered that in looking at that.

3 Whenever I have designed my network, my loop network, I've also
4 looked at what I felt the demand was going to be out there. Now
5 I have never -- maybe in the back of my mind I've said there may
6 be some need for someone else to use some of those fibers, but
7 really, it's been based on Cincinnati Bell's needs.

8 Q. Okay. Just to clarify that, another assumption that's
9 embedded in what you just said was that CBT would ultimately
10 provide service to the entire universe of demand that you're
11 looking at when you make that decision, correct?

12 A. I would hope so, yes; or have the facilities to do that,
13 yes.

14 Q. Okay. On Page 3 you talked a lot about the two-to-one
15 engineering guideline for pairs to the home. And you make
16 reference to that as really one example of several industry
17 engineering guidelines. Can you give us another example of what
18 else you're talking about there as far as the engineering
19 guidelines that aid the network deployment, on the loop?

20 A. Well, I think some of the guidelines that I'm referring to
21 there is when it comes to a buried area, you don't have a
22 structure available to go back and reinforce that at any time in
23 the future without some higher cost.

24 Aerial, you may have, once again, a problem with limited
25 space on poles; underground, if it's an underground distribution

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1 cable, you may have a concern if you're going to use the last
2 conduit that's available, that you want to make sure that you're
3 using it at the best efficiency so that either you can maybe
4 pull another cable out at a later date or something of that
5 nature.

6 So you design it for two pairs per living unit; however,
7 like in an underground area if you have a 50-pair cable out and
8 now you need to put a 200-pair cable and you have a vacant duct
9 and you want to put that 200-pair cable in, you may elect to put
10 a 300-pair cable in so you can pull that 50-pair out and roll
11 those 50 customers to the new 300-pair cable.

12 Q. So you mean, you're giving examples. There are guidelines
13 like that that you're referring to there that are pretty much
14 clear-cut decisions like that, or you're just saying that's an
15 example?

16 A. One of the guidelines that we used in Cincinnati Bell is
17 that you don't want to fill up the last duct unless it's with
18 fiber. That's kind of the rule of thumb.

19 Now, unfortunately, we're not using fiber in any part of
20 our distribution network. And maybe we don't want to open that
21 up today, but yeah, I would think that if you had a distribution
22 in that conduit system, that you would have to look at both
23 those items whether you had room for a future distribution
24 cable, and/or a new fiber feeder cable.

25 Q. Okay. Back to the two-to-one ratio then, which we heard

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1 about the source of that, I guess, through the Lucent or the
2 AT&T guides. Is there any -- Have you heard of any discussion
3 or any thought based on anything in the current
4 telecommunications environment that would suggest that that
5 might change in the future? Have you heard anything along those
6 lines?

7 A. I have not, no, nor have I seen any documentation saying
8 that that could change.

9 Q. What would it take for you to change that; I mean, get a
10 new version of the manual next year and it says, you know,
11 something else, is that -- is that what it would take to change
12 that on a forward-going basis?

13 A. I think it would take that and a lot of persuasion of
14 directors in charge of the engineering department to persuade
15 them to either go up or down, whatever that new parameter may
16 be.

17 Q. So that would be the catalyst, if it came out in a book,
18 then you would think more about it, is that --

19 A. Yeah, and I think we would probably have to look at some
20 costs associated with that closer to whether we'd want to
21 deviate from that or not.

22 Q. Okay. Let me ask you on Page 4 in the eighth and ninth
23 lines there, you're referring to varied area, I think this is
24 what you gave an example of a moment ago, but let me be clear.
25 When you say you place cable of sufficient size to limit

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1 the need to reinforce the distribution area, does that basically
2 mean you would fill up -- you would put the maximum capacity,
3 you would fill it up; is that what you're saying?

4 A. I wouldn't want to say that mainly because I would not want
5 to be unrealistic. And the way we do things today, we're not --
6 we do it in a realistic manner. We want to make sure that what
7 we're doing is cost effective because we don't want to oversize
8 cables to the point where I'm spending money in an area that
9 really I wish I would have used half of that money and used it
10 somewhere else. You know, we are under budget constraints and,
11 therefore, I want to make sure that I use -- put the proper size
12 cables in to make sure that I can keep my costs down; but I
13 don't want to come back and have to reinforce that because then
14 I have just increased my cost down the road further.

15 Q. So that sufficient size reference there is really a
16 reference to the forecast or the expected growth, the ultimate
17 demand, whatever you call it?

18 A. Yeah, if I -- Yes. If I would have a field out there where
19 there was no plans to be developed and I need -- and there's a
20 project going down the street, I would probably size my
21 distribution cable to feed that project, not any -- I would not
22 size my distribution cable for speculation that probably this
23 field is going to occur two years, five years down the road
24 without any hard-pressed plans in front of me.

25 Q. Okay. Page 5 of your testimony you make reference to an

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1 example of a 210-lot subdivision, and you -- you conclude that
2 you would put in a 600-pair distribution cable there. Do you
3 see that?

4 A. Yes.

5 Q. And you make reference to that as the minimum choice for
6 the engineer, correct?

7 A. Yes.

8 Q. Okay. And just a few lines above that you're talking about
9 the cable sizes that CBT purchases. Those are copper,
10 obviously, right?

11 A. That's correct.

12 Q. Okay. And now why wouldn't you put, for example, a
13 400-pair cable with a 25-pair, or 400 with a 50, or 400 with
14 something other than going clear up to the 600?

15 A. That would be an engineering judgment. It would all depend
16 on how far off the road this development is. There is a good
17 possibility that you would put a 50-pair or a 25-pair cable in
18 with a 400-pair cable, let the 400-pair cable express down the
19 street and just use the 25-pair cable for a short distance, yes,
20 that's a possibility.

21 Q. Okay.

22 A. And that's something I did not look at when I gave that
23 example.

24 Q. Okay. So that's -- that conclusion in your example of the
25 600-pair cable does not result from a standard or a guideline;

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1 it's --

2 A. No. No.

3 Q. -- just an example you thought of?

4 A. The other advantage that you could have with the 600-pair
5 cable, it's a 210-lot subdivision today. The developer on
6 Section 3 gets a change from 5.2 dwelling units per acre to 7.0
7 dwelling units per acre. So now I'm back potentially re- --
8 reinforcing that 400-pair cable because I really went on that
9 cut rule of 210 lots.

10 You know, these are things you have to look at. If you
11 have a street that is -- streets that are cul-de-sac, well,
12 you're pretty confident that what the developer has put out
13 there is probably going to become pretty true. If you have
14 streets that are open to fields or adjoining property, you may
15 want to consider looking at that a little bit closer or making
16 things available to let -- allow you to come back in later and
17 reinforce that.

18 Q. The things you mentioned in your last answer really change
19 the example that I referred to?

20 A. That's correct.

21 Q. Okay. And let me ask you, because you said this yesterday,
22 I remembered that, developers never have even -- nice even
23 numbers in their subdivisions, and let me change the hypo and
24 ask you this.

25 A. Sure.

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1 Q. If the lots going in were 201 lots --

2 MR. CHORZEMPA: 201?

3 BY MR. NOURSE:

4 Q. 201-lot subdivision. How would your decision there change
5 as far as what cable to put in?

6 A. I would probably put a 400-pair cable in it; take a gamble.

7 Q. So the two-to-one guideline does have some flexibility in
8 it?

9 A. I would -- It does have some flexibility.

10 Q. Okay. How far down do we go, then, with that between --
11 how far above 201 lots would you go before you go to the next
12 size?

13 A. I would probably look at what you looked at with us in the
14 past that possibly you parallel for the first part of the
15 subdivision a second cable, which I have done, to keep you from
16 upsizing the cable.

17 However, if you're talking about a very short distance,
18 there is a good chance I would go in and put the 600-pair cable
19 because the cost difference between a 400- and a 600-pair cable
20 for 200 feet where I can drop off ten homes or a street is very
21 minimal.

22 201 I could get by with a 400-pair cable. I think if you
23 get up to 210, I would think that some engineer, especially when
24 he has to revisit and go out and have to take pairs out of a
25 terminal and move them to another terminal because I did not

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1 allow enough vacant pairs in the beginning, which is engineering
2 time and driving time, I think he would be back saying to me
3 "How did you -- Why did you design it this way?"

4 Q. Okay. Getting back to my earlier question, the prospect of
5 facilities-based competition, let's use your example here with
6 210 lots in the subdivision and let's assume that the Time
7 Warner/AT&T joint venture that's out there -- You've -- You're
8 familiar with that, right?

9 A. Yes.

10 Q. Let's say they were positioned on the other side of the
11 subdivision and you assumed that they would be competing for
12 those customers, and let's also assume that Ameritech -- Who's
13 also announced they're going into CBT's territory, correct? Are
14 you familiar with that?

15 A. I'm not familiar with that, no.

16 Q. Just assume that Ameritech is -- is also located,
17 positioned on the other side of the subdivision to compete on a
18 facilities basis. What do you do then?

19 A. I think we would have to look at all those issues before
20 that we could really make a decision. I'm not able to make that
21 decision. Maybe we could buy a loop from them.

22 Q. Well, would you still provision two to one to every house
23 in the subdivision?

24 A. I would think that would be something we'd have to look at.

25 Q. Would you -- Would you try to forecast how many of those

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1 customers that you might get and then provision two to one on
2 that basis?

3 A. Once again, my concern is, is what you forecast -- or, what
4 you see in the network today can change either way as customers
5 move, as dissatisfaction may occur either with us or someone
6 else's service, people move back and forth no different than
7 what they do with the long-distance network today. So you may
8 be able to come up with a forecast and you may be able to
9 identify how many pair you ultimately see a need down there.
10 However, the person who comes up with that forecast will --
11 potentially won't be the same person that's going to have to
12 come back and reinforce it later.

13 Q. Sure. But what you're saying, then, is that the forecast
14 in a competitive environment is more difficult because you can't
15 predict which customers will switch to the new provider or you
16 can't predict what measure of the growth that's out there that
17 the new providers will capture; is that --

18 A. I cannot predict that, nor do I think we have any facts to
19 fall back on. You know, we presently are building our network
20 on facts that we know that two lines per living unit works, and
21 we have elected to continue on doing that. Unless we have some
22 facts going forward that we can really say for sure that we're
23 going to lose half of the customers, it would be hard for me to
24 predict that we would make -- put a smaller cable in.

25 I would hope that if we are going to lose half of the

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1 customers, that we would reduce our cost some way to allow us to
2 remain competitive.

3 Q. That would be my assumption also.

4 And I guess you've already indicated that in the -- in the
5 current study and your current approach, you embedded the
6 assumption that you would serve all the demand that -- that is
7 out there so you're largely just looking at projecting growth,
8 correct?

9 A. At the time when we did the study, even though competition
10 was talked about, and actually I believe at that time it was
11 right around the corner, it's actually been further down the
12 street I think than when this study was originally done, that we
13 would have -- we would have possibly looked at it different if
14 it was right there and we had some facts to fall on.

15 I don't know if I answered your question.

16 Q. To some operative, I'll get to the bottom line, I guess.

17 You're not comfortable telling me that in that 210-lot
18 subdivision with the example of the other facilities-based
19 carriers in the area, you're not comfortable saying that you
20 would put -- you would use the two-to-one guideline and install
21 at least 400-plus pairs in the subdivision?

22 A. At this present time, I would say I'm not comfortable with,
23 unless I would put the 400-pair cable or some part of that in.

24 Q. Okay. Bear with me here, I want to make sure I don't
25 repeat some stuff that was covered earlier.

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1 I believe you indicated throughout your testimony that you
2 have the engineering or the planning network design
3 functionality; that's your job, correct?

4 A. That's correct.

5 Q. So it's not your job to, for example, make high-level CBT
6 budget decisions? I mean, you -- you would basically project
7 what you need and you would try to get budget approval for what
8 the things that you feel you need to do, correct?

9 A. That's exactly correct.

10 Q. And I'm sure you work hard to do that.

11 If, in the competitive environment, you were told that you
12 need to -- to cut costs and you need to, you know, tighten the
13 belt, become lean and mean, whatever you want to say, would that
14 affect your network deployment as -- as we've been discussing in
15 the context of fills and the engineering decisions you would
16 make?

17 A. I think that's something that we, at our company, even
18 prior to competitive environment, have done or have tried to do
19 to place facilities in a cost-effective manner. As far as
20 distribution cable, I think the key is, is the cost --
21 additional cost of a cable to serve two-to-one is minimal when
22 you're talking about a subdivision compared to trying to come
23 back later and reinforce that. And that is some of the analysis
24 that we have used.

25 If we are told that -- Whenever I am told that we are in a

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1 competitive environment, we have to watch how we spend our
2 money, we don't want to spend money in this area, I question,
3 "Well, what do we do with the first order that we have?" And no
4 one -- they say, "You'll put it in". So we still have to put it
5 in.

6 So when we have a cable that's a hundred percent full in
7 distribution in any area, we go in and put that cable in even
8 though maybe down the road a competitor would come in and take
9 some lines, we have to do it because right now we're the only
10 person who's going to -- has to serve our customers, we're the
11 only person out there.

12 A competitor may even be coming in, especially if they want
13 unbundled loops, and they're going to need those facilities.
14 Q. Yeah, and I have tried to be careful about referring in my
15 examples, in my questions, to facilities-based competition. But
16 you are agreeing that in the context of facilities-based
17 competition, there is a risk there that was not previously
18 present and not incorporated into your fill factor analysis that
19 you do this -- this upfront build-out approach that you
20 described that if you do that, it won't be used; you acknowledge
21 that, correct?

22 A. There is a potential that it won't be used if people move
23 off of our network, yes.

24 Q. And as -- Under the hypos that I have asked you, under the
25 assumption that facilities-based competition increases and

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1 becomes prevalent and becomes real in CBT's territory, that risk
2 would -- would be factored in to your engineering design
3 analysis, correct?

4 A. It would -- At the time when our company will elect to do
5 something other than two lines per living unit, it would be
6 factored in to that forward design; however, the fill factors
7 that we're associating at the present time is across -- what we
8 feel is across the network. And it would take a long time, I
9 believe, for those to change on an overall basis directly.

10 Q. You're referring to the actual network, though, in that
11 response?

12 A. That's correct.

13 Q. Okay. And with respect to the two-to-one ratio that you
14 just mentioned in that response, that's only one of the many
15 guidelines or practices that could be affected by
16 facilities-based competition, correct?

17 A. That's right. We could actually, in some cases, maybe
18 change when and if we would ever have to reinforce feeder
19 facilities because if we're losing lines in an area, there may
20 not be a need to reinforce feeder facilities. And in reality,
21 the fill on those feeder facilities could go down.

22 Q. Okay. Again, that last statement refers to actual network?

23 A. That's right.

24 Q. Okay. Let me ask you to turn to Page 11 of your testimony.
25 In the Q and A in the middle of the page and at the bottom

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1 you describe your projection that copper feeder cable -- cable
2 fill is on a declining trend, slight decline you say.

3 A. Yes.

4 Q. Do you see that?

5 And Mr. Petrilla asked you about the ZoomTown service and
6 you had a discussion on that with him, and I believe you stated
7 that basically ADSL was not considered in the cost study -- or,
8 in the fill analysis you have done in here, correct?

9 A. That's correct.

10 Q. Does that -- I just want to clarify. Does that -- Would
11 that translate into changing your answer at all here or change
12 your projection on the decline in the copper feeder cable fill?

13 A. Well, I think the key here is not knowing at -- At the
14 present time, what I have seen with ZoomTown, the amount of
15 lines or the take rate percentage-wise for the amount of
16 customers on our -- that are on copper is very low, and I would
17 say it could probably go five, ten, 20 times before we would see
18 any real difference in the actual fill rate.

19 Once again, the fill rate would actually go down
20 potentially on our copper feeder, and we're actually projecting
21 a fill rate that is actually higher than what we have in our
22 network today.

23 Would I suggest changing that? That would be something we
24 would have to look at the next time we look at this -- the --
25 how ADSL affected our fills.

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1 Q. Well, could I ask you to clarify your statement that it
2 could -- the actual fill and feeder could go down based on a --
3 assuming a -- let's say a significant growth in ADSL demand for
4 ZoomTown service? If I understood your response.

5 A. Well, I think you're going to have possibly people
6 migrating from one- or two-line users to one-line users with
7 ADSL, and therefore, your fill is going to go down.

8 Q. Okay. I see what you mean.

9 MR. NOURSE: That's all I have, your Honor.

10 THE EXAMINER: Is that everyone?

11 MR. CHORZEMPA: Yeah, I've already gone.

12 THE EXAMINER: Do we have redirect?

13 MR. HART: Could I have just a moment to review my
14 notes?

15 THE EXAMINER: You talking 30 seconds, or should we
16 take a break here?

17 MR. HART: Like five minutes.

18 THE EXAMINER: All right. Why don't we come back at
19 5:30.

20 (Recess taken.)

21 THE EXAMINER: Let's go back on the record.

22 Do we have any redirect?

23 MR. HART: I do have a limited amount. This will
24 probably take just a few minutes.

25 THE EXAMINER: All right.

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2

REDIRECT EXAMINATION

3

BY MR. HART:

4

Q. Mr. Meier, you were asked some questions about how competitors coming in to the area might impact network design. Is there anything about the new competitive environment that you're aware of that has relieved Cincinnati Bell of the obligation to serve all customers?

9

A. I think I said that just -- just a few minutes ago, that we're still required, to my knowledge, even if we're in a competitive environment, to provide service for anyone who calls us and requests that service; potentially even an unbundled loop. I would think that if we have -- or, don't have facilities in an area and someone calls for an unbundled loop, that we may have responsibilities still to even provide facilities for that.

17

Q. Do you know of anyone who currently is building any unbundled loops in Cincinnati -- or, I shouldn't say unbundled loops -- but loops independent of Cincinnati Bell?

20

A. Not at a DS0 rate. There are -- There is some DS1 competition and DS3 competition, but that's about all I know as far as that's concerned.

23

Q. You were questioned at length about ADSL, and I don't want to get beyond your technical knowledge, but can ADSL work without additional equipment than what's found on a regular

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1 loop?

2 A. As I mentioned earlier, I know there has to be a modem,
3 some type of modem put in the customer premise, I think the
4 modem is made by Sysco, that we're currently using. There's
5 also an interface card of some sort that has to be installed in
6 the customer's computer.

7 Equipment is also installed at the central office, and how
8 that works is you presently have a connection between the switch
9 and the copper pair, this ADSL equipment -- and the only thing I
10 can tell you, it's a box in my mind, or maybe a cloud in some
11 cases, that the jumper from the switch equipment to the cable
12 pair actually gets disconnected and gets connected to this box.
13 I see people looking at me when I said cloud. In other words, I
14 don't know what it is.

15 Q. Well, let me stop you. I'm not asking you to describe
16 equipment --

17 A. Okay.

18 Q. -- I'm just asking, is there something you have to do in
19 addition to having a basic loop to get ADSL service?

20 A. Yes, there is equipment that has to be installed at the
21 customer premise and at the central office.

22 Q. So for the price of the loop, you don't get ADSL service,
23 do you?

24 A. The price of ADSL gives you the equipment -- or the use of
25 that equipment. There is also, I believe, a \$500 installation

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1 charge on that.

2 Q. Now, you were asked some questions about the cost of
3 electronic equipment coming down and whether you would install a
4 second OC3 system versus upgrading to an OC12; do you recall
5 that?

6 A. Yes.

7 Q. Now, your cost/benefit analysis of which of those two
8 options you would select, is that based on current and future
9 pricing information that you're aware of?

10 A. That's based on pricing information that, at the time when
11 I did the cost study or whenever -- at the present time when I
12 do my analysis, and it is forward looking to the point where I
13 can look out and unless we would change contractors or
14 suppliers, that cost is available to me.

15 So that is what I would look at a present cost and a
16 forward cost on -- and that analysis is done on what I know
17 physically today and what the costs are.

18 Q. Okay. So you know the cost studies were done maybe two
19 years ago. Is the same analysis true today, that you would
20 prefer a second OC3 to upgrading to an OC12?

21 A. Yes. Any discounts that may have been -- come into effect
22 in the past year is across the board. So if there was a two
23 percent or four percent discount we may have achieved, that's
24 the same on all the equipment.

25 Q. Okay. Let's briefly talk about distribution cable. I

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1 think you were questioned at length yesterday about how you
2 could perhaps rearrange pairs to serve an area where you're kind
3 of tight on facilities; do you recall that?

4 A. Yes.

5 Q. Could you kind of give us a ballpark description of what's
6 involved in doing the rearrangement; how much time that takes,
7 that sort of thing?

8 A. Well, if an order comes in for a customer for an additional
9 line and the assignment system looks at that drop terminal for a
10 vacant pair, if there's not a vacant pair available, it
11 automatically sends that order to our engineering department,
12 and they have to look at what's involved to get a pair in that
13 terminal.

14 You -- This automatic process of assignment has ended, and
15 now someone has their hands on it physically having to look and
16 see if there's a pair available in that cable. If there is,
17 they send through a cut-through notice to a splicer, a splicer
18 has to be dispatched to go out and cut a pair into that
19 terminal. The splicer then calls the engineering department and
20 says, "I've cut the pair in, go ahead and send the order
21 through".

22 You're talking about probably an hour or two of engineering
23 time and an hour or two of splicing time. Now that's if there's
24 a vacant pair available in a cable.

25 If the vacancy is back towards a central office, maybe cut

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1 into another terminal, engineering time is basically the same,
2 one to two hours, but now you have to send a splicer to that
3 terminal, disconnect that pair from that terminal, send it
4 out -- the cable towards your terminal.

5 And in some cases it may include going to what I call our
6 branch splice on the street. So you're looking at two hours, at
7 least, to do something like that.

8 Q. Okay. What is the hourly cost of the splicer?

9 A. About \$50 an hour.

10 Q. And what about an engineer?

11 A. I -- I estimate the same. A lot -- Some of that work is
12 done by clerical work, not actually engineering -- an engineer
13 itself.

14 Q. Are those costs included in your current nonrecurring cost
15 studies to do that rearrangement?

16 A. No, not as far as a new install.

17 Q. You were asked some questions about designing a network to
18 last five years; do you recall that?

19 A. Yes.

20 Q. Would you consider it good engineering practice to design a
21 network that lasts five years?

22 A. I have a few more years before I can retire, unfortunately.
23 What I mean by that is we have had in the past someone -- some
24 people have come through and said, "Can you design a digital
25 loop carrier site, and I only want you to design it to last five

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1 years".

2 The problem you have with that is not only am I going out
3 and putting in those new sites five years from now, I'm also
4 having to replace the existing ones I have.

5 So we try to look out further than that to make sure that
6 five years down the road we're not only having to do -- or,
7 place facilities for new areas, but also replace or reinforce
8 stuff that we have put in there just five years ago.

9 Q. You were asked questions about least cost and most
10 efficient design and combining those terms. When you consider
11 all of the costs of operating a telephone network -- and I mean
12 the physical material and the labor for installation and the
13 labor to do things like rearrangements and enforcing --
14 reinforcing facilities, do you believe that the way in which you
15 engineer your network is most efficient and lowest cost?

16 A. When you talk about least -- the least cost and most
17 efficient, yes, the way I'm designing my network today is that
18 way. I want to make sure that what you're saying, most
19 effective, because that way I'm not going to have to go back and
20 do a lot of rework.

21 You know, you can have IFC, initial first cost, could be
22 low. However, down the road your cost, if you don't do the most
23 effective network, you could run into a problem, and in reality
24 your initial first cost may be low but your actual present worth
25 of expenditures is very high if you don't build the most

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1 efficient network.

2 So to answer it again, I believe the way we design today,
3 we are doing the least cost, the most effective network.

4 MR. HART: Thank you. That's all I have.

5 THE EXAMINER: Mr. Chorzempa?

6 MR. CHORZEMPA: Yes.

7 - - -

8 RECROSS-EXAMINATION

9 BY MR. CHORZEMPA:

10 Q. I believe you said that you believe your network was the
11 most efficient network that -- that you could build, or -- Let
12 me back up.

13 Mr. Hart asked you a question whether or not you believe
14 your network was least cost, most efficient. Do you remember
15 that?

16 A. Yes.

17 Q. And if I told you today to go rebuild your network,
18 assuming that your central offices are where they are today,
19 that your customers are where they are today, those two
20 assumptions being true, would you build it differently to
21 increase the efficiency of your network, or would you go in and
22 build it identically to how it's embedded in the ground today?

23 A. I would say if I had nothing out there today and my central
24 offices were where they were at and I had customers where they
25 are at today, I have no facilities, no conduit facilities out

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1 there, I would probably look at doing more fiber feeder than the
2 copper feeder that is under our network, mainly because I can
3 put less conduit in the ground than if I was doing it like we
4 have today.

5 And the reason why I bring that up is, once again, we build
6 the most effective -- or, efficient network at the least cost.
7 I gave you the 12,000-foot range for when we do copper, when we
8 do fiber feeder with DLC. If I have in that 12,000-foot range a
9 full conduit system that I can't put another copper cable in,
10 there is a good chance I'm feeding fiber DLC lower than 12,000
11 feet.

12 So what I'm saying is we look at every job. If I was doing
13 something new and had central office and customers, no
14 facilities in between them, I would say there's a good chance
15 there would be more fiber feeder than copper feeder than we have
16 today.

17 Q. Let me ask you this: As your network has been deployed, I
18 take it that because you didn't know where the demand was going
19 to come in the future, you weren't always able to fit your
20 network as closely to demand as you might have wished in the
21 past; isn't that true?

22 A. We have put facilities in, in some cases they have not --
23 things have not materialized the way we thought, and in some
24 cases it has gone the other way where we have held back on
25 putting facilities in and actually growth has increased faster

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1 than what we thought.

2 Q. But again, if you went in and built your network today, you
3 would know that for your existing facilities and your existing
4 customers, you would know all that information already, right?

5 A. Is this the same perfect customers we were talking about
6 yesterday?

7 Q. No, it's not. I'm taking you back and just assume that
8 your customers are where they are and you haven't gone through
9 the process in the past of waiting for developments to come or
10 maybe making a wrong guess as to when developments will come.
11 You know it.

12 Isn't that going to be able -- enable you to better fit
13 your network to where the demand is and make a more efficient
14 network? Isn't that knowledge important to that?

15 A. I don't know that what you're saying is any different than
16 what we're doing today. You are taking assumptions that I don't
17 have anything out there. I'm going to take an assumption that
18 what I am doing today in lieu of what I said about structure and
19 possibly fiber, that what I am doing today is the most efficient
20 way of doing it without having some true numbers that I could
21 sink my teeth -- teeth into.

22 Q. Okay. Well, let's take a development, you've talked about
23 this in your testimony, sometimes developers have big heads and
24 they don't -- and they don't meet their time frames or maybe the
25 development doesn't come, but you have to be ready to serve that

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1 development the way he told you it's going to come. Do you
2 remember testifying to that?

3 A. Yes.

4 Q. If you take a situation where I tell you for that
5 development now, you know exactly what happened in that
6 development, you know exactly what the demand was that came into
7 that development over time, and if you made a wrong choice and
8 the development didn't come, you know that now. Wouldn't that
9 be able -- Wouldn't that information enable you to better fit
10 your network to the demand for that particular development?

11 A. Could I have that --

12 Q. That's all I'm asking.

13 THE WITNESS: Could I have that read back, please?

14 (Question read back as requested.)

15 THE WITNESS: Okay. I'm going to try to kind of
16 rephrase your question. If I do it wrong, let me know.

17 BY MR. CHORZEMPA:

18 Q. Okay.

19 A. What you're saying is you have a development, the developer
20 comes to you and he tells you exactly what he's going to do; is
21 that correct?

22 Q. What I'm saying is that in the past you've indicated that
23 there are times where the developer gives you information as to
24 what his time frame for the development's going to be and how
25 big the development's going to be, and sometimes his time frames

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1 are off and sometimes the development in total doesn't come to
2 fruition as the developer had planned. And because of that, I
3 thought you indicated that CBT has to go in and deploy a network
4 to be able to meet the demand that the developer tells you is
5 going to be there from the outset. Do you remember that?

6 A. Yes.

7 Q. And I got that right?

8 A. Yes.

9 Q. What I'm telling you now is that you know that the
10 development that started ten years ago stopped and was supposed
11 to go for ten years, it stopped after four years, the developer
12 went bankrupt. And instead of having a thousand-person
13 development that was anticipated in year one, it really turned
14 out to be about a 400-house development or condo development or
15 whatever the living unit would be. You know that now.

16 Would'n't your assumptions as to how to deploy network
17 equipment into that area change because you know it?

18 A. Once again, I'm going to kind of rephrase your question,
19 and please let me continue.

20 What you're saying is that we have a developer who has come
21 to us with knowledge of this thousand-lot subdivision, he's
22 going to put it in. But we have this knowledge that is in the
23 future that it's not going to happen, it's only going to go 400
24 lots. So what size cable do I put in? Do I put a cable in for
25 the thousand -- thousand lots, or do I put a cable in because I

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1 know in the future I'm going to find out this developer is going
2 to go bankrupt and not do it?

3 I'm going to put in a cable to serve the thousand lots
4 because I want to make -- because what you're saying is I have
5 this perfect knowledge of what this guy is going to do; however,
6 you didn't tell me that I had this perfect knowledge the day
7 that this development started. You told me you know this -- you
8 have this perfect knowledge down the road that he's not going to
9 do it. I don't have that knowledge the day I start.

10 The day I start, I have to make sure that I have facilities
11 for that development. I can't predict or forecast if he's going
12 to complete it or not, or go bankrupt.

13 Q. But if you knew that, your assumptions would change as to
14 how to deploy equipment into that development, right?

15 A. If I knew going in that that developer says, "I'm going to
16 put a thousand lots in", and I knew he was only putting 400 lots
17 in, he was really not telling me the truth, yes, I could put in
18 a cable to serve 400 lots.

19 Q. Right. And if this happened, let's say this happened like
20 in the 1980 to the 1985 time frame, okay, and let's say
21 magically today you're able to redeploy your whole network,
22 assuming central offices are the same and your customers are in
23 the same locations, everything else disappears magically in your
24 network, Mr. Meier -- I know this is difficult for a network
25 engineer to do, to conceptualize -- you would go back to that

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1 area and deploy the equipment and the network facilities as if
2 you would have had knowledge from day one that this developer
3 wasn't going to meet his projected projections?

4 A. There's a lot of speculation we have here. What you're
5 saying is instead of a thousand-lot subdivision -- Let me start
6 over.

7 Developer tells me he's going to put a thousand-lot
8 subdivision in. The day before I order the cable, I found
9 out -- find out there's only 400 lots. Hey, that's brand new.
10 Doesn't start, there's nothing there. I will put in service for
11 400 lots if I know it's not going to grow to that thousand lots.

12 Q. Okay. Let me try a different way. Well, I think you've
13 answered the question.

14 I take it you're not aware of an assumption in the TELRIC
15 methodology that you should assume that your central offices and
16 your customers are in the same locations and otherwise build a
17 study as if you were redeploying your network today?

18 A. Who's my customer?

19 Q. I'm asking you whether or not you're aware if that
20 assumption is contained in the FCC rules or the Ohio Commission
21 rules in relation to how to build a TELRIC study.

22 A. I'm not aware of that.

23 Q. Okay. And in relation -- Mr. Hart asked you some questions
24 about whether or not it would be a good idea to build a network
25 for five years; do you remember that?

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1 A. Yes.

2 Q. You're not aware of any FCC rules or Ohio Commission rules
3 relating to assumptions of how long a TELRIC study should last
4 for, are you?

5 A. The only thing that I have been told that is a forward-cost
6 looking methodology.

7 Q. Okay.

8 A. And to my knowledge, forward cost, in my design, is three
9 to five years.

10 Q. So you wouldn't be aware of an FCC rule that would -- that
11 might provide that you look at your central office locations,
12 you assume those to be the same, you assume your customer
13 locations to be the same and on that day that you do your study,
14 whatever date it is, you build your network to fit that; you
15 wouldn't be aware of that?

16 A. That's sort of what we're building, as far as cost.

17 Q. Okay. You're -- I'll move on. I think you've already
18 indic- -- you've indicated you're not familiar with the FCC
19 rules or the Ohio Commission rules in relation to TELRIC
20 studies.

21 A. I am not familiar with it.

22 Q. Okay.

23 MR. CHORZEMPA: That's all the questions I have.

24 THE EXAMINER: Ms. Sanders?

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RECROSS-EXAMINATION

1
2 BY MS. SANDERS:

3 Q. Just one brief question, Mr. Meier. In response -- I
4 believe Mr. Hart asked you a couple questions about rearranging
5 the drop cable; do you recall that line of questions?

6 A. Not necessarily rearranging the drop cable, but having
7 additional facilities available for like an additional line in
8 the drop terminal.

9 Q. All right. Well, we're on the same wavelength.

10 What I'm getting at is I think you mentioned in response to
11 one of his questions that the -- the charges for the technician
12 to go out and make those arrangements were not included in the
13 nonrecurring charges; is that correct?

14 A. If I --

15 Q. Or did I misunderstand?

16 A. If I'm installing a new service, there are nonrecurring
17 charges for installing a new service. However, I don't think
18 those charges include us going out and making rearrangements so
19 the person who basically is getting paid for those nonre- --
20 nonrecurring charges can go out and install that line. I
21 believe nonrecurring charges are associated with an installer to
22 go out and put service in, and I could be wrong on that. What
23 I'm having to do is some engineering work and some splicing work
24 before I send that installer out.

25 Q. Okay. Well, what I was getting at here is I thought that

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1 you had told me earlier on -- when I was questioning you that
2 you really didn't have much involvement in the nonrecurring cost
3 studies, the development of the nonrecurring cost studies; is
4 that correct?

5 A. I think that's correct.

6 Q. And I think maybe you've answered my question.

7 So you're not really sure whether -- specifically whether
8 that kind of time was or was not included in Mr. Mette's
9 nonrecurring cost study; is that correct?

10 A. I don't think -- I would have a difficult time believing
11 that they are included, but I would like to refer that to
12 Mr. Mette when he gets up here.

13 Q. Okay. Fair enough.

14 A. He's anxious.

15 Q. I'm sure he is.

16 MS. SANDERS: That's all I have. Thank you,
17 Mr. Meier.

18 THE EXAMINER: Mr. Petrilla?

19 MR. PETRILLA: I have a few questions, your Honor.

20 - - -

21 RECROSS-EXAMINATION

22 BY MR. PETRILLA:

23 Q. Mr. Meier, Mr. Hart questioned you about whether or not in
24 the future, notwithstanding what competitors enter Cincinnati
25 Bell's territory, Cincinnati Bell still has the obligation to be

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1 the carrier of last resort essentially; is that correct?

2 A. I have not heard anything but that. My understanding is,
3 is we are the carrier of the last resort. No one has told me
4 that I do not have to provide service to someone if they're in a
5 competitive area.

6 Q. You're not a regulatory expert, though, are you?

7 A. No, definitely not.

8 Q. And you haven't studied the law on Cincinnati Bell's legal
9 obligations to be the carrier of last resort?

10 A. No, I have not.

11 Q. So you're not qualified to predict whether or not
12 Cincinnati Bell will have such obligations in the future, are
13 you?

14 A. At the present time, I don't know of any obligations that
15 remove that from us, or any law that removes us from that
16 obligation, and the future I cannot predict.

17 Q. Okay. Mr. Hart asked you if anyone else was building loops
18 in Cincinnati Bell's territory, and I think your response was
19 not for DS0; is that right?

20 A. Not that I know of, that's correct.

21 Q. Okay. So is it fair to say that you think the risk of
22 another competitor coming in and physically bypassing Cincinnati
23 Bell's network by building its own DS0 loops is pretty low?

24 A. I think someone -- Mr. Mette's -- or, I'm sorry, Mr. Hart,
25 when he asked me that question, I think he was referring to

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1 copper cables, or maybe I just interpreted that.

2 There are actually cable TV providers that are looking at
3 putting modems in to bypass us.

4 So it's difficult for me to say that there is competition
5 out there because no one comes to me and says, "I no longer need
6 you, I'm going to somebody else".

7 There could be DS0 -- We could be losing DS0 loops in the
8 various areas where DS1s are at, customers are taking out our
9 analog trunks feeding their PBX and putting in a T-1 for their
10 trunks. I'm not aware of any of that -- I mean, I'm not aware
11 of where that's happening at, but it could be happening.

12 Q. Since you're not aware of it, you didn't take it into
13 account in your testimony on fill factors for Cincinnati Bell's
14 loop cost study?

15 A. That is correct.

16 Q. Okay. Mr. Hart asked you if there was an installation
17 charge for ADSL; is that correct?

18 A. I don't think he asked me that, but I think maybe I --

19 Q. Or you stated that?

20 A. I stated that, yes.

21 Q. \$500?

22 A. That's what I've heard.

23 Q. Okay. Does Cincinnati Bell actually charge customers who
24 sign up for ADSL the \$500?

25 A. There was an initial sign-up period where that cost was

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1 waived; however, that period has ended.

2 Q. All right. February 5th, 1999?

3 A. I'm not going to argue with the web page.

4 (Laughter.)

5 Q. Okay. So Cincinnati Bell gave away installation and also
6 the equipment, the modem, the network interface card and the
7 microfilters to customers who signed up before February 5th,
8 1999; is that correct?

9 A. I believe that's correct.

10 Q. Okay. Mr. Meier, Mr. Hart asked you whether it would be
11 good engineering practice to design a network for only five
12 years, and I'm not going to ask you a question necessarily about
13 your specific answer, but in answering that question I just want
14 to make certain that you understand that there is a difference
15 between actually building a network and costing a network for
16 purposes of -- of a regulatory forum like this.

17 A. The cost that I was asked to provide was a forward-looking
18 cost for the fiber, the copper feeder, digital loop carrier and
19 distribution. I was not aware that there were constraints that
20 that cost could only cover a five-year period.

21 Q. You understand that the assumptions that Cincinnati Bell
22 makes in its loop cost study in this proceeding will not become
23 any sort of requirement on Cincinnati Bell to build that; that
24 the assumptions are done purely for costing purposes in a
25 regulatory proceeding?

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1 A. The cost that I have provided is a network that I am
2 currently building. I have no one telling me to build a network
3 other than what I am doing except for the people sitting at the
4 table across from me. You're the only people who disagree with
5 the way that I'm building the network. So the cost I have
6 provided is a forward-looking cost for the network I am building
7 today and will continue to build.

8 Q. Okay. But it's not a forward-looking cost for a network if
9 you built it from scratch? If we pretended that the network
10 didn't exist and you were building from scratch, that's not what
11 you're here to talk about?

12 A. Well, I think it is because I have given you cost for a
13 digital loop carrier system beyond 12,000 feet.

14 Q. Right.

15 A. I have given you cost on a fiber cable that's going to be
16 placed to that. I have given you cost for distribution for
17 providing service to customers. I have given you cost for
18 copper feeder for anybody under 12,000 feet. I think I have
19 given you cost on a forward-looking basis based on what I have
20 given -- or, what I see today.

21 Q. Have you ignored all the constraints associated with your
22 existing network? Have you ignored the fact that you have
23 certain switches in your network?

24 A. I have not ignored that I have certain switches. I am
25 using those switches because that's what I have available today.

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1 What possibly I did not cost out, and I believe it was
2 recovered in the cost study, is any embedded structure that I
3 have, a conduit system. That's there, and I'm sure somehow
4 costs are recovered for that. I'm sure if Mr. Mette came to me
5 and asked for new costs of putting a new conduit system in, I'm
6 sure I would have to provide that.

7 Q. But you didn't in the study?

8 A. I did not provide cost of a conduit system. I think that
9 was basically brought in from embedded.

10 Q. Okay. I can live with that.

11 One of the things Mr. Hart also asked you, his question
12 right after that, was when you consider all of the costs of
13 operating a network, do you believe that the way you engineer
14 the network is the least cost and most efficient.

15 Now, from your response, what I gather is you said the way
16 I'm administering the network today and for the next three to
17 five years is the most efficient way to administer that network;
18 is that what you said?

19 A. Forward looking, I am doing the most efficient network. I
20 don't know if I put three to five years on that.

21 Q. Okay. But this is CBT's existing network; you are
22 administering that existing network in the most efficient and
23 least cost way for the future?

24 A. That's the way I have cost it, yes.

25 Q. Okay.

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1 A. And that's the --

2 Q. But what you're not doing is you're not assuming that that
3 network has disappeared and you're building it again from
4 scratch and trying to build the most efficient network that
5 would be the lowest cost network; that's not what you've done?

6 A. I -- I disagree with you.

7 Q. Well --

8 A. I am building -- The cost -- The cost I have give Mr. Mette
9 on a copper cable is not an existing copper cable, it's a new
10 copper cable. And, likewise, with all those other elements are
11 new facilities, as if I didn't have a thing out there today.

12 But somehow you believe that I am not doing that, and I
13 don't understand that. It may be me because I think all three
14 of us have said the same thing.

15 (Laughter.)

16 Q. Let's go back to the issue of treating the network --
17 treating the building of the network as if you have no
18 constraints.

19 It is fair to say that in coming up with your assumptions
20 for the cost study, you departed from the existing network in
21 certain ways, such as in regard to the percentage of digital
22 loop carrier and the cost for some of the materials; but is it
23 fair to say also that there were certain constraints upon you,
24 you had to choose the FACTR system because that was compatible
25 with your switches, you couldn't choose a digital loop carrier

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1 that was not compatible so that was out of the mix? You did not
2 assume that there was GR303 concentration throughout the network
3 because you haven't really deployed it throughout the network?
4 Do these things make sense?

5 A. Well, I think some of it makes sense. What I don't agree
6 with you in is that how can I provide cost on a forward-looking
7 basis on a technology, whether it be a switch or a piece of
8 equipment, that I have no cost on? The -- Everyone has asked me
9 for information on data requests for give me costs, give me
10 contracts. If I told you that I had a piece of equipment that
11 was in the future and this is what I anticipated the cost, it
12 would be up for argument all around.

13 Q. I'm not suggesting that you predict future costs. I just
14 mean that of the equipment available to you to purchase now, you
15 have been constrained to a certain degree by what's in
16 Cincinnati Bell's existing network. You had to look at Fujitsu
17 FACTR digital loop carrier because you could not look at some
18 other digital loop carrier that would not be compatible with
19 your AT&T 5ESS switches; is that correct?

20 A. We have other options besides FACTR, we do have the
21 asynchronous network. However, we have found that the FACTR
22 system is the least cost and most efficient that we can
23 purchase.

24 I cannot disagree that there is -- potentially could be
25 something out there to replace FACTR and to replace our

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1 switches, but I don't have those numbers. And like I said, if I
2 provided those numbers, whether they were realistic or not, they
3 would be up to scrutiny by everyone on this other side of this
4 table.

5 Q. The numbers --

6 A. And, therefore, I have to do what I am building today and
7 what I see myself building in the future, which is the FACTR,
8 fiber DLC system, the copper with under 12,000 feet, the
9 distribution cable. That's what I have to build because you
10 want to know true cost. And if I give you anything other than
11 true cost, someone's going to criticize me for that.

12 Q. The numbers that you have available to you are for the
13 equipment that Cincinnati Bell purchases currently, correct?

14 A. That's correct.

15 Q. And you don't have available to you digital loop carrier
16 investment costs for digital loop carrier equipment that
17 Cincinnati Bell doesn't purchase; that's what you're trying to
18 say?

19 A. That's correct. And we have looked at equipment, we did
20 the RFP or RFQ years ago --

21 Q. Sure.

22 A. -- that fit our network and we had those costs available to
23 us. I won't say that we picked the least cost, but we picked
24 one that fit -- most efficiently fit our network. Because if we
25 would have bought something that didn't fit our network --

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1 Q. It would cost you more money?

2 A. That's right.

3 Q. But if you could have built that network from scratch,
4 maybe there was a way to have a digital loop carrier that would
5 have cost you less money? But that -- But you can't testify
6 about that because you don't know?

7 A. That's right.

8 Q. Okay. Well, I guess another point that I -- I heard you
9 making earlier, and I don't think you're disavowing, is there
10 are efficient technologies out there like GR303 concentration
11 and you're trying to incorporate them into your network, it's
12 just going to take some time to get them incorporated fully; is
13 that -- is that correct?

14 A. Well, we're -- What I say -- I don't -- When you say
15 "fully", I don't see GR303 ever taking over our network because
16 we have a lot of embedded network out there that --

17 Q. It wouldn't work?

18 A. Well, it would work, but I don't think the Commission would
19 allow us to remove stuff just because something new was out
20 there if it's working fine.

21 Q. Right.

22 A. So the other thing is, is GR303, and I -- is for integrated
23 services, not for universal services that we're talking about
24 with the unbundled loops.

25 Q. Sure. So in your current network it doesn't make sense to

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1 deploy GR303 as widely as I would -- I suggested by saying
2 "fully", I guess is your point?

3 A. We're doing it in a cost effective and most efficient
4 manner, yes.

5 Q. For your existing network?

6 A. That's correct.

7 Q. You haven't done any studies to figure out if there was
8 some other -- if you were building this from scratch and there
9 was some other way to do it, you don't know if that would be
10 more efficient or not?

11 A. It would be more efficient for me to put in a GR303
12 integrated system than a TR08 integrated system, I will say yes.

13 Q. Okay. But you have -- Okay. All right.

14 In terms of the concentration, though, it doesn't make
15 sense to have concentration everywhere in your network on GR303?

16 A. Define "everywhere".

17 Q. It doesn't make sense to place concentration -- GR303
18 concentration in all the possible places in your current
19 network? All right, that doesn't get you there either, I know.

20 A. Are you talking about loop? When you say --

21 Q. Sure.

22 A. -- all network --

23 Q. It doesn't make sense to equip every one of your feeder
24 routes with GR303 concentration currently because you have so
25 much of your plant being copper that you would have to rip that

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1 out and throw in new fiber feeder, essentially, to do that?

2 A. That's correct.

3 Q. And you would spend all that money ripping out that copper,
4 that would be a waste? Copper works now.

5 A. For certain loops, yes.

6 MR. PETRILLA: Okay. All right. I'm done. Thank
7 you.

8 THE EXAMINER: Mr. Nourse?

9 MR. NOURSE: Very briefly, your Honor

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RECROSS-EXAMINATION

12 BY MR. NOURSE:

13 Q. Mr. Meier, Mr. Hart's question about the obligation to
14 serve, that was in response or to clarify a line of questioning
15 that I had for you, correct?

16 A. Yes, I think I responded that we still -- to my knowledge,
17 we still had to provide service to everybody.

18 Q. Right. And the line of questioning that I discussed with
19 you, the -- regarding facilities-based competition and the
20 example of the 200-lot subdivision in your -- your testimony was
21 that you would install 400-plus pairs to serve that subdivision,
22 and you -- the line of questioning resulted in you concluding
23 that you weren't comfortable as you sit here today in saying
24 that in that context of facilities-based competition, that you
25 would do the same thing in that subdivision, correct?

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