advanced services."[305] We strongly recommend that in this proceeding the Commission take such actions, as required by 254(k), that are clearly in the public interest.

8.4 The Appropriate Mechanism for Recovering Joint Costs on the Network is Based on the Market Demand for the Jointly Provided Voice and non-Voice Services which Differentiates the Value of the Two Services

The key question for 21st century regulation becomes -- if the loop is now a joint product for voice and data services, what is the appropriate mechanism for efficiently sharing these costs, and how do we determine how much of the cost should be recovered through the Subscriber Line Charge?

The joint costs of voice and non-voice services should be shared based on the market demand attributable to each service since there is no way to differentiate the value of jointly provided services other than by using the market. It is clear that competitive markets set prices for jointly supplied products, and this is the only way that the FCC can determine a reasonable amount to allocate to the cost of providing the high-frequency spectrum UNE on shared lines. At this time, there is no meaningful evidence to indicate what percentage of loop costs should be allocated to the high-frequency spectrum UNE, and for this reason, we support as a staring point for cost allocation the FCC's Video Dialtone proposal for a 50-50 split for jointly used loops.

With regard to implementation of the CALLS order on Subscriber Line Charges, we argue for a gradual transition to efficient pricing since this will best serve economic and political objectives -- without inducing large increases in consumer costs, and at the same time minimizing distortions which affect consumer and investor decisions. By holding down the Subscriber Line Charge and gradually increasing charges on the high-speed data services that are imposing new demands on the loop, the FCC can best meet its multiple objectives (e.g., efficient pricing, universal service, expansion of high speed services, etc...).

8.5 Today's Technology has Made the Fiber Feeder Plant Investment Traffic-Sensitive

Noticeably absent from the ILECs submission is any discussion of how the evolution of technology has impacted the cost structure of the loop. Historically the loop was exclusively composed of non-traffic-sensitive (NTS) investments. The ubiquity of NTS investments was a primary consideration in the Commission's conclusion that loop costs should be recovered through a fixed customer charge.

Today's technology is of course much different. In this section we show that today's digital line carrier systems have made a portion of the loop traffic-sensitive.

[305] Id.

Consequently it would be economically efficient to recover a portion of the loop costs from interexchange carriers through usage-based charges.

Digital Loop Carriers (DLCs) were originally introduced to cost-effectively deploy voice in rural areas. They have grown in size from the 96- line channel bank type terminals to the large 2,048 line terminal with fiber optics and built in network management that characterizes the Next Generation Digital Loop Carriers (NGDLCs) currently being deployed as the platform for delivery and transport of narrowband, wideband, and potential broadband services in today's networks.

Approximately 35% of all North American access lines are presently supported by fiber based NGDLCs,[306] and this number is growing with firms such as SBC[307] and Verizon[308] announcing that fiber based NGDLCs are being deployed in their respective networks so as to provide non-voice advanced services such as xDSL. Furthermore, the forward looking cost model developed by the FCC, the HCPM, assumes that all deployed DLCs are fiber based NGDLCs.[309]

In the late 1980s Bellcore developed the TR-303, later known as the GR-303, protocol that greatly facilitated the use of NGDLCs.[310] An industry standard, GR-303 specifies an open interface that allows for interoperability between Class 5 switches and NGDLCs. This eliminates the need for proprietary interfaces common among access

[306] DSL Anywhere: A Paper Designed To Provide Options For Service Providers To Extend The Reach Of DSL Into Previously Un-Served Areas, a DSL Forum Whitepaper submitted December 12, 2001 in the National Telecommunications and Information Docket No. 011109273-1273-01, In the Matter of Request for Comments on the Deployment of Broadband Networks and Advanced Telecommunications, available at http://www.ntia.doc.gov/ntiahome/broadband/comments/dslf/dsl_anywhere.pdf, at 27.

[307] See, for example, Pacific Bell Consultant Vendor Support Group Newsletter, June 2000, http://www.pacbell.com/Products_Services/CSG/consultant-news-june00.pdf, at 2; and *SBC Project Pronto Notice*, Issue 2.1, September 1, 2000, at 3, where it states: "Project PRONTO will deploy an advanced, highly flexible, next-generation digital loop carrier (NGDLC)." This document available at http://www.sbc.com/PublicAffairs/PublicPolicy/pronto_gateways/docs/SBC_NG_Notice_090100_v2_1.doc . And Estes, Renée C., Marylyn Longo, and George Kubes, SBC Technology Resources, Inc., GR-303 Deployment Issues; An ILEC Perspective, July 29, 1998, Power Point Presentation made at the 1998 GR-303 Industry Symposium, available from http://www.telcordia.com/resources/genericreq/gr303/symposium_archive.html#1998, at slide 7.

[308] Before the Federal Communications Commission, In the Matter of Access Charge Reform, CC Dockets 94-1 and 96-262, Verizon's Cost Submission, November 16, 2001, Attachment D, pp. 4.

[309] Before the Federal Communications Commission, In the Matter of Federal-State Joint Board on Universal Service and Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, CC Docket Nos. 96-45 and 97-160, Tenth Report and Order, FCC 99-304, Adopted: October 21, 1999, Released: November 2, 1999, at ¶14, where it is stated that "[i]f the feeder is fiber, it extends to a DLC terminal..." and at footnote no. 593. This conclusion is also supported by the New Jersey Board of Public Utilities who stated that "that the use of 100 % IDLC is an appropriate and realistic forward-looking assumption." Docket No.TO00060356 at Page 6.

[310] The FCC's Tenth Report and Order, FCC 99-304 at footnote no. 593, expressly states that in modeling the forward looking network HCPM assumes the use of GR-303 capable hardware on IDLC systems.

systems, and allows service providers to reduce capital and operating costs by enabling a mix-and-match deployment scheme utilizing products from a variety of vendors. [311] Two other advantages of the GR-303 interface is that it supports a flexible concentration ratio and it has a built in network management channel.[312] Concentration is a technique enabling some number of telephone users to employ a smaller number of trunk paths to the switch by utilizing the principle that not everybody uses his or her telephone at the same time. [313] By concentrating traffic at the NGDLC equipment port requirements could be reduced, greatly improving the utilization, and hence economics, of expensive Class 5 switching ports.

For example, consider a residential application consisting of 668 POTS lines with a per-line traffic requirement of 6 ccs and a blocking probability of 0.01. Without loop concentration, this application would require 28 DS-1 facilities and 28 DS-1 ports. Using loop concentration, remote terminals accepting up to 668 subscriber lines can be supported with only six DS-1 facilities (approximately an 80% facility reduction), while ensuring the same grade of service as the non-concentrated scenario.[314]

By virtue of the fact that NGDLCs equipped with GR-303 type interfaces are capable of performing concentration, they can be said to possess a primitive level of switching as part of their inherent make-up. This fact is recognized by the ILECs who have testified that a GR-303 Remote Terminal possesses some call processing capabilities similar to a Local Digital Switch and that, because of these capabilities, the GR-303 Remote Terminal can be viewed as an extension of the central office to the customer.[315] As a result of this functionality NGDLCs are properly viewed as the first piece of traffic-sensitive equipment in the telephone network. This is because deployment of NGDLCs equipped with GR-303 type interfaces was, and is, being carried out by companies so as to better balance traffic loads resulting from increased network usage, thereby expanding the capacity of the network in a more economical manner. Economists have

[311] GR-303 IDT INTERFACE, A product announcement document from Taqua Systems, March 2001, http://www.taqua.com

[312] GR-303 supports flexible concentration ratios from 1:1 (672 lines served by 28 DS1s) up to 46:1 (2, 048 lines served by 2 DS1s). (The Evolution of Digital Loop Carriers, Occam Networks Whitepaper, May 2001, http://www.occamnetworks.com/pdf/DLCEvolution3-01.pdf, at 4.)

[313] David Ehreth, Strategies for Unbundling Remote Access Terminals, A Westwave White Paper, October 6, 2000, http://www.d2m.com/AEAweb/Unbundling.pdf, at 1.

[314] ESMA—TR-303 Interface Providing Enhanced Capacity, Services, and Cost-Efficiency, Nortel Networks Planning Document for the Expanded SCM-100A digital interface, April 1996, at 21.

[315] Ehreth, Strategies for Unbundling Remote Access Terminals, at 1. The Class 5 switch that is connected to an NGDLC controls the switching (concentration) function at the NGDLC through the GR-303's built in network management channel, and Before the New Mexico State Corporation Commission, Rebuttal Testimony of Todd Bohling on Behalf of AT&T, In The Matter Of The Interconnection Contract Negotiations Between AT&T Communications Of The Mountain States, Inc. And U S West Communications, Inc., Pursuant To 47 U.S.C. Section 252, Docket No. 96-411-TC, January 21, 1997, at 26.

typically found that capacity costs incurred "...in this way are traffic-sensitive, because they are marginally attributable to usage, and may be regarded as the long-run marginal cost equivalent of the congestion costs that they mitigate."[316] This is a fact that has been long recognized by regulatory agencies in other countries.

In Europe, which utilizes an interface specification that is functionally equivalent to the GR-303,[317] regulatory agencies in both Germany and the United Kingdom have found DLCs, by virtue of their concentrating functions, to be traffic-sensitive portions of the network and regulate them accordingly.

For example, in Germany, the Regulatory Authority for Telecommunications and Posts (RegTP), has found that: "Subscribers not directly connected to a local exchange will have their calls begin and end at the first concentrating element of the network. This element is designated the remote concentrator or remote digital line unit."[318] What this means, according to the RegTP, is that the access network provides "...transmission functionality between the terminal equipment and the termination point of the outside plant before the first concentration point, set up either at a local exchange or at a remote concentrator unit." [319] In other words, the RegTP goes on to state, "[b]y virtue of their concentrator function the digital line units are, from the subscriber's point of view, the first traffic-sensitive equipment of the telephone network."[320]

For these reasons the "...concentrators, line trunk groups and interoffice network elements are dimensioned as a function of traffic offered in the busy hour" [321] in the RegTP's modeling of customer network access costs. The RegTP has subsequently reiterated this position in a later cost modeling document where it found that "[a]ll network components beyond the concentrator must be dimensioned as a function of traffic...".[322]

---

[316] Alfred E. Kahn and William B. Shew, "Current Issues in Telecommunications Regulation: Pricing", 4 Yale Journal on Regulation 191 (1987), at 226.

[317] Taylor, Martin, Complete DSL: Requirements for Public Multi-line Telephone Service Delivery over the DSL Access Network, 1999, a CopperCom Technology White Paper, at 12.

[318] An Analytical Cost Model for the Local Network, A Consultative Document prepared by Wissenschaftliches Institut für Kommunikationsdienste, GmbH (WIK) for the Regulatory Authority for Telecommunications and Posts, March 4, 1998, at §2.3.1. A digital line unit is functionally equivalent to a DLC.

[319] Id., at §2.3.2. Document available on the Regulatory Authority for Telecommunications and Posts (RegTP) website at http://www.regtp.de/imperia/md/content/reg_tele/anakosteng/2.pdf

[320] Id., at §2.3.3. Document available on the Regulatory Authority for Telecommunications and Posts (RegTP) website at http://www.regtp.de/imperia/md/content/reg_tele/anakosteng/11.pdf

[321] Id.

[322] Analytical Cost Model: National Core Network, Consultative Document 2.0, Prepared by Wissenschaftliches Institut für Kommunikationsdienste, GmbH (WIK) for the Regulatory Authority for Telecommunications and Posts, June 30, 2000, at §2.3. While the quotes presented here are from

The practice of considering the concentrator and all network elements between the concentrator and the local switch as being traffic-sensitive is also followed by the Office of Telecommunications (OFTEL) in the United Kingdom. OFTEL breaks down the cost of concentrators into port costs, processing costs, unattributed costs, line driven costs, and common costs. Line-driven costs are considered relevant to the incremental costs of access. The port, processing and unattributed concentrator costs are considered to be relevant to the incremental cost of conveyance[323] and are converted into per busy hour minute costs.[324] Transmission from the concentrator to the local switch is also considered to be part of conveyance and is treated as a traffic-sensitive cost like the port, processing and unattributed concentrator costs. [325]

The Australia Competition and Consumer Commission (ACCC) similarly treats the concentrator as part of the of the switching/transmission network, not as part of the access network. As is evidenced by the following statement:

> "Under Telstra's customer access network architecture, customers are connected to the broader network by means of cabling which runs from a customer's premises to what is known as 'Customer Access Module (CAM)' equipment. The CAM equipment does not necessarily undertake switching; rather its function is to provide battery feed, ring current and dial tone to the customer premises equipment. CAM equipment includes remote switching units or stages (RSUs/RSSs), remote (and integrated remote) integrated multiplexers (RIMs/IRIMs) or newer generation remote customer multiplexers (C-MUXs). In some areas, notably in CBD's, customers are directly connected to local access switches (LAS) which effectively serves as the CAM in this case."[326]

Consultative documents provided by WIK, the RegTP acknowledges that the analytical cost models, and the documentation of those models, developed by WIK have been adopted by the RegTP in it regulation of the network. Evidence for this can be found on the RegTP's website where it is noted that the local loop consultation process of 1998 led to the decision to separate modeling of the access network from modeling of the conveyance network. This decision was put into practice in the in the consultative document "An Analytical Cost Model - National Core Network". Evaluation of this document in light of the comments received, led to the RegTP to make the structural modifications and refinements, set out in the updated 2.0 document referenced above. (See, http://www.regtp.de/en/schriften/start/fs_08.html)

[323] OFTEL defines the long run incremental cost of conveyance to be the cost that would be saved in the long run if no traffic were provided over the network, but access were to continue to be provided. (Long Run Incremental Costs: The Bottom-Up Network Model, OFTEL, March 1997, Version 2.2, at 2)

[324] Id., at 2-13. Where the weighted average cost for the concentrators is computed using the proportion of busy hour traffic through the concentrators (p.13)

[325] Id., at 15-16.

[326] Pricing of Unconditioned Local Loop Services (ULLS) and Review of Telstra's proposed ULLS Charges, Australian Consumer and Competition Commission, August 2000, at 5.

In other words, according to the ACCC, local loop service consists of service for the use of copper-based communications wire between the boundary of a telecommunications network and a point where the copper terminates.[327] In the Australian context this point would be the Customer Access Module equipment defined above.

These examples provide ample support for considering fiber-fed NGDLCs to be the first traffic-sensitive component of the network that an end user encounters. The regulatory agencies in these other countries rightly recognize that today's telecommunications networks are radically different from the networks that were in use when the FCC undertook access reform in the early 1980s. At that time, customers were almost exclusively connected to the wire center through dedicated facilities. Today, firms rely on NGDLC technology, and the engineering literature clearly demonstrates that this equipment is traffic-sensitive.

We have shown that the fiber facilities deployed on a forward-looking basis are engineered to satisfy peak-hour usage. It is economically inefficient for the Commission to maintain its current policy of recovering these traffic-sensitive costs through fixed customer charges because such costs related to the NGDLCs, and the fiber feeder that connects them to the local switch, are more properly recovered through a peak-hour per minute of use access charge. The Commission's current pricing rules require end users to subsidize interexchange carriers. The interexchange carriers are imposing traffic-sensitive costs on the local exchange networks that are being recovered through fixed Subscriber Line Charges.

Section 254(k) directs the Commission to prevent supported services from subsidizing non-supported services. Interexchange toll usage, or switched access, is not a supported service. The Commission's current pricing rules and cost allocation procedures requires monopoly supported services to subsidize the non-supported and competitive interexchange toll usage because traffic-sensitive costs are currently being recovered through the Subscriber Line Charge. NASUCA strongly urges the Commission to abide by the clear intent of the Act by ending this implicit subsidy.

8.6 The Most Recent Annual Company Reports of the ILECs Clearly Show that they Intend to Increasingly Emphasize the Provision of Data Services

The purpose of this section is to provide documentation on the stated purpose of the ILECs' capital expenditures during the past decade. The ILECs have repeatedly pronounced that they were modifying the architecture of their loop plant so that they could provide data and video services. These statements clearly indicate that the loop is a joint input used for the provision of basic voice, as well as data and video services. We are providing this documentation for, among other reasons, to support our cost estimates.

[327] Id., at 6.

As the FCC has recognized, the telephone companies are moving the electronics closer to end-users so that they can supply advanced telecommunications and video services. The statements of the ILECs lead to the conclusion that a major cost driver (if not the most important one) for loops is the provision of these new services. Neither the CALLS order, nor the ILECs' cost studies submitted in this docket, reflect these well-recognized developments.

More recent public statements by ILECs have perhaps been more realistic with respect to what they can accomplish with respect to provision of advanced services, but they continue to indicate that provision of advanced services will be an integral part of their business development strategies.

Data provided by Verizon in its 2000 Annual Report are indicative of the importance that ILECs attribute to the development of advanced services like DSL. In 2003, data services will account for 16% of total Verizon revenues compared to 9% in 2000 -- data revenues increased by 30% in 2000, and the number of DSL subscribers more than tripled. Capital expenditures for telecom data services will increase by 20% from $3.98 billion to $4.78 billion over the same period. By comparison, Verizon's capital expenditures for telecom voice services will decline from $5.78 billion to $5.58 billion by 2003.[328]

Statements in Sprint's Annual Report indicate much the same shift in emphasis toward advanced services and away from voice services with data service revenues expected to account for 50% of revenues from wireline services by 2003.

> "Our challenge is to transform Sprint into a data-centric company. On the wireline side of the business, it means shifting focus from traditional voice business to concentrating on developing data, Internet, Sprint ION and international capabilities. Moving from predominately voice services to higher growth areas of data and broadband services should result in a significant shift in our revenue mix. Currently, the Global Markets Group generates approximately 45 percent of Sprint's total revenues, with voice services accounting for approximately 70 percent of the mix and data services 30 percent. Our local operations produce about 26 percent of Sprint's revenues with voice accounting for approximately 90 percent of the mix and data 10 percent. By the end of 2003, across both of these wireline businesses, we anticipate that rapidly growing data and broadband services will account for half of the annual revenues. Sprint is well positioned with the assets to win a larger share of these markets and to grow its base of technologically advanced customers who demand higher-speed Internet access."[329]

[328] Verizon, Annual Report, 2000. Pages 6-7. http://investor.verizon.com/annual/vz_bw2.pdf

[329] Sprint, Annual Report, 2000. http://www.sprint.com/sprint/annual/00/cs_frames3.html

For SBC, data revenues increased from $5.3 billion in 1999 to $7.5 billion in 2000 – an increase of 41.7%, increasing their share of total company revenues from 10.8% in 1999, to 14% in 2000.[330] By the end of 2000, 18.3 million of SBC's wireline customer locations (more than half) had access to broadband technology, representing a 79% annual increase, and SBC has stated that it will provide broadband technology to anyone within 12,000 feet of its central offices.[331] With respect to operation and maintenance expenses, approximately 38% of the annual increase was related to the costs of rollout of DSL services in 2000 -- as compared to 26% in 1999.[332]

SBC has also indicated other acquisitions that suggest that it is increasingly focusing on advanced services. In September 2000, SBC announced an agreement making Covad Communications (Covad) an in-region and out-of-region DSL provider for SBC, and it purchased 6% of Covad in November, 2000.[333] In November 1999, SBC and Prodigy Communications Corporation announced an agreement under which SBC purchased 43% of Prodigy, and will make Prodigy its exclusive retail consumer and small business Internet access service for customers in SBC's service area. At the time, SBC committed to deliver a minimum of 1.2 million new customers over three years to Prodigy.[334]

BellSouth Telecommunications stated throughout the mid 1990s in its filing to the Securities Exchange Commission (SEC) that:

> "...network is in transition from an analog to a digital network, which provides capabilities for BellSouth Telecommunications to furnish advanced data transmission and information management services."[335]

[330] SBC, Annual Report, 2000, Page 1, 3.
http://www.sbc.com/Investor/Financial/annualreport/2000_AR_FINAL.pdf

[331] SBC, August 14, 2001 *ex parte* Presentation to the FCC, GN Docket No. 00-185 – Page 7. http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6512762699.

[332] SBC Corporation Report for the Fiscal Year Ended December 31, 2000 -- United States Securities and Exchange Commission, Form 10-k, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.
http://www.sec.gov/Archives/edgar/data/732717/000073271701000019/0000732717-01-000019.txt

[333] Id.

[334] SBC Corporation Report for the Fiscal Year Ended December 31, 1999 -- United States Securities and Exchange Commission, Form 10-k, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.
http://www.sec.gov/Archives/edgar/data/732717/0000732717-00-000018.txt

[335] BellSouth Corporation Report for the Fiscal Year Ended December 31, 1993, 1994, 1995, 1996 -- United States Securities and Exchange Commission, Form 10-k, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.
http://www.sec.gov/Archives/edgar/data/92088/0000912057-94-001123.txt

Similar filings to the SEC for 1999 indicated:

> "We have deployed ADSL (asymmetrical digital subscriber line) which provides Internet access speeds up to 30 times faster than today's fastest dial-up modems. We offer ADSL in 31 markets ... access is currently available to over 7 million access lines and we plan to increase this to 11.5 million by the end of 2000. In January 2000, we began offering a self-install kit for ADSL in seven cities and announced a partnership with Darwin Networks to expand ADSL offerings to additional areas in the southeastern US."[336]

BellSouth was planning to increase its DSL coverage by 39% to 16.0 million qualified access lines by the end of 2001, and announced that its broadband business priorities include the accelerated rollout of ADSL, e-center services, Web hosting, and Internet platform (IP) services applications.[337] Finally, more recent projections by BellSouth indicate that it is expecting its number of DSL subscribers to nearly double in 2002, after nearly tripling in 2001.[338]

Finally, in its most recent Annual Report, Qwest could not be clearer regarding the importance of advanced services for its future from its statement on page 1 of the report:

> "Qwest Vision: To build shareholder value by becoming the customer-focused market leader for worldwide broadband internet communications and applications services."[339]

Qwest goes onto point out that it expects revenues from business services to increase 25-30% in 2001, led by demand for "high-growth internet and data services," and that it will spend $100 million for high-speed optical networking capacity, and an additional $750 million for expanding voice and advanced data communications services.[340] Like the other ILECs, Qwest expects its data services business to contribute a larger portion of revenues in the future – its DSL revenues grew over 150% in 2000, primarily due to

---

[336] BellSouth Corporation Report for the Fiscal Year Ended December 31, 1999 -- United States Securities and Exchange Commission, Form 10-k, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.
http://www.sec.gov/Archives/edgar/data/92088/0000912057-00-009519.txt

[337] BellSouth Corporation Report for the Fiscal Year Ended December 31, 2000 -- United States Securities and Exchange Commission, Form 10-k, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.
http://www.sec.gov/Archives/edgar/data/732713/000091205701007097/0000912057-01-007097.txt

[338] Communications Today, January 4, 2002, Volume 8, No. 3.

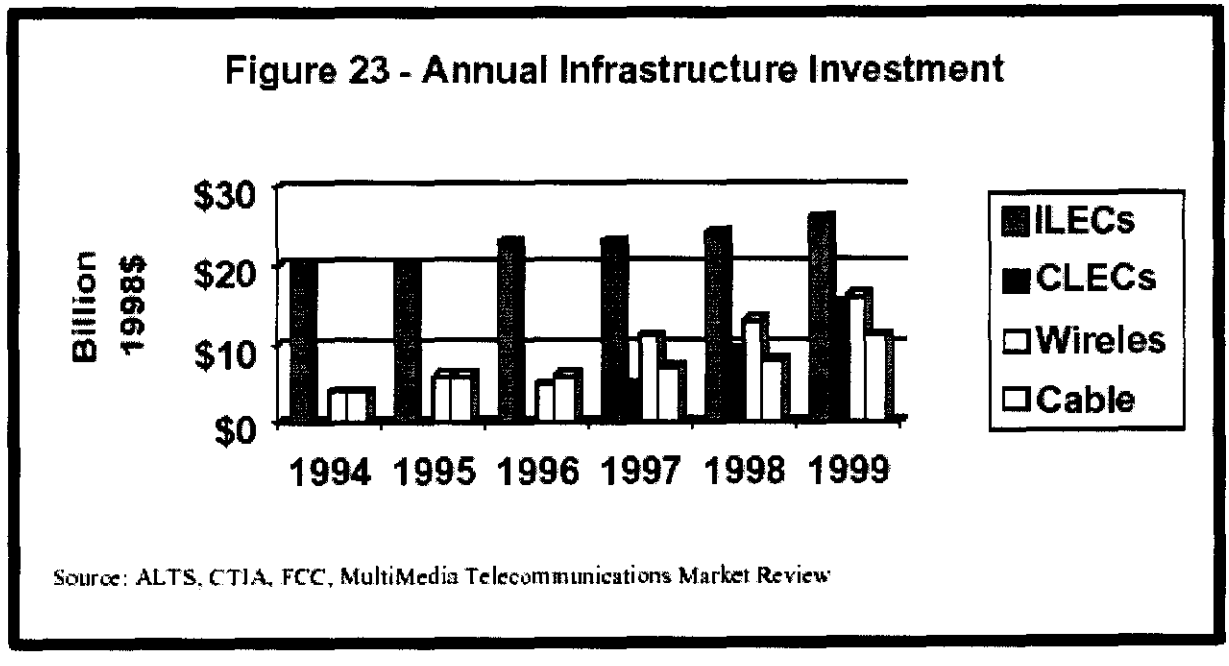
[339] Qwest, Annual Report, 2000, Page 1. http://www.qwest.com/Qwest_2000_AR/ar2000.pdf

[340] Id., Pages 3-4. http://www.qwest.com/Qwest_2000_AR/ar2000.pdf

an increase in customers.[341] In 1997 and 1998, Qwest introduced it Megabit(TM) Services, a high-speed Internet access service in select markets, and in 2000, was launched this service in 58 additional central offices covering 33 metropolitan service areas.[342]

These statements clearly illustrate that the ILECs have undertaken significant capital expenditures during the past decade with the intention of modifying the architecture of their loop plant so that they could provide data and video services (Figure 3 summarizes the extent of ILEC and non-ILEC investment from 1994-1999). Moreover, ILECs are expected to spend more than $8 billion dollars over the next four years just to increase provision of DSL service.[343]

Figure 3 – Annual Infrastructure Investment by ILECS, CLECS, Cable, and Wireless



Source: FCC Report on Deployment of Advanced Telecommunications Capability: Second Report August 2000, Figure 23, Page 74.

---

[341] Qwest Corporation Report for the Fiscal Year Ended December 31, 2000 -- United States Securities and Exchange Commission, Form 10-k, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.
http://www.sec.gov/Archives/edgar/data/68622/000095013401003065/0000950134-01-003065.txt

[342] Id.

[343] Stanford C. Bernstein & Co. and McKinsey & Co., Inc., Broadband, 2000, Page 72.

8.7 ILECs will Continue to Seek New Technologies for Deploying Advanced Telecommunication Services

Although we have not done an exhaustive study on telecommunications technology, there is no question that technological advancements will continue to drive ILEC (and CLEC, cable, and other providers) decisions regarding provision of advanced data services. For some time, the leaders of telecommunication companies have had a vision of providing data, voice, and video over one platform, and this will continue since the technology has finally arrived that permits this type of convergence. Packet network conversion is one such technology that is being implemented to facilitate the provision of advanced services. The case of Sprint is illustrative, but Qwest also plans to deploy packet-switched technology in several of the largest metropolitan areas it serves.

Sprint plans to convert its local exchange network from the existing digital circuit-switched configuration to a packet-switched network beginning January 2003. It awarded Nortel Networks a $1.1 billion contract to deploy phase I of the conversion. Phase I will end in July 2006, and the company expects full conversion by 2009. During phase I, Nortel will convert 3.6 million of 8.3 million access lines in Sprint's local exchange operations in 18 states. Packet switching on the local network will enable multiple telephone calls or Internet connections to share the same telephone line.

Sprint, which has been working on plans for this conversion since 1997, said it would be the first incumbent local exchange carrier in the U.S. to convert its entire local operation to a packet-switched network. This will enable it to expand its ability to offer advanced data services. In the long-run, Sprint contends, the new packet-switched technology will also reduce capital costs by reducing the need for maintenance and upkeep of the old network.[344]

> "As we migrate toward the next generation packet network Sprint will be able to offer new, advanced solutions for businesses at a much more rapid pace," said Phyllis Robertson, president of Sprint LTD's Business Markets Group.[345]
>
> "Today many subscribers are frustrated that because they are served behind a non-compatible network device such as a Digital Loop Carrier (DLC), they can't get high-speed data services. The deployment of this technology will circumvent these bottlenecks. Packet switching will also

[344] Sprint to Become First Incumbent Local Phone Company to Convert its Network Infrastructure to Next-Generation Packet Network, Telecommunications Reports, November 12, 2001. http://www.tr.com/online/tr/2001/tr111201/Tr111201-21.htm#TopOfPage

[345] Sprint Press Release, November 5, 2001

> enable Sprint to provide customers with more reliable and robust data services." said Jim Hansen, senior vice president, Sprint LTD Network.[346]

Networks thus continue to evolve so that high-speed data and video services can be provided. However, at the same time, the FCC has done nothing to implement 254(k) cost allocation requirements of joint and common plant. Consequently, voice services will subsidize these new services under the Commission's CALLS plan as it is currently being implemented.

9 Concluding Remarks and Recommendations

It is appropriate to use the forward–looking costs incorporated into state approved TELRIC rates and the FCC Synthesis Model to determine if an SLC Cap increase is warranted. The cost data show that the SLC should not go above $5. However, at the same time, we do not specifically seek deaveraging below $5 by asking in this proceeding for zones with costs below $5 to be immediately priced at cost. In this proceeding, the FCC should only stop the increases in the SLC, and not change the CALLS order in any other way.

The cap should not exceed $5 since with this cap the ILECs are still collecting too much revenue – NASUCA estimates that customers with costs at or below $5 are paying $1,113 million more than cost, while customers with costs over $5 are paying $472 million less than cost. In any event, maintaining the SLC cap at $5 would not cause any company to have a rate of return below the FCC's authorized return on the order of 11.25%. As shown in Appendix A, every Company, other than New York Telephone, Cincinnati Bell (Kentucky), and Southwestern Bell (Texas), is currently earning a return on interstate service that exceeds 11.25%.

Furthermore, we recommend that the Commission undertake a proceeding in which it identifies the shared and joint costs that should be allocated to non-supported services. This filing demonstrates that the Commission's cost allocation procedures do not provide protection to users of supported services, in violation of Section 254(k) of the Act.

The Commission can no longer avoid the allocation issue of Section 254(k) because this docket deals with what costs should be collected in the bundled exchange rate. Our submission shows that the network is designed to meet the more demanding requirements of data and video, and that the CALLS plan to collect all of these costs from basic exchange service is illegal because it requires supported services to subsidize non-supported services.

Finally, Section 254(k) directs the Commission to prevent supported services from subsidizing non-supported ones. The Commission's current pricing rules and cost

[346] Id.

allocation procedures require monopoly supported services to subsidize non-supported and competitive interexchange toll usage since traffic-sensitive costs are recovered through the Subscriber Line Charge. NASUCA strongly urges the Commission to abide by the clear intent of the Act, and end implicit subsidies.

Appendix A

Non-Rural Price-Cap Study Areas and Year 2000 Interstate Rate of Return

State	Study Area Code	Study Area Name	Interstate Rate of Return – 2000
AL	250281	Contel of the South Dba GTE South	16.95
AL	250293	GTE And Contel of Alabama	21.53
AL	255181	South Central Bell-AL	19.07
AR	405211	Southwestern Bell-Arkansas	14.84
AZ	455101	Mountain Bell-Arizona	18.44
CA	542302	Contel of California-California	29.90
CA	542319	GTE of California	26.56
CA	545170	Pacific Bell	19.13
CO	465102	Mountain Bell-Colorado	15.94
CT	135200	Southern New England Telephone	18.77
DC	575020	C And P Telephone Company of DC	21.37
DE	565010	Diamond State Tel Company	15.14
FL	210328	GTE Florida, Inc	22.32
FL	215191	Southern Bell-FL	24.61
GA	225192	Southern Bell-GA	19.04
HI	623100	GTE Hawaiian Telephone Company, Inc.	17.76
IA	355141	Northwestern Bell-IA	24.23
ID	475103	Mountain Bell-Idaho	22.55
IL	341036	Contel of Illinois Inc Dba GTE - Illinois	44.29
IL	341015	GTE of Illinois	24.40
IL	345070	Illinois Bell Telephone Company	29.00
IN	320779	Contel of Indiana Inc Dba GTE - Indiana	49.38
IN	320772	GTE of Indiana	34.15
IN	325080	Indiana Bell Telephone Company	30.32
KS	415214	Southwestern Bell-Kansas	19.57
KY	265061	Cincinnati Bell-Kentucky	11.00
KY	260407	GTE South Inc - Kentucky	27.14
KY	265182	South Central Bell-Kentucky	18.00
LA	275183	South Central Bell-LA	23.26
MA	115112	New England Tel-MA	11.78
MD	185030	C And P Tel Company of Maryland	14.59
ME	105111	New England Telephone-Maine	20.14
MI	310695	GTE North Inc-MI	16.89
MI	315090	Michigan Bell Telephone Company	34.29
MN	365142	Northwestern Bell-Minnesota	23.45
MO	421922	Contel Missouri Dba GTE Missouri	18.82
MO	421186	GTE North Inc – Missouri	17.99
MO	425213	Southwestern Bell-Missouri	22.55
MS	285184	South Central Bell-Mississippi	16.73
MT	485104	Mountain Bell-Montana	19.47

State	Study Area Code	Study Area Name	Interstate Rate of Return – 2000
NC	230509	Contel North Carolina Dba GTE N Carolina	17.83
NC	230479	GTE South Inc - North Carolina	25.09
NC	235193	Southern Bell-NC	20.43
ND	385144	Northwestern Bell-North Dakota	33.55
NE	371568	Lincoln Telephone And Telegraph Company	12.00
NE	375143	Northwestern Bell-Nebraska	18.67
NH	125113	New England Tel-NH	19.15
NJ	165120	New Jersey Bell	18.63
NM	495105	Mountain Bell-New Mexico	19.64
NV	552348	Central Telephone Company – Nevada	18.67
NV	555173	Nevada Bell	20.52
NY	155130	New York Telephone	5.18
NY	150121	Rochester Telephone Corporation	24.00
OH	305062	Cincinnati Bell-Ohio	36.00
OH	300615	GTE North Inc-Ohio	21.55
OH	305150	Ohio Bell Tel Company	29.97
OK	435215	Southwestern Bell-Oklahoma	24.44
OR	532416	GTE of The Northwest	32.18
OR	535163	Pacific Northwest Bell-Oregon	21.94
PA	175000	Bell of Pennsylvania	18.98
PA	170169	GTE North Inc-PA And Contel	22.55
RI	585114	New England Tel-RI	19.55
SC	240479	GTE South Inc - South Carolina	31.35
SC	245194	Southern Bell-SC	17.94
SD	395145	Northwestern Bell-South Dakota	21.13
TN	295185	South Central Bell-TN	18.85
TX	442154	Contel of Texas Inc Dba GTE Texas	12.20
TX	442080	GTE Southwest Inc - Texas	21.43
TX	445216	Southwestern Bell-Texas	10.58
UT	505107	Mountain Bell-Utah	18.87
VA	195040	C And P Tel Company of VA	19.41
VA	190233	Contel Of Virginia Inc Dba GTE Virginia	41.92
VT	145115	New England Tel-VT	14.74
WA	522416	GTE Northwest Inc - Washington	33.13
WA	525161	Pacific Northwest Bell-Washington	22.08
WA	522449	GTE NW-WA (Contel)	40.03
WI	330886	GTE North Inc-WI	17.71
WI	335220	Wisconsin Bell	27.33
WV	205050	C And P Tel Company of West Virginia	22.66
WY	515108	Mountain Bell-Wyoming	22.67
Source: Armis 43-01, Row 1920 for the interstate rate of return			

APPENDIX B

IS

PROPRIETARY

APPENDIX C

Comparison of UNE Costs to ILEC Estimates of the Costs of Interstate Loop and Port Costs

A State [Note 1]	B Company [Note 2]	C CMT [Note 3]	D Number of Lines [Note 4]	E Average Per-line Interstate UNE Cost	F RBOC Interstate Loop + Port Cost Estimates [Note 5]	G Monthly Interstate Overstatement [F - E]	H Overcollection Per-line Per-Month at $5 [Min ($5 or C) - E]	I Overcollection Per-State Per-Month at $5 [H * D]	J Overcollection Per-line Per-Month at $6 [Min ($6 or C) - E]
Indiana	AIT	$5.53	2,280,482	$3.54	$6.14	$2.60	$1.46	$3,340,335	$1.99
Michigan	AIT	$5.32	5,391,358	$3.45	$6.85	$3.40	$1.55	$8,382,797	$1.87
Ohio	AIT	$5.37	4,132,649	$3.04	$6.01	$2.97	$1.96	$8,120,220	$2.33
Alabama	BS	$7.84	1,958,846	$5.79	$7.49	$1.70	$0.00	$0	$0.21
Florida	BS	$7.84	6,683,940	$4.73	$6.05	$1.32	$0.27	$1,827,269	$1.27
Georgia	BS	$7.84	4,337,216	$5.10	$6.40	$1.30	$0.00	$0	$0.90
Kentucky	BS	$7.84	1,240,313	$5.08	$8.21	$3.13	$0.00	$0	$0.92
Louisiana	BS	$7.84	2,395,670	$5.63	$7.61	$1.98	$0.00	$0	$0.37
Mississippi	BS	$7.84	2,691,468	$4.98	$9.78	$4.80	$0.02	$41,892	$1.02
South Carolina	BS	$7.84	1,492,788	$5.37	$7.48	$2.11	$0.00	$0	$0.63
Tennessee	BS	$7.84	2,743,818	$4.74	$6.81	$2.07	$0.26	$717,461	$1.26
Arkansas	SBC	$5.67	1,018,030	$4.63	$7.33	$2.70	$0.37	$379,477	$1.04
California	SBC	$4.41	17,123,290	$4.04	$5.97	$1.93	$0.37	$6,344,499	$0.37
Connecticut	SBC	$5.71	2,402,153	$4.55	$5.71	$1.16	$0.45	$1,074,211	$1.16
Kansas	SBC	$5.27	1,429,945	$4.49	$8.39	$3.90	$0.51	$724,041	$0.78
Missouri	SBC	$5.10	1,325,864	$6.45	$6.66	$0.21	$0.00	$0	$0.00
Nevada	SBC	$6.05	338,418	$5.28	$7.15	$1.87	$0.00	$0	$0.72
Oklahoma	SBC	$4.71	1,705,544	$5.18	$7.86	$2.68	$0.00	$0	$0.00
Texas	SBC	$5.37	10,165,710	$4.65	$7.86	$3.21	$0.35	$3,552,151	$0.72
Idaho-South	USW	$8.48	496,122	$7.36	$8.25	$0.89	$0.00	$0	$0.00
Iowa	USW	$7.08	1,083,752	$5.96	$6.77	$0.81	$0.00	$0	$0.04
Nebraska	USW	$7.29	509,689	$5.33	$6.93	$1.60	$0.00	$0	$0.67
New Mexico	USW	$8.24	811,451	$6.19	$7.74	$1.55	$0.00	$0	$0.00
North Dakota	USW	$8.45	236,467	$5.64	$7.98	$2.34	$0.00	$0	$0.36
Oregon	USW	$7.60	1,380,903	$4.76	$7.17	$2.41	$0.24	$328,465	$1.24
South Dakota	USW	$9.00	276,608	$6.44	$8.59	$2.15	$0.00	$0	$0.00
Utah	USW	$5.45	1,082,091	$4.99	$5.04	$0.05	$0.01	$13,195	$0.46
Washington	USW	$5.64	2,487,443	$4.96	$5.26	$0.30	$0.04	$106,365	$0.68
D.C.	VZ	$3.81	727,822	$3.75	$6.05	$2.30	$0.06	$46,576	$0.06
Delaware	VZ	$6.41	582,725	$4.29	$6.01	$1.72	$0.71	$415,273	$1.71
Maine	VZ	$6.41	702,726	$5.94	$6.24	$0.30	$0.00	$0	$0.06
Maryland	VZ	$5.68	3,664,355	$4.74	$7.08	$2.34	$0.26	$946,385	$0.94
Massachusetts	VZ	$6.41	4,404,502	$4.94	$6.24	$1.30	$0.06	$251,057	$1.06
New Hampshire	VZ	$6.41	828,170	$5.87	$6.24	$0.37	$0.00	$0	$0.13
New Jersey	VZ	$6.21	6,424,617	$3.32	$7.33	$4.01	$1.68	$10,781,272	$2.68
New York	VZ	$6.41	11,408,062	$4.70	$6.24	$1.54	$0.30	$3,421,392	$1.30
Pennsylvania	VZ	$6.00	6,421,421	$4.61	$8.45	$3.84	$0.39	$2,511,072	$1.39
Rhode Island	VZ	$6.41	705,885	$5.03	$6.24	$1.21	$0.00	$0	$0.97
Vermont	VZ	$6.41	354,368	$4.16	$6.24	$2.08	$0.84	$299,326	$1.84
Virginia	VZ	$6.53	3,587,418	$4.45	$7.55	$3.09	$0.55	$1,958,030	$1.55
West Virginia	VZ	$8.21	842,646	$7.18	$12.39	$5.21	$0.00	$0	$0.00
					Weighted Average $4.56		Weighted Average $2.32		
							Percent of True Costs 51%		
				SLC Cap		$5.00	$6.00	$6.50	
				Monthly Totals		$55,582,763	$126,616,011	$151,207,262	
				Yearly Totals		$666,993,152	$1,519,392,137	$1,814,487,145	
				Number of State Under the Cap		23	36	39	
				Percentage of States Under the Cap		55%	86%	93%	

Appendix C—Notes

Note 1: The Study was limited to the continental United States. Also dropped were states with (a) more than 4 UNE zones or (b) UNE rates below wire center level.

Note 2: SBC Communications "AIT" or "SBC"; Verizon - "VZ"; Bellsouth - "BS"; Qwest - "QW".

Note 3: CMT Data derived from: SBC Attachment 5; Verizon Attachment B; "Trends in Telephone Service" Table 1.3 August 2001(For Bellsouth), and; Qwest from Qwest Attachment 1.

Note 4: Number of lines was from the Armis reports.

Note 5: Loop & Port cost estimates are derived from: SBC Study, Attachment 5; Verizon Study Attachment D; Bell South Study *Filename Summary1.xls*, and; Qwest Study Attachment 1.