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FEDERAL COMMUNICATIONS COMMISSION
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**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

In the Matter of)
)
Deployment of Wireline Services Offering) CC Docket No. 98-147
Advanced Telecommunications Capability)
)

REPLY COMMENTS OF NEXT LEVEL COMMUNICATIONS

Peter Keeler
President
Next Level Communications
6085 State Farm Drive
Rohnert Park, CA 94928

Charles Eldering, Ph.D.
Telecom Partners Ltd.
900 Town Center
New Britain, PA 18901
Consultant to Next Level Communications

Stephen A. Weiswasser
Alane C. Weixel
Harold J. Feld
Covington & Burling
1201 Pennsylvania Avenue, NW.
P.O. Box 7566
Washington, D.C. 20044-7566
Phone: (202) 662-6000
Fax: (202) 662-6291

Its Attorneys

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INTRODUCTION AND SUMMARY

The issues raised in this proceeding – focusing as they do on facilitating the universal deployment of advanced telecommunications services – go to the heart of the Congressional and Commission policy intended to ensure the availability of broadband services to *all* Americans. Widely deployed broadband technologies capable of delivering broadband video, data and voice services to every demographic group will soon become essential to our national well-being and will shape the way we educate our children, learn about our society, transact our business, and communicate with each other.

Next Level Communications ("NLC") has developed a state-of-the-art system, using xDSL technology, that is capable of speeding the day when these goals can be achieved.¹ NLC's technology brings the future forward by enabling all providers to deliver these broadband services over the existing narrowband network. Local exchange carriers, competing carriers, cable operators and other providers have argued in this proceeding that they share the goal of

¹ The term "xDSL" covers a number of Digital Subscriber Loop ("DSL") technologies, including Very High Speed Digital Loop ("VSDL").

widespread availability of advanced services. NLC's product, the "NLevel³ system," is, we believe, the best vehicle currently available to bring advanced services to *all* consumers, including residential and small business users and those residing in rural and low-income urban areas.

There are currently two wireline networks – cable and telephone – that deliver telecommunications services to consumers. The Commission should have in place a regulatory scheme that makes maximum use of these existing networks to provide advanced services to the public; it would be counterproductive and wasteful to force any entity to construct a third network for that purpose. Indeed, it would be the telecommunications equivalent of requiring passenger rail carriers intending to enter the freight business to construct a separate national railroad network to do so.

The Commission's view that competition is necessary to speed the evolution of our telecommunications system is right on target; unfortunately, in this proceeding that principle has been badly misapplied in a way that impedes achievement of this public interest goal. In the Notice of Proposed Rulemaking ("NPRM"), the Commission has set forth many of the same tired and ineffective proposals for heavy regulation that will retard, rather than expedite, competition in the deployment of advanced services. Simply put, and as effectively demonstrated in comments submitted by several incumbent local exchange companies ("ILECs"), service providers (cable companies and telephone companies) must be able to take advantage of existing economies and efficiencies if advanced services are to be deployed on a competitive and expedited basis.

NLC offers equipment that enables existing cable and telephone networks to carry these advanced services to customers. Indeed, the cable industry has made great strides in using

its network to deliver advanced services, and those steps can achieve important public interest goals. No entity should be forced to build an overlay network. Unfortunately, the Commission's proposals all but demand construction of a third network. Those requirements will penalize the introduction of critical services, will unbalance the competitive environment, and will do so even though the market is poised to produce significant competition with little or no need for regulation.

Ultimately, these heavy-handed regulations will force the American consumer to wait, to pay more than necessary, and to be denied the benefits of innovation that competition can provide. In the short and long run, the Commission's proposals risk turning what should be a competitive confrontation between telephone companies and cable operators – to the benefit of consumers – into a one-sided contest that will not yield consumer benefits. The Commission's proposals threaten to impose such a heavy regulatory cost on telephone companies that they simply will not find it economically practical to deploy new services to many residential and small business consumers. The Commission, in short, is on the verge of making the same mistake today that it admittedly made in the *Computer II* proceeding.

As a supplier of equipment for delivery of telephony and broadband services to cable MSOs and telephone companies, NLC understands the market and regulatory environments described by the ILECs, and we believe that their assessments should be of concern to all of those seeking the deployment of advanced services to all Americans.² A regulatory solution which does not achieve the goal of *universal service* – which requires

² NLC supports the ILEC position in this proceeding because we believe that it offers the best prospect for a thriving, competitive environment in which we can sell equipment. We are in fact selling advanced telecommunications equipment and systems to all entities, including cable MSOs.

residential, low-income urban or rural areas to wait years for new networks to be constructed to reach their neighborhoods – should be unacceptable to the Commission.

In the past, a requirement to construct a third network might have been harmless error because no equipment was in fact available to combine video, data, and voice in one network. That is no longer the case. As discussed below, NLC has developed a new technology which makes it possible to use the existing networks to deliver not merely digital subscriber line (DSL) service, but very fast digital subscriber line (VDSL) service. This technology (i) utilizes both the traditional circuit-switched network and a packet-switching network, (ii) works with both fiber fed remote terminals and direct connect copper wire twisted pair loops, and (iii) can simultaneously deliver video, voice, and high-speed data. NLC's technology, therefore, allows broadband services to be deployed inexpensively to meet the needs of all Americans – including those accustomed to waiting for innovation to reach them – *today*, not five years from now.

If the Commission adopts the separate affiliate and unbundling requirements set forth in the NPRM, the full advantages of NLC's system (and others like it which will no doubt be developed) will not be realized. Incumbent telephone companies forced to work within such a structure may well find widespread deployment too expensive or too burdensome. And it is no answer to suggest that, if the incumbent local exchange carriers do not step up to the task, others will do so. There is, for example, no reason to believe that CLECs or other competitors will find reason to be faithful to the mandate of universal service and deploy this technology to serve low-income urban or rural areas. On the contrary, history shows they will concentrate on more profitable urban and commercial customers.

In sum, NLC agrees with those commenters who have cited competition as a primary impetus to deployment and innovation. NLC firmly believes that competition benefits

consumers by lowering prices and focusing competitors on improving customer service. At present, the greatest potential for deployment to residential customers lies in the competition between cable-based systems and telephony-based systems. Other emerging technologies, such as wireless, also benefit from this competition, as neither cable-based nor telephony-based systems have yet become dominant in the market for advanced services. To maintain this competition, however, the Commission must allow both sides to use their existing networks in an efficient and economic manner.

We stress that this is not a question of fairness, but one of economics. Cable-based systems are deploying integrated services in residential markets. These cable-based integrated services will spur the ILECs to deploy new services to compete, *if* they are permitted to do so. To compete with these integrated services, ILECs must also be permitted practically to offer integrated services. NLC's technology provides an immediate means for doing so, and competition from cable provides both the proper incentives for ILECs to deploy new broadband technology and sufficient safeguards against dominance of the market by any one player.

I. NLC'S VSDL SYSTEM CURRENTLY CAN DELIVER BROADBAND ADVANCED TELECOMMUNICATIONS SERVICES OVER THE EXISTING NARROWBAND NETWORK TO VIRTUALLY ALL CONSUMERS.

NLC's mission is and has been to develop cost-effective solutions for providing advanced telecommunications services over the local loop, including traditional telephony services, high-speed data services, switched digital video, and high-speed Internet access services. NLC has met this goal through the development of the NLevel³ system, a product based on the concept of a "unified access platform." A detailed description of the NLevel³ system is included in the Appendix. Here, we note only that the platform works equally well for plain old telephone systems ("POTS"), video systems, or packet-switching systems, including

Internet protocol ("IP") networks. The NLevel³ technology was designed to integrate cheaply and efficiently into both legacy copper-wire POTS systems and developing voice and data fiber systems.

The NLevel³ technology is capable of delivering the following services to consumers over twisted copper loops:

- Three separate video streams, allowing consumers simultaneously to watch three different television sets showing different programs.
- Standard voice service, significantly improved over standard POTS delivery.
- High-speed data transfers, with delivery speeds of 26 mbps downstream and 3.2 mbps upstream.
- Direct high-speed Internet access that leaves with the consumer the choice of ISP.
- Video conferencing and other high bandwidth activities.
- Competitive pricing.

The NLevel³ technology represents not merely the promise of broadband applications for consumers tomorrow, it can deliver these broadband applications to consumers *today*. More than one ILEC has begun to deploy NLevel³ technology. None, however, is using the technology to deliver the extensive array of services it is capable of providing -- although conversion to an integrated offering could be achieved at little additional expense. Given the regulatory requirements being considered in this proceeding, such narrow deployment is should not be surprising. Our experience with telephone companies has lead us to conclude that they are concerned, as they must be, about the impact of the Commission's actions here on their ability to compete.

The cost on which the Commission should focus is not, of course, the possible harm to NLC's business prospects from such regulation. We can demonstrate, and have

demonstrated, that our technology is cost-effective and efficient even when it is not deployed to deliver the full range of services it is capable of providing. Rather, it is the lost opportunity for public benefit if the technology is not fully exploited. This becomes especially apparent, for example, when it is recognized that the NLevel³ technology can be installed as part of a rehabilitation of a voice network (for example, in low-income urban areas) because it is effectively deployable for voice service upgrades. A properly incentivized carrier would then have the capability to offer the full broadband package in neighborhoods that have traditionally had to wait years to receive such new services, if they would receive them at all.

II. IMPEDING ILECS FROM DIRECTLY PROVIDING INTEGRATED SERVICES WILL DELAY DEPLOYMENT TO ALL CONSUMERS AND PERPETUATE THE VERY DIGITAL DIVIDE FCC POLICY IS REQUIRED TO ELIMINATE.

We agree with the Commission's view that if all Americans are to have meaningful access to advanced services, "there must be a solution to the problem of the 'last mile.'"³ The Commission has also stated that its role in this proceeding "is not to pick winners or losers, or select the 'best' technology to meet consumer demand, but rather to ensure that the marketplace is conducive to investment, innovation and meeting the needs of consumers."⁴ NLC's NLevel³ system solves the problem of the "last mile" for the overwhelming majority of Americans. Moreover, it offers consumers the opportunity to receive the full array of advanced services – voice, video, high-speed data and high-speed Internet access – at the lowest cost. Unfortunately, the Commission's proposed regulatory scheme will have the effect of thwarting deployment of integrated solutions such as that offered by the NLevel³ system.

³ Section 706 NPRM at ¶ 8.

⁴ Section 706 NPRM at ¶ 2.

ILECs have the ability to offer advanced services to all Americans because their networks serve virtually all communities.⁵ By capitalizing on economies of scope, ILECs can offer integrated advanced services on this existing network on an affordable basis to all Americans. As U S West has noted in its comments, large cities and other obviously profitable markets will continue to be served by a variety of businesses offering many types of service. Marginally profitable areas, however, such as low-income urban areas and rural areas, present a more challenging problem.⁶ Carriers – ILECs, CLECs, IXCs, and cable operators – will deploy equipment only where it is profitable. In adhering to the regulatory mandate of Section 706 that advanced services be available to all Americans, the Commission cannot ignore this economic reality, and it is obligated to address this problem with practical and realistic policies.

A. Unbundling is Unnecessary Because Advanced Services Equipment Is Available To All Carriers.

We believe that ILECs have the ability to offer advanced services to all consumers – including residential and small business users. Furthermore, ILECs are constantly in the process of rehabilitating and upgrading their networks, thus providing the opportunity to deploy technology such as NLevel³ that will bring broadband services to all Americans. The ability of ILECs to offer integrated services will allow them to take advantage of economies of scope, making it profitable for ILECs to serve communities that may not generate significant revenues and otherwise would go unserved.

The Commission's proposed rules, however, destroy ILECs' incentives to deploy new technologies or serve marginally profitable communities. Requiring ILECs to unbundle advanced services equipment and subsidize competitors by offering services for resale at

⁵ See Section 706 NPRM, Comments of U S West at 16.

discounted wholesale rates destroys the ILEC profit margin in all but the most profitable markets. As the ILECs have shown, they simply will not be able to deploy advanced telecommunications services to rural or low-income urban areas.⁷ As a policy matter, this adverse result far outweighs any potential benefit from requiring unbundling or resale of advanced services equipment.

To encourage incumbent LECs to invest in advanced services equipment and offer affordable advanced services, the Commission should permit them to deploy advanced services on an integrated basis, free from any unbundling requirements. As the ILECs correctly point out, equipment used to provide advanced services is readily available to all carriers. Accordingly, we urge that the Commission adopt U S West's "essential facilities" test in determining whether incumbent LEC equipment is subject to unbundling requirements. That is, "[a]n incumbent should be forced to turn over a facility for use by competitors only if it is not available from another source or capable of being duplicated by the competitor or others."⁸ Such a test is fully consistent with the policy behind the Section 251(c) unbundling obligations.

B. The Commission's Separate Subsidiary Requirements Destroy Economies of Scope and Hinder the Development of Advanced Services.

The proposed separate affiliate alternative to unbundling will prevent ILECs from utilizing economies of scope that make delivery of advanced telecommunications services to rural or low-income areas profitable. The strict structural separation requirements proposed by the Commission will destroy ILEC efficiencies, dramatically increase the costs of providing advanced services, and retard – or even stop – wide-scale deployment of advanced services. If

⁶ Section 706 NPRM, Comments of U S West at 3.

⁷ See, e.g., Section 706 NPRM, Comments of U S West at 11, 17.

ILECs are forced to incur the substantial costs of setting up a separate subsidiary as the price for entering this market, at best, they will necessarily be forced as well to adopt the typical CLEC cream-skimming approach that focuses on businesses and other large-volume users. Low-volume users, such as most residential consumers, small businesses and schools, will be left waiting.

As BellSouth has perceptively suggested in this proceeding, it is not as though the Commission has never before confronted this identical situation. In the *Computer II Order*, the Commission imposed a similar separate affiliate requirement on AT&T (and, after divestiture, the RBOCs) as a precondition to their competing in the "enhanced services" market.⁹ Approximately a decade later, in the *Computer III* proceeding, the Commission admitted doing so had constituted a critical policy error.¹⁰

The Commission's post hoc review led it to conclude that the separate affiliate requirement (i) had prevented the RBOCs from effectively deploying enhanced services; (ii) hurt consumers by deterring innovation and investment in the market; (iii) delayed the deployment of enhanced services; and (iv) created wasteful "duplication of facilities and personnel" while preventing the development or use of economies of scope. This heavy regulatory burden delayed the deployment of specific services and innovation, and rendered other services unprofitable. Many services were underdeployed or not offered at all. During this time frame, large and

⁸ Section 706 NPRM, Comments of U S West at 6 (quotation and citations ommitted).

⁹ Amendment of Section 64.702 of the Commission's Rules and Regulations (*Computer II*), 77 FCC 2d 384 (1980) ("*Computer II Order*"), recon., 84 FCC 2d 50 (1980) ("*Computer II Recon. Order*"), further recon., 88 FCC 2d 512 (1981), affirmed sub nom. *Computer and Communications Industry Ass'n v. FCC*, 693 F.2d 198 (D.C. Cir. 1982), cert. denied, 461 U.S. 938 (1983).

¹⁰ Amendment of Section 64.702 of the Commission's Rules and Regulations (*Computer III*), Report and Order, CC Docket No. 85-229, Phase I, 104 FCC 2d 958 (1986) ("*Computer III Order*"). For the complete subsequent history of the *Computer III Order*, see Comments of BellSouth at 15, n.25.

sophisticated consumers found creative ways to obtain the services they wanted, such as voicemail provided by a PBX, whereas residential and small business consumers simply did without such innovations.

Ultimately, the Commission concluded that the cost of its regulatory mistake fell not merely on the RBOCs but on these small businesses and residential customers, who paid higher prices for less efficient services and were denied the benefit of new, innovative services and integrated solutions to their business and consumer needs. The Commission noted that because of the ubiquity of the BOCs' local exchange networks, "the BOCs could be especially effective in offering enhanced services to residential and small business customers."¹¹ After concluding that its structural separation requirements were "part of the problem, not part of the solution," the Commission dropped those heavy-handed regulations.¹²

There seems little doubt that the Commission will be repeating its *Computer II* mistake if it adopts the regulatory structure proposed here. Indeed, the mistake is likely to have even graver consequences. The *Computer II* separation managed to deter the largest corporation in the world, one that provided 95 percent of the long distance services and 80 percent of the local services in the U.S., from deploying services it was fully capable of offering. If the additional costs of setting up a separate subsidiary proved too costly for a fully integrated provider – and also for the RBOCs after divestiture – they will surely prove too costly for the ILECs who will not be able to compete in the cost-effective delivery of such services against cable operators and others who are not similarly burdened. In sum, the "inefficiencies and other

¹¹ *Computer III Order* at ¶ 91.

¹² *Computer III Order* at ¶ 79.

costs to the public associated with structural separation" will once again "significantly outweigh [any] corresponding benefits."¹³

III. COMPETITION WILL ACT AS A SAFEGUARD AGAINST ILECS BECOMING DOMINANT PROVIDERS OF ADVANCED SERVICES.

Ironically, the Commission's proposed regulatory regime comes at the very moment in which the market is poised on the threshold of true competition. There is no doubt that cable companies intend to provide advanced services over their networks, and that they will provide genuine competition to the telephony-based systems deployed by ILECs and others. Yet the Commission's proposal threatens to stifle this competition by handicapping the ILECs and making them unable to respond to competitive pressures and act as a genuine rival to cable's increasing push into the market for integrated services.

A. Head-to-Head Competition Is the Best Safeguard Against Market Dominance.

The premise behind the Commission's proposal appears to be the prevention of ILEC dominance of the advanced services market.¹⁴ As a recent study by the Commission demonstrates, however, there is no single dominant player in today's advanced services market.¹⁵ ILECs clearly do not possess market power in that market. On the contrary, only a few ILECs have begun to deploy advanced services, and these roll-outs are still in the early stages.

Cable systems, on the other hand, enjoy broad video penetration, although they have not achieved the same level of universal penetration as achieved by the ILEC networks.¹⁶

¹³ *Computer III Order* at ¶ 46.

¹⁴ *Section 706 NPRM* at ¶10-14.

¹⁵ *Internet Over Cable: Defining the Future in Terms of the Past*, by Barbara Esbin, (August 1998) ("*Internet Over Cable*") at 17-21 (describing Internet market) and 78-80 (describing cable services).

¹⁶ In particular, marginally profitable areas such as rural areas do not enjoy the same level of cable penetration as ILEC network penetration.

Therefore, like ILECs, cable operators have the capacity to serve the majority of residential customers, and as reflected in comments filed in the companion *Section 706 NOI*, they have begun aggressive roll outs of integrated broadband services. For example, the National Cable Television Association (NCTA) reported that 18 of the largest cable companies, and many small ones, are rolling out cable modem services in 40 states.¹⁷ Cable systems offering high-speed data services now pass 19 million homes, and NCTA projected they will pass 39 million homes over the next two years.¹⁸ One operator reported that it provides an increasing number of broadband services to approximately 5 million customers in 17 states.¹⁹

Cable's entry into the market for the delivery of integrated broadband services is salutary and likely to produce the competitive environment which the Commission has been seeking. In competition between cable operators and ILECs, the ILECs enjoy no clear advantage. Both offer systems that are familiar to users, both possess the capability to deliver voice, video, and high speed data services, and – as noted above – both have extensive networks already in place. Indeed, cable operators enjoy some advantages over ILECs, particularly in the current regulatory environment.

Cable operators are utilizing their extensive networks to deploy broadband cable systems at a significant rate. By the end of this year, it is anticipated that cable modems will reach 700,000 users. By contrast, because telephone companies have been hampered by regulatory uncertainty over unbundling and their ability to offer integrated services and the need

¹⁷ *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC docket 98-146 (released August 7, 1998) ("*Section 706 NOI*"), Comments of National Cable Television Association at 8.

¹⁸ *Id.*

¹⁹ *Section 706 NOI*, Comments of MediaOne at 1.

to file tariffs, it is estimated that telephony-based DSL systems will reach only 25,000 users.²⁰ Indeed, a study this summer by Forrester Research found that by the year 2002, 16 million homes will have high-speed Internet connections. The study also determined that, if the regulatory environment remains unchanged and present trends continue, *eighty percent* of these homes will use cable modems.²¹ Clearly, ILEC integrated systems do not dominate the market and are unlikely to do so in the future. A regulatory scheme based on that premise is totally flawed.

B. The Commission Should Create a Pro-Competitive, Technologically Neutral Regulatory Regime, Not "Parallel Universes" Based on Delivery Platforms.

In the *Section 706 NOI*, the Commission recognized that the current regulatory scheme of defining the regulatory burden based upon the nature of the delivery system (e.g., cable, common carrier, wireless) rather than by service type (e.g., broadband) creates barriers to the speedy deployment of broadband services and may inhibit innovation and development of new technologies.²² In response to the *Section 706 NOI*, cable companies themselves noted the importance of competition with ILEC-based systems in spurring both cable companies and other market participants to deploy new technologies as cheaply and efficiently as possible to the broadest possible market share.²³ This competition will not materialize, however, if the Commission adopts rules that increase the regulatory burden on the ILECs.

²⁰ "Net Access: Cable Modems Surge," October 5, 1998, USA Today Online, found at www.usatoday.com/life/cyber/tech/ctd575.htm (visited on October 11, 1998).

²¹ *Id.*

²² *Section 706 NOI* at ¶ 4.

²³ *Section 706 NOI*, Comments of NCTA at 14-17 (discussing ILEC deployment); Comments of MediaOne Group at 12.

The recent *Internet Over Cable* paper, commissioned by the Office of Planning and Policy, questions whether a "'parallel universe' for cable and telephony Internet-based services" would be "inconsistent with such fundamental communications policy goals as competitive and technological neutrality."²⁴ This proceeding requires the Commission squarely to confront this question. Prohibiting ILECs from offering integrated solutions in the same fashion as cable systems, and requiring ILECs to unbundle non-bottleneck facilities, will inevitably create a parallel universe in which ILEC-based systems cannot effectively compete. This problem is not an abstraction, but a here-and-now impediment. Creation of this "parallel universe" is simply inconsistent with the promotion of competition and consumer choice that should be the Commission's goal.

The Commission has begun to recognize as much in a related context. In *The Universal Service Report*,²⁵ the Commission suggested that "phone-to-phone" Internet telephony might be classified as a common carrier service, despite its use of an Internet platform to deliver telephony services. That is to say, it is appropriate to look beyond the platform used in the delivery of services and to focus instead on the characteristics of the service itself.²⁶ Whatever may be said about this result in that specific context, it is clear that the Commission should not allow the fact that cable systems use a cable platform to deliver Internet services to translate into a regulatory advantage over telephony-based systems that arises solely because of the difference in platform.²⁷

²⁴ *Internet Over Cable* at 87.

²⁵ *In the Matter of Federal-State Joint Board on Universal Service, Report to Congress*, CC Docket No. 96-45 (April 10, 1998), ¶ 58.

²⁶ *Id.* at ¶ 55.

²⁷ *See generally Voice Over Internet* at 96 (suggesting that unbundling may be appropriate if cable becomes the dominant Internet delivery platform).

Internet Over Cable recognized the importance of robust intermodal competition in delivery of advanced services, but it drew precisely the wrong conclusion. Although conceding that creating distinct regulatory regimes for telephony and cable-based systems would threaten competition, the paper nonetheless suggested that the Commission forbear from acting until the nature of the market evolves. Given the speed at which the market is developing, delay is equivalent to denial of relief. As discussed above, subscribers to high speed cable systems already outnumber subscribers to ILEC DSL systems by *a ratio of 28 to 1*. If ILEC deployment of DSL is to have any chance of competing with cable systems, ILECs must be free to offer integrated services today and must not be compelled to unbundle enhanced services technology.

Implicit in the suggestion of forbearance is the view that increased regulation – rather than deregulation – may be the appropriate antidote to feared anticompetitive behavior – that is, that regulating cable as a common carrier rather than freeing ILECs to operate might be the appropriate way a new blended regime should be created. This approach contradicts Congress' intention that the 1996 Telecommunications Act, and Section 706 in particular, be used to deregulate the communications sector, not increase regulation. Moreover, we think it clear that the Commission should place its trust in competition, and therefore *deregulation*, as the solution for these concerns. The Commission should permit the ILECs to compete freely against cable systems. If ILECs are permitted to compete effectively, the technology produced by NLC would permit them to offer a host of competing services, including video telephones, MVPD services, and high-speed Internet connections. This direct competition will spur both cable-based and telephony-based systems to continually improve their services and cut costs to consumers in the manner envisioned by Congress and desired by the Commission, and will eliminate most concerns about gateway abuse or bottleneck-achieved dominance by either.

CONCLUSION

If the Commission intends to further the Congressional goal of ensuring the availability of advanced services to all Americans, the Commission must embrace the inevitable benefits that will result from allowing ILECs to offer integrated services largely unencumbered by burdensome and expensive regulation.

This is not new territory for the Commission. In its various *Computer Inquiry* proceedings, the Commission faced the same problem it now confronts in the broadband service market: how to encourage affordable, widespread deployment of advanced services and encourage innovation in the market place. In *Computer II*, the Commission adopted regulations similar to those proposed in the *Section 706 NPRM*. *Computer II* prohibited ILECs from offering integrated services, and required ILECs to offer advanced services through a separate affiliate. A decade later, the Commission recognized its mistake. The separate affiliate requirement removed the incentives for ILECs to offer enhanced services and prohibited the development of integrated solutions desired by residential and small business consumers. As a result of the *Computer II* restrictions, the Commission concluded, consumers – especially residential and small business users -- were denied valuable services, innovations, and the benefits of competition.

This time around, a similar mistake will have far more serious consequences. If the Commission regulates ILECs out of the advanced services market, large segments of our society will be denied access to educational and business opportunities. When measured against

the potential benefits, it is clear that the American public should not be asked to wait ten years for the Commission to rectify what would inevitably be perceived as the same error.

Respectfully submitted,

NEXT LEVEL COMMUNICATIONS



Stephen A. Weiswasser
Alane C. Weixel
Harold J. Feld
Covington & Burling
1201 Pennsylvania Avenue, N.W.
P.O. Box 7566
Washington, D.C. 20044-7566
Phone: (202) 662-6000
Fax: (202) 662-6291

Its Attorneys

Peter Keeler
President
Next Level Communications
6085 State Farm Drive
Rohnert Park, CA 94928

Charles Eldering, Ph.D.
Telecom Partners Ltd.
900 Town Center
New Britain, PA 18901
Consultant to Next Level
Communications

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APPENDIX

The NLC system is comprised of a "Broadband Digital Terminal" ("BDT") which is located in a central office or central wire center. Each BDT serves approximately 2000 customers. The BDT is a full-service multiplexer and connects both to a LEC's narrowband Public Switched Telephone Network ("PSTN") and broadband Asynchronous Transfer Mode ("ATM") network. The Broadband Digital Terminal also supports two management systems provided by NLC. One system acts as a traditional operator support system and provides monitoring, alarm reporting and other administrative functions for the NLevel³ system. The other is a broadband service management system that controls which customers are authorized to receive which video programming services.

The NLevel³ system can be deployed in either a fiber-to-the-curb ("FTTC") or a fiber-to-the-node architecture ("FTTN"). In a FTTC system, a Broadband Network Unit ("BNU") is placed at a curbside location (including a telephone pole, pedestal or buried area) which is a few hundred feet from the subscriber's home. For down-stream traffic, the BNU is a de-multiplexer that takes a single bit stream coming into it and splits it apart into different services, including voice, data, Internet access and video. The Broadband Network Unit then routes the services to the appropriate customer. For up-stream traffic, the BNU serves as a multiplexer. A BNU typically serves 8 to 16 customers. (Figure 1 demonstrates this fiber-to-the-curb architecture.)

In a fiber-to-the-node architecture, a Universal Service Access Multiplexer ("USAM") is placed at the serving area interface, where the fiber feeder lines meet the cooper distribution lines. The USAM performs the same functions as the Broadband Network Unit and

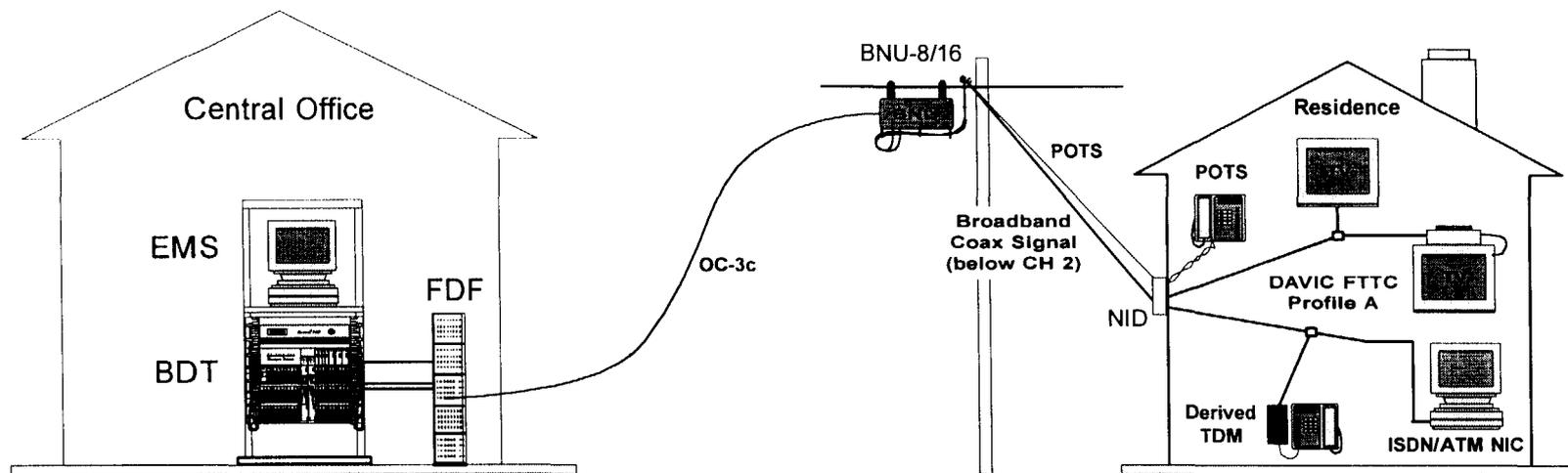
provides the same array of services – voice, data, Internet access and video. The primary difference is that Universal Service Access Multiplexers can be placed further from the residence than Broadband Network Units. USAMs can serve up to 96 POTS lines. (Figure 2 demonstrates the fiber-to-the-node architecture.)

The consumer interface consists of a single set top box in the consumer's home – called the "residential gateway" – that provides access to telephone, video programming, high-speed data, and Internet access services. An additional network interface installed outside the home and invisible to the consumer connects the house to the network. As described above, the NLevel³ system allows a consumer to enjoy three separate video streams (that is to say, three separate televisions exhibiting different programs), voice service, and high-speed data service, all at the same time. The NLevel³ system utilizes internal wiring to the greatest extent possible, so that separate set top boxes are not necessary. The network interface works on a standard Ethernet connection, and a consumer can connect directly to the Internet through an ISP in the same fashion as a dial-up modem connection via conventional phone lines.

In sum, the NLevel³ system allows incumbent LECs *and other entities* with access to the incumbent LECs' local loops to provide the full array of advanced services – including video – without replacing the existing narrowband network or building a second broadband network. With the NLevel³ system, incumbent LECs can become viable competitors to incumbent cable operators without having to install coaxial cable or additional fiber.²⁸

²⁸ U S West, which provides service to many rural areas, is currently deploying the NLevel³ system for video services and will be able to provide video to approximately 85 to 90 percent of its customers. While video cannot be provided to customers in extremely rural areas that are served by copper loops that exceed 8,000 feet, those system is able to provide enhanced voice, high-speed data, and high-speed Internet access services to those customers.

New Growth/Rehab Using FTTC

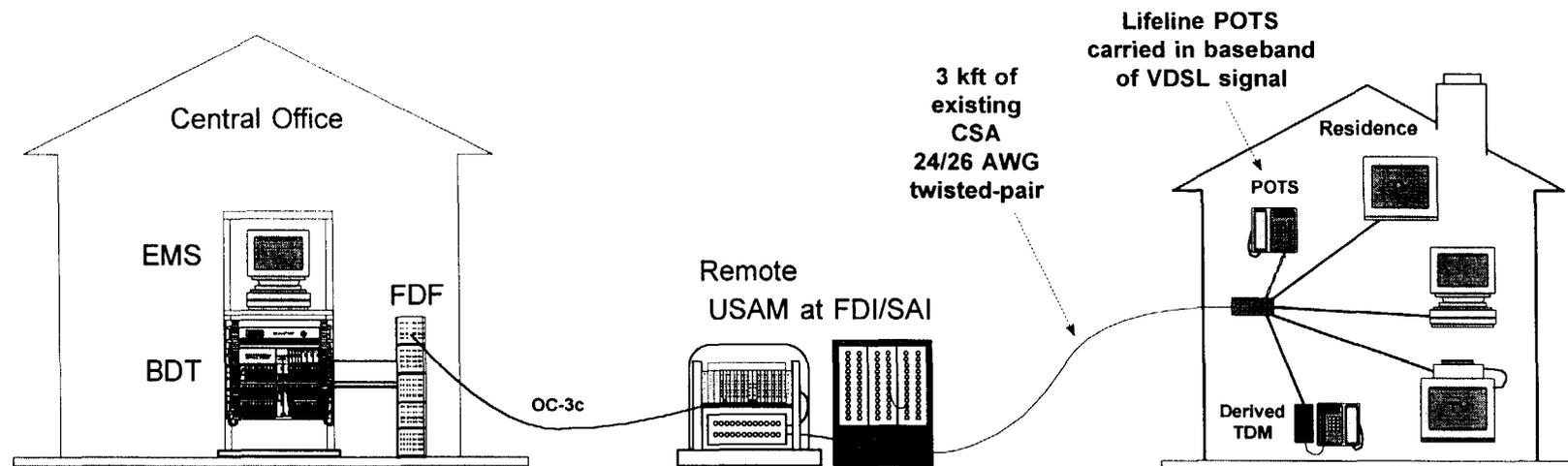


- Brings a *single* fiber to 8 or 16 home level (BNU-8 or BNU-16)
- Cost parity with existing DLCs – a key design goal and ideal new growth telephony-first strategies, with low incremental broadband upgrade cost
- Compact BNU (<60 lbs.) can be wall, pole, strand or pedestal mounted
- Packaging aimed at installation time and cost reduction

Figure 1



VDSL Overlay for Full Service Support



- For full service network applications, with multiple devices per home supported, VDSL can be provided from a USAM at the FDI/SAI (if FDI/SAI is less than 4000 ft from subscriber)
- Point-to-point VDSL drop terminated in a Residential Gateway which provides home network interfaces without the need for multiple Digital STBs

Figure 2

