BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Implementation of requirements arising from Federal Communications Commission's triennial UNE review: Local Circuit Switching for Mass Market Customers.	DOCKET NO. 030851-TP

DIRECT TESTIMONY OF JAMES D. WEBBER

Network and Technology Impairment

On Behalf Of

MCI WORDLCOM COMMUNICATIONS, INC.

AND

MCIMETRO ACCESS TRANSMISSION SERVICES LLC

December 4, 2003

PUBLIC VERSION

TABLE OF CONTENTS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is James D. Webber and my business address is: QSI Consulting, 4515 Barr Creek Lane, Naperville, Illinois 60564.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by QSI Consulting as a senior consultant within the firm's Telecommunication Division. QSI is a privately-held consulting firm that provides consulting services to a diverse group of clients within the regulated utility industries including, for example, competitive local exchange carriers, long distance carriers and energy service providers.

Q. PLEASE PROVIDE A SYNOPSIS OF YOUR EDUCATIONAL BACKGROUND AND RELEVANT WORK EXPERIENCE.

A. I earned both a Bachelor of Science degree in Economics (1990) and a Master of Science degree in Economics (1993) from Illinois State University.

From October 2000 until July 2003, I was employed by ATX/CoreComm as the Director of External Affairs. In that capacity, my responsibilities included: management and negotiation of interconnection agreements ("ICAs") and other contracts with other telecommunications carriers; management and resolution of operational impediments (including, for example, the unavailability of shared transport for purposes of IntraLATA toll traffic or continual problems associated with failed hot cut processes) arising from relationships with other carriers;

management of financial disputes with other carriers, design and implementation of cost minimizations initiatives; design and implementation of legal and regulatory strategies; and, management of the company's tariff and regulatory compliance filings. I was also involved in the Company's business modeling as it pertained to the use of Resale services, UNE-Loops and UNE-P.

Before joining CoreComm, I was employed by AT&T from November 1997 to October 2000 where I held positions within the company's Local Services and Access Management organization and its Law and Government Affairs organization. As a District Manager within the Local Services and Access Management organization I had responsibilities over local interconnection and billing assurance. Prior to that position, I had served as a District Manager – Law and Government Affairs where I was responsible for implementing AT&T's policy initiatives at the state level.

Prior to joining AT&T, I was employed (July 1996 to November 1997) as a Senior Consultant with Competitive Strategies Group, Ltd. ("CSG"), a Chicago-based consulting firm that specialized in competitive issues in the telecommunications industry. While working for CSG, I provided expert consulting services to a diverse group of clients, including telecommunications carriers and financial services firms.

From 1994 to 1996, I was employed by the Illinois Commerce Commission ("ICC") where I served as an Economic Analyst and, ultimately, as Manager of the Telecommunications Division's Rates Section. In addition to my supervisory responsibilities, I worked closely with the Commission's engineering

department to review Local Exchange Carriers' ("LECs") – and to a lesser extent Interexchange Carriers' ("IXCs") and Competitive Local Exchange Carriers' ("CLECs") - tariffed and contractual offerings as well as the supporting cost, imputation and aggregate revenue data.

From 1992 to 1994, I was employed by the Illinois Department of Energy and Natural Resources where I was responsible for modeling electricity and natural gas consumption and analyzing the potential for Demand Side Management ("DSM") programs to offset growth in the demand for, and consumption of, energy. In addition, I was responsible for analyzing policy options regarding Illinois' compliance with environmental legislation.

A more detailed discussion of my educational and professional experience can be found in **Exhibit JDW-1,** attached to this testimony.

Q. ON WHOSE BEHALF WAS THIS TESTIMONY PREPARED?

A. This testimony was prepared on behalf of MCImetro Access Transmission Services LLC, and MCI WorldCom Communications, Inc. (hereafter "MCI").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to address Issues 3 and 5. At paragraph 419 of its *Triennial Review Order*, the FCC found, on a national basis, that competitive local exchange carriers ("CLECs") are impaired without access to unbundled local switching ("ULS") when attempting to serve the "mass market." *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, and Deployment of Wireline Services Offering*

Advanced Telecommunications Capability, CC Docket Nos. 01- 338, 96-98 & 98-147, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, FCC 03-36 (rel. Aug. 21, 2003) ("*Triennial Order*" or "*Order*"), ¶3. The FCC pointed specifically to certain economic and operational criteria that served as the basis for its impairment finding, and asked state commissions to review these issues in more detail as they contemplate whether the finding of impairment should be overturned in any of the telecommunications markets within their jurisdictions. (See Order at paragraph 493.) At paragraph 476 of its *Triennial Review Order*, the FCC describes a number of economic and operational factors, including, for example, issues related to ILEC unbundling performance, collocation and the lack of processes and procedures facilitating the transfer of loops from one CLEC's switch to another CLEC's switch. The FCC specifically identified these types of issues as those it believed could add to the impairment faced by CLECs attempting to provide services via a UNE loop ("UNE-L") as compared to the relative ease with which CLECs can provide such services utilizing the UNE-P platform ("UNE-P"). I understand that BellSouth, and possibly Verizon, will be requesting the Florida Public Service Commission ("Commission") to enter a finding of "no impairment" with respect to unbundled local switching ("ULS") for mass market customers in certain markets within the state as well as the removal of ULS from the list of available unbundled network elements ("UNEs"). The purpose of this testimony is to describe why operational, network and in some cases technological factors give rise to impairment, and to describe how CLECs generally, and MCI specifically, are

impaired in their effort to serve the mass market using UNE-L without access to UNE switching in today's environment. This testimony also describes ways in which MCI believes many of the factors leading to today's impairment can be overcome with active oversight on the part of the Florida Public Service Commission and cooperation of the industry.

Q. BEFORE SUMMARIZING YOUR TESTIMONY, DO YOU HAVE ANY GENERAL COMMENTS?

A. Yes, I do. I believe it is critical to highlight the fact that UNE-P is successful today as a tool for mass market competition in large part because a number of talented people and an enormous number of resources were dedicated to its development as a commercially viable delivery platform over a period of many years, and because it involves the end- to-end lease of ILEC facilities. Further, it should be noted that much of the success of UNE-P must be attributed to the cooperation (however reluctant) on the part of the ILECs, based almost solely on their desire for §271 relief.

To assume that UNE-L, which requires the connection of an unbundled loop facility with the CLEC's switch, will overcome more challenging operational, technical and network hurdles in a mere 9-month timeframe is not sensible. Further, to assume such hurdles can be overcome in this limited timeframe without similar incentives on the part of the ILECs who have, for the most part, already been released from market restrictions via §271 is even more difficult to support. Similar to our experience with UNE-P, it is more logical to assume that the operational and technological issues giving rise to impairment

will be resolved over time, and loop portability, as described in detail throughout this testimony -- will become a reality with the guidance and oversight of state commissions and proper incentives to ensure ILEC cooperation.

Q. ARE THERE PARTICULAR ISSUES THE COMMISSION SHOULD KEEP IN MIND RELATIVE TO IMPAIRMENT FOR MASS MARKET SWITCHING AND EFFORTS MADE TO MITIGATE THAT IMPAIRMENT OVER TIME?

A. Yes. To the extent this Commission determines that the UNE-L strategy should become more widely implemented, it must recognize that transferring a customer's service from the local switch of one carrier to that of another relies upon numerous Operational Support Systems ("OSS"), processes and procedures as well as the availability and reliability of network elements, comprising a chain of connectivity between the customer and his/her local service provider of choice. Because of this necessary chain of connectivity, even if one assumes that ILEC hot cut processes can become seamless at some point in the future, CLECs are likely to remain impaired as a result of not one but numerous other operational and technological issues affecting loops, collocation and transport. Hence, it is absolutely imperative that the Florida Public Service Commission remain focused on each of these individual issues when evaluating impairment, and keep an unwavering eye on the primary objective -- to ensure mass market consumers can transfer their services from one facilities-based local service provider to another in as seamless and reliable manner as possible.

Q. ARE THERE BENCHMARKS AGAINST WHICH UNE-L PROVISIONING PROCESSES LIKE THE BATCH HOT CUT PROCESS SHOULD BE MEASURED RELATIVE TO THE SEAMLESSNESS AND RELIABILITY YOU ALLUDE TO ABOVE?

A. I will, throughout this testimony, point the Commission to the largely seamless and reliable nature of the existing UNE-P process as the benchmark to which UNE-L provisioning processes should be held if impairment is to be overcome. A finding of no impairment in the absence of ULS and a move to UNE-L as a mass market delivery method simply cannot occur until the ILECs' daily processes can support the seamless and reliable provisioning of loops to multiple carriers at commercial volumes consistent with the manner in which they currently accommodate CLEC orders via the UNE-P. As such, MCI recommends that the Florida Public Service Commission maintain the national finding of impairment throughout all telecommunications markets in the state of Florida until such time as UNE-L can realistically replace UNE-P as a tool for serving mass market customers. This will require resolution of all operational issues addressed is this and Ms. Lichtenberg's testimony as well as others that have not yet arisen.

Q. MUCH OF THIS PROCEEDING IS RELATED TO SO-CALLED "TRIGGER" ANALYSES. HOW DOES YOUR TESTIMONY ON OPERATIONAL ISSUES AFFECTING UNE-L RELATE TO TRIGGER ANALYSES?

A. As Dr. Bryant discusses in his testimony, the trigger analysis is supposed to examine whether mass markets consumers have three real and current choices

available to them by facilities-based carriers using ILEC loop facilities. Obviously, therefore, any examination of potential triggering companies requires an examination of whether those alleged "triggering" companies have overcome the technical issues related to connecting BellSouth's and Verizon's loops to the CLEC's switching facilities. To understand that, one needs to understand the technical issues relating to loop provisioning on a mass markets basis (and to understand whether the ILECs or the alleged triggering CLEC has implemented any of the steps necessary to make the provision of service to mass markets customers as seamless with UNE-L as it is with UNE-P).

Q. PLEASE BRIEFLY SUMMARIZE YOUR CONCLUSIONS.

A. As discussed in Ms. Lichtenberg's testimony, MCI intends to move toward serving its mass market customers using its own switching, collocation and transport facilities in combination with ILEC provided unbundled loops. MCI intends to pursue this strategy aggressively in locations where certain operational and economic hurdles can be overcome. However, this strategy is critically dependent upon reliable access to the customer's loop facilities and the OSS, processes, procedures, and other facilities needed to ensure that loops can be successfully extended to CLEC switching facilities and maintained on an on-going basis. The Commission must recognize that moving from a UNE-P to a UNE-L strategy requires a true paradigm shift for both the CLEC and its underlying loop provider -- the ILEC. And, unfortunately, based upon the operational issues described in this testimony, as well as the customer impacting issues discussed in Ms. Lichtenberg's testimony, MCI simply cannot, in the

foreseeable future, move forward with a migration of its sizeable UNE-P customer base to a UNE-L strategy with confidence that its customers will continue to receive the quality of service they have come to expect.

Simply put, at present MCI cannot reasonably move its 100,000 plus mass market customers to UNE-L, nor can it utilize a UNE-L delivery strategy to effectively address mass market customers throughout Florida on a going-forward basis. Moreover, as described in Dr. Bryant's testimony, it would not be economic for MCI to do so. Until the UNE-L process becomes as seamless as UNE-P, MCI, as well as other CLECs, remain operationally impaired without access to unbundled local switching as a means to access the ILEC's local loop as distinguished from economically impaired which is the topic of Dr. Bryant's testimony. Throughout my testimony, I use as a benchmark the successes UNE-P has enjoyed as a service delivery platform and I recommend that CLECs, ILECs, and this Commission strive to attain for UNE-L a comparable level of seamlessness, consumer transparency, and cost efficiency. Unless and until this goal is attained, MCI and the other CLECs seeking to implement a UNE-L local strategy for the mass market will continue to be impaired.

Q. WILL THE PARADIGM SHIFT YOU DISCUSSED IN YOUR PREVIOUS ANSWER HAVE A MAJOR IMPACT ON COMPETITION NATIONALLY AND IN FLORIDA?

A. It certainly has the potential to do so. The seamlessness and efficiency associated with UNE-P has, for the first time, made it possible for CLECs to enter the marketplace in a meaningful way, with UNE-P based market penetration

outpacing UNE-L based market penetration by about 2.5 to 1 on a national basis as depicted in **Exhibit JDW-2**.

For this type of entry to remain sustainable, the ease by which CLECs can participate in the market via UNE-P must be reproduced via the UNE-L strategy. That is, loop portability must become an operational and economic reality. If that benchmark is not attained, the competitive market and, more importantly, consumers will suffer. Indeed, CLEC market share would likely take a significant step backward and the benefits attributable to CLEC entry would likely diminish accordingly.

Q. HAS THE SEAMLESSNESS AND EFFICIENCY OF UNE-P HAD AN IMPACT ON COMPETITION IN THE LOCAL EXCHANGE MARKET IN FLORIDA IN MUCH THE SAME MANNER AS IT HAS NATIONALLY?

A. It certainly has. In fact, as the tables included in **Exhibit JDW-3** demonstrate, CLEC penetration rates for Florida have more than doubled during this same time period while UNE-P growth has comprised nearly all of BellSouth's network-based competitive losses even after accounting for the declining resale market. Indeed, the CLEC penetration rate in Florida as depicted on page 1 of Exhibit JDW-3 has increased from 6% to 13% over the past three years, according to FCC data. Moreover, page 2 of the same Exhibit highlights the fact that nearly all of the competitive growth is directly attributable to UNE-P and its success in overcoming the operational (and economic) barriers that had restrained growth from resale and UNE-L alternatives previously.

Issue 5(c): In which markets do any of the following potential operational barriers render CLEC entry uneconomic absent access to unbundled local circuit switching:

1. **The ILEC's performance in provisioning loops;**
2. **difficulties in obtaining collocation space due to lack of space or delays in provisioning by the ILEC; or**
3. **difficulties in obtaining cross-connects in the ILEC's wire centers?**

Q. ARE THERE IMPORTANT AREAS OF CONCERN UPON WHICH THE COMMISSION SHOULD FOCUS IN EVALUATING IMPAIRMENT RELATIVE TO MASS MARKET CUSTOMERS AND THE CHALLENGES THAT EXIST WITH A UNE-L DELIVERY STRATEGY?

A. Yes, there are. For purposes of clarity, I've have identified three broad areas of concern the Commission should consider when evaluating the operational and technical impairment that exists for carriers attempting to use UNE-L in order to serve mass market customers:

Loop Provisioning Issues: Although the FCC in its *Triennial Review Order* focused primarily on "hot cuts" and the impairment resulting from the inability of CLECs to reliably, seamlessly and economically cut loops in large numbers (i.e., in a "batch"), this is only one of the provisioning issues giving rise to impairment without UNE switching. Other important issues are those: (1) related to untested provisioning processes operating at dramatically increased volumes on a day-to-day basis for both "batch" cuts and for future provisioning requirements; (2) the increased reliability issues associated with substantial manual intervention in the provisioning process when compared to UNE-P, which is largely automated; and (3) the need to manage multiple provisioning scenarios

(e.g., CLEC-to-CLEC, UNE-L to Line Splitting). Solutions to all of these issues must be in place and tested for proper performance before UNE-L can be said to exist as a viable mass market delivery platform.

Loop Facilities: ILECs have maintained for years that end user loops served via Integrated Digital Loop Carrier ("IDLC") technology cannot be unbundled and provided to CLECs for UNE-L provisioning because those loops are permanently combined (i.e., "integrated") with their local switching facilities. Instead of admitting that unbundling IDLC is technically feasible and working to address the remaining operational aspects of any necessary solutions, they insist technical "work-arounds" must be implemented before a customer served via IDLC can be reached by a competitor. These workarounds are often time consuming, costly and fraught with technological deficiencies. To further exacerbate this problem, ILECs appear to be deploying IDLC technologies with increasing frequency. For example, it has been our experience that IDLC is used to serve as many as 40% to 60% of the end users in some central offices.

Because of these technological challenges associated with unbundling IDLC loops, ILECs have consistently suggested that UNE-L requests for loops served via IDLC must "fall out" of any provisioning process, including "batch" hot cuts, and be provisioned via an extremely expensive and time-consuming manual process. These issues must be addressed and resolved before a finding of "no impairment" can be entered.

These issues do not arise in a UNE-P environment. Because IDLC loops are integrated with the ILEC's switch and UNE-P uses both the loop and switch

facility, this connection between the two need not be broken to provide a working circuit in a UNE-P environment. For this reason, the myriad issues that arise with respect to unbundling IDLC are unique to a UNE-L strategy. These issues must be resolved before it can be decided that impairment has been overcome specific to UNE switching.

Moreover, the manner in which ILECs currently unbundled ILDC-based loops creates specific impediments for the ability of CLECs to offer comparable levels of quality as the ILECs when the CLECs emply UNE-L to provision xDSL services or dial up services. As such, the CLEC's ability to offer adequately "bundled" packages of services, which are increasingly demanded by customers, is threatened.

Collocation/Transport Complexities: A workable UNE-L architecture requires the CLEC to procure and place numerous telecommunications assets for purposes of aggregating and transporting UNE loops from the ILEC's central office to its own switching facility. Many of these facilities can be purchased and managed by the CLEC itself (i.e., loop aggregation equipment), while others are likely to be purchased from the ILEC and managed consistent with interconnection agreements and tariffs (e.g., collocation, transport and EEL capacity). The Commission should consider that both of these types of facilities are unique to a UNE-L architecture and are not required either by the ILEC in serving its own retail customers or by a CLEC relying upon UNE-P. As such, the costs of procuring, placing and managing these facilities are over and above those costs incurred by the ILEC or by a CLEC using UNE-P. The additional

complexity associated with procuring and managing these facilities is not only important from a perspective of operational impairment, but must also be considered for purposes of evaluating economic impairment as discussed in Dr. Bryant's direct testimony. Additionally, the availability and extent to which such services are currently deployed in relationship to the mass market must be contemplated when addressing impairment from an operational standpoint, particularly if ILEC policies, procedures and abilities are limiting factors.

II. ILEC HOT CUT PROCESSES ARE INADEQUATE AND LEAD TO IMPAIRMENT

Issue 3: (a) Does a batch hot cut process exist that satisfies the FCC's requirements in the Triennial Review Order? If not, in which markets should the Commission establish a batch cut process?

(c) For those markets where a batch cut process should be established, what specific processes should be employed to perform the batch cut?

(d) For those markets where a batch cut process should be established, is the ILEC capable of migrating multiple lines that are served using unbundled local circuit switching to CLECs' switches in a timely manner?

Q. THERE ARE A NUMBER OF ISSUES IN THIS PROCEEDING REGARDING HOT CUT PROCESSES. PLEASE DESCRIBE THESE PROCESSES AND WHY THEY ARE IMPORTANT.

A. The term "hot cut" describes the near-simultaneous disconnection of a working loop from a port on one carrier's switch and the reconnection of that loop to a port on a different carrier's switch without any significant out-of-service period. The term hot cut is also meant to include, at a minimum, the notification of the customer's network change for purposes of porting his/her telephone number to

the appropriate receiving carrier. In a hot-cut scenario, regardless of whose switch the customer is moving from and to, the ILEC must perform two manual wiring activities at the main distributing frame ("MDF"). The first step involves pre-wiring in preparation for the cut over. During this step the technician places a jumper between the CLEC tie facility and the customer loop. The jumper is terminated at the tie facility and not at the loop side. When the cut is scheduled to begin, the jumper that is connected to the loop side of the existing loop/port arrangement is disconnected and the jumper connected to the receiving CLEC's tie facility is terminated in its place. LNP translation activity is typically involved with this type of transaction and has traditionally been the responsibility of the receiving carrier. The diagram included in **Exhibit JDW-4** provides a high level depiction of the process described above.

Q. PARAGRAPH 488 OF THE FCC's TRIENNIAL REVIEW ORDER ("TRO") DIRECTS STATE COMMISSIONS TO APPROVE "BATCH" HOT CUT PROCESSES TO BE IMPLEMENTED BY ILECS. ARE THESE PROCESSES DIFFERENT FROM THE EXISTING PROCESSES?

A. Yes, they had better be. These new processes – once approved, implemented and tested – will serve two purposes. MCI uses the term Transition Batch Hot Cut Process to address the FCC's requirements that a "seamless, low-cost batch cut process for switching mass market customers from one carrier to another" be approved which – when implemented – will allow CLECs an opportunity to compete effectively in the mass market. (Order at paragraph 487). This process

should be implemented in order to effectuate a transition of customers off of UNE-P and onto UNE-L in large quantities, or "batches." A variant of this process should also transcend migrations *en masse* in order for CLECs to be able to effectively compete for mass market customers on an ongoing basis. This daily process is referred to as a Mass Market Hot Cut Process. To the extent that ILECs are unable to implement Transitional Batch Hot Cut Processes, the initial mass transitioning of customers from UNE-P to UNE-L will not be manageable. Moreover, if an effective, permanent process is not established, CLECs will remain impaired in their ability to address the mass market for all of the reasons cited in the *Triennial Review Order*. Given that the FCC based its national finding of impairment, at least in part, upon the absence of adequate hot cut processes, this Commission should evaluate any proposed processes in this context. Moreover, the Commission should ensure that hot cut processes are not only "identified" and "documented" but that they are actually tested and implemented prior to contemplating whether a finding of non-impairment in the absence of ULS is appropriate.

Q. IS THE COMMISSION SOMEHOW CONFINED TO AN EXAMINATION OF HOT CUT PROCESSES WITHIN THE CONTEXT OF "TRIGGER ANALYSES" OR LIMITED TO ANALYSES OF "BATCH" PROCESSES THAT ARE DESIGNED TO ADDRESS THE BATCH MIGRATION DESCRIBED ABOVE?

A. No. The Commission is not restricted in either sense. As described above, state Commissions must approve hot cut processes independent of trigger analyses.

Moreover, the FCC found that carriers are impaired without access to ULS when attempting to address mass market customers due - in part – to inadequate hot cut processes. In directing the commissions to examine issues of impairment more generally, the FCC indicated that state commissions should perform more granular analyses to determine whether a finding of "no impairment" should be granted and, in doing so, directed the commissions to examine other factors which include – in part – "difficulties in performing customer migrations between competitive LECs." (TRO *Order* ¶ 424 at footnote 1298.). Such difficulties may well arise outside of the "batch" concept discussed above and may lead to impairment. Hence, the commissions' analyses pertaining to hot cut processes cannot be limited to the Transition Batch Hot Cut process described above and should, therefore, include Mass Market Hot Cuts.

I recommend that the Commission not only require ILECs to work toward the development of an efficient, low cost Transition Batch Hot Cut process but that the ILECs also be required to improve upon their existing daily processes and implement a "seamless, low-cost" Mass Market Hot Cut Process for switching mass market customers from one carrier to another on a going-forward basis that is at least as transparent to the consumer as this process is today for CLECs utilizing a UNE-P strategy. Without the successful implementation of these processes, loop portability cannot become an operational and economic reality. Moreover, as discussed in Dr. Bryant's testimony, the extent to which UNE-L is viable for the mass market will be dependent, at least in part, on the costs incurred

during the hot cut process. As such, the Commission should ensure such a process is economically efficient.

Q. ISSUE 3(a) ASKS WHETHER "A BATCH HOT CUT PROCESS EXISTS THAT SATISFIES THE FCC'S REQUIREMENTS." PLEASE COMMENT.

A. As stated in Ms. Lichtenberg's testimony, MCI believes the existing processes are inadequate and do not measure-up to the FCC's requirements. In fact, she identifies many customer impacting, operational issues that involve the exchange of information that must take place in a UNE-L migration that make the current processes unworkable for the mass market in particular. MCI has serious concerns regarding the extent to which ILECs will be successful in designing, testing and implementing Transitional Batch Hot Cut processes which will be capable of seamlessly transferring customer's loops from one carrier's switch to another carrier's switch, to which I refer as loop portability, on an economic basis. Likewise, MCI is concerned about the extent to which ILECs will successfully implement a Mass Market Migration Hot Cut process that will be necessary to address the increasing daily migration and churn related volumes that which will no doubt exist in a dynamic competitive market where UNE-L is used to serve the mass market.

Q. GENERALLY SPEAKING, WHAT ARE SOME OF THE MAIN ISSUES THE COMMISSION SHOULD CONTEMPLATE WHEN DETERMINING THE PROCESS THAT SHOULD BE EMPLOYED TO PERFORM BATCH HOT CUTS AS CONTEMPLATED BY ISSUE 3(c)?

A. In addition to the numerous issues described in Ms. Lichtenberg's testimony, MCI's concerns regarding ILEC hot cut process can generally be categorized as follows: (1) workability; (2) availability; (3) costs; and (4) scalability.

Q. PLEASE PROVIDE ADDITIONAL DETAIL REGARDING EACH OF MCI'S CONCERNS.

A. Given that in markets where MCI chooses to serve its substantial mass market customer base via UNE-L a hot cut will be required for each new customer it wins, in addition to the migration of existing UNE-P customers to UNE-L *en masse*, the capabilities of the ILECs' systems and processes to accommodate this substantially increased volume of hot cuts in a timely manner without customer service interruption is paramount. Using existing technology, ILEC manual intervention will be required for each one of the loops for a hot cut. In other words, an ILEC technician will need to be dispatched to accommodate the frame manipulation. Concerns regarding the ILEC's ability to handle hundreds of thousands of these types of manual orders on an ongoing basis are legitimate. This is especially troubling given that most ILECs have in the past accomplished very few of these hot cuts in a commercial setting, and almost none on a mass markets basis because most hot cuts have been for limited numbers of enterprise customers.

Q. PLEASE EXPLAIN YOUR CONCERNS RELATIVE TO "WORKABILITY."

A. A hot cut is, by definition, a coordinated effort on the part of the ILEC and the CLEC to "cut" a loop with minimal disconnection time (i.e., the time wherein the

customer is connected to no switch or is connected to a switch wherein his/her telephone number is no longer active). For this reason, the ILEC hot cut process must be specifically designed to minimize not only the time and cost specific to the ILEC's activities, but also those associated with the CLEC's representatives. In short, the ILEC process must work well not only for the ILEC, but for the CLEC as well.

Q. PLEASE EXPLAIN YOUR CONCERNS ABOUT "AVAILABILITY."

A. Even with the limited amount of information available from the ILECs to this point specific to their proposed hot cut processes (including BellSouth and Verizon), it is clear that the ILECs intend to limit both the types of loops and the number of loops they will accommodate via a hot cut. More specifically, the ILECs have generally stated that they intend to limit the hot cut process such that: (1) CLEC-to-CLEC, UNE-L based migrations would not be available via the hot cut process; (2) lines currently involved in a "line splitting" arrangement could not be cut via the hot cut process; (3) IDLC lines would not be available for provisioning via the hot cut process; (4) lines for customers having more than 4 lines would not be available for hot cut; (5) lines to be provisioned over Enhanced Extended Links ("EELs") would not be available; and (6) requests for loops greater than 25-50 per day per central office ("CO") would, in most circumstances, not be available without significant "negotiation" and departure from existing provisioning and performance intervals. All of these restrictions, and others, substantially reduce the benefit provided by the hot cut process and could severely limit the efficiency by which CLECs could offer mass market

services on a UNE-L basis. In short, hot cut processes with these types of restrictions do very little to help overcome the FCC's national finding of impairment and should not be approved by state commissions toward that end.

Q. EXPLAIN YOUR CONCERNS RELATIVE TO HOT CUT COSTS.

A. After substantial time and effort, CLECs and state commissions waded through a plethora of ILEC data to conclude that UNE-P provisioning costs were closer to $1 in a migration situation, as opposed to the more than $100 advocated by the ILECs. The lesson to be learned from experience is that the ILECs have an incentive to dramatically over estimate the costs associated with provisioning UNEs and their estimates tend to be based on cost studies that incorporate inefficient procedures or technologies and that include duplicative work steps, exaggerated estimated work times and many other errors for purposes of advocating non-recurring charges substantially in excess of efficiently incurred costs. The same will undoubtedly be true of the hot cut process. For that reason, it is critical that this Commission understand that the hot cut process will, for the most part, take the place of a UNE-P migration. (i.e., the method by which most mass market customers are changed from one carrier to another). Thus, to the extent NRCs for the hot cut process substantially exceed existing UNE-P migration charges, UNE-L will suffer from an economic disadvantage relative to UNE-P and relative to the ILEC's retail services that are, in large part, similar to a UNE-P migration. MCI is concerned that existing hot cut costs – to the extent they might be applied in the future – and any hot cut charges which may be determined in future proceedings will be inappropriately based upon inefficient

processes and technologies and, as a consequence, set at rates which are too high to allow for economic use of the UNE-L strategy for mass market customers.

Q. HAVEN'T ILECS MADE STATEMENTS TO THE EFFECT THAT THESE HOT CUT MIGRATIONS WILL NOT POSE ANY PROBLEMS?

A. Yes. Though ILECs claim that they can handle large volumes of hot cuts, the facts simply don't support their bravado. For example, Verizon claims that if an operational framework is "sufficiently flexible to accommodate substantial increases and decreases in demand," it meets the scalability test. However, this definition raises additional questions relative to their definition of the term "sufficiently flexible" and their ability to "accommodate increases in demand."

These questions begin with the negotiation process. Typically, only individual hot cuts are given standard completion appointment intervals. Bulk hot cut project completion due dates are normally negotiated, which allows the ILEC to spread its work load to meet the throughput restraints of the underlying process. The manual requirements of the process dictate the need to match the appropriate number of technicians and other personnel with the volume of work that is requested and, as such, it is the manned workforce that provides the restraining factor in upward scalability. As volumes increase, a workload strain is placed on the existing work force, eventually leading to transfers from other jobs within the ILEC or through new hires, in order to meet demand. Unfortunately, simply "throwing more bodies" at the problem is only helpful to a limited degree, as real-world constraints on the number of technicians that can work on a given frame at a given time come into play. To the extent the ILEC's process cannot keep up

with the dramatically increased demand for hot cuts, the compounding effect of missed cut dates would create long UNE-L provisioning intervals and an enormous backlog of hot cut requests.

Q. WHAT IS THE MAJOR OBSTACLE TO A SCALABLE HOT CUT PROCESS ON THE PART OF THE ILECS?

A. The major bottleneck in the hot cut process appears at the MDF. As described before, from an operational standpoint, in a UNE-L environment each customer must be rewired manually for purposes of connecting the UNE loop to the receiving CLEC's collocation cage or EEL arrangement. This raises another important factor specific to scalability, i.e., differences between large hot cut jobs undertaken today (or in the past) by the ILECs, versus the very different hot cut requirements they will face in a market without UNE-P. Currently, large project hot cuts typically involve one or a limited number of individual multi-line business customers wherein the cut, though potentially impacting many loops, is specific to a given customer. Frequently, the loop MDF connections for these groups of multiple lines are centrally located on the frame and typically, all of the customers' loops are relatively concentrated geographically on the frame, because they terminate at the same premises. Conversely, a hot cut for a large group of residential single line customers will generally appear at random frame locations. It is easy to envision multiple frame technicians working on a number of individual large business hot cuts concentrated on a given loop count; however, it is equally as easy to envision the potentially chaotic situation that could develop as a result of multiple technicians working simultaneously on a number of large

residential single line hot cut projects involving loops appearing in random locations on the frame.

Q. ARE THERE ANY RECOMMENDATIONS YOU CAN MAKE TO THIS COMMISSION REGARDING THE LONG TERM USE OF TECHNOLOGY TO REDUCE LABOR TIMES, EXPENSES AND THE POTENTIAL FOR ERROR IN THE HOT CUT PROCESS?

A. Yes. In a truly forward-looking environment, hot cuts should become routine and totally automated. Today's "hot cut processes" as briefly described above remain largely manual, or labor intensive, and can be made marginally more efficient with system and process related improvements. There are, however, technological solutions that can help to automate the most manual intensive portion of this process and, thereby, make it more efficient, less time consuming and less costly to implement hot cuts on a going forward basis. Verizon, for example, has developed a wholesale provisioning tracking system known as "WPTS" that has automated a number of the manually intensive coordination steps. Additionally, several vendors have technologies that are either currently available or in development that can automate the MDF wiring functions. Examples of Vendors who provide electromechanical and micro-relay type MDFs include NHC (www.nhc.com) and Simplernetworks (www.simplernetworks.com), respectively. There are many others as well.

Q. PLEASE EXPLAIN THE LIMITATIONS CURRENTLY HINDERING THIS TECHNOLOGY FOR MORE WIDESPREAD USE.

A. For the most part, it appears the largest hindrance with respect to these automated systems is one of incentive, not of technology. Unless required to provide a UNE-L provisioning process approaching the automated efficiency of their retail or UNE-P-based services, ILECs have little incentive to consider a technology that will make UNE-L a more viable option. Indeed, ILECs are motivated to delay the implementation of such advances, claiming such advancements are unnecessary, too costly or impossible. As such, ILECs spend the majority of their time pointing to the limitations of existing equipment rather than describing how it could be improved or trialing innovative alternatives.

Q. ARE THESE PROBLEMS EXACERBATED WHEN THE MIGRATION IS FROM ONE CLEC TO ANOTHER?

A. Yes. The issues associated with this process are magnified with the introduction of CLEC-to-CLEC hot cuts as well as with myriad other scenarios (e.g., hot cut from a line sharing CLEC to a CLEC handling both the broadband and narrowband application, moves from one CLEC to another wherein the receiving CLEC is serving via the ILEC's resale services and many others). In many of these scenarios, three or more individual carriers as well as providers of ancillary services such as NPAC and PSAPs, are required to cooperate, in real time, for purposes of accommodating this largely manual process. A failure at any one of the numerous steps can result in a customer losing service.

Q. TO THE EXTENT UNE-L BECOMES MORE WIDELY IMPLEMENTED, WILL CHURN IMPACT THE ILECS' ABILITY TO KEEP-UP WITH THE DEMAND FOR HOT CUTS?

A. Absolutely. As Ms. Lichtenberg describes in more depth, churn will become increasingly important and will ultimately drive the rate at which UNE-L migrations grow. Moreover, while the ILECs would have this Commission ignore CLEC- to- CLEC UNE-L migrations, it should not. In fact, the FCC specifically cited such migrations as a potential area of impairment. (See, *e.g.*, *Order* ¶ 476.) Based upon the ILECs' positions as stated in staff workshop held at the Florida Public Service Commission on October 28, 2003, the ILECs do not intend to support CLEC-to-CLEC migrations. As such, once a customer is served by a CLEC on UNE-L facilities, the ability of that particular customer to move to another carrier is in serious doubt. All of the issues which lead to the FCC's finding of impairment without ULS come into play in such a situation and are compounded by the fact that a third carrier is now involved. Yet, the ILECs, who by the very nature of their control of the local loop are critical to the process, intend to leave this issue unaddressed. Clearly, if the Commission intends for loop portability and UNE-L to be widely implemented, this critical issue must be addressed and included in all hot cut processes evaluated, designed, tested, implemented and certified by the Florida Public Service Commission.

Q. TO YOUR KNOWLEDGE, HAVE BELLSOUTH AND VERIZON SUFFICIENTLY ADDRESSED THE ISSUES DESCRIBED ABOVE?

A. In all fairness, the ILECs have only communicated their plans to the industry through workshops held at the Commission's offices on October 28, 2003. Based upon the information provided during those workshops, however, I would say no, they have not. My expectation is that the ILECs in their direct testimony will be proposing specific processes in these proceedings at the same time my direct testimony is being filed. I intend to carefully review all such filings and respond as may be appropriate in the rebuttal phases of these proceedings.

In response to the issues in this docket, I set forth attributes that the Transition Batch Hot Cut and Mass Market Hot Cut processes should contain which can be used by the Commission in order to evaluate the extent to which the ILEC proposals will meet the FCC's criteria and the service performance levels CLECs and consumers deserve to receive.

Q. SHOULD THE HOT CUT PROCESSES ULTIMATELY IMPLEMENTED BY THIS COMMISSION EXCLUDE ANY PARTICULAR ORDER TYPES?

A, Generally, no. While there might be a legitimate reason to exclude some particular order type, such an exclusion should be the exception as opposed to the rule. The ILECs, from what I have seen to date, appear to make such exclusions common place, thus mitigating the potential benefits of improved hot cut processes. To the extent their efforts are successful, the process in which we are currently engaged is likely to be for naught.

To the extent CLECs intend to implement a UNE-L strategy in order to move their embedded base of UNE-P based customers to UNE-L and maintain their customers over any length of time on a going forward basis, they need to be able to address all customer types represented in their market. That would include, at a minimum, all types of lines that are currently contained within their embedded base. This issue is likely to be controversial in many respects. First, I understand the ILECs do not intend to allow for the complete flow through of, and thus intend to delay, hot cut orders where IDLCs are deployed. Second, I understand that any line that is currently being used for both voice and data services will be excluded from these processes. Third, I also understand that the ILECs do not intend to support hot cuts where the receiving carrier is not collocated in the office where an end user's loop is terminated. Fourth, they will not allow for hot cuts to take place where EELs are used to gain access to end-end users.

By including these – and potentially other – prohibitions on the use of hot cut processes, the ILECs have substantially reduced the percentage of current and future customers' loops that could potentially benefit from the processes which are being designed to mitigate impairment. As such, CLECs will remain impaired when attempting to serve any of the mass market customers who happen to fall into these categories, which is likely to be well over half of all such customers. Moreover, to the extent the CLECs are denied a hot cut process for a substantial portion of the network seriously calls into question whether economies of scale will be sufficient enough to warrant any attempt on the part of CLECs to implement UNE-L for that market.

Q. ISSUE 3(d) ASKS WHETHER ILECS ARE "CAPABLE OF MIGRATING MULTIPLE LINES THAT ARE SERVED USING UNBUNDLED LOCAL CIRCUIT SWITCHING." DO YOU HAVE A COMMENT IN THIS REGARD?

A. As is described above, there are numerous exceptions to the circumstances in which ILECs currently acknowledge that (a) "hot cuts" are required and (b) that performance measurements are appropriate, rendering data to specifically address this issue extraordinarily difficult to access. By excluding certain types of orders or arguing that performance measurements aren't applicable for certain other types of orders, it is difficult to get a true sense of the extent to which CLECs are capable of migrating multiple lines served by ULS. This is analogous to the golfer who refuses to count strokes for various reasons, thus making his score appear better than his actual performance – without which strokes his/her score tends toward par. Indeed, other golfers would never get a sense of whether such a player is capable of legitimately making par.

For example, IDLC based loops – when ordered for UNE-L purposes – typically drop to manual and orders for large quantities of loops ordered at one time (a batch) are typically the subject of negotiated "projects" which are not usually tracked for performance measurement purposes. MCI has described its concerns about ILEC abilities in terms of workability and scalability, in part, for this very reason. Simply put, it is unlikely ILECs will be able to perform such migrations on timely basis in a seamless manner as is required by the FCC and as will be expected by end -users. Moreover, such performance has not been tested

and performance guarantees have not been offered to date. To the extent this Commission intends to protect end users when implementing hot cut processes, it should clearly define all such processes both in terms of order types that which can and can not be excluded and in terms of performance requirements. Moreover, prior to opening the flood gates, and allowing the ILECs to remove local switching from the list of available UNEs based, at least in part on a finding that CLECs are not impaired as a result of the adoption and "implementation" of hot cut processes, it should certify that the ILEC performance is at an acceptable level and that loop portability is a reality. To do otherwise would be truly reckless. Moreover, once certified, any finding of "no impairment" should be dynamic in that failure on the part of the ILEC to maintain its performance at a satisfactory level should immediately bring about the revocation of the "no impairment" finding until the Commission has determined the situation leading to inadequate performance is remedied. In the meantime, CLECs should have full access to ULS in order to address the mass market.

Q. DO THE ISSUES BRIEFLY OUTLINED ABOVE ADDRESS ALL ATTRIBUTES BY WHICH THE ILEC HOT CUT PROCESSES SHOULD BE EVALUATED?

A. First, Ms. Lichtenberg addresses a number of these issues in her testimony. Hence, my testimony should not be considered the final word on this particular topic. Additionally, I intend to address issues pertaining specifically to loops, collocation and transport later in this testimony. As such, the list of properties to be included in ILEC's upcoming Transition Batch Hot Cut and Mass Market Hot

Cut processes will be expanded as a part of those discussions. Finally, MCI will comment more fully on this subject once it has reviewed the ILECs' direct testimony.

III. LOOP RELATED OPERATIONAL AND TECHNOLOGICAL ISSUES GIVE RISE TO IMPAIRMENT

Issue 5(c): In which markets do any of the following potential operational barriers render CLEC entry uneconomic absent access to unbundled local circuit switching:

1. The ILEC's performance in provisioning loops;
2. difficulties in obtaining collocation space due to lack of space or delays in provisioning by the ILEC; or
3. difficulties in obtaining cross-connects in the ILEC's wire center?

Q. ISSUE 5(c) ASKS PARTIES TO INDICATE WHETHER OPERATIONAL BARRIERS PERTAINING TO "ILEC PERFORMANCE IN PROVISIONING LOOPS" CREATE BARRIERS TO ENTRY WHEN THEY'RE ATTEMPTING TO ADDRESS THE MASS MARKET. IS IT YOUR OPINION THAT SUCH BARRIERS EXIST AT THE PRESENT TIME?

A. Yes. Loop acquisition is critical to the implementation of a UNE-L based strategy designed to address the mass market. In a UNE-L environment, CLECs will require timely, efficient and low cost access to UNE loops, and must be able to depend upon loop quality characteristics comparable to those enjoyed by its primary competitor: the ILEC. Indeed, the physical process of accessing the unbundled loop, and thereafter using that loop to provide a comparable service to its customer, is likely to be the most important and difficult obstacle to overcome

in rendering UNE-L a workable delivery platform for mass market customers. In the following section I identify a number of operational obstacles that plague the existing UNE-L delivery strategy, and lead to increased operational complexities, diminished quality, and increased costs when compared to the existing retail and/or UNE-P arrangements. Clearly, these issues give rise to impairment.

Q. CAN YOU BRIEFLY SUMMARIZE THESE OPERATIONAL CONCERNS?

A. The majority of the operational issues I describe below result directly from the fact that in a UNE-L environment, the ILEC will be separating network elements that it had specifically combined in order to provide its own retail service in as efficient a manner as possible (and currently maintains in a combined fashion to provide UNE-P). The intentional separation of a combined loop and port combination generates two types of problems. First, because ILECs insist that integrated DLC facilities ("IDLC") cannot be unbundled at the DS-0 (individual line) level, the line is re-assigned to an alternate facility even though that same customer as a BellSouth or UNE-P customer may have been using the facility currently supporting his or her/her service for years. In many circumstances, the facility to which the customer is re-assigned is technologically inferior to the existing facility or may simply be a facility that has been poorly maintained. Further, even the presumably simple process of reassigning a new facility is anything but simple, and can cause numerous service-impacting problems for the customer (problems the customer will undoubtedly identify with switching service providers).

Second, as greater numbers of competitors are moved from more efficient fiber-based services to copper-based services via the reassignment process described above and ILECs take advantage of the FCC's relaxation of retirement and maintenance requirements, this Commission will undoubtedly begin to see two networks develop, each exhibiting dramatically different levels of quality -- the network used by the ILEC to serve its retail customers versus the network leased to CLECs by the ILEC for purposes of competing against it. As CLECs compete for limited numbers of inferior quality facilities when the ILEC begins to retire its copper plant, situations of "no facilities" or facilities that will require costly repair before they can be used will undoubtedly become more problematic for the CLECs, thereby increasing the amount of time required to service any single customer, and dramatically increasing the CLEC's customer acquisition costs.

Q. PLEASE DESCRIBE IN MORE DETAIL THE TWO PRIMARY CONCERNS YOU SUMMARIZE ABOVE.

A. Before the Commission can fully appreciate the operational barriers I've have summarized above, a brief overview of the existing outside plant network is appropriate. The diagrams included in **Exhibit JDW-5** depict the three most common outside local loop serving arrangements. In the case depicted at the top portion of the diagram, the copper loop enters the central office where it is manually cross connected from the vertical side of the main distributing frame (generally considered the "outside plant" or OSP appearance) to the horizontal side of the frame (generally considered the "central office" or CO appearance).

The lower portion of the diagram depicts two alternate serving arrangements that utilize more advanced "pair gain" platforms known as universal digital line carrier ("UDLC") and integrated digital line carrier ("IDLC"). In a general sense, the purpose of these applications is to aggregate the traffic of literally hundreds of individual customers and then multiplex those individual signals into a single, higher bandwidth signal that can be transported more efficiently back to the CO.

The first example on the lower left hand portion of the diagram depicts a UDLC application. In this scenario, the copper loop that leaves the customer connects to a Digital Loop Carrier ("DLC") at a remote terminal ("RT"). The electronics in the DLC convert the analog signals to a digital multiplexed format and then send the digital signal over a feeder cable (copper in this case) to the central office ("CO"). The cable terminates in the CO on a Central Office Terminal (COT), which converts the signal back to individual analog lines that ultimately terminate at the MDF for manual wiring purposes. The MDF wiring appearances serve as a point of interface for the carriers' switching equipment.

In the second example, the loop from the customer connects to a remote terminal equipped with IDLC technology, sometimes referred to as next generation DLC ("NGDLC"). With this application, the electronics convert the analog signals to a digital multiplexed format, and then send the digital signal over fiber feeder cable to the CO, terminating directly in the ILECs' digital switch without converting the signal back to analog.

Q. CAN YOU EXPLAIN THE DIFFERENCE BETWEEN UDLC AND IDLC IN MORE DETAIL?

A. Older Universal Digital Loop Carrier ("UDLC") technology consists of a remote terminal ("RT"), a transmission (transport) facility to link the RT to the central central office ("CO") and a central office terminal ("COT"). The RT aggregates the copper distribution pairs and performs conversions -- converting the customer's analog signal to a digital multiplexed format going to the central office, and (in the opposite direction) converting the digital signal from the central office to the customer to an analog signal. The transport carries the digital signal from the RT to the COT, and vice versa. The COT equipment converts the digital signal from the RT to an analog signal before the signal is terminated on the Main Distributing Frame ("MDF") and cross-connected to the switch port.

With the introduction of digital switches, an additional conversion was needed at the MDF. The signal that was converted from digital to analog at the COT had to be converted back to a digital signal by an Analog Interface Unit ("AIU") resident in the switch. The required digital-to-analog conversion at the CO was unnecessary, inefficient, and expensive as more digital switches were deployed, IDLC addressed these inefficiencies by eliminating the need for the additional analog-to digital conversions at the CO. The analog signal originating at the customer's premises still is converted to digital at the RT, but no other analog/digital conversions are necessary as digital switches can accept the digital formatted signal without conversion (something older analog switches could not

do). Unlike traditional copper loops or UDLC lines, IDLC lines do not typically have termination appearances on the MDF.

Q. ARE THERE ADVANTAGES SPECIFIC TO IDLC OVER UDLC?

A. The answer to that question is strongly influenced by whether you ask it with respect to retail/bundled services or if the question is specific to unbundled services. With respect to bundled services (retail and/or UNE-P), there are undisputable advantages to IDLC. For bundled services, IDLC allows local loops to be connected to a digital circuit switch more efficiently and cost effectively when compared to UDLC because IDLC requires neither an analog conversion at the CO, nor the AIU line card at the switch, nor manual MDF wiring. As a result, compared to today's IDLC technology, older UDLC systems require unnecessary investment for digital-to-analog and analog-to-digital conversion equipment and MDF wiring in the central office.

Q. DO THESE ADVANTAGES ACCRUE TO CLECS UTILIZING UNE-L?

A. Typically not. To the extent that IDLC has advantages over UDLC and ILECs continue to insist that they will not unbundle IDLC systems for use by their CLEC competitors, these advantages accrue only to retail and UNE-P services that rely upon the combined nature of the IDLC system. If the Commission were to effectively eliminate UNE-P with a finding of no impairment (without also entering a finding that the ILECs must unbundle their IDLC systems), this Commission would further ensure that only ILECs and their retail customers would enjoy the benefits of IDLC. More importantly, the Commission would foreclose CLECs from competing for a large portion of the ILECs' customer base.

Q. ARE THERE SPECIFIC CONCERNS REGARDING UNBUNDLED UDLCs?

A. Yes, there are. Section 12.13.3 of Telcordia Notes on the Networks (SR-2275, Issue 4, October 2002) which is entitled "Unbundling Issues Associated with UDLC and IDLC Systems" indicates that UDLC contributes to multiple problems including: (a) increased dial tone delay; (b) degradation of on-hook transmission services, such as caller ID; (c) degradation of signal quality as a result of multiple A/D and D/A conversions; and (d) reduction in analog modem operation speeds due to the number of A/D conversions.

This later issue has been an increasing concern for MCI. Specifically, IDLC avoids additional analog-to-digital and digital-to-analog conversions inherent in the UDLC system. In doing so, the IDLC system avoids problems associated with dramatically reduced bit rate speeds for voice band data connections that plague UDLC systems, such as faxes or analog modems. This issue is described more fully in Microsoft's Windows 2000 support website, where it is explained that: "there can be only one analog connection between your modem and the host computer" if a PC modem is able support a V.90 dial-up connection which operate at speeds of 56 kilobits per second. **(See Exhibit JDW-6)** Moreover, customers served by UDLC technology cannot receive ISDN and ADSL services without the installation of additional external loop electronics to increase digital transmission bandwidth at the UDLC. These limitations do not exist with most IDLC configurations. In short, UDLC systems can dramatically

reduce the access speed enjoyed by dial-up Internet customers, while IDLC systems avoid these problems entirely.

Q. HOW DO ILECS CURRENTLY PROVISION UNE LOOPS WHEN THE EXISTING, BUNDLED LOOP FACILITY IS PROVIDED OVER IDLC?

A. Based upon their fundamental position that IDLC loops cannot be unbundled in a technically practicable manner, when faced with a UNE loop request for a customer who is currently served via IDLC, the ILECs typically bypass the IDLC system and transfer the loop to an all-copper pair, if one is available, or utilize an UDLC serving application. Either procedure requires central office and outside plant rewiring to complete the new circuit from the MDF to the customer and provides the CLEC, and the end user customers, with a very different facility than that it enjoyed when receiving service from the ILEC.

Q. HOW DOES THIS CHANGE OF FACILITIES AFFECT THE CLEC AND END USER CUSTOMER?

A. This process provides the customer with a facility very different than that it enjoyed as an ILEC's retail customer or CLEC's UNE-P customer. The difference is almost always detrimental to both the customer and the CLEC because UDLC requires multiple analog/digital conversions that dramatically limit the dial-up modem throughput capability of the circuit. Further, both methods require extensive manual intervention for purposes of provisioning, a result specifically removed in the ILEC's provisioning process for bundled (retail/UNE-P) services via the IDLC technology. The diagram taken from

Telcordia Notes on the Network Issue 4 section 12.13.2.1 provides an illustrative example of the two "workarounds" described above. **(See Exhibit JDW-7)**

Q. UNDER THE COPPER SCENARIO DESCRIBED ABOVE, DO ILECS AND/OR CLECS NEED TO DISPATCH TECHNICIANS FOR LOOP INSTALLATIONS?

A. Typically, yes. ILEC technicians are involved with CO work in this scenario but in most cases technicians are also dispatched to the RT and even to the end-user premise in some instances in order toto change facilities. In addition, in some situations CLECs must also visit the customer's premises to change/validate wiring and test customer equipment. In contrast, a UNE-P environment involving an "as is" or "as ordered" migration does not typically require the ILEC or CLEC to dispatch technicians to the CO or field.

Q. DO THESE UNBUNDLING METHODS IDENTIFIED ABOVE IMPAIR THE CLECs?

A. Absolutely. The CLEC faces both technical and provisioning disadvantages relative to either work around identified above. The process almost invariably entails additional provisioning time, additional costs and the result is often an inferior facility. Likewise, all of these difficulties and increased costs appear to the customer to be a direct result of choosing a competitor's service. An ILEC customer who is currently being served by an IDLC is more likely to convert to a CLEC if the transition is quick and seamless, but not if the new service is technologically inferior and takes an extended period of time to provision.

Q. IF HOT CUTS COULD BE ACCOMPLISHED IN A RELATIVELY TIMELY AND LOW COST FASHION, WOULD THE ISSUES YOU HAVEYOU'VE DESCRIBED ABOVE, AND POTENTIALLY OTHERS, REMAIN?

A. Yes. The operational obstacles I have described above will exist regardless of how effective any hot cut process is today or eventually becomes.

Q. CAN THE COMMISSION HELP TO ADDRESS THE OPERATIONAL IMPAIRMENT ISSUES YOU HAVE DESCRIBED ABOVE?

A. Yes. However, addressing these issues concerning IDLC technology will require diligent efforts on the part of the Commission, BellSouth and Verizon. This results from the fact that the only way to ensure CLECs are not impaired is to ensure that they have access to the same quality of service provided by the technology that BellSouth and Verizon use to serve their own end-user customers. In the case of IDLC, that can only be accomplished by unbundling IDLC technology in an electronic manner that provides the CLEC with access to individual customer circuits at a digital level. Short of achieving this solution, its seems clear that without UNE-P, CLECs will continue to be impaired in the marketplace because they'll be saddled with less effective facilities to be used in competing for the very same end user customers.

Q. CAN IDLC BE UNBUNDLED DIGITALLY AS YOU DISCUSS ABOVE?

A. Yes, despite arguments to the contrary from BellSouth and the other ILECs, it is technically feasible to unbundle IDLC in a digital format without losing the

inherent "integrated" advantages enjoyed by the ILEC's bundled products.

Indeed, the FCC in its *Triennial Review Order* noted:

> We recognize that it *is* technically feasible (though not always desirable for either carrier) to provide unbundled access to hybrid loops served by Integrated DLC systems. (*Order* ¶ 297, footnote 855).

The most advanced IDLC systems engineered and deployed today (GR-303 compliant) have that capability. Bellcore (now Telcordia) which developed the GR-303 interface, describes two different methods by which GR-303 compliant IDLC can be unbundled electronically without requiring a dispatch. One method entails the establishment of separate interface groups (IG) in the IDLC so that a distinct IG is assigned to a CLEC and passed through a multiplexing device in the central office for purposes of accessing individual lines at the DSO or DS1 level. This particular unbundling strategy has been discussed for years by industry bodies and has in the past been supported by Telcordia in numerous symposiums. **(See Exhibit JDW-8)**

Q. DO OTHER METHODS OF UNBUNDLING IDLC EXIST?

A. Yes, Telcordia also describes another method relative to sharing GR-303 Interface Groups between the ILEC and the CLEC, thereafter using a sidedoor port (also known as "hairpinning") on the ILEC's digital switch for purposes of accessing individual DSOs for transfer to the CLEC's switch. The diagram in **Exhibit JDW-9** shows the use of a GR-303 Interface Group sharing ILEC and CLEC traffic wherein all CLEC traffic is routed through a sidedoor port, supporting a DS1 or DS0 unbundling scheme.

In this scenario, unbundled CLEC circuits are provisioned as non-locally switched circuits within the IDLC system. Telcordia describes this application as follows: "While the digital system cross-connect ("DCS"), DCS-1/0, is shown in the figure, it is not a requirement of this architecture. The advantage of using a DCS-1/0 is realized if the CLEC is not fully utilizing a DS1 from the ILEC local digital switch ("LDS") to the CLEC, and multiple switch modules with individual digital control units ("IDCU") are used by the ILEC. If a DCS-1/0 is placed between the LDS DS1 sidedoor port and the CLEC DS1s, it would permit full utilization of the sidedoor LDS/IDCU hardware by enabling CLEC DS0s to be rearranged in the DCS-1/0 and placed on the individual CLEC DS1s." (See Notes on the Networks at Section 12-56).

Q. IN ADDITION TO THE SIMPLE FACT THAT CLECS CAN GAIN ACCESS TO UNBUNDLED CIRCUITS VIA THIS UNBUNDLING METHOD, ARE THERE OTHER ADVANTAGES TO THIS TYPE OF DIGITAL UNBUNDLING?

A. Yes, there are. Not only would either of these methods provide a CLEC unbundled access to individual customer loops in a digital format, it would also mitigate, if not remove entirely, the need for manual intervention in the loop provisioning process. Because GR-303 IDLC systems are largely software driven and do not rely upon manual copper wire manipulation for purposes of cross-connecting the derived circuits they support, unbundled loops could be provisioned to a CLEC on an electronic basis, free of any costly or time consuming technician dispatch. As such, this type of IDLC unbundling would go

a long way toward providing non-discriminatory access to unbundled loops but also toward removing impairment caused by the manually intensive and cumbersome hot cut processes supported by BellSouth. In short, this type of unbundling once implemented, tested and proven in a commercial setting, would go a long way toward removing the impairment currently faced by mass-market CLECs without access to unbundled local switching.

Q. ARE THERE COMPLEXITIES ASSOCIATED WITH UNBUNDLING IDLC IN THE FASHION YOU'VE DESCRIBED ABOVE?

A. Yes, there are. Though unbundling IDLC is unarguably feasible, the work required to establish necessary processes and techniques to unbundled IDLC in this fashion in a commercial setting has never been undertaken in earnest by the ILECs. They have simply been provided no incentive to support this type of process that will only serve to enhance competition in the local market they currently dominate. As such, time and effort must be put toward making this technology a reality. Below is a list a number of the obstacles that must be overcome on the road to efficiently unbundling IDLC for purposes of removing impairment:

First, since each CLEC circuit requires a nailed up DS0, absent additional software functionality or other processes, the ILEC may encounter blocking over the IDLC system as other circuits compete for DS0 channels.

Second, the number of sidedoor ports that can be engineered varies depending on the LDS supplier and no standard appears to have emerged, hence, a

concerted effort on the part of the ILEC may be required to standardize this technology for this purpose.

Third, there is limited support in existing special services design systems and databases to support sidedoor port circuits. Again, this results primarily from the fact that the vendors design systems based upon the needs of their primary customers and the ILECs have had little incentive in the past to pursue this type of unbundling technology.

Fourth, other issues regarding security for an IDLC system providing multiple VIGs to multiple CLECs need to be addressed. Likewise, numerous other details associated with sharing test resources, alarms, etc., would require additional development.

Though these issues are real, and real effort will be required to address them, it is important to remind the Commission that Telcordia developed the specifications for the GR-303 platform for unbundling and has demonstrated its commitment to resolving the issues associated with unbundling by providing the methods described above. In the final analysis, these types of issues are really no different than the myriad of issues the industry has been addressing for several years regarding the evolution of the network and unbundling in general. This Commission should initiate a proceeding designed to fully explore options for providing CLECs high quality unbundled loops and – specifically – unbundled loops provided over IDLC. Such a proceeding should clearly focus on the potential for the two IDLC strategies included in this testimony to mitigate CLEC impairment without access to ULS.

Q. IS THIS AN IMPORTANT ISSUE?

A. Yes, it is. IDLC technology is used to provide services to upwards of 40% to 60% of residential and small business customers in some exchanges. As a result, absent some resolution of the problems identified above, a significant percentage of customers in some exchanges could experience either decreased service quality if they switch to a CLEC's service accommodated by UNE-L (because their loop will be changed to a less efficient technology), or they could experience significant delays in service availability from the CLEC because the ILEC "works around" the IDLC technology for purposes of providing either a copper or UDLC alternative. In many cases customers will experience both problems when purchasing service from a CLEC in this manner but would experience none of those same problems if they stayed with the ILEC, or returned to the ILEC's service. In either circumstance, the CLEC will be required to wait longer and pay more to serve its customer when IDLC is present, absent the unbundling options I've described above.

Q. IS THE USE OF IDLC OCCURRING MORE FREQUENTLY?

A. All indications are that the number of ILEC customers served via IDLC is increasing. This results primarily from the fact that most packet-capable DLC platforms (platforms that support both voice and DSL functionality) are integrated DLC platforms. Hence, as carriers like SBC and Verizon institute DSL-based network upgrade initiatives like Project Pronto and PARTS (meant to increase their geographic market capabilities for DSL), respectively, the number of IDLC terminals in their networks increase substantially, and more customers are moved

to IDLC facilities. As such, the IDLC-related issues identified above are becoming more and more important on a daily basis.

This Commission has a unique opportunity to take a leadership role on this very important issue and require BellSouth and Verizon to provide a *digital* handoff to CLECs when their customers are served by IDLC. This way the CLEC customers can have instantaneous provisioning just the same as BellSouth and Verizon customers enjoy today.

Q. ARE THERE OTHER AREAS THE COMMISSION SHOULD ALSO ADDRESS CONCERNING UNBUNDLED LOOPS THAT WILL HELP TO EASE IMPAIRMENT?

A. Yes, there are. Until IDLC can be unbundled, and even thereafter for those facilities not served by IDLC, issues with respect to accessing high quality, copper facilities will continue to exist. As fiber-based facilities continue to expand in use in the network, and as the ILEC's continue to retire copper facilities that have been replaced by those newer technologies, the availability of high quality copper loops will become less prevalent and "no facilities available" notices will become more common. Even if spare copper loops are available, it is likely that they have not been maintained properly and may not even be useable for voice services without maintenance or repair activities taking place at the time of installation. These activities – which must be undertaken on behalf of the CLECs, but not the ILECs – delay CLEC access to not only to the loops, but to the entire market served by those loops. The condition and availability of these loops would be less

of an issue, if the Commission would take active steps to ensure that ILECs maintain the loops properly as required by the *Triennial Review Order*:

> We require incumbent LECs to make routine network modifications to unbundled transmission facilities used by requesting carriers where the requested transmission facility has already been constructed. By 'routine network modifications' we mean that incumbent LECs must perform those activities that incumbent LECs regularly undertake for their own customers. (*Order*, ¶ 632.)

Q. ARE THERE OTHER ISSUES THAT CONFRONT CLECS EVEN IF COPPER LOOPS ARE AVAILABLE?

A. Yes. When and if loops are available, if they are long loops, they may have xDSL inhibiting load coils and bridged taps on them, which would not allow xDSL services unless those inhibitors are removed (that is, the loop is "conditioned"). Consistent with the FCC's mandate for advanced services, CLECs need access to conditioned loops to be able to offer advanced services ILECs should make these xDSL capable loops available to CLECs as required by the *Order*:

> As noted above, we conclude that incumbent LECs must provide access, on an unbundled basis, to xDSL-capable stand-alone copper loops because competitive carriers are impaired without such loops. (*Order* ¶642)

Additionally, ILECs often impose steep nonrecurring charges for conditioning loops which contribute to economic impairment as discussed in greater detail in Dr. Bryant's direct testimony. Because the ILEC relies on technologies in which loop conditioning is not an issue, the CLEC is disadvantaged relative to the ILEC regardless of the conditioning fees imposed by the ILEC.

Q. WHAT ARE MCI'S QUALITY OF SERVICE CONCERNS RELATIVE TO BELLSOUTH'S AND VERIZON'S CURRENT PROVISIONING OF UNE-L OFF OF AN IDLC?

A. FCC Rule 51.319(a) requires ILECs to provide CLECs with non-discriminatory access the local loop, in accordance with section 251(c)(3) of the act as set forth in paragraphs (a)(1) through (a)(9) of this section. FCC Rule 51.319(a)(2)(iii) states when a CLEC seeks access to a hybrid loop for the provision of narrowband services, the ILEC may either provide the CLEC with non-discriminatory access to an entire hybrid loop capable of voice-grade service, (i.e. equivalent to DS0 Capacity), using time-division multiplexing technology, or, provide the CLEC with non-discriminatory access to a spare home-run copper loop.

When a CLEC orders a UNE loop that is served by an IDLC, the current provisioning processes used by the ILECsadds at least one additional Analog to Digital ("A/D") conversion on the loop at the COT in the CO. This additional A/D conversion cuts the data throughput on the loop in half and, as a result, the CLEC loop does not have service "equivalent to DS0 capacity, " which provides for 64 kbps. The two A/D conversions inherent in an UDLC architecture will drop the maximum transmission speed on the line to the V.34 limits (up to 33.6 kbps). This substantially reduced capacity cannot be considered "equivalent to DS0 capacity," as required by the FCC's rules.

With regards to alternative provided to the ILECs in Rule 51.319(a)(2)(iii), providing CLECs spare home-run copper loops, to the extent these facilities exist at all, some of these facilities have not been maintained in years and may not be

able to provide "equivalent DS0 capacity" either. Further, if these home-run copper facilities do NOT exist, then there is no alternative available. Therefore, the manner in which BellSouth and Verizon currently provide CLECs with UNE-L on hybrid loops must be changed before a finding of non-impairment on unbundled local switching can be made.

IV. COLLOCATION AND TRANSPORT ISSUES MAY GIVE RISE TO IMPAIRMENT

Q. PLEASE INTRODUCE THIS ISSUE.

A. In order for MCI to move toward a mass market UNE-L deployment strategy, such a strategy must be operationally sound and economically viable. MCI will be unable to offer retail services when and where these requirements are not met. Using the UNE-L strategy, MCI must have the ability to gain access to mass market customers utilizing collocation and transport services to extend its customers' loops to MCI's own switching facilities rather than relying on the ILEC's combined loop and switching elements as is currently done (utilizing a UNE-P strategy). It is critical, therefore, that MCI not be impaired with respect to these elements. Transport and collocation elements must be available, accurately provisioned in a timely manner and properly maintained if MCI, or any other CLEC is to have the ability to move forward with this strategy, and to serve the mass market in Florida.

Q. PLEASE BRIEFLY DISCUSS THE EXISTING NETWORK ARCHITECTURE AS IT RELATES TO A COLLOCATING CLEC.

A. Collocation-specific network architecture issues revolve around the ILEC's central office ("CO"), specifically, the ILEC's main distribution frame ("MDF"). The MDF is the central point of termination for virtually all voice-grade facilities and equipment in a central office. At a very simplistic level, COs are designed such that any individual outside plant facility (i.e., a loop) can be cross-connected to any individual central office electronic equipment, primarily the switch for purposes of completing basic local exchange services. This is accomplished primarily by terminating all outside plant facilities to the MDF, and thereafter establishing a defined "appearance" for that particular loop at a defined point on the MDF. Likewise, the majority of CO central office electronic equipment is also terminated to the MDF with a defined appearance. After all such equipment is terminated to the MDF in this fashion, connecting any two pieces of equipment for purposes of providing service can be accomplished by placing a cross-wire connection, which is a very labor intensive, "on site" process, between the two appearances for purposes of establishing an electrical circuit. From a collocating CLEC's perspective, it is the MDF where the CLEC gains access to the outside plant network of the ILEC and it is from that location that the differences (and disadvantages to the collocating CLEC) become starkly clear. This is because the ILEC can access its end user customers by performing a single manual step - - placing a jumper on the frame - - whereas a UNE-L CLEC must "build out" from its own CO central office electronic equipment to each ILEC CO central office,

via collocation arrangements and physical transport facility placements, in order to reach the very same customer. There are obvious differences in the costs and activities associated with serving and end user customer between an ILEC, which performs a single step, and a CLEC, which must perform multiple steps in addition to the step performed by the ILEC. Because the CLEC is required to perform these additional steps, and because these steps are not without cost (to the contrary, as is discussed in the companion economic testimony, these steps are quite costly) the CLEC is – by definition – disadvantaged and therefore potentially impaired. Dr. Bryant's direct testimony discusses the economic considerations in more detail.

A. Collocation related impairment

Q. ISSUE 5(C) ASKS CARRIERS TO COMMENT AS TO WHETHER THEY ARE IMPAIRED AS A RESULT OF ISSUES PERTAINING TO COLLOCATION?

A. As has been stated throughout my testimony, my intent is to address operational issues and, as such, my response here is intended only to address the extent to which CLECs can practically rely upon access to collocation arrangements in order to gain assess to their mass market customers throughout the state in the absence of unbundled local switching ("ULS").

As it stands today, MCI, and many other CLECs do not currently have collocation arrangements (whether they by physical, cageless or virtual, etc.) in as ubiquitous a fashion as would be necessary to serve their UNE-P based mass market

customers throughout the state. Indeed, MCI serves more than 100,000 lines via the UNE-P throughout the state of Florida. These customers are served through approximately *****BEGIN PROPRIETARY***** [redacted] *****END PROPRIETARY***** end offices. By way of comparison, MCI is only collocated in *****BEGIN PROPRIETARY***** [redacted] *****END PROPRIETARY***** central offices throughout the state, leaving approximately *****END PROPRIETARY***** [redacted] *****END PROPRIETARY***** central offices that would ultimately require collocation of some form prior to the point at which UNE-P is eliminated through a finding of "no impairment." Moreover, additional end offices would need to be addressed with collocation as the number of offices where MCI's mass market end users are served increases, creating an additional strain on the resources of both MCI and the ILECs. As I suspect is the case with other CLECs, therefore, MCI is not currently able to accommodate all of its UNE-P based mass market customers should those customers be migrated en masse to UNE-L. Moreover, setting aside questions regarding the extent to which mass market customers can be economically served based upon a network which includes collocation, it is currently unclear whether the CLECs will be able to obtain access to collocation arrangements in conjunction with the necessary transport facilities on a timely basis such that a migration can be supported. Collocation is an intricate process, which requires CLECs to perform numerous complex functions and activities that are not required where ULS is available. Each step taken by the CLEC in order to reach the end user customer through collocation adds time and cost to the process and

introduces a probability of error and customer dissatisfaction that is not associated with the ILEC's provision of service to the same customer or UNE-P based CLEC customers.

Assuming that the Commission ensures collocation arrangements are available in conjunction with transport and that such arrangements are provisioned on a timely basis prior to a migration en masse, it is unlikely that collocation will give rise to impairment. If, on the other hand, ILECs are unable to respond quickly enough to the numerous collocation requests over the next several months, collocation may well create barriers to the mass market in the absence of ULS.

Q. ARE CLECS ABLE TO RELY UPON ACCESS TO COLLOCATION ARRANGEMENTS IN ALL ILEC CENTRAL OFFICES FROM WHICH THEY CURRENTLY SERVE RETAIL CUSTOMERS VIA THE UNE-P?

A. At this time, it is entirely unclear whether CLECs will be able to rely upon the availability of collocation arrangements in all offices where they presently serve UNE-P based mass market customers, particularly in light of the tremendous volumes of requests which would occur if one were to assume that all customers currently served via UNE-P were simultaneously migrated to the UNE-L strategies of multiple carriers throughout the entire state or any other significant geographic area within the state. MCI, for example, has tens of thousands of UNE-P customers in Florida served from *****BEGIN PROPRIETARY***** [redacted] ****END PROPRIETARY***** ILEC offices and is currently collocated in *****BEGIN PROPRIETARY***** [redacted] *****END PROPRIETARY*****

offices. Moreover, there are numerous other UNE-P providers in the state of Florida who collectively serve roughly 700,000 UNE-P based end user lines in BellSouth's territory alone. To the extent they all move toward UNE-L, there would be a significant strain on the availability of collocation arrangements and, more importantly, a tremendous strain would be placed on the ILECs' abilities to manage the requests and provisioning related processes that would be necessary to accommodate such an unprecedented paradigm shift. Obviously, if MCI cannot access collocation arrangements in each central office from which it currently serves customers via UNE-P or if the company is unable to use EELs in combination with a working hot cut process as described elsewhere in this testimony, MCI's ability to attract new customers or even serve its existing customers would be severely impaired. Therefore, to the extent that ULS is to be removed from the list of UNEs based upon a finding of non impairment as it pertains to collocation, the Commission should implement backstop measures which allow for the maintenance of ULS for mass market customers where collocation arrangements are effectively unavailable to requesting carriers lest CLECs remain impaired. Moreover, to the extent that the Commission were to enter – at some future date in some areas – a finding of "no impairment" pertaining to ULS for mass market customers, the Commission must ensure that EELs – an issue which I discuss later in this testimony -- are available throughout the state in conjunction with hot cut procedures which permit the seamless transition of customers between carriers whether they choose to use EELs or collocation as a means to access end user loops.

Q. ASSUMING THAT MCI IS ABLE TO OBTAIN THE COLLOCATION ARRANGEMENTS NECESSARY TO SERVE EXISTING AND FUTURE END USER CUSTOMERS, WHAT OTHER ISSUES MAY CAUSE IMPAIRMENT?

A. It has been MCI's experience during the early stages of collocation that, even when space is ultimately made available by the ILECs, it was not uncommon to experience significant delays before gaining access to the requested arrangements. To the extent that history repeats itself in an era where the implementation of UNE-L could potentially become more widespread in certain markets, CLECs who choose to implement UNE-L will be unable to do so when and where such delays take place. Under these conditions, it would be impossible to migrate existing customers to UNE-L as well as to continue to effectively market throughout the state since the ultimate ability to serve customers in the absence of ULS arrangement implementation timelines, the Commission should mandate that ULS remain available to such carriers and in such locations where mass market customers are concerned. Moreover, to the extent that collocation is ultimately implemented in such a location, the CLEC should have the choice to leave any remaining customers on UNE-P until such time as a migration to UNE-L is operationally may be in question.

To the extent the Commission enters at some future date a finding of non-impairment without access to ULS as it pertains to the mass market for any particular area, it is my recommendation that the Commission implement backstop measures in this regard. Specifically, to the extent that CLECs' access

to end-user is effectively unavailable, delayed or otherwise impeded as a result of collocation afeasible.

B. Transport Related Impairment

Q. WHY HAVE YOU INCLUDED TRANSPORT IN THE SAME SECTION OF YOUR TESTIMONY AS COLLOCATION?

A. Because transport and collocation are intrinsically related in terms of the functions they perform in the network. Availability of and access to collocation facilities is meaningless in terms of a CLEC's ability to reach the end user customer without the availability of and access to transport facilities, and vice versa. This Commission can consider the UNE-L framework can be viewed as to be a very complex chain, each link of which must be procured, assigned, provisioned and maintained in order for customers to receive telephone services. Each link is subject to its own issues and complications, but each link is equally important in terms of providing the ultimate service. Any single component of the service, including transport, has the potential to take the customer out of service if something goes wrong.

Q. DOES TRANSPORT POSE CHALLENGES IN AND OF ITSELF?

Yes, it certainly can. In a situation where CLECs are replacing UNE-P with UNE-L, they'll rely heavily on their ability to utilize ILEC provided transport in order to extend individual customer loops to their own local switching facilities. Additionally, CLECs will be largely dependent upon ILEC provided transport in order to originate and terminate local, intraLATA and interLATA traffic on behalf of their end users that previously had been carried within the ILEC network via

shared transport. Moreover, CLECs will likely utilize ILEC provided transport in order to establish 911 trunk groups and, albeit to a lesser extent, OS and DA trunk groups. The sheer magnitude of blanketing a state or even a LATA with collocation arrangements and the transport facilities described herein can become daunting from a logistic and economic perspective. Given that these transport requirements are, for the most part, over and above those already required by a UNE-P based CLEC, the logistical and financial ramifications flowing from these requirements may lead to operational and/or economic impairment.

Q. PLEASE DISCUSS SPECIFIC OPERATIONAL ISSUES THAT MAY GIVE RISE TO IMPAIRMENT.

A. It is unclear whether the ILECs' networks are currently set up to accommodate the CLECs' need for transport both in terms of their need to extend loops (whether via collocation and interoffice transport arrangements of via Enhanced Extended Links, or EELs) to their own switches and in terms of meeting demand for the transport necessary to originate and terminate traffic. As such, it's unclear whether the ILECs will claim that "facilities are not available," rendering a migration from UNE-P to UNE-L doubtful at best. It's also unclear whether the ILECs will claim that as a result of the *Triennial Review Order*, they're not required to provide transport to requesting carriers in any or all of the circumstances identified above. Indeed, if the necessary physical connections cannot be obtained, or are substantially delayed, CLECs will be operationally impaired, if not physically precluded from accessing customers. Moreover, the ILECs have already indicated that hot cuts will not be available to carriers if those

carriers intend to utilize EELs in order toto extend customer loops to their own switch facilities. As such, even if hot cuts become a seamless, low cost reality and loop, collocation and transport related issues are resolved, CLECs who, for economic or operational reasons, choose to rely upon EELs will be impaired. That's because the ILECs intend to preclude Hot Cuts to these very CLECs who would use EELs in order toto operate in their intended manner. Clearly, the operational issues described herein, may give rise to CLEC impairment where access to ULS is unavailable.

Dr. Bryant's testimony addresses the financial issues related to UNE-L as a strategy in general and raises serious concerns with transport related costs and whether they contribute to economic impairment.

Q. CAN THE ISSUES LEADING TO IMPAIRMENT RELATIVE TO TRANSPORT BE ADDRESSED IN SUCH A WAY THAT MCI COULD PURSUE ITS PLAN TO MOVE TO A UNE-L STRATEGY?

A. To the extent the Commission intends to foster the expansion of a UNE-L strategy and, therefore, intends to minimize transport related issues which may give rise to impairment, it should consider, at a minimum, initiating proceedings which provide for EELs as discussed more fully later in this testimony, continued availability of transport and backstop measures which provide for use of ULS for mass market customers where transport is not reasonably available.

V. The Enhanced Link ("EEL") as a DS0 Loop Transport Tool

Q. PLEASE EXPLAIN THE POTENTIAL CONNECTION BETWEEN MASS MARKET SWITCHING IMPAIRMENT AND UNE TRANSPORT IMPAIRMENT.

A. Because UNE transport is governed by the Telecommunications Act of 1996, and it is provided via interconnection agreements that are mediated and/or arbitrated by state commissions with prices set consistent with TELRIC, changes in the availability of UNE transport for existing CLECs providing facilities based services could dramatically alter those CLECs' capabilities to continue providing services. Removing the ILEC's obligation to provide UNE transport within a given market has the potential to dramatically effect the process by which those "triggering" carriers access transport capacity and the prices they pay for such transport. As such, a decision to remove UNE transport from the UNE list in a given market has the potential to dramatically impact whether a carrier could be considered a "trigger" with respect to the FCC's analysis specific to mass market switching impairment. This Commission should be cognizant of this relationship as it evaluates the evidence provided by ILECs specific to impairment in both regards.

Q. PLEASE EXPLAIN ANY CONCERNS RELATIVE TO DSO-RELATED TRANSPORT ARRANGEMENTS BY DESCRIBING AND DEFINING AN EEL.

A. EELs are nothing more than a combination of unbundled loops, the potential for multiplexing and unbundled interoffice transport. The diagram contained in

Exhibit JDW-10 provides a simplistic example. As noted above, the primary advantage of an EEL is that a competitive carrier using an EEL need not collocate in every ILEC central office within which it chooses to serve a customer. By combining the unbundled loop with interoffice transport, the CLEC is able to "extend" the loop directly to its own CO. (Note that in most cases multiple transport facilities from multiple ILEC end office (each carrying multiple loops) would terminate in one ILEC central office before being transported to the CLEC's CO.)

Q. DOES THE INDUSTRY HAVE MUCH EXPERIENCE WITH EELS USED TO SUPPORT DSO-BASED SERVICES LIKE THOSE THAT WOULD BE REQUIRED TO PROVIDE MASS MARKET OFFERINGS?

A. No. This is highly troubling given the FCC's implicit (if not explicit) reliance upon the EEL for purposes of making UNE-L a more attractive delivery mechanism in lieu of continued availability of UNE-P. While UNE-P is a proven mechanism by which to provide competitive services to mass market customers in an efficient and economical manner, UNE-L fueled by increased reliance on DSO-based EELs is almost completely untried and certainly unproven. Very little, if any, real world experience exists in support of the notion that EELs can actually be used effectively as a DS0 transport option on any scalable, commercially viable basis. It appears this is true as a result of ILEC resistance relative to EELs as well as the fact that EELs may not even be economically viable in all situations, particularly for the mass market.

Q. WHAT CAN THE COMMISSION DO TO ENHANCE THE ABILITY OF CLECS TO USE EELS EFFECTIVELY IN A UNE-L ENVIRONMENT?

A. This Commission can focus its attention on two primary EEL related objectives that will substantially increase the likelihood that EELs can, in the future, be used effectively in a mass market scenario: (1) any approved ILEC Transitional Batch Hot Cut and Mass Market Migration Hot Cut processes should include detailed information and processes related to "cutting" a UNE loop to an EEL arrangement (as opposed to a the more restrictive proposal that collocation cages be the only location to which loops can be "hot cut"); and (2) arrangements related to "concentrated" EELs should be explored.

Despite the FCC's failure to properly evaluate real-world experience with DSO-based EELs in a UNE-L environment, there is an opportunity for this commission to elevate EELs to a more effective platform capable of enhancing the likelihood of UNE-L success. After having affirmed, in this proceeding, the FCC's finding that CLECs like MCI are impaired without access to UNE switching functionality, the Commission should begin the process, via follow-up proceedings, of addressing those issues generating impairment. When evaluating ways to overcome the economic and operational issues related to transport, MCI believes that the Commission's time would be well spent exploring with the industry how EELs could work more effectively in a concentrated format, and the extent to which ordering and provisioning processes specific to concentrated EELs could be used to limit some of the economic and operational challenges that exist with providing transport via a UNE-L platform today.

(i) The Advantages of Concentrated EELs

Q. WHAT DO YOU MEAN BY "CONCENTRATED" EELS?

A. A concentrated EEL is nothing more than the same unbundled loop and interoffice transport combination, with the added capability to "oversubscribe" the interoffice transport element with unbundled loops in a greater than 1:1 ratio. Said another way, "concentrating" an EEL allows a CLEC to purchase far fewer interoffice transport circuits to serve the same number of customers, with little or no impact on its resulting quality of service.

Q. HOW WOULD THE CLEC ACHIEVE A CONCENTRATION RATIO GREATER THAN 1:1?

A. Earlier in this testimony I described new or next generation DLC equipment, primarily GR-303 compatible equipment, that allows a carrier to concentrate traffic traveling between a remote terminal or RT and the integrated terminal on the central office switch. I discussed the fact that GR-303 compatible DLC allowed carriers to engineer their outside plant facilities with 4:1, 6:1 or even greater levels of concentration, thereby substantially reducing the feeder capacity required to serve the same number of distribution pairs. A concentrated EEL relies on this very same technology in extending the loop between central offices.

Q. HOW WOULD A CONCENTRATED EEL BE DIFFERENT FROM THE USE OF EELS TODAY?

A. One of the primary disadvantages of a traditional EEL delivery platform is that a competitive carrier must purchase one interoffice transport circuit for every unbundled loop it purchases in a central office. Effectively, competing carriers

are limited to a 1:1 concentration ratio between loop and interoffice transport. This substantially, and unnecessarily, increases the costs relative to EELs and contributes to an enormous waste of the ILEC's interoffice transport resources. A requirement that ILECs provide EELs in a more efficient, concentrated manner can reduce transport costs, (and CLEC switch interface costs,) by as much as 75% to 90% (and reduce wasted capacity by the same amount).

Q. PLEASE EXPLAIN THIS POINT IN GREATER DETAIL.

A. A concentrated EEL arrangement could rely upon the same GR-303 equipment discussed earlier. In simplest terms, to support a concentrated EEL arrangement, an ILEC could be required to place a GR-303 compatible RT in its central office, and lease access to that GR-303 RT on a "per port basis" to individual CLECs. Using the GR-303 RT, individual CLECs could purchase individual DS0 UNE loops from the ILEC, cross-connect those loops to the RT, and purchase transport from the RT to their own central office switches (using GR-303 signaling). Assuming a CLEC chose to use 4:1 concentration in such an arrangement, the CLEC would, using the concentrated EEL in this fashion, be required to purchase 1/4 the interoffice transport capacity originally required (likewise using 6:1 concentration would allow the CLEC to purchase only 1/6 the amount previously required).

Q. PLEASE SUMMARIZE YOUR POSITION ON CONCENTRATED EELS.

A. As the FCC and state commissions ponder the development of facilities based local exchange competition, opportunities like those exhibited by the concentrated EEL must be a realistic component of those considerations if UNE-L is to ever

fulfill the role of a primary mass market service platform. The concentrated EEL serves as a prime example of how newer technologies can be, and should be, used to reduce costs for all involved, in addition to providing a more efficient and scaleable competitive opportunity. There are few, if any technical barriers to a concentrated EEL arrangement, and while operational issues will no doubt require some amount of development, the competitive advantages undoubtedly require the effort. Nonetheless, ILECs will not offer concentrated EELs of their own volition (indeed, many have already refused to provide these arrangements in the fashion described above). Therefore, this Commission will need to provide the proper incentive for ILEC cooperation in the form of a docketed proceeding aimed at developing a workable concentrated EEL platform. It is MCI's opinion that proceedings of this type should immediately follow the Commission's decision in this docket in an effort to mitigate those transport-related issues giving rise to the impairment that exists today relative to unbundled mass market switching.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

James D. Webber

Contact Information

4515 Barr Creek Lane
Naperville, Illinois 60564

Phone: 630. 904.7876
E-mail: JWebber@qsiconsulting.com

Current Position

Senior Consultant, Quantitative Solutions, Inc.

Professional Experience

CoreComm
Director - External Affairs — October 2000
Chicago, Illinois — to June 2003

AT&T
District Manager - Local Services and Access Management — February 1999
Chicago, Illinois — to October 2000

AT&T
District Manager - Law and Government Affairs — November 1997
Chicago, Illinois — to February 1999

Competitive Strategies Group, Ltd
Senior Consultant — July 1996
Chicago, Illinois — to November 1997

Illinois Commerce Commission
Manager, Rates Section - Telecommunications Division — March 1996
Springfield, Illinois — to July 1996

Illinois Commerce Commission
Economic Analyst, Rates Section - Telecommunications Division — March 1994
Springfield, Illinois — to March 1996

Illinois Department of Energy and Natural Resources
Research Project Coordinator — February 1992
Springfield, Illinois — to March 1994

Education

Master of Science, Economics - 1993
Illinois State University, Normal, IL.
Thesis: *An Analysis of the Effects of Fiscal Policy on Real Interest Rates in the United States: (1973-1990).*

Bachelor of Science, Economics - 1990
Illinois State University, Normal, IL.

James D. Webber

Testimony Profile and Experience

Federal Communications Commission

File No. EB-01-MD-017
In the matter of CoreComm Communications, Inc. and Z-Tel Communications, Inc., Complainants v. SBC Communications Inc., Southwestern Bell Telephone Company, Pacific Bell Telephone Company, Nevada Bell Telephone Company, The Southern New England Telephone Company, Illinois Bell Telephone Company, Indiana Bell Telephone Company, Inc., Michigan Bell Telephone Company, The Ohio Bell Telephone Company, and Wisconsin Bell, Inc.
On behalf of CoreComm Communications, Inc.

Illinois Commerce Commission

ICC Docket No. 00-0700
Illinois Commerce Commission on its own motion -vs- Illinois Bell Telephone Company. Investigation into tariff providing unbundled local switching with shared transport.
On behalf of CoreComm Illinois, Inc.

ICC Docket Nos. 97-0516, 97-0601, and 96-0602
Illinois Commerce Commission on its own motion -vs- Illinois Bell Telephone Company; et al. Investigation into non-cost based access charge rate elements in the intrastate access charges of incumbent local exchange carriers in Illinois. Illinois Commerce Commission on its own motion Investigation into implicit universal service subsidies in intrastate access charges and to investigate how these subsidies should be treated in the future.
On Behalf of AT&T Communications of Illinois, Inc.

ICC Docket Nos. 96-0486 and 96-0596
Illinois Commerce Commission on its own motion Investigation into forward looking cost studies and rates of Ameritech Illinois for interconnection, network elements, transport and termination of traffic. Illinois Bell Telephone Company Proposed rates, terms and conditions for unbundled network elements.
On behalf of AT&T Communications of Illinois, Inc.

ICC Docket Nos. 95-0458 and 95-0531
AT&T Communications of Illinois, Inc. Petition for a total local exchange wholesale service tariff from Illinois Bell Telephone Company d/b/a Ameritech Illinois and Central Telephone Company Pursuant to section 13-505.5 of the Illinois Public Utilities Act. LDDS Communications, Inc. d/b/a LDDS Metromedia Communications. Petition for a total wholesale network service tariff from Illinois Bell Telephone Company d/b/a Ameritech Illinois and Central Telephone Company pursuant to Section 13-505.5 of the Illinois Public Utilities Act.
On behalf of the Staff of the Illinois Commerce Commission

ICC Docket Nos. 95-0201 and 95-0202
Illinois Bell Telephone company proposed establishment of separate rate elements for single line versus multiline business access line customers. Illinois Bell Telephone company proposed establishment of separate rate elements for directory assistance to business sand residence customers.
On behalf of the Staff of the Illinois Commerce Commission

ICC Docket No. 94-0048
IntraLATA Presubscription Rule Making.

James D. Webber

On behalf of the Staff of the Illinois Commerce Commission

ICC Docket Nos. 94-0096, 94-0117, and 94-0146
Proposed Introduction of a Trial of Ameritech's Customers First Plan in Illinois, et al.
On behalf of the Staff of the Illinois Commerce Commission

Indiana Regulatory Utility Commission

IRUC Cause No. 40571-INT-03
AT&T Communications of Indiana, Inc. TCG Indianapolis petition for arbitration of interconnection rates terms and conditions and related arrangements with Indiana Bell Telephone Company, Incorporated d/b/a Ameritech Indiana pursuant to Section 252(b) of the Telecommunications Act of 1996.
On behalf of AT&T Communications of Indiana, Inc and TCG Indianapolis.

IRUC Cause No. 40785
In the matter of the investigation on the Commission's own motion into any and all matters relating to access charge reform and universal service reform including, but not limited to high cost or universal service funding mechanisms relative to telephone and telecommunications services within the state of Indiana pursuant to IC 8-1-2-51, 58, 59, 69; 8-1-2.6 ET. SEC. and other related state statutes, as well as the Federal Telecommunications Act of 1996 (47 U.S.C. Sec. 151, ET. SEC.)
On behalf of AT&T Communications of Indiana, Inc.

IURC Cause No. 40611
In the matter of the Commission investigation and generic proceeding on Ameritech Indiana's rates for interconnection, service, unbundled elements, and transport and termination under the Telecommunications Act of 1996 and related Indiana statutes.
On behalf of AT&T Communications of Indiana, Inc.

Michigan Public Service Commission

MPSC Case No. U-12622
In the Matter of the application of Ameritech Michigan for approval of shared transport cost study and resolution of disputed issues related to shared.
On behalf of CoreComm Michigan, Inc.

MPSC Case No. U-12465
In the matter of the application of AT&T Communications of Michigan, Inc., and TCG Detroit for arbitration of interconnection rates, terms and conditions and related arrangements with Ameritech Michigan Pursuant to 47 USC 252(b).
On Behalf of AT&T Communications of Michigan, Inc., and TCG Detroit.

MPSC Case No. U-11831
In the matter, on the Commission's own motion, to consider the total long run service incremental costs for all access, toll, and local exchange services provided by Ameritech Michigan.
On behalf of AT&T Communications of Michigan, Inc.

MPSC Case No. U-11743

MPSC Case No. U-11757

James D. Webber

MPSC Case No. U-11448
In the matter of the application of the Michigan Exchange Carriers Association, Inc., for approval of a joint total service long run incremental cost study.
On behalf of AT&T Communications of Michigan, Inc. and MCI Telecommunications Corporation.

MPSC Case No. U-11280
In the matter, on the Commission's own motion, to consider the total service long run incremental costs and to determine the prices of unbundled network elements, interconnection services, resold services, and basic local exchange services for Ameritech Michigan.
On behalf of AT&T Communications of Michigan, Inc.

Public Utility Commission of Ohio

PUCO Case No. 02-579-TP-CCS
In the matter of the Complaint of CoreComm Newco, Inc., Complainant, V. Ameritech Ohio, Respondent.
On behalf of CoreComm Newco, Inc.

PUCO Case No. 00-942-TP-COI
In the matter of the further investigation into Ameritech Ohio's entry into in-region interLATA service under section 271 of the Telecommunications Act of 1996.
On Behalf of CoreComm Newco, Inc.

PUCO Case No. 00-1188-TP-ARB
In the matter of the application of AT&T Communications of Ohio Inc. and TCG Ohio for arbitration of interconnection rates, terms and conditions and related arrangements with SBC Ohio.
On Behalf of AT&T Communications of Ohio, Inc.

PUCO Case No. 96-899-TP-ALT
In the matter of the application of Cincinnati Bell Telephone Company for approval of a retail pricing plan which may result in future rate increases and for a new alternative regulation plan.
On Behalf of AT&T Communications of Ohio, Inc.

PUCO Case No. 96-366-TP-ALT
In the matter of the complaint of AT&T Communications of Ohio, Inc., Complainant, V. Ameritech Ohio, Respondent, In the matter of the implementation of substitute Senate Bill 306 or substitute House Bill 734 of the 121st General Assembly.
On Behalf of AT&T Communications of Ohio, Inc.

PUCO Case No. 96-922-TP-UNC
In the matter of the review of Ameritech Ohio's Economic Costs for Interconnection, Unbundled Network Elements, and Reciprocal Compensation for Transport and Terminations of Local Telecommunications Traffic.
On Behalf of AT&T Communications of Ohio, Inc.

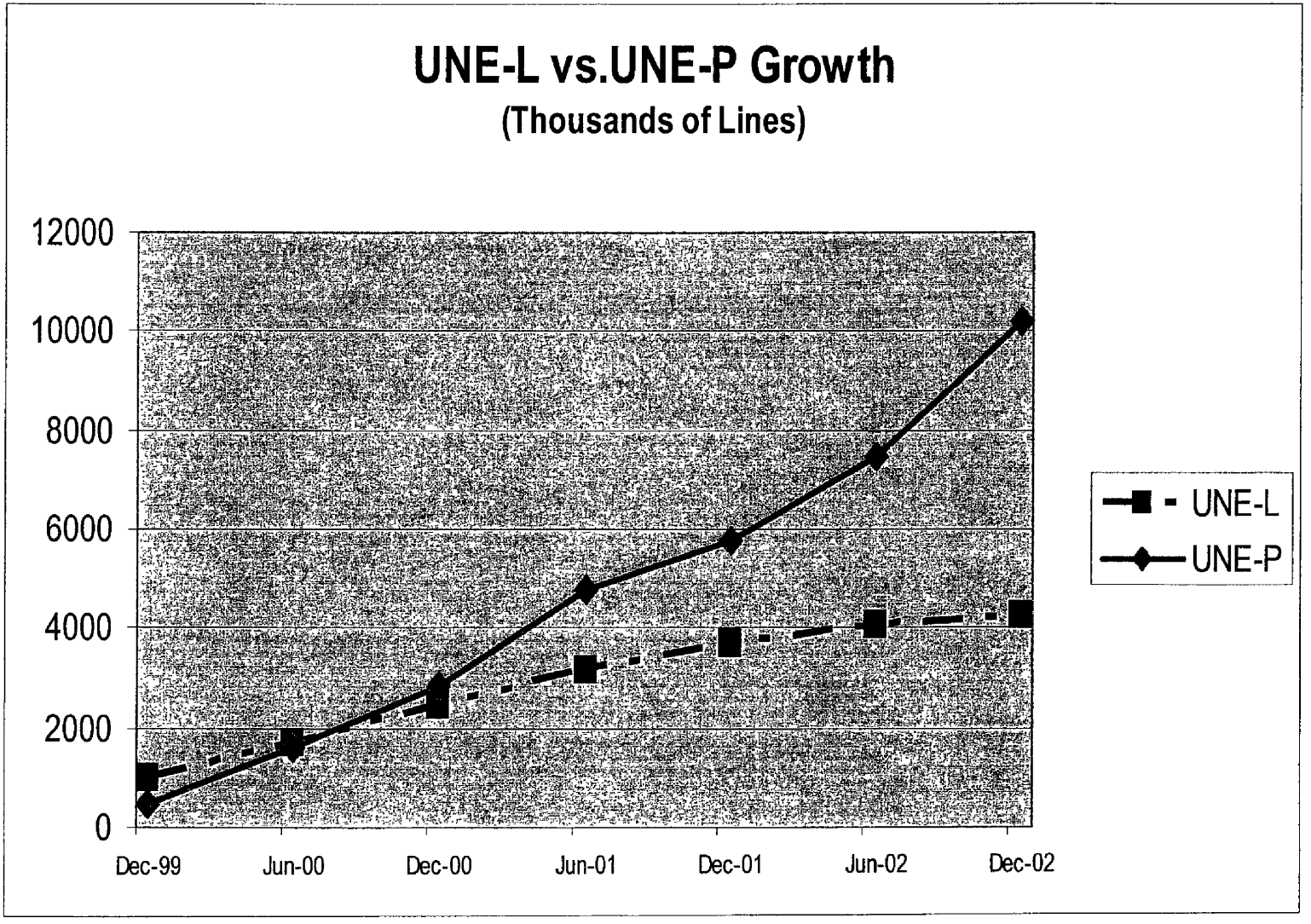
Public Service Commission of Wisconsin

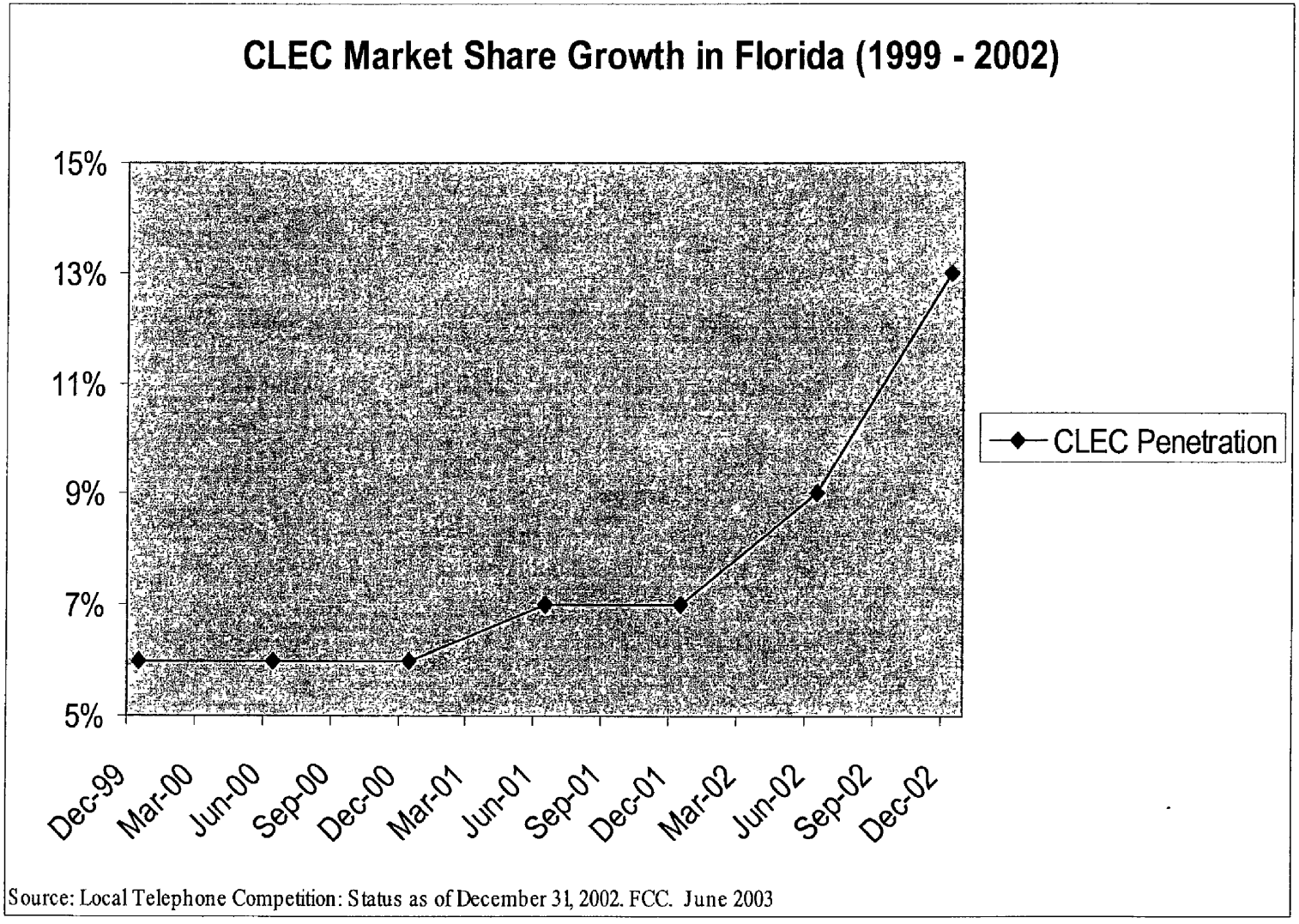
PSCW Docket No. 2815-TR-103

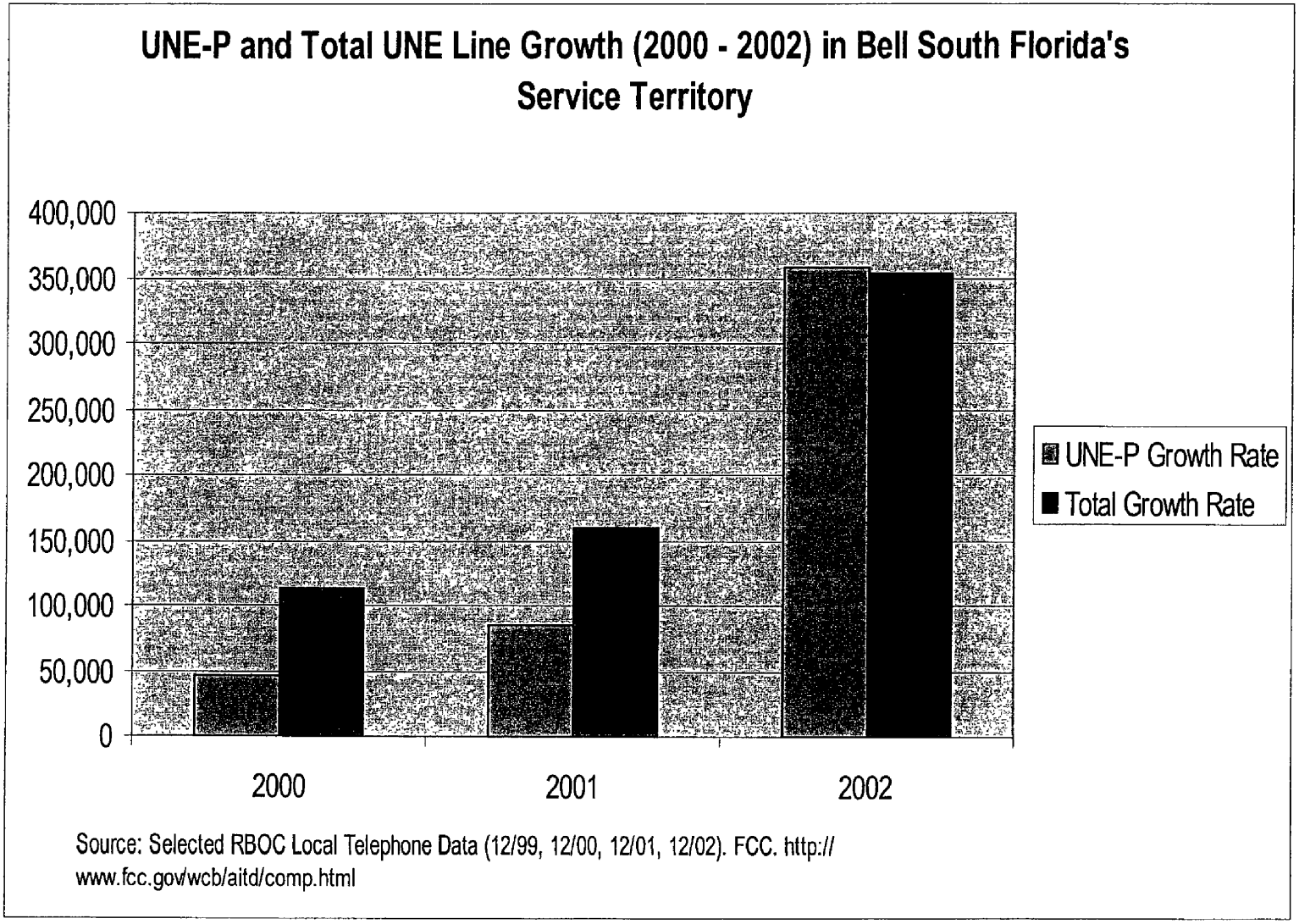
James D. Webber

Application of CenturyTel of the Midwest-Kendall LLC Requesting Public Service Commission to Approve Alternative Regulation Plan.
On behalf of AT&T Communications of Wisconsin, L.P. and TCG Milwaukee.

PSCW Docket No. 05-TI-174
Generic review of carrier performance and consumer benefits under alternative regulation.
On behalf of AT&T Communications of Wisconsin, Inc.

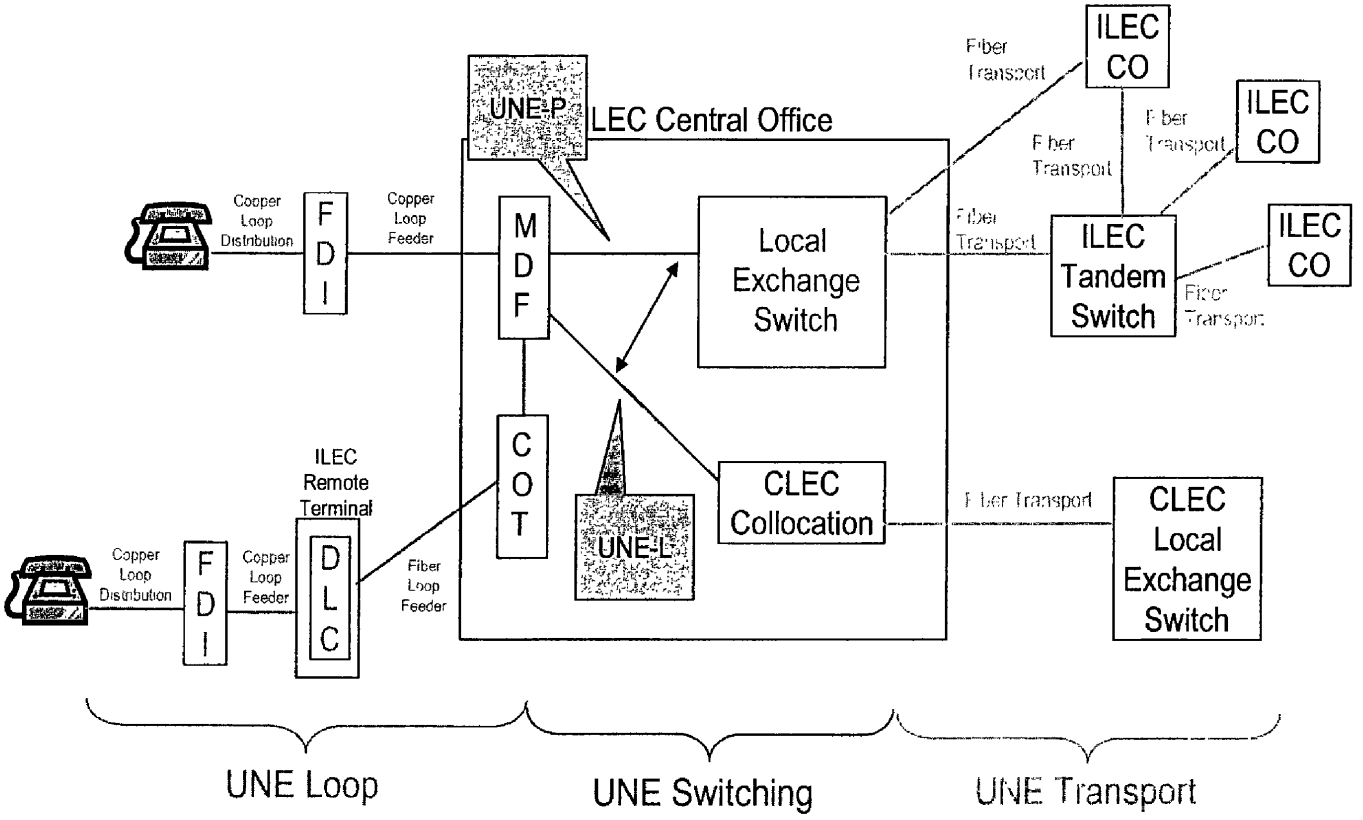

UNE-L vs.UNE-P Growth
(Thousands of Lines)
12000
10000
8000
6000
4000
2000
0
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
UNE-L
UNE-P


CLEC Market Share Growth in Florida (1999 - 2002)
15%
13%
11%
9%
7%
5%
Dec-99
Mar-00
Jun-00
Sep-00
Dec-00
Mar-01
Jun-01
Sep-01
Dec-01
Mar-02
Jun-02
Sep-02
Dec-02
CLEC Penetration
Source: Local Telephone Competition: Status as of December 31, 2002. FCC. June 2003

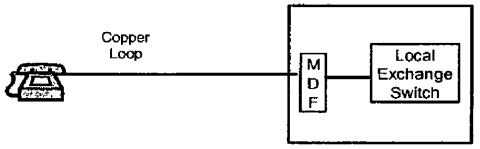


Source: Selected RBOC Local Telephone Data (12/99, 12/00, 12/01, 12/02). FCC. http://www.fcc.gov/wcb/aitd/comp.html

UNE-P to UNE-L HOT CUT

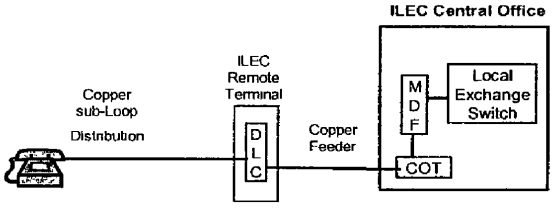


(1) All-copper outside plant; no digital loop carrier (DLC)

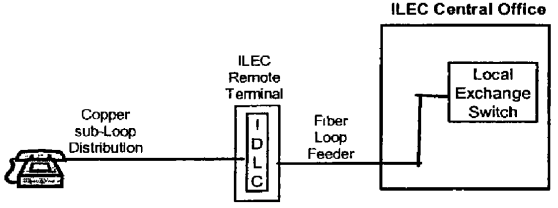


Local Voice Network

(2) Copper loop plant with UDLC



(3) Copper & fiber loop plant with IDLC



Microsoft Windows 2000 Server Documentation

Windows 2000 Home Page |

Contents | Index | Search | Glossary | ? Using This Site

Contents

- Welcome
- Getting Started with Windows 2000 S
- Active Directory
- Active Directory Connector
- Security
- Users and Computers
- Files and Printers
- Connections
- Networking
- Network Interoperability
- Client Services
- IntelliMirror
- Storing Data
- Disaster Protection
- Monitoring and Diagnostics Tools
- Internet Tools and Services
- Automating Administrative Tasks
- Application and Programming Tools
- Troubleshooting and Additional Resou

Attaining fast speeds with a 56 Kbps modem

A modem connection must fulfill three requirements to support a 56 kilobits per second (Kbps) (also called V.90) connection.

1. The host server must use a digital connection to the network. Your Internet service provider can tell you if they support 56 Kbps service.
2. Both ends of the connection must support the same protocol, the V.90 standard or either of its predecessors, K56flex, or 3COM/USR X2. For example, if your Internet service provider has a V.90 device, your modem must support the V.90 protocol.
3. There can only be one analog connection between your modem and the host computer. The phone line in most homes is an analog line.

If a connection does not meet these requirements, a modem falls back to the fastest protocol that works for the connection. For example, a 56 Kbps V.90 modem falls back to the 33.6 Kbps V.34 protocol if it cannot make a V.90 connection. Even if your connection fulfills these requirements, other factors may reduce either the transmission speed or the number of times that you successfully obtain the highest speed connection. For example, old lines or lines that are subject to interference may reduce transmission speeds. Maximum throughput speeds of 26 Kbps are not unusual in these cases.

Devices to improve the quality of your telephone service may also hamper 56 Kbps V.90 modem connections. Load coils found on long wire lengths to improve voice quality do not usually prevent V.90 connections, but can reduce the speed. Digital pads, which balance the volume of voice calls, usually do not prevent V.90 connections, but they can reduce the speed. Analog pads prevent V.90 connections, because they convert the digital data to analog to balance the volume and then back to digital. This inserts an additional analog section in the line.

In practice, the 56 Kbps speed supported by the V.90 and other protocols is unattainable. U.S. government regulations to safeguard public phone systems right now limit transmission speeds to 53 Kbps. Phone-line noise and other limitations of phone systems usually keep average transmissions in the 40 to 50 Kbps range.

For more information, see The V.90 modulation protocol, Data transfer speed, Improving modem throughput speeds, Optimizing data transfer speed, and Protocols and standards

Last updated: February 28, 2000

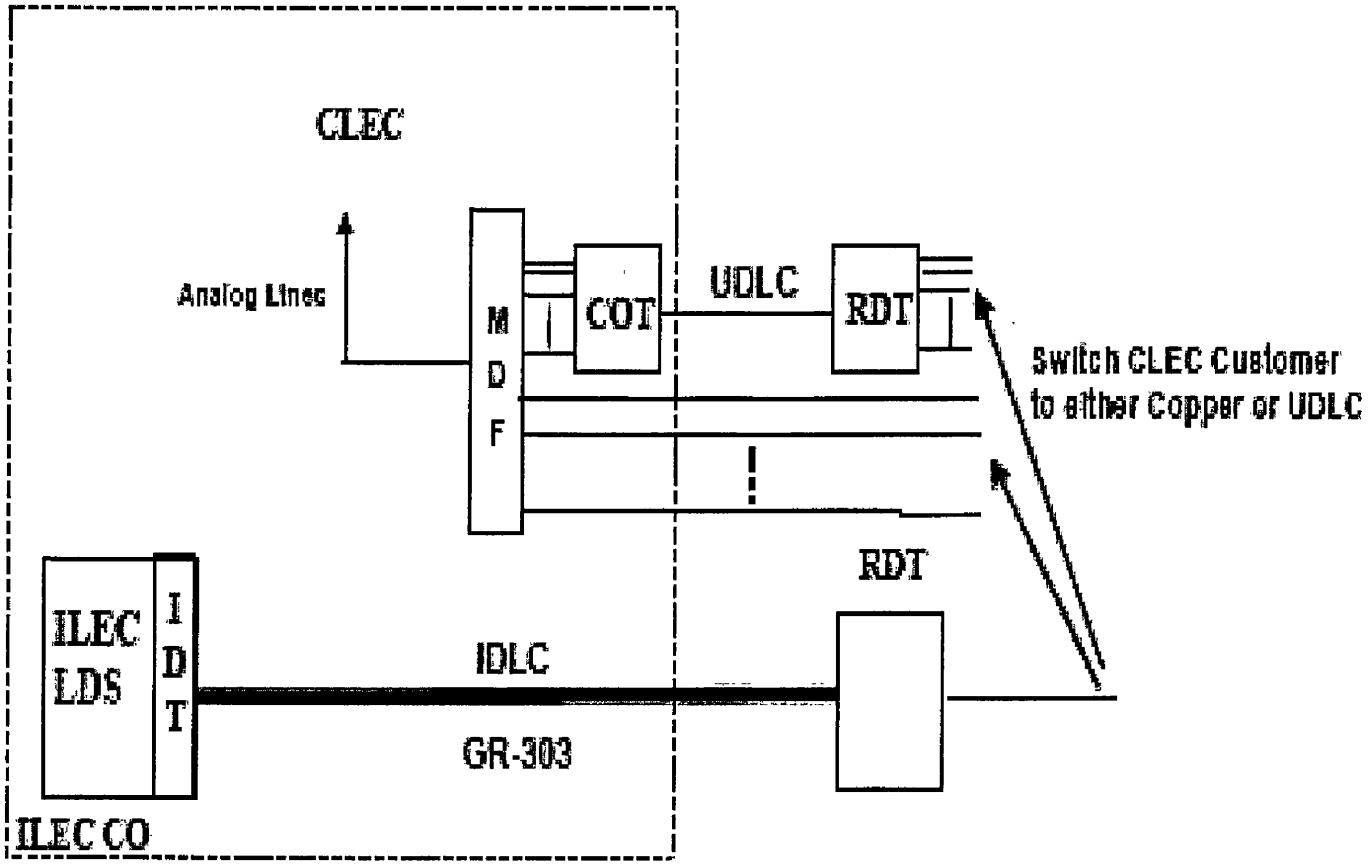
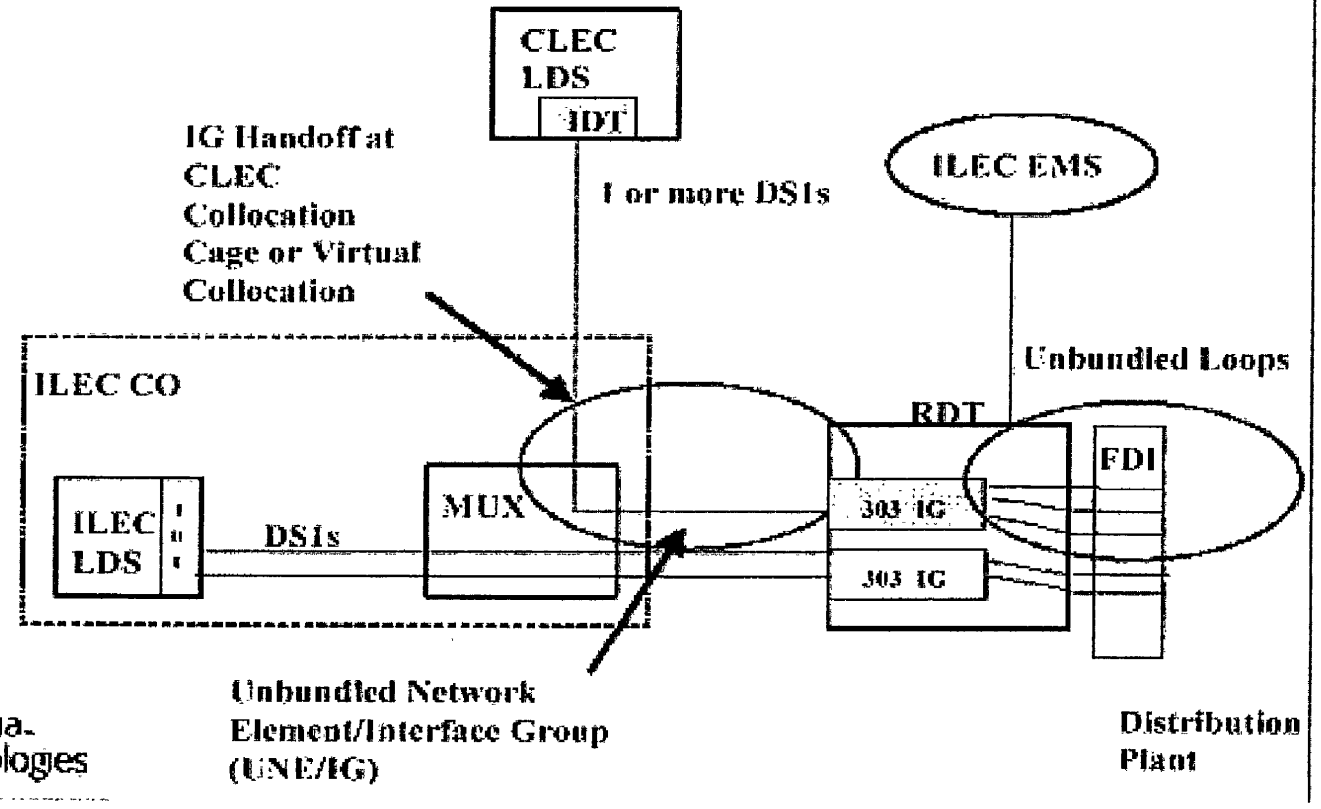


Figure 12-33. IDLC Unbundling - Bypass the IDLC System

Unbundling a GR-303 IG

Architecture



Telcordia Technologies

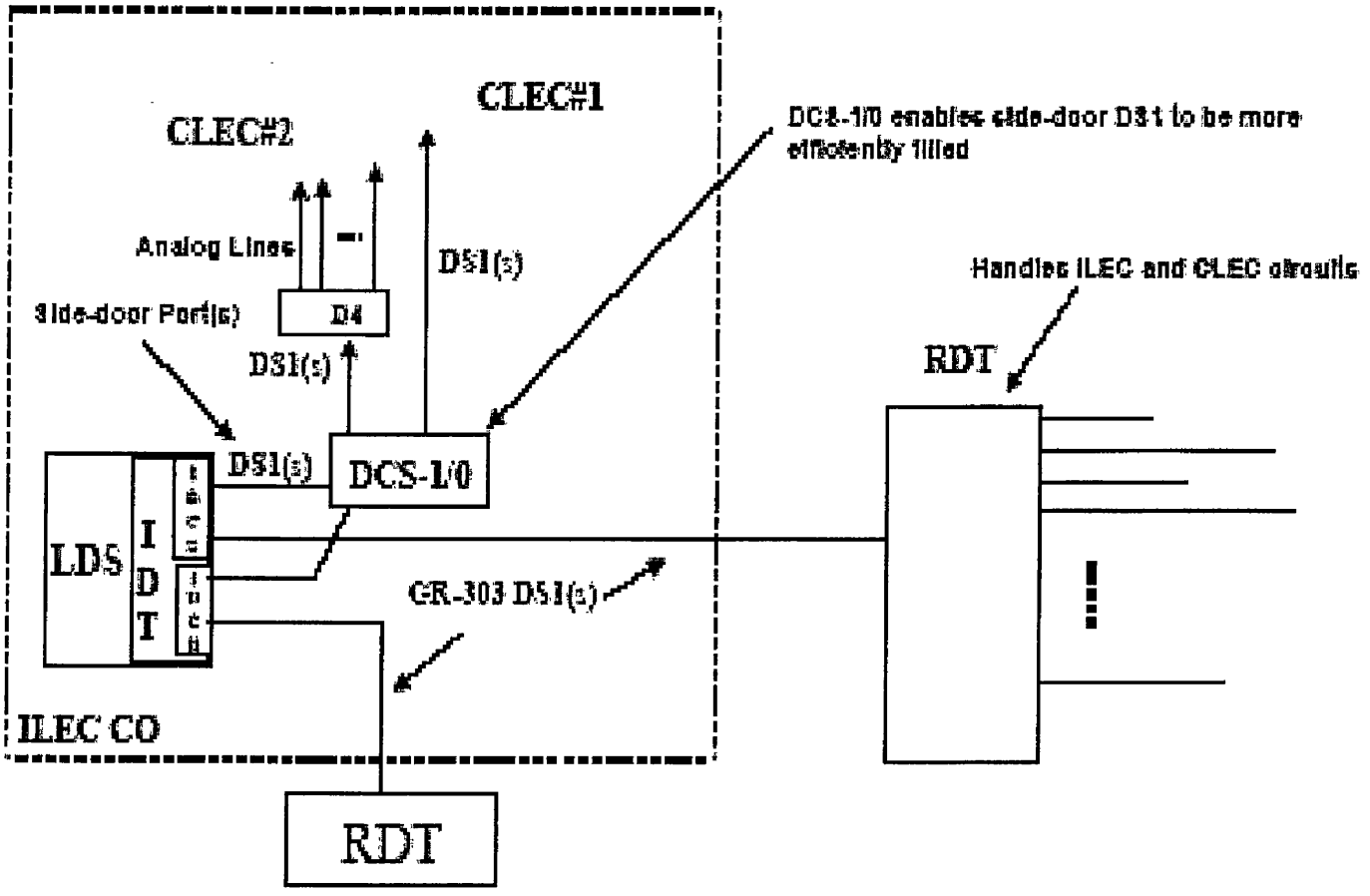
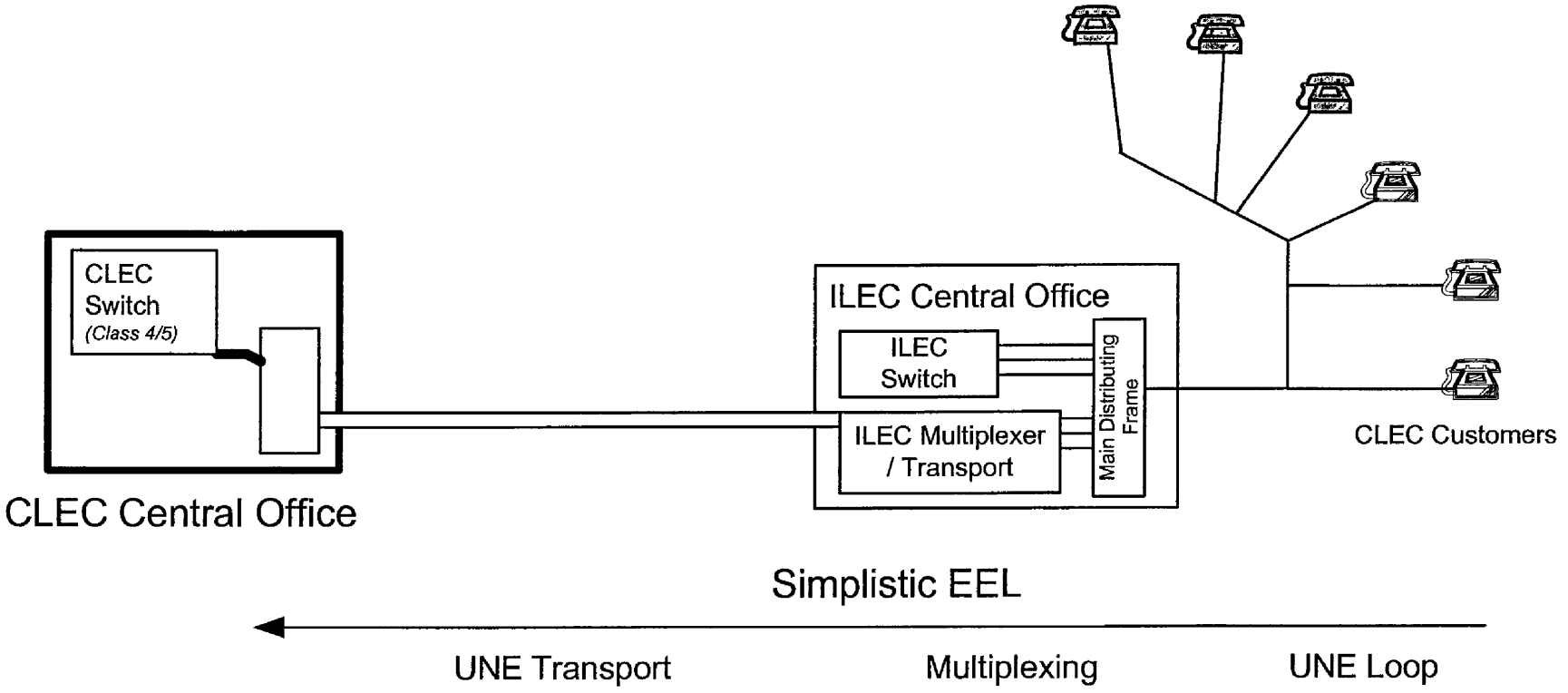


Figure 12-36. IDLC Unbundling Using Sidedoor Port


CLEC
Switch
(Class 4/5)
CLEC Central Office
ILEC Central Office
ILEC
Switch
ILEC Multiplexer
/ Transport
Main Distributing
Frame
CLEC Customers
Simplistic EEL
UNE Transport
Multiplexing
UNE Loop