EXHIBIT RVF-14T

BEFORE THE WASHINGTON STATE
UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of	**)**	
	)	**DOCKET NO. UT-033044**
QWEST CORPORATION	**)**	
	)	
To Initiate a Mass-Market Switching	**)**	
And Dedicated Transport Case	**)**	
Pursuant to the Triennial Review	**)**	
Order	**)**	

DIRECT TESTIMONY

OF

ROBERT V. FALCONE

ON BEHALF OF

AT&T COMMUNICATIONS OF THE PACIFIC NORTHWEST, INC., AT&T LOCAL SERVICES ON BEHALF OF TCG SEATTLE, AND TCG OREGON
(COLLECTIVELY "AT&T")

HOT CUT AND BATCH MIGRATION PROCESSES

January 23, 2004

TABLE OF CONTENTS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME FOR THE RECORD.

A. My name is Robert V. Falcone.

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

A. I am a self-employed telecommunications and management consultant retained by AT&T to assist with its efforts on the TRO hearings in the states.

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EMPLOYMENT EXPERIENCE.

A. I hold a B.S. in Business Administration from Adelphi University, Garden City, New York. Additionally, I attended a number of technical and business related courses offered by the AT&T School of Business when I was employed by AT&T on a full time basis. My career with AT&T began in 1970, working in a large central office in New York City. One of my first assignments with AT&T, which lasted for about eight-months, was a frameman. In this assignment my responsibility was to install and remove cross connections on various central office frames. For the next seven years I worked as a switchman in a central office performing switch provisioning and maintenance activities. In 1978, I was promoted to a first level manager responsible for the software administration of the New York City 4ESS switching complexes. As a first level manager I subsequently held various assignments in AT&T's operations and engineering

departments. In 1986, I was promoted to a second level manager responsible for AT&T's access engineering in the Northeast. I also held assignments as a product implementation manager in Bell Laboratories, project manager for the implementation of a new circuit switched network in Canada in a joint venture with Unitel of Canada and implementation manager for AT&T's conversion of its access network to SS7 out-of-band signaling. In 1994, I was promoted to a District Manager responsible for headquarters support of AT&T's local market network implementation. In 1997, I was promoted to a Division Manager responsible for supporting the AT&T regions with local market entry initiatives. I retired from AT&T in June of 1998. After retiring from AT&T, I have worked as a self-employed consultant for numerous clients, including AT&T, CompTel, BearingPoint (formerly KPMG Consulting) and Liberty Consulting. While working as a subcontractor with BearingPoint I was the group leader for BearingPoint's Systems Engineering Organization on the incumbent local exchange carrier ("ILEC") Operational Support System ("OSS") testing team. In this role I was responsible for the test planning, test bed development and test execution for BearingPoint's various ILEC OSS Section 271 testing efforts, including the Regional "ROC" test of Qwest's OSS.

Q. WHAT ISSUES DOES THIS TESTIMONY ADDRESS?

A. This testimony describes the current hot cut process, addresses the adequacy of certain components of Qwest's batch process and describes a long-term solution

that is necessary to remove the impairment CLECs face without access to unbundled local switching.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. First, I describe the current hot cut process. Second, I discuss the findings of the Federal Communications Commission ("FCC") in the Triennial Review Order ("*TRO*")[1] regarding the current hot cut process. I summarize the FCC's conclusion that CLECs are impaired without access to unbundled local switching as a result of economic and operational impairment, among other things, related to the hot cut process and describe certain aspects of the FCC's directions to the Commission regarding the FCC's finding of impairment. Third, my testimony provides recommendations on evaluating the proposed batch process. Fourth, I discuss the deficiencies and inadequacies in Qwest's proposal. Finally, I discuss why an electronic provisioning process is necessary to truly eliminate the impairment.

II. BACKGROUND: THE HOT CUT PROCESS

Q. WHAT IS A HOT CUT?

A. Whenever a customer seeks to move his or her local service from one switch-based carrier to another, the connection between the customer's loop and the

[1] *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; 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) (hereinafter *"TRO"*).

original carrier's switch must be broken and a new connection must be established between that loop and the new carrier's switch. Because the customer's loop is lifted or "cut" while it is still in active service (*i.e.*, the loop is "hot"), the process used to transfer loops has become known as a "hot cut." The hot cut process involves two separate changes to the customer's service that must be coordinated to occur at approximately the same time: (1) the manual transfer of the customer's loop from one carrier's network to another's (the loop cut); and (2) the porting of the customer's telephone number (including the timing of the associated software changes and disconnection of the original carrier's switch translations), so that inbound calls to the customer can be routed to the new carrier's switch using the customer's existing telephone number.

Q. DOES A HOT CUT CAUSE THE CUSTOMER TO LOSE SERVICE?

A. Yes. This occurs in two ways. The first is a complete loss of dial tone. From the time the customer's loop is disconnected from the ILEC's switch until it is reconnected to the competitive local exchange carrier's ("CLEC") switch, the customer has no dial tone and is completely out of service. Second, from the time the customer's loop is reconnected to the CLEC's switch until the customer's number is successfully ported to the CLEC's switch, the customer cannot receive any incoming calls. That is because, until the appropriate change message is received by the Number Portability Administration Center ("NPAC"), the NPAC database indicates that calls should be routed to the ILEC's switch. If calls are

sent to the ILEC's switch after the customer's loop has been physically moved, they are unable to complete.

Q. HOW DID THE FCC ADDRESS THE ISSUE OF HOT CUTS?

A. In the *TRO*, the FCC reviewed substantial data provided by both ILECs and CLECs and found, on a national basis, that competing carriers providing voice service to mass market customers are impaired without access to unbundled local circuit switching.[2] This finding was based, in part, on clear evidence regarding the economic and operational barriers caused by the hot cut process.[3] The FCC recognized that "whether a customer was previously being served by the competitive LEC using unbundled local switching (*i.e.*, using UNE-P), or by the incumbent itself, a hot cut must be performed [if unbundled local switching is no longer available]."[4] I will address the details of the FCC's impairment finding with respect to hot cuts later in my testimony.

Q. HOW DOES THE HOT CUT PROCESS DIFFER FROM PROVIDING SERVICE USING UNE-P?

A. UNE-P is a simple process that is ordered and provisioned electronically. With UNE-P, there is no need to perform any physical work in the ILEC's central

[2] *TRO* at ¶459.
[3] *Id.*; *see also TRO* at ¶ 473 ("Our national finding of impairment is based on the combined effect of all aspects of the hot cut process on competitors' ability to serve mass market voice customers.").
[4] *Id.* at ¶ 465.

office or outside loop plant to migrate an existing ILEC customer to a CLEC that is providing service using UNE-P. The migration from ILEC-retail to CLEC-UNE-P service only requires the ILEC to make software changes. Thus, there is little chance for error and the customer does not have to lose service during the migration, because the service is being provided through the use of the ILEC's switch. This eliminates the need for a physical transfer of the customer's loop, as well as the need to port the customer's telephone number to another switch. Consequently, CLECs offering service via UNE-P may almost always provide service to the customer very quickly, often on the same day the customer signs-up for service with the CLEC.

A hot cut, in sharp contrast, is a complex, highly manual process. It requires significant coordination between both the ILEC and a CLEC. Both carriers must perform multiple tasks in the hot cut ordering and provisioning processes, and both parties must coordinate these operations in the proper, agreed-upon sequence. If the many steps of the hot cut process are not performed in that exact sequence -- and properly coordinated between both carriers -- and if the ILEC does not complete its downstream processes correctly and timely, the customer will experience a service outage that is much longer than the unavoidable outage associated with this process.

Q. PLEASE DESCRIBE THE ADDITIONAL STEPS OF MIGRATING A CUSTOMER FROM AN ILEC TO AT&T USING A HOT CUT AS OPPOSED TO THE UNE-P PROCESS.

A. When a CLEC uses its own switch to serve mass market local customers with a UNE-L architecture, the processes needed to change local carriers are much more complex, manual and costly than for UNE-P, requiring physical work to transfer the customer's loop from one carrier's switch to another's. For example, the CLEC must assign the customer to facilities in its switch and equipment; both the CLEC and the ILEC must conduct a series of number porting activities; and the ILEC must perform numerous manual provisioning and testing activities in its central office and sometimes in the field. A summary of all the additional technical steps involved in a hot cut is contained in **Exhibit RVF-15** attached to my testimony. Not only are there significantly more steps involved in a hot cut, but also those steps must be coordinated if a cut is to be successful in limiting the time the customer is out of service.

III. THE FCC'S FINDINGS REGARDING THE CURRENT HOT CUT PROCESS

Q. WHAT DEFICIENCIES DID THE FCC FIND WITH THE CURRENT HOT CUT PROCESS?

A. The FCC made numerous findings regarding the inadequacy of the current hot cut process. These findings confirm the concerns AT&T has raised about hot cuts in

the past and demonstrate why AT&T moved away from UNE-L hot cuts as a method to provide service to its customers.

First, the FCC recognized that deficiencies in the hot cut process are seen and felt by customers. It found that the problems and delays associated with hot cuts "prevent[ ] the competitive LEC from providing service in a way that mass market customers have come to expect."[5] This is a substantial problem because "competition is meant to benefit consumers, and not create obstacles for them."[6]

Second, the FCC recognized that CLECs are likely to lose customers as a result of these problems. "Service disruptions also will influence customer perceptions of competitive LECs' ability to provide quality service, and thus affect competitive LECs' ability to attract customers."[7] Specifically, the FCC found that the "record shows that customers experiencing service disruptions generally blame their provider, even if the problem is caused by the incumbent."[8]

Third, the FCC recognized that many of the problems with hot cuts are inherent in the process. The FCC concluded, based on the evidence presented, that "hot cut capacity is limited by several factors, such as the labor intensiveness of the process, including substantial incumbent LEC and competitive resources devoted to coordination of the process, the need for highly trained workers to perform the

[5] *TRO* at ¶ 466.
[6] *Id*. at ¶ 467.
[7] *Id*. at ¶ 466.
[8] *Id*. at ¶ 467.

hot cuts, and the practical limitations on how many hot cuts the incumbent LECs can perform without interference or disruption."[9]

Fourth, the FCC focused specifically on the unavoidable limitations on the volume of hot cuts the ILECs could perform. The FCC found that CLECs were impaired because hot cuts could not be performed in the volumes that would occur in the mass market: "[h]aving reviewed the record evidence, we find that it is unlikely that incumbent LECs will be able to provision hot cuts in sufficient volumes absent unbundled local circuit switching in all markets."[10] The FCC specifically rejected ILEC arguments that the FCC's findings in section 271 proceedings regarding hot cuts demonstrated lack of operational impairment. The FCC correctly found that the number of hot cuts in the current market environment "is not comparable to the number that incumbent LECs would need to perform if unbundled switching were not available for all customer locations served with voice-grade loops."[11] Thus, the issue here is that there is "an *inherent limitation* in the number of manual cut overs that can be performed, which poses a barrier to entry that is likely to make entry into a market uneconomic."[12]

Finally, the FCC concluded that ILEC promises, regarding the ability to perform some volume of hot cuts that had never been requested, cannot be relied upon to demonstrate adequate performance. Specifically, the FCC found that "incumbent

[9] *Id*. at ¶ 465.
[10] *Id.* at ¶ 468.
[11] *Id*. at ¶ 469.
[12] *Id*. (emphasis added).

LECs' promises of future hot cut performance [are] insufficient to support a FCC finding that the hot cut process does not impair" CLECs.[13]

In short, the FCC found "ample testimony in the record" on the CLECs' operational and economic difficulties with hot cuts.[14] It recognized that "hot cuts frequently lead to provisioning delays and service outages and are often priced at rates that prohibit facilities-based competition for the mass market."[15]

Q. PLEASE SUMMARIZE THE FCC'S NATIONAL FINDING OF IMPAIRMENT REGARDING THE HOT CUT PROCESS.

A. Based in large part on its conclusions outlined above, the FCC made a "national finding that competitive carriers providing service to mass market customers are impaired without unbundled access to local circuit switching" and set out a plan to help mitigate the "inherent difficulties" with the ILECs' hot cut processes.[16] The FCC's plan included asking the state commissions to "approve and implement a batch cut migration process – a *seamless, low-cost process for transferring large volumes of mass market customers . . . .*"[17] This batch cut process must "render the hot cut process more efficient and reduce per-line hot

[13] *Id*. at n. 1437.
[14] *Id*. at ¶ 466.
[15] *Id*.
[16] *Id*. at ¶¶ 422-423.
[17] *Id*. at ¶ 423 (emphasis added).

cut costs."[18] It must also "address the costs and timeliness of the hot cut process."[19]

Q. WHAT DOES THE FCC MEAN BY "BATCH CUT PROCESS"?

A. The FCC defined a batch cut process as a seamless, low-cost process for transferring large volumes of mass market customers.[20] The FCC found that "the hot cut process could be improved if cut-overs were done on a bulk basis, such that the timing and volume of the cut over is better managed," and the non-recurring costs reduced.[21] Indeed, the FCC found that "such improvements are likely to be *essential* to overcome the operational impairment that competitors face in serving mass market customers. *Without such improvement*, the record shows that *carriers are likely to be unable to economically serve a market characterized by low margins*."[22]

Q. DID THE FCC FIND CURRENT ILEC PROCESSES FOR CONVERTING CUSTOMERS IN BULK TO BE SUFFICIENT?

A. No. The FCC found that "[p]roject managed cut-overs involve the conversion of a number of lines at one time, pursuant to provisioning requirements and intervals negotiated by the incumbent and the competitive LEC. We find that these approaches are not sufficiently developed or widespread enough to adequately

[18] *Id*. at ¶ 460.
[19] *Id*. at ¶ 488.
[20] *Id*. at ¶ 487.
[21] *Id.* at ¶ 474.
[22] *Id*. (emphasis added).

address the impairment created by the loop cut over process. The evidence in the record demonstrates that the carriers that have used project-managed cut-overs have used them only for business customers, and only after acquiring the customer through a means that offered the use of incumbent LEC loops and switches in combination."[23]

The FCC also noted "the record evidence indicates that incumbent LECs are not well-equipped to handle hot cut volumes even with the existence of a procedure to manage bulk migrations on a project-managed basis."[24]

Q. DID THE FCC OFFER ANY DIRECTION FOR STATE COMMISSIONS REGARDING BATCH CUT PROCESSES?

A. The FCC found that a seamless, low-cost batch cut process for moving mass market customers from one carrier to another is necessary, ***at a minimum***, for carriers to compete effectively in the mass market.[25] The FCC's Order directs state commissions to approve, within nine months of the effective date of the Order, a batch cut migration process to be implemented by the incumbent LECs that will address the costs and timelines of the hot cut process.[26] More specifically, it requires state commissions to do the following:

---

[23] *Id*. at ¶ 474.
[24] *Id*. at ¶ 487, n. 1516.
[25] *Id*. at ¶ 487.
[26] *Id*. at ¶ 488. A state commission may decline to institute a batch cut process, provided that it instead issues *detailed* findings regarding the volume of UNE-L migrations that could be expected if competitive LECs were no longer entitled to unbundled local circuit switching, that the incumbent can be expected to meet that demand in a timely and efficient manner using the existing hot cut process, and that the non-recurring

- Adopt a batch cutover "increment" for migrating customers served by unbundled loops combined with unbundled local circuit switching to unbundled stand-alone loops. In other words, states should decide the appropriate volume of loops that should be included in the "batch."

- In conjunction with incumbent LECs and competitive LECs, approve specific processes to be employed when performing a batch cut. The FCC "expect[s] these processes to result in efficiencies associated with performing tasks once for multiple lines that would otherwise have been performed on a line-by-line basis."

- Determine whether the ILEC is capable of migrating batch cutovers in a timely manner.

- Adopt TELRIC rates for the batch cut process. These rates should reflect the efficiencies associated with batch migration of loops to a competitive LEC's switch, either through a reduced per-line rate or through volume discounts.[27]

Q. ARE THERE OTHER ISSUES RELATED TO BATCH CUTS THAT THE FCC DIRECTED THIS COMMISSION TO CONSIDER?

A. Yes. The FCC also directed state commissions to consider whether (or the extent to which) temporary or "rolling access" to UNE-P would address all identified impairment.[28] Rolling access to UNE-P is not adequate to "cure" the many operational and economic issues for the reasons described in other AT&T testimony. However, should the Commission make a finding that all economic and operational impairment would be eliminated by a batch hot cut process, AT&T believes the use of rolling UNE-P is required. Indeed, AT&T is not aware

---

costs associated with the hot cut process are not an entry barrier. *Id.* at ¶ 490. Failure to develop a process, however, does not relieve the state commission of its obligation to analyze whether requesting carriers are impaired without access to unbundled switching.

[27] *TRO* at ¶ 489.

[28] *TRO* at ¶ 524.

of any methodology for transferring "batches" of customers that would not require the customers to first be acquired by the CLEC.[29] Therefore any batch migration process developed by this Commission should be based on the assumption that the CLEC has already acquired the customer using UNE-P before moving it to a UNE-L/CLEC switch network configuration. Further, as acknowledged by the FCC, "competitive LECs may face difficulties in accumulating enough customers to justify batch line migration processing *in both new central offices* and existing collocations."[30] Accordingly, if rolling access is established by this Commission, it should include sufficient time for CLECs to accumulate enough customers to justify collocation, and enough time to then establish the collocation in new central offices or to augment existing collocation arrangements where necessary.

IV. RECOMMENDATIONS ON EVALUATING THE BATCH PROCESS

Q. DID THE FCC IDENTIFY A STANDARD AGAINST WHICH AN ILEC'S HOT CUT PROCESS SHOULD BE MEASURED?

A. Yes. In describing a hot cut process that demonstrated "consistently reliable performance," the FCC recognized that for the migration of customers, UNE-P should be the standard of performance. The FCC stated: "This review is

[29] The FCC stated that "we find that the availability of unbundled local switching – even on a temporary basis – may enable competitors to acquire customers, aggregate them, and migrate them to the carriers' own switch in a manner *that would not be feasible if the customers each had to be migrated individually* upon signing up with the competitive LEC." *TRO* at ¶ 522 (emphasis added).
[30] *Id*. at ¶ 522 (emphasis added).

necessary to ensure that customer loops can be transferred from the incumbent LEC main distribution frame to a competitive LEC collocation *as promptly and efficiently as incumbent LECs can transfer customers using unbundled local circuit switching*."[31] Thus, the appropriate comparison must be whether the ILEC can move customers served by UNE-L at the same volumes and performance levels as UNE-P. This is perfectly logical, since CLECs would be forced to abandon UNE-P and substitute UNE-L if they were denied access to unbundled local switching.

Moreover, such a standard is required in order to provide parity to all carriers that seek to provide a bundle of both local and long distance services to mass market customers. ILECs today can (and do) add large numbers of long distance customers through the electronic PIC process, which is very comparable to the electronic provisioning process used to provide UNE-P service. If CLECs cannot have the same ability to add local customers, they are seriously impaired in their ability to provide similar bundled offers. Indeed, the RBOCs themselves have recognized that the ability to offer such bundles is a major competitive advantage in fending off CLECs and/or winning back CLEC local customers. Further, since the FCC's impairment standard requires a review of all costs and revenues a CLEC would incur, including long distance, CLECs must have the same ability to offer local/long distance bundles as the ILEC.

[31] *TRO* at n. 1574 (emphasis added).

Q. WHAT CHARACTERISTICS SHOULD BE INCLUDED IN ANY BATCH CUT PROCESS CONSIDERED BY THIS COMMISSION?

A. While any batch process will still continue to contain the same manual steps as the current process, making it difficult to significantly reduce the economic and operational impairment, the development of a batch cut process by this Commission would be of some benefit to competition, because it would facilitate CLECs' use of non-ILEC facilities in the limited situations where it is otherwise feasible to do so. From AT&T's perspective, the process should, at a minimum, address the elements contained in **Exhibit RVF-16** attached.

Q. WILL THE IMPLEMENTATION OF A BATCH PROCESS ELIMINATE ECONOMIC IMPAIRMENT?

A. No. First, the efficiency gains realized from a manual batch process will likely be too incremental to result in substantial reduction of the overall costs required to extend mass market loops to CLEC switches. And even if the ILEC charges for hot cuts were reduced, that would affect only one of many additional costs that only CLECs face in attempting to provide service using non-ILEC switches. Critically, a batch provisioning process does not relieve any of the economic impairment that results from the collocation, collocation equipment and backhaul costs that a CLEC must incur to connect the ILEC loop to its switch.

Q. WILL THE IMPLEMENTATION OF A BATCH PROCESS ELIMINATE OPERATIONAL IMPAIRMENT?

A. No. The batch hot cut process does not eliminate any of the manual steps necessary to perform a hot cut. It also does not eliminate the need to physically change out the customer's facilities for those customers that are on Integrated Digital Loop Carrier ("IDLC"). Any process that relies on multiple manual steps to achieve a customer migration to another carrier is going to be subject to human error and therefore is unsatisfactory for serving the mass market.

V. QWEST'S BATCH PROCESS

Q. CAN YOU DESCRIBE QWEST'S CURRENT BATCH PROPOSAL?

A. No. AT&T spent 8 days in meetings reviewing and discussing Qwest's proposal. Qwest's initial proposal evolved over time. Qwest made a new, conditional proposal near the end of discussions, and AT&T is not sure if that proposal is still outstanding or was withdrawn because the CLECs did not accept all of the conditions. However, notwithstanding the proposal Qwest ultimately submits, there are a number of issues that were discussed and that Qwest and the CLECs agreed are at impasse. These impasse issues are fundamental to any batch process Qwest proposes.

Q. WHY DO YOU CLAIM THAT THE IMPASSE ISSUES ARE FUNDAMENTAL?

A. Because the impasse issues go to the very basis of the FCC's finding of impairment. The FCC stated:

> "we find the overall impact of the current hot cut process raises competitor's costs, lowers the quality of service, and delays the provisioning of services, thereby preventing them [CLECs] from serving the mass market in the large majority of locations."[32]

Qwest's current batch hot cut proposal will further raise the CLECs' internal costs, will lower the quality of the hot cut process and will further delay the provisioning of service.

The FCC told the states to decide the appropriate volume of loops to be included in the batch, approve specific, efficient, and cost effective processes to be used when performing a batch, and determine whether the ILEC is capable of migrating customers using the process in a timely manner.[33] All of the impasse issues are directly related to these issues. Qwest's proposal, therefore, falls far short of the goals sought to be achieved by the FCC.

A. Size of the Batch

Q. WERE THE CLECS AND QWEST ABLE TO COME TO AN AGREEMENT ON THE SIZE OF THE BATCH?

A. No. Qwest's initial proposal was that the minimum size of the batch should be 25 loops. The maximum size of the batch would be 100 loops. The total per central office would be 100 loops per day for all CLECs. Therefore, if a CLEC puts in an

[32] *TRO* at ¶ 473.
[33] *TRO* at ¶ 489.

order for 100 loops in one batch, that is the entirety of the loops that could be cut that day in the central office using the batch process.

Q. DID QWEST'S PROPOSAL CHANGE DURING THE MEETINGS?

A. It would be more accurate to say it became more refined. Qwest would not change its original proposal of a maximum batch of 100 loops per day per central office. It did not agree to lower the 25 loop minimum order size for a batch, but it did agree to process the batch even if some of the 25 loops were rejected from the batch.

Q. DOES AT&T DISAGREE WITH THE REQUIREMENT THAT THE BATCH INCLUDE AT LEAST 25 LOOPS?

A. Yes. There is no reason that there should be a minimum batch size. Once the order is placed, efficiencies should begin on the second cut. In fact, Qwest's current hot cut rates are reduced beginning with the second hot cut on an order, even if technically a multi-loop order is not considered a batch. Qwest argues there would be no efficiencies if, for example, it had to have central office or field technicians cut over less than 25 loops. However, under the current process, it has to dispatch central office or field technicians if there is an order for one loop. Therefore, an order containing more than one loop would save a trip or trips to an unmanned central office. Even in manned central offices Qwest has admitted

there are efficiencies to be gained from the elimination of some processes for a multi-loop order.[34]

The Qwest proposal is voluntary, not mandatory, according to Qwest. Therefore, Qwest may receive multiple orders from a CLEC on the same day or over a number of days for the same central office that will have different installation intervals, because it does not have 25 loops to submit as a batch. Qwest does not explain how this is more efficient, nor can it.

Q. DOES AT&T AGREE WITH THE 100 LOOP MAXIMUM PER BATCH?

A. No. AT&T has concerns that Qwest's proposal unnecessarily limits a CLEC's flexibility.

AT&T does not agree with the reasons Qwest provided to limit the size of the batch. Qwest makes two primary arguments against increasing the maximum number of loops that can be cut over in a day. The first is that no CLEC should need to do more than 100 in a central office in a day. In support of that argument, Qwest has stated that it can adequately transition the existing UNE-P base to UNE-L over the transition period established by the FCC[35] using the maximums established by Qwest. Its second primary argument is that diseconomies of scale

[34] Qwest Batch Hot Cut Forum, TR 281-282 (Dec. 2, 2003): "For example, just to walk over to analyze the orders and for the technician to pull all that stuff together, if they do that once for 25 orders, that's cheaper than if they did it once for each order and kept doing it over and over again for each separate order. So there's some real savings that are realized by the CO tech for that; a lot of analysis stuff; they only have to do entries into the system one time, they don't have to keep doing them multiple times." This is true whether it is 25 orders or 2 orders. It is simply a matter of degree.

[35] *TRO* at ¶ 532.

are created if it has more than one two-person team working on hot cuts in a central office at the same time. Qwest claims that if there is more than one two person team of technicians working on hot cuts at the same time, their central office technicians will be running into one another when doing work on the frames.

Qwest's second argument should also be rejected. Even if it were true that there are diseconomies of scale when more than one two-person team is migrating unbundled loops in a central office, Qwest could overcome that problem by simply having more than one shift in which it works batch hot cuts.

Q. SHOULD THE FOCUS BE ON TRANSITIONING THE EMBEDDED BASE OF UNE-P CUSTOMERS?

A. No. Though the batch process, if priced correctly and implemented in such a manner that it does not increase the risk of an extended outage for the CLEC's customers, may be used to facilitate the migration of the embedded base, AT&T believes that Qwest is inappropriately fixating on the transition of the existing base of UNE-P customers and failing to take into account migration of new UNE-L customers from Qwest to the CLECs or from CLEC to CLEC.[36] Without UNE-P, UNE-L volumes will significantly increase over current levels and increase the need and use of a batch process.

[36] A customer being served by a switch-based CLEC using UNE-L may lose that customer to another switch-based CLEC using UNE-L.

The FCC noted that CLECs have used UNE-L to serve small market segments, however, "no competitive carrier relies on hot cuts to offer services to significant numbers of customers served by voice grade loops."[37] The FCC further noted that some ILECs limited the number of hot cuts they would perform per day or per central office.[38] The FCC found an "inherent limitation in the number of manual cut overs that can performed, which poses a barrier to entry that is likely to make entry into a market uneconomic."[39] Qwest has not explained why its "limitation" passes muster and the limitations cited by the FCC did not. It cannot, because the FCC has equated any limitation to an entry barrier.

In addition, even for the embedded base, Qwest's argument is overly presumptuous, and it should be rejected. Qwest is presuming to know that CLECs will never find efficiencies in having more than 100 loops cut over in an office in a single day. In fact, if a CLEC has 200 UNE-P lines in a central office, it would be more efficient for the CLEC to have those lines converted at one time rather than in two or more days. Qwest's refusal to increase the maximum number of lines prevents CLECs from gaining efficiencies they could obtain.

Q. WHAT ABOUT QWEST'S SECOND CONCERN REGARDING TECHNICIANS RUNNING INTO EACH OTHER? IS THIS A VALID CONCERN?

[37] *TRO* at ¶ 468.
[38] *Id*.
[39] *TRO* at ¶ 469.

A. The second issue raised by Qwest is the issue of technicians running into each other while working on the frames. First, most of the more active central offices are very large with large main distribution frames ("MDF"). Generally speaking in these offices this should not be a problem. Qwest's response is that it uses intermediate frames ("ICDFs"), and the other ILECs do not. It claims it is more difficult for multiple teams of technicians to be working on the ICDF at the same time than it is on the MDF. Any limitation due to the use of an ICDF was created by Qwest, and Qwest's decision to interject an ICDF should not be used to make the batch process less advantageous to the CLECs.

CLECs initially opposed the Qwest requirement of an ICDF. During the section 271 proceedings they argued for the ability to connect directly to the MDF. Qwest fought this for years. CLECs had no choice but to use the ICDF. Subsequently, Qwest relented, but a lot of CLEC infrastructure was already in place, and the use of a direct connection to the MDF is priced higher by Qwest, making its use less favorable. Since Qwest built in whatever limitations that it claims exist, it should find a method around them. This it can do by simply extending the limited hours it plans to do batch hot cut work.

Q. WHAT IS AT&T'S RECOMMENDATION ON THE MINIMUM SIZE OF THE BATCH?

A. Two. However, that recommendation is made in the absence of critical information. The first key piece of information that is lacking is the knowledge of

whether CLECs will have access to rolling UNE-P as a customer acquisition tool. The second key piece of information is the price of a batch hot cut. Without rolling access to UNE-P, the minimum should be two. However, if rolling UNE-P is allowed then the minimum may be central office specific. In central offices where there is a great deal of activity, a minimum of 10 or 20 lines may be reasonable, as it should not take a CLEC long to build up this quantity to qualify for a batch hot cut project. In smaller offices, where migration activity is likely to be nominal, the minimum needed to qualify for a batch job may remain as little as two or three lines. Of course, the price the Commission determines for the batch hot cut will significantly influence whether a CLEC uses the process and the economics of varying batch sizes.

Q. WHAT IS AT&T'S RECOMMENDATION ON THE MAXIMUM SIZE OF A BATCH?

A. Given that even the most efficiently designed batch hot cut process that can be developed using current technologies will still not eliminate any of the manual work associated with the customer migration process or the associated economic and operational barriers, AT&T understands why Qwest has to set a maximum limit on the number it can do. As opposed to the electronic methods used to transfer an unlimited number of customers to a new long distance carrier or to a new local carrier using UNE-P, CLECs will always be gated by any hot cut process. The "seamless, low cost" design envisioned by AT&T just cannot be

achieved using technologies (the MDF) that were patented in the 19th century. AT&T's concern with the 100 per day per central office limit is that there is no flexibility with Qwest's proposal. Any CLEC who has outstanding orders for large batch jobs is going to be able to preclude other CLECs from being able to initiate a batch job in the same office. Any maximums set must consider that there will be multiple CLECs trying to compete for customers in the same office and all will need to be able to avail themselves of the batch process.

Recognizing that, from a capacity perspective, this inherently manual process cannot be significantly improved, AT&T recommends that the maximum size of the batch be increased to 200 loops per central office per day. This assumes two shifts of Qwest technicians performing batch hot cuts.

B. The Specific Process

Q. YOU INDICATED EARLIER YOU COULD NOT DESCRIBE QWEST'S BATCH PROCESS. WERE THERE ANY IMPASSE ISSUES THAT ARE RELATED TO THE PROCESS?

A. Yes. There are a number of impasse issues. First, Qwest wants to limit the time of day the hot cuts in a batch are performed from 3 a.m. to 11 a.m. Second, Qwest has proposed creating a new web-based tool to communicate order status. Third, Qwest has disqualified IDLC and line split loops from a batch. Fourth, the standard five-day interval should be maintained. Fifth, the process does not allow migration by telephone number ("TN") and street address name ("SANO").

1. The Time When the Hot Cuts are Performed

Q. WHAT TIME OF DAY DOES AT&T WISH THE HOT CUT TO BE PERFORMED?

A. First of all, AT&T does not want the time for performing the actual hot cut[40] to be restricted from 3 a.m. to 11 a.m. Considering that the bulk of the manual work associated with a loop migration involves the pre-wiring and testing, which Qwest has agreed to perform prior to the day of the actual hot cuts, the actual lift and lay is all we are talking about. CLECs should be able to identify the specific time of day for performing the lift and lay. AT&T recognizes there may be more than one request for a particular time, but the CLEC should be able to request a time for the cut to accommodate the needs of its customers. Qwest responded to this request for flexible cutover times by stating that the CLEC can check the web-based status tool to determine when a batch has started or a CLEC could use a process that Qwest identified as "trap and trace." Although Qwest's proposals will tell the CLEC when the process has started, they require the CLECs to take affirmative steps to obtain the information. Furthermore, Qwest's proposals do not permit the CLECs to select the window when the cuts are performed, which may limit the CLEC's ability to use the batch process for select customers.

[40] By actual hot cut AT&T means the action of putting the customer out of service by removing the customer's existing connecting to the Qwest switch and connecting the customer's loop to the CLEC's collocated equipment

Q. WHY DOES AT&T WANT THE ABILITY TO SCHEDULE THE CUTS ANY TIME OF DAY?

A. Because hot cuts put customers out of service and prevent customers from making and receiving telephone calls, all customers are affected by the cutover process. Businesses are very concerned about being out of service during their business hours. Qwest's response is that there are other options available to CLECs to do coordinated cuts. This is yet another restriction on a process envisioned by the FCC to make the hot cut process more efficient. The fact is, AT&T is not asking to do a coordinated cut; it simply wants to be able to schedule the time of the cut. Qwest's second argument is that it reduces efficiency. AT&T disagrees. First, Qwest has not provided any evidence to demonstrate that it would be less efficient to schedule a batch of 5 or 95 loops at 1 a.m. rather than 9 a.m. It is AT&T's position that it is more efficient to do a batch of these loops at 1 a.m. than 5 -95 separate coordinated cuts. A batch should be more efficient at any time of the day than doing a similar number of loops on an individual case basis.

2. CLEC Notification

Q. WHAT IS AT&T'S CONCERN WITH THE WEB-BASED TOOL YOU MENTIONED?

A. One of the issues with any hot cut process is notification to the CLECs of the commencement and completion of the actual hot cut. Under the existing hot cut procedures, for a basic hot cut, the CLEC is notified by telephone when the cut is

complete. For coordinated cuts, Qwest notifies the CLEC by telephone call when a hot cut is commenced and completed. Qwest proposes to develop a new web-based tool that CLECs will have to periodically check to determine the status of the batch orders. This means that a CLEC will have to constantly review the web-based tool to confirm order completion, since the CLEC cannot port the numbers with NPAC until the process is completed. A telephone call upon completion of the hot cut is the current method used to notify the CLEC of order status.

Q. IS AT&T SUGESTING SOME OTHER METHOD OF NOTIFICATION?

A. As I noted, Qwest presently contacts the CLECs by telephone of the completion of a hot cut. For this same notification associated with batch hot cut jobs Qwest originally proposed sending an email. After a number of concerns were raised by the CLECs, Qwest proposed the web-based tool. Though such a tool may be a step in the right direction, the current design being put forth by Qwest places additional monitoring obligations on CLECs that do not exist now. In addition, it requires CLECs to use a tool that does not take advantage of existing CLEC OSS development. Whatever efficiencies Qwest may obtain through the use of this web-based tool are achieved at the expense of the CLECs.

Q. WHY DO YOU SAY THAT QWEST'S PROPOSAL DOES NOT TAKE ADVANTAGE OF EXISTING OSS?

A. CLECs have expended considerable sums to design and build OSS that are compatible with Qwest's OSS. Qwest provides two interfaces – an IMA GUI and

IMA EDI. The GUI is web-based. The EDI is not. AT&T, for example, uses EDI. Instead of receiving a message using EDI, AT&T will have to review the web-based tool. It would be more efficient for the CLECs to receive messages over EDI. Additionally, such a notification method would be "pushed" out to the CLECs upon completion of the hot cut as opposed to the CLECs having to have someone continually request updates to the web-based tool to determine whether or not their customer's line has been cutover to trigger them to port the customer's number. Either Qwest's web-based solution or the EDI solution will require some development effort on the parts of Qwest and CLECs. As a general matter, if AT&T is going to be performing development work, it would rather have the work performed as part of its existing EDI systems rather than on a web based, proprietary, Qwest system.

3. IDLC and Line Split Loops

Q. YOU TESTIFIED THAT QWEST HAS DISQUALIFIED IDLC LOOPS AND LINE SPLIT LOOPS FROM THE BATCH PROCESS. HOW DOES THAT AFFECT THE BATCH PROCESS?

A. It means, for example, that existing UNE-P customers served by loops using IDLC cannot be converted to UNE-L as part of the batch process. Qwest, once again, claims a loss of efficiency. However, once again, Qwest is placing conditions on the batch process that are not presently imposed on basic and coordinated cuts.

Qwest suggests that these lines can be handled using the present processes. AT&T believes this is unacceptable for a number of reasons. The number of IDLC loops in some central offices is not insignificant. Not only will CLECs be prevented from using the batch process for these loops, all the inherent limitations of the current process will continue to exist. The FCC specifically found that the inherent difficulties of the current hot cut process creates impairment requiring CLEC access to unbundled local switching.[41] The batch process ultimately adopted is supposed to be a low-cost and cost-effective one.[42] CLECs with customers served by IDLC loops will be denied the cost savings of the batch process. In addition, a CLEC will have to develop or modify internal systems and processes to identify that a loop is served by IDLC and then employ separate processes and work flows depending upon the response.

4. Standard Interval

Q. WHAT SHOULD THE INTERVAL BE FOR THE BATCH PROCESS?

A. The current standard interval for an unbundled loop hot cut order when there are 1 – 8 lines at a single location is 5 days.[43] Qwest is proposing that the more efficient batch hot cut process standard interval be 7 days. It is an oxymoron to assert that a "more efficient" hot cut process takes longer to execute than the existing process. In addition, this too is a difficult question to answer without first

[41] *TRO* at ¶ 422.
[42] *TRO* at ¶¶ 423 & 489.
[43] The vast majority of hot cuts will require less than 8 lines at a single location.

knowing whether CLECs will have access to rolling UNE-P and the price of the batch hot cut process. Without access to UNE-P as a customer acquisition tool, the batch hot cut interval cannot exceed the current interval for a hot cut of five days for orders of 1-8 lines. There is no limit on the number of hot cut orders a CLEC can place with less than 8 loops and still receive the 5-day standard interval.[44] Consequently, there is no reason a more efficient process should be longer than the less efficient loop-by-loop process.

Q. IF THE CLEC IS ALREADY SERVING THE CUSTOMER USING UNE-P, DOES IT MATTER WHAT THE INTERVAL IS?

A. During any transition of existing UNE-P customers from UNE-P to UNE-L, the interval is less critical. However, if the batch process is expected to be used for the acquisition of new CLEC UNE-L customers, then 5 days is the maximum a new customer should have to wait to switch to the new CLEC.

5. Migration by TN and SANO

Q. EXPLAIN WHAT YOU MEAN BY MIGRATION BY TN AND SANO.

A. Currently, on a conversion from UNE-P to UNE-L, Qwest requires that the CLEC populate many address-related fields on the LSR. Once the CLEC submits the LSR, Qwest compares those many address-related fields to its own internal information. If the information does not match Qwest's internal information, the

[44] Though there is no advertised limit to the number of orders, Qwest really has never been put to the test to determine if they would be able to provide a 5-day interval considering today's modest hot cut volumes.

order is rejected. In contrast, when a customer is migrated from Qwest retail to CLEC UNE-P, the CLEC need not populate all of the address-related fields on the LSR. Instead, the CLEC only needs to provide on the LSR the customer's telephone number and street address number (the street address number field on the LSR is called the SANO). It is less work for the CLEC to create an LSR using only the customer's telephone number and SANO, and the order is less prone to errors and rejection than if the CLEC had to populate all of the address related fields. For a transfer of CLEC UNE-P customer to a UNE-L platform, since the customer is already an existing customer of the CLEC, MCI proposed, and AT&T supports, that the use of the customer's TN and SANO be sufficient. This would speed up the order process for the CLECs and eliminate the problem of orders being rejected or dropping out for manual handling where the address-related information on the LSR does not exactly match the address information in Qwest's internal systems. In other words, it would permit the CLECs to be more efficient, assuming the process is reasonably priced. Qwest has acknowledged there is no technical limitation that prevents Qwest from modifying its interfaces to do migrations by TN and SANO.

Q. IF QWEST HAS AGREED THERE IS NO TECHNICAL LIMITATION, WHAT IS THE PROBLEM?

A. MCI wants the process to be agreed to by Qwest as part of the batch process and ordered as a regulatory change to ensure the change is made along with all the

other changes that will need to go through the change management process ("CMP") to implement the batch process. MCI submitted its proposal to CMP in December 2003. However, there is no assurance that MCI's proposal will be prioritized high enough to be included in the next release. By making the MCI request a requirement of any batch process, it could be considered a regulatory change and be given priority under the CMP guidelines.

Q. SHOULD MCI'S PROPOSAL BE A REQUIREMENT OF ANY BATCH PROCESS?

A. Yes. There is no question the change can be done. By incorporating MCI's proposal, the CLEC will be able to process orders more quickly and fewer orders will drop out of the batch. This is more efficient for both parties, and it makes it more likely that a CLEC will use the batch hot cut process.

C. Timely Processing of Hot Cuts

Q. HAS QWEST PROVIDED ANY EVIDENCE THAT IT CAN HANDLE THE VOLUMES OF BATCH CUTS THAT WILL BE NECESSARY DURING THE TRANSITION FROM UNE-P TO UNE-L?

A. Qwest did provide some exhibits that it claimed demonstrated that it can handle the volumes necessary to transition from UNE-P to UNE-L. However, the data included in the exhibits was very limited. It did not incorporate any Qwest winbacks, CLEC-to-CLEC hot cuts or regular hot cuts that are not part of the

batch, at the option of the CLEC or by design. Nor did Qwest include any of the normal day-to-day activity that occurs on its frames, such as troubleshooting and repairing customer service problems and installation of new service.

The FCC found the inability of the ILECs to process sufficient volumes of hot cuts as a real impairment.[45] Qwest's evidence is insufficient to overturn the FCC's initial finding of impairment.

Q. HAS QWEST OFFERED TO PROVIDE ANY EVIDENCE THAT THE PROCESS IT PROPOSES WILL WORK?

A. No. One could argue that the process has not been established, so there is nothing to test. The question then becomes, once the process is adopted, should Qwest be required to demonstrate that the process works. AT&T would answer the question affirmatively.

Q. WHAT KIND OF DEMONSTRATION DO YOU PROPOSE?

A. AT&T believes the batch process should be tested by an independent third party by migrating a significant number of Qwest's retail customers from one Qwest switch to another Qwest switch using the proposed process.

[45] *TRO*, ¶¶ 468-469.

D. Rates

Q. UP TO NOW THERE HAS BEEN NO DISCUSSION OF RATES. DID QWEST GIVE THE CLECS ANY IDEA WHAT THE FINAL PROCESS WOULD COST?

A. Not specifically, and this caused considerable frustration on the CLECs' part. During the first set of meetings AT&T and the other CLECs asked what the rate would be under Qwest's initial proposal. Qwest responded that it had not done a cost study. The CLECs advised Qwest that it was impossible for CLECs to evaluate Qwest's initial proposal and the different issues if they did not have some idea of what the cost would be. Qwest finally responded, stating that if its proposal was adopted, there may be a cost savings of approximately 20 to 30%, possibly 40%, off of the original hot cut study cost of approximately $75.[46] After further discussion, Qwest stated the number could be around $45 per loop. However, according to Qwest, any changes to the proposed process would reduce efficiency and raise costs. The batch process has gone through so many iterations it is impossible for anyone to guess what the final process would cost the CLECs. The FCC expects the ultimate process to be a low-cost, cost-effective one. There is no assurances this will happen, and Qwest's proposed rates for the "more efficient" batch hot cut process could conceivably be higher than the rates for the "less efficient" loop-by-loop process.

[46] It should be noted that the current price for a coordinated hot cut without cooperative testing is generally around $60 and the price for a basic installation of a new loop is around $55.

Qwest made it quite clear that it believes the rates set by state commissions for basic and coordinated cuts are too low. However, if the state commissions set a rate that exceeds the current rates, there will be no incentive for the CLECs to use the batch process, and the CLECs will continue to use the current processes. Furthermore, the impairment the FCC determined to exist because of the current hot cut processes will continue to exist. The result will be that Qwest must continue to provide unbundled local switching at TELRIC rates.

Q. WHAT DOES AT&T RECOMMEND THE COMMISSION DO WITH RESPECT TO SETTING RATES?

A. The first concern is setting the proper rate. If the rate is set too high any batch process the Commission ultimately establishes may not be useful to the CLECs. It is AT&T's understanding based on statements made by Qwest that it will be filing a cost study with its direct case. Not only will the CLECs be seeing Qwest's final proposal for the first time, they will also be seeing the cost study for the first time. AT&T's cost experts are already working on economic impairment and business case *TRO* issues in all of Qwest' jurisdictions. It will be very difficult to adequately review Qwest's cost study during the limited time provided in this proceeding. If there is considerable disagreement over the study, it may be best to adopt an interim rate subject to true up and subsequently schedule sufficient time to more thoroughly review the study and adopt permanent rates.

E. Performance Measures

Q. HAS QWEST RECOMMENDED ANY METHOD OF EVALUATING ITS PERFORMANCE UNDER ANY BATCH PROCESS THAT IS ADOPTED?

A. No. Qwest did not recommend a method for evaluating the batch process except for deferring the matter to long-term PID administration. This is a mystery to AT&T because the FCC stated that the state commission may require that ILECs "comply with an average completion metric, including any further disaggregation of existing loop performance metrics (*i.e.*, quality or maintenance and repair metrics), for provisioning high volumes of loops."[47] Qwest said performance measures and metrics were not an issue for the batch forum, and any discussion on performance metrics should be handled in long-term PID administration meetings.[48] CLECs subsequently asked Qwest which of the existing PIDs would apply to loops provisioned under the batch process. After much prodding from the CLECs, Qwest did say that the loops in a batch would be covered by the analog loop performance measures but the CLECs would have to review each PID to see if there were exclusions that would apply.[49]

Q. WHAT, IF ANYTHING, DOES AT&T RECOMMEND THE COMMISSION DO WITH RESPECT TO PERFORMANCE MEASURES?

---

[47] *TRO* at ¶ 489.
[48] Qwest did state that it recommends that specific measures regarding the batch process be addressed in long-term PID administration and that batch process measures be moved to the top of the list.
[49] Qwest did state that it believed OP-4, OP-7 and OP-13 would not apply to the batch process.

A. The Commission should make it clear to Qwest that the loops in a batch should be included in the current PIDs, unless excluded by specific language in a specific PID. The parties should be directed to address measurements related to the batch process in long-term PID administration. In addition, once the performance measurements are developed, the Commission should require PAP modifications to provide financial incentives for Qwest to meet its batch hot cut performance obligations.

VI. ELECTRONIC LOOP PROVISIONING

Q. WILL A BATCH HOT CUT PROCESS ELIMINATE THE IMPAIRMENT THAT CLECs EXPERIENCE WHEN THEY COMPETE FOR LOCAL SERVICE CUSTOMERS?

A. As I stated earlier, no. Experience with the development of long distance competition has shown that effective mass market competition is critically dependent on customers' ability to change carriers quickly, accurately and inexpensively. Both the current method of performing hot cuts and the one contemplated by the *TRO* are manual processes. Both are labor-intensive and, thus, considerably more expensive and error-prone than an electronic, or software-controlled, process such as, for example, the processes already in place that allows virtually unlimited numbers of mass market customers to change local providers, when UNE-P is used, or long distance providers overnight. As has proven to be the case with long distance competition, competitors will not have a

reasonable opportunity to compete for customers' local telephone patronage until there is a quick, accurate and inexpensive way for them to switch carriers.

Q. IS TECHNOLOGY CHANGING IN WAYS THAT WILL HELP MAKE IT EASIER TO SHIFT CUSTOMER LOOPS FROM ONE LOCAL CARRIER TO ANOTHER?

A. Yes. We are in the midst of a "generational" change from the analog generation, distribution and transmission of signals from the customer's premises to the central office and switched through the use of circuit-switching technology to a fully digital generation, distribution and transmission of signals all the way to the customer using packet switch technology. Because the industry is in the midst of this transition, the Public Switched Telephone Network ("PSTN") is a combination of "legacy" and modernized technologies that the ILECs have cobbled together in the most efficient way feasible *for them to be the sole providers of service to mass market end-users.* This is the most crucial point for regulators to understand in addressing loop migration issues going forward: the ILECs have begun the transition to a digital, packet network design that achieves its greatest efficiency *with one provider of service—the incumbent*. If there is ever to be effective facilities-based local competition, regulators will have to implement what a combination of antitrust litigation and regulatory oversight forced in the long-distance market: a transition to a network design that achieves economic and engineering efficiency for multiple carriers.

Q. HOW CAN REGULATORS ENSURE THAT CONSUMERS WILL BE ABLE TO MOVE AS EASILY AMONG LOCAL CARRIERS AS THEY ALREADY DO AMONG LONG DISTANCE CARRIERS?

A. There is a means available that uses currently available technology and is adaptable to the differing ILEC approaches to loop provisioning. This is a process that AT&T has generically referred to as "electronic loop provisioning" ("ELP"). This approach allows the provisioning of loops used for local service to be operationally and competitively neutral, making it the local service counterpart of "equal access" in the long distance market. ELP would take advantage of technology that can digitize and packetize end-user signals (both voice and data) so that the signals can be readily routed from one LEC service provider to another. In this environment, consumers would be able to change their local carrier seamlessly, and no carrier would have inordinate advantages in competing for a mass market customer's business. This is in sharp contrast to the current, hard-wired, manual connections from customer premises to ILEC central offices. Implementation of such an electronic provisioning process would create permanent virtual circuits that could use software commands to shift loops from one carrier to another quickly and inexpensively, with no loss or degradation of service.

Q. ARE THERE OTHER BENEFITS THAT ELP WOULD CREATE THAT WOULD LESSEN CLEC ECONOMIC AND/OR OPERATIONAL IMPAIRMENT?

A. Yes. Today, because mass-market customers are primarily serviced *via* analog-voice grade loops, CLECs must deploy a capital intensive backhaul infrastructure that digitizes, multiplexes and concentrates signals so that they can be reliably and efficiently transported to a CLEC's switching center. In a digital, packet local access network, which is what ELP would create, the need for such collocation and equipment is mitigated to a large extent because end-user signals would be handed off to the carrier in a digital rather than analog format.

Q. THIS CASE IS ABOUT THE CONTINUED AVAILABILITY OF THE LOCAL SWITCHING UNBUNDLED NETWORK ELEMENT. WHY SHOULD REGULATORS GET INVOLVED IN SUCH AN EXERCISE NOW?

A. In the *TRO*, the FCC found, on a national basis, that CLECs are impaired in their provision of local exchange service by the expense, delay and service degradation caused by the current, manual process of shifting loops from an ILEC switching platform to switching provided by competing carriers. The FCC thus directed the states to determine whether, and to what extent, that impairment could be reduced by the implementation of a "batch" process for manually shifting loops from ILEC switching to non-ILEC switching. This should logically prompt state

regulators to question whether, in an age of digital processing, any manual, labor-intensive, and error-prone system for customer migration will ever be efficient enough, both economically and technically, to support robust local exchange competition.

To ask the question, however, is to suggest its answer: there will only be an opportunity for effective local competition when local loop migrations are as efficient, swift and economical as changing local carriers through the use of UNE-P or changing long distance carriers through use of the PIC process.

Q. HAVEN'T THE ILECs BEGUN DIGITIZING THE LOCAL DISTRIBUTION NETWORK?

A. Yes. Increasingly, ILECs have deployed digital loop carrier ("DLC") equipment, often located away from the central office and closer to the customer premises. The DLC and associated equipment converts the communications signals coming over copper loops into a digital format, so they can be transported more efficiently to the ILEC LSO.

In a generic DLC configuration, a copper loop runs from the customer's premise to a serving area interface ("SAI"). This portion of the loop is known as the distribution plant. The SAI is a point where the copper distribution "sub-loop" from a number of customers terminates. Typically, the loops are cross-connected to additional copper facilities that connect the SAI to a Remote Terminal ("RT"). RTs are often located in enclosures in the ILEC's outside plant – *i.e.*, the RT is

located somewhere between the customer premise and the ILEC LSO. A Remote Terminal typically houses the DLC and other equipment that converts analog voice communications into a digital format.[50] There, all communications from loops on the DLC are multiplexed (to increase the efficiency of use of costly transmission facilities) and are transmitted to the ILEC LSO through facilities (either fiber or copper wire) commonly known as the "feeder" portion of the local loop. With some DLC systems (called integrated DLC or "IDLC"), traffic carried over the feeder plant is terminated directly onto the ILEC's local circuit switch, and is not demultiplexed. In such arrangements, an individual customer's traffic arrives at the central office commingled with other customers' traffic in a manner that is either difficult or costly to separate, or both.

Q. HOW DOES THE INTRODUCTION OF DIGITAL TECHNOLOGY IN THE LOCAL DISTRIBUTION PLANT AFFECT THE EASE OF TRANSFERRING LOOPS AMONG CARRIERS?

A. Where IDLC architecture is employed, it is even more difficult to switch a customer's voice-grade loop to a competing carrier's facilities. To switch a customer's IDLC loop to another carrier, the incumbent carrier must be able to separate that customer's traffic from the other traffic that is commingled on the

[50] Where the copper loops are sufficiently short, DLC equipment can just as easily be placed in the ILEC LSO. This is what CLECs must do in order to access a voice-grade loop via a hot cut. They place in their collocation arrangements the DLC equipment that digitizes and multiplexes traffic from voice-grade loops for backhaul to their switches. The duplication of DLCs in both ILEC and CLEC networks is one of the inefficiencies that electronic loop provisioning would eliminate.

feeder facility. Unfortunately, the available processes for removing the customer's loop from the IDLC can be even more cumbersome than where the loop runs directly to the LSO. One common method is to remove the customer's loop from the IDLC equipment in the RT and place it back onto an old "spare" copper loop that extends from the customer's premises to the central office. This method, however, requires an additional set of manual processes – in addition to the hot cut described above. This is often disadvantageous to both the customer and its new carrier, because any spare copper loop has necessarily been placed out of service, often because it offers inferior quality to the digital service provided over the IDLC loop. Moreover, where IDLC has been employed from the outset, such as in newly constructed areas, there may simply be no spare copper loop at all. Another disadvantage is that spare copper loop necessarily is longer than a DLC loop, lowering the loop's available bandwidth, compared to a DLC loop.

Other methods for removing a loop from IDLC so that it could be made available to a competitor are equally daunting. For example, the ILEC could install demultiplexing equipment before the feeder facility terminates into the ILEC circuit switch. That would demultiplex *all* of the traffic from a DLC-fed feeder and re-convert the traffic from a digital to an analog format. Traffic from the particular loop used to serve the customer won by the competing carrier would then be separated through the hot cut procedure from traffic carried on the other loops, and then connected to the competing carrier's facilities in collocated space. But then the CLEC would have to convert the analog signal *again* to digital

format, using its own DLC, before transporting it to the CLEC switch. There are obvious inefficiencies, both economic and engineering, in the multiple signal conversions and duplicate DLC equipment that the carriers have to deploy in this scenario.

Thus, regardless of whether a voice-grade loop is connected to IDLC or terminates directly to the MDF in an ILEC central office, CLECs that compete for local service must endure a difficult process that necessarily requires extensive manual work on the ILEC's facilities, resulting in a greater expense and, often, lower-quality service.

Q. IS THERE ANYTHING ABOUT THE WAY ILECs ARE MANAGING THE TRANSITION TO A PACKETIZED ACCESS NETWORK THAT WOULD ASSIST IN MAKING VOICE-GRADE LOOP MIGRATION MORE EFFICIENT?

A. Fortunately, yes. In order to see how loop migration could be rendered seamless and electronic, it is helpful to examine how ILECs are introducing advanced services, such as Digital Subscriber Line ("DSL") service, into their local networks. Such an examination presents one path to electronically based loop migrations, so long as the ILECs engineer their transition to a packet-based architecture in a manner that includes the prospect of multiple carriers, rather than creating a two-class system in which ILEC service is provided over modern,

digital access facilities and CLECs are relegated to the oldest and least efficient access facilities.

Q. HOW ARE SOME ILECs INTRODUCING "NEXT GENERATION DIGITAL LOOP CARRIER" ("NGDLC") TECHNOLOGY INTO THEIR NETWORKS?

A. The ILECs are increasingly deploying NGDLC technology, to enable them to provide both DSL and plain old telephone service ("POTS") on the same copper loop. This architecture is illustrated in the figure below:

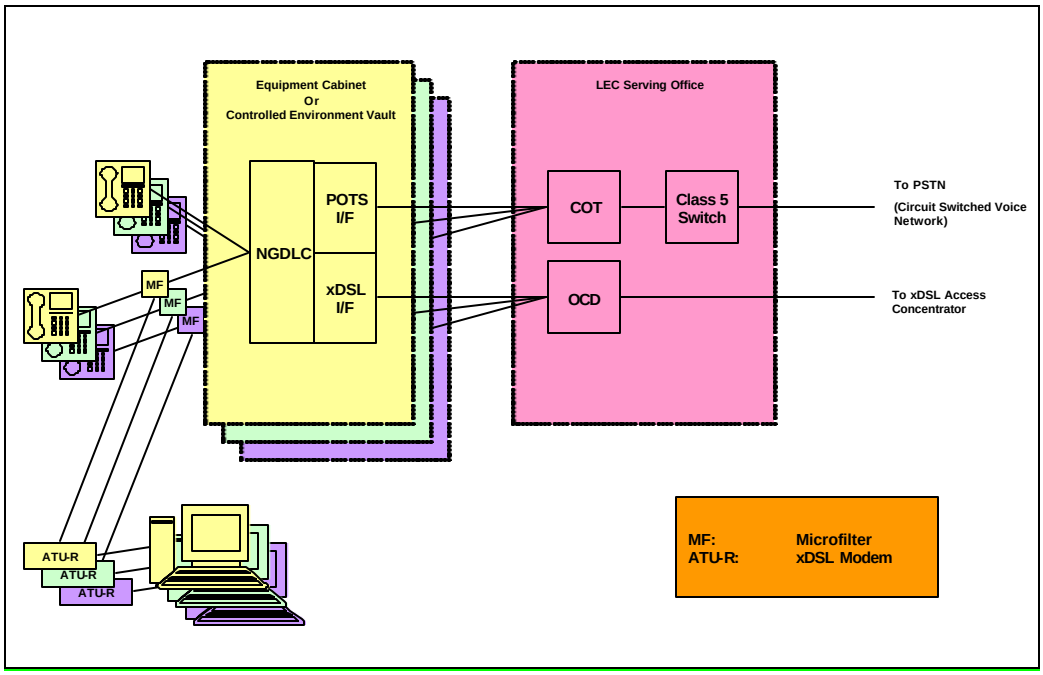

FIGURE 1: Typical ILEC NGDLC Architecture (Basic)

Traffic originating with customers (at left) is transmitted over copper loops to a Remote Terminal equipped with NGDLC equipment. At this crucial step in the

process, voice traffic, which occupies the low-frequency spectrum of the loop, is treated differently from high-speed data traffic, which occupies the high-frequency spectrum of the loop. Typically, the NGDLC takes end-user voice signals and (i) converts the analog voice signals to a digital format, (ii) multiplexes those signals using a time division multiplexing ("TDM") protocol (thus commingling voice traffic from many loops) and (iii) directs them to their own, separate fiber feeder facility that is connected to the ILEC LSO. At that point, the commingled signals are directed to a Central Office Terminal (COT) and from there to the ILEC's circuit switch. For high-speed data traffic, the NGDLC buffers, concentrates and multiplexes the traffic, using the Asynchronous Transmission Mode ("ATM") protocol, and directs the data signals to a separate fiber feeder facility that transmits them to the ILEC Central Office, where they are cross-connected to an Optical Concentration Device ("OCD") or ATM module. From there, the data signals are transported to the ILEC's data network.

Q. SO, IN THE CONTEXT OF PROVIDING DSL SERVICE, ARE THE ILECs CREATING TWO SEPARATE FEEDER SYSTEMS, ONE FOR VOICE AND ONE FOR DATA?

A. Yes. This is the beginning of what I was referring to above when I spoke of a "two-class" system for voice and data. In addition to the different processing and routing of the types of traffic, there are separate feeder facilities for each. And there are not simply two feeders – one for voice and one for data – but, for

reliability purposes, each of those feeders requires a back-up, so four feeder facilities must be in place for the system to operate reliably.

Q. HOW IS THE HIGH-SPEED DATA TRAFFIC HANDLED IN THE REMOTE TERMINAL?

A. Figure 1 above shows the Remote Terminal where the NGDLC equipment processes and sends data to an Optical Concentration Device in the ILEC LSO, using ATM transmission protocol. The ATM access architecture establishes a "permanent virtual circuit" ("PVC") between the end user's premises and the OCD in the ILEC central office. PVCs are "virtual," rather than physical, because they are defined in the software of networking devices. The virtual connection is "permanent" only in the sense that it is a static connection between two points so long as the controlling software directs it to be. Such connections or paths can readily be changed or redefined through the use of software commands. As a result, the NGDLC system provides a software-controlled cross-connection between an input and output port based upon cell header information and an internal -- but updateable -- table that identifies which two ports should be connected. The physical circuits attached to the ports need not change, but the destination of the traffic they carry can be changed by software commands that alter the headers in the ATM cells. In short, once physical loop connections become "virtual," traffic destinations and, thus, routing, can be changed electronically through the use of software commands, rather than by "hands on

the network" (*i.e.*, the dispatch of technicians to undertake physical rearrangement of circuits).

Q. WHAT CHANGES TO THE NETWORK WOULD THE DEPLOYMENT OF ELECTRONIC LOOP PROVISIONING REQUIRE?

A. The upgrades necessary to implement ELP architecture divide into three segments: ILEC outside loop plant, ILEC central offices, and equipment used by all local carriers (CLECs and ILECs) that choose to use a traditional circuit-switched network to carry voice traffic.

Q. HOW WOULD THE ILEC'S OUTSIDE PLANT NEED TO BE MODIFIED TO ACCOMPLISH ELECTRONIC LOOP PROVISIONING?

A. Under ELP, the key difference is that equipment would be deployed or upgraded to digitize and packetize *all* traffic, not just the traffic in the high-frequency portion of the loop, as with the ILECs' current NGDLC architecture. The packetization would be performed by "true" Next Generation DLC ("tNGDLC") equipment, which includes a functionality known as a voice cell processing. Where an ILEC has already deployed a remote DLC, that equipment would be upgraded to tNGDLC. Where customer loops terminate at the ILEC central office, tNGDLC functionality would be deployed at the CO.

The tNGDLC and its associated voice cell processor will digitize and convert voice signals into cells (or, for terminating calls, from cells into a bit stream, and then an analog voice signal). Thus, unlike current NGDLC, tNGDLC will

process all traffic into the ATM packet format. This will enable end-users to continue using their existing CPE for traditional voice service.[51]

After being packetized by the tNGDLC equipment, all of a customer's traffic is transported over a multiplexed fiber facility to the ILEC CO (or within the CO for tNGDLC that is deployed in the CO itself). This is a significant improvement over the outside plant architecture that ILECs have deployed for DSL services. The architecture in place today -- which uses an ATM facility to transport data and a time-division-multiplexed ("TDM") facility for voice transmissions -- is an inefficient and costly design, because it uses two parallel facilities (each of which is typically backed-up with an alternative facility) to transport traffic between the very same points – the RT and the central office. By contrast, where all the traffic is packetized, as with ELP architecture, one common feeder facility can carry commingled voice and high-speed data traffic between the tNGDLC and the ATM module.

Q. HOW WOULD THE ILEC CENTRAL OFFICE CHANGE TO ACCOMMODATE LOOP EQUAL ACCESS?

A. To implement loop equal access, feeder facilities would not connect directly to the ILEC circuit switch. Rather, as with data traffic in the current ILEC NGDLC

[51] Customers that want advanced services, such as additional derived voice lines, DSL-based services, and/or other high-speed data services, would need to install compatible CPE, and the associated DLC equipment would need the appropriate line card electronics. This is similar to the requirement that customers who today subscribe to DSL-based service must install a DSL modem to work with their computer.

environment, the fiber feeder would be cross-connected to an ATM module (the ATM module is analogous to the OCD under an ILEC NGDLC architecture). That module serves as a multiplexer that allows both sub-tending tNGDLC equipment and loop facilities to be shared among all local carriers' networks. The ATM module serves as the point of demarcation between the ILEC loop plant and the networks of all local carriers, including the ILEC.

Thus, the ATM module would serve as the "gateway" for carriers to access their retail customers' loops. This is appropriate because, as with "ordinary" NGDLC technology, the ATM module is the point at which all of the packetized communications converge for all the loops served by the feeder facility. For originating traffic, the ATM module would sort out the commingled traffic carried by sub-tending tNGDLC and associated feeder facilities and direct it to the customer's chosen carrier, whether ILEC or CLEC. For terminating traffic, the ATM module would sort cells received from various carriers so that they are "cross-connected" – by the software-controlled PVC – to the correct RT and customer facility.

Each local carrier seeking to serve customers whose loops terminate at an LSO, including the ILEC, would connect appropriate facilities to the ATM module to transport its end-user traffic to its own network. By connecting to the ATM module, any CLEC could readily access the facilities used to serve all end-users connected to the central offices where the ATM is located. All competing

carriers, including the ILEC, would be assigned one or more physical ports on the ATM module so that it could direct traffic from their end-users for transport to their network based upon the PVCs established for their customer-carrier combinations. Depending on how the ELP architecture is deployed,[52] the ATM port could represent the only "collocation" that would be required to serve customers at certain ILEC LSOs, thus reducing the CLEC's "backhaul penalty." Even where a CLEC may be required, or would desire, to collocate as it does today, much of the electronics necessary in today's collocation would be eliminated.

The ATM module and the associated tNGDLC located at the RT allow a customer to switch local carriers electronically, with no manual or physical changes to the underlying facilities, because, as described earlier, ATM technology creates a permanent virtual circuit for each customer. If a customer wishes to change service providers, software commands directed to the ATM module and the associated tNGDLC electronics at the RT allow the existing path to one carrier's network to be re-directed to a different carrier's network.

[52] For example, a tandem ATM module could be deployed that would aggregate signals from many sub-tending ATM modules located at different ILEC LSOs, thus significantly reducing a competitor's collocation needs.

Q. HOW WOULD ALL CARRIERS HAVE TO ADAPT TO DEALING WITH THE PACKETIZED VOICE TRAFFIC STREAMS THAT ARE NECESSARY TO ENSURE LOOP EQUAL ACCESS?

A. All local carriers that choose to serve customers using a traditional circuit-switched network would need to deploy ATM-compatible equipment as a "voice gateway" (also known as "VoATM gateways"). For transmissions from the circuit-switched PSTN that will be terminated to the customer, the VoATM gateway converts TDM-based voice traffic to ATM cells. For originating traffic, the VoATM gateway processes the voice packets to meet the GR-303 or GR-8 protocol, which are the typical interface requirements for connecting the local loop to a Class 5 switch. DLCs equipped with these interfaces are commonly found in local carriers' networks. Vendors of VoATM gateways use a GR-303 or GR-8 interface to preserve the carriers' investment in Class 5 switching equipment. As a result, despite the modernization of the loop architecture, end users will continue to have access to all Class 5 switch features without any modification to the switching network itself.

Q. WHAT EXACTLY WILL ELECTRONIC LOOP PROVISIONING ACCOMPLISH?

A. Nothing less than "loop equal access"; that is, the ability for a customer to choose any facilities-based local exchange carrier without excessive delays in effecting a change of carrier, without losing service for any period of time, and without

degrading service quality. As with long distance equal access, this can be anticipated to unleash a flood of investment by those eager to capitalize on a truly open telecommunications market and place significant competitive pressure on market prices for all telecommunications services.

Even from the narrow perspective of the ILEC community itself, current, manual methods of shifting loops from one carrier to another violate a basic rule of telephone engineering: "no hands on the network." It is a well-established decision rule in general engineering practices, including those of the telecommunications industry, that, whenever possible, it is preferable to implement a system that requires less, rather than more, manual intervention – since such intervention is costly, slow, and prone to introduce errors and problems into the network that would not have occurred if there were no "hands on the network."

From the perspective of overall network efficiency – as well as of each carrier's individual efficiencies – ELP also provides a big advantage. Recall that, under current conditions, where ILECs have placed DLC in their distribution network, there is inefficient repeated multiplexing and demultiplexing when a CLEC receives the traffic from the ILEC at its collocation space. Under ELP, a CLEC can receive its traffic in a fully multiplexed form and transport it in that form as far into its network as it finds desirable and economic. Thus, there is no need for separate DLC equipment in ILEC central office collocation space.

A similar benefit to all carriers is the fact that, in many central offices, CLECs will simply not need traditional collocation space. To transport traffic to their switches, they can simply build, purchase or lease transmission to the ATM modules in a number of ILEC central offices, concentrate their traffic as they collect it and then deliver it to their serving switch. Again, this reduces the demand for central office floor space, as well as the expense CLECs incur in renting and maintaining collocation space. If an ILEC established a fiber ring to connect all ATM modules in a given geographic area, CLECs would need only "tap into" one spot on the ring to collect their packetized traffic from all central offices on the ring. This is efficient for both CLEC and ILEC, and reduces wasteful, duplicative and costly "backhaul" than CLECs using UNE-L must now undertake.

Further, while using existing technology, electronic loop provisioning would permit customers to have better access to higher-speed and advanced services, which CLECs need not forgo because of the impracticability of replicating some or all of the existing ubiquitous loop distribution network. There are no services that ELP would eliminate – and many that it would enable. In addition, ELP of the kind AT&T describes above would permit the potential standardization of wireline broadband interfaces, which, in turn, could encourage new broadband applications and new advanced services networks.

But, make no mistake, at its core, AT&T's ELP proposal is designed to make local exchange competition possible in the face of the virtually unconquerable obstacles presented by the task of replicating, in its entirety, the ILEC local loop plant: a task that would be necessary for CLECs to address the mass market without using ILEC loops. And, as AT&T has shown and as the FCC has found as a matter of law (*TRO* at ¶¶ 464-475*)*, the lack of equal access to loops is the main impediment today to the development of effective local exchange competition.

Q. BUT ISN'T ELP A SPECULATIVE DEPLOYMENT OF UNTESTED TECHNOLOGY?

A. Not at all. Every aspect of AT&T's electronic loop provisioning proposal uses equipment that is available from vendors today, and technology and functionality that carriers are using today. For example, in AT&T Laboratories, AT&T has developed a laboratory trial that demonstrates the technical feasibility of ELP. The trial employs the use of a Zhone MALC tNGDLC, a Lucent CBX-500 ATM module, and a Pardyme/Jetstream VoATM gateway. Moreover, large portions of the current outside plant deployed in the ILECs' distribution and feeder systems will remain in place, unchanged. Best of all, carriers will remain free to stick with current, circuit-switching technology, migrate to advanced switching, including so-called "soft switches," or use any combination of technologies that they find practical and economic.

Q. IN RESPONSE TO AT&T'S ADVOCACY REGARDING ELECTRONIC LOOP PROVISIONING TO THE FCC, THE RBOCs COMPLAINED THAT ELP WOULD COST HUNDREDS OF MILLIONS OF DOLLARS AND TAKE YEARS TO IMPLEMENT – AND THE FCC DID NOT ADOPT YOUR APPROACH. DOESN'T THAT SUGGEST THAT STATES SHOULD STEER CLEAR OF YOUR NOTION OF LOOP EQUAL ACCESS?

A. No. As state regulators well know, the RBOCs (and other ILECs) *always* exaggerate the costs of changes to their networks that they do not originate themselves – especially ones that will facilitate competition. State regulators, moreover, know of the hundreds of millions of dollars that CLECs and their investors have spent in attempting to make a success of their entry into local exchange markets – and how little they have to show for it to date, because of RBOC intransigence and their continual operation of the levers of monopoly power. Regulators want to protect not only the investment by CLECs and their shareholders and investors, but regulators' own considerable investment of time, money and effort in making competition work – and they are beginning to see that, without loop equal access, all that investment may go down the drain.

Secondly, AT&T is not contending that loop equal access can be accomplished in a "flash cut." It took years for long distance equal access to be fully implemented at a substantial cost, but the rewards in lowered prices and, even more important, growth in the use of telecommunications have tremendously benefited state and

local economies (in addition to the growth of the US GNP). AT&T is not recommending an attempted "flash cut" to electronic loop provisioning, but the "digital train" is leaving the station – and it is leaving without the voice communications that form the bulk of most consumers' use of the telephone network.

Finally, as outlined above, what is happening "under the radar" is the development of two separate, but unequal, networks within the national public switched telephone network: a high-speed, state-of-the-art data network that the RBOCs are scheming to keep entirely to themselves and a lower-tech, rapidly obsolescing voice network that they are slowly and begrudgingly beginning to share with competitors. AT&T is convinced that a future of telecom "haves" and "have nots" could be avoided with some smart investment today and regulatory prodding to facilitate its accomplishment.[53]

By contrast, the loop equal access future that AT&T envisions evokes the well-established adage, "A rising tide raises all boats." Loop equal access – and the electronic loop provisioning architecture described in this testimony – will bring a future where all telecommunications traffic – from POTS ("plain old telephone service") to PANS ("powerfully amazing new services") – will ride on the

[53] Although it is true that the FCC has not yet *adopted* and required the implementation of AT&T's Electronic Loop Provisioning architecture, state regulators should not overlook the fact that the FCC did not forbid the states from investigating or adopting it themselves. And it is clear that, in the *TRO*, the FCC did direct the states to consider *all* sources of "impairment" to CLECs' competitive entry and to take measures to mitigate or eliminate them, consistent with the Order's rulings. *TRO* at ¶ 486. AT&T's ELP proposal is just such a necessary "mitigating measure."

technologically most advanced platform that ingenious minds can invent, and where the powerful economic engine of competition ensures that those services are delivered at the lowest cost, in the most efficient manner, and with the fastest pace of innovation that the economy can support.

VII. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The process of migrating customers to a CLEC-owned switch using an ILEC loop, the so-called "hot cut process," is extremely dependent on manual work, rendering the process prohibitively expensive, highly error prone with resulting impacts to customer service, and not scalable to handle reasonable commercial volumes. As such, CLECs will remain impaired by any manual hot cut or loop migration process. Even the best manual processes that could be operationalized today, including batch migration processes, cannot satisfy the requirements needed to eliminate the CLECs' operational impairment in attempting to compete for mass-market customers. Accordingly, this Commission should develop and approve a comprehensive review process to insure any process put forth by Qwest will deliver as advertised and could evaluate the extent to which CLECs remain impaired. Furthermore, the Commission should evaluate and adopt AT&T's ELP proposal as a solution to removing CLEC impairment.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.