STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

**PUBLIC UTILITIES COMMISSION**

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| In re Review of Bell Atlantic's TELRIC Studies. | Docket No. 2681 |
| Implementation of the Requirements of the Federal Communications Commission's Triennial Review Order | Docket 3550 |

# TESTIMONY OF JACK LYNOTT

## ON DEDICATED TRANSPORT

ON BEHALF OF AT&T COMMUNICATIONS
OF NEW ENGLAND, INC.

## **PUBLIC VERSION**

February 24, 2004

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## I. INTRODUCTION OF WITNESSES AND PURPOSE OF TESTIMONY.

**Q. PLEASE STATE YOUR FULL NAME, TITLE AND BUSINESS ADDRESS.**

A. John P. Lynott. I am an independent consultant providing analysis of regulatory issues and testimony for telecommunications companies. My business address is 16837 E. Crestline Place, Centennial, CO 80015.

**Q. WHAT IS YOUR RELEVANT EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE?**

A. I graduated from Regis University in Denver Colorado in 1991 with a Bachelor of Science Degree in Technical Management (Emphasis on Electrical Engineering Technology [EET]), and a Minor in Economics. I received a Masters Certificate in General Business from the Wharton School of Business at the University of Pennsylvania. I have worked in the telecommunications industry for the past 24 years, and I have extensive experience in the design, implementation, maintenance, and operation of telecommunications networks.

During my career, I have worked in the network systems, engineering, and operations groups for Mountain Bell Telephone, QWEST, Lucent Technologies, and AT&T. My responsibilities included providing the effective and timely provisioning, maintenance, testing, growth, and service restoration of DS0, DS1, and DS3 Transport Facilities. I managed teams who installed, tested, monitored, augmented, and maintained Switched (POTS) and Private Line (DS0, DS1 and DS3) services in a Central Office (LSO) Environment. I also conducted technical analysis, acceptance, and interoperability of SONET Transport and GR-303 IDLC Network Elements. I have been a member of the Institute of Electrical and Electronic Engineers (IEEE) for the past 15 years, and I

have previously testified before the Commission in many other regulatory hearings. A copy of my resume is attached as Exhibit 1.

**Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

A. I am testifying on behalf of AT&T Communications of New England, Inc.

**Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A. The purpose of my testimony is to analyze and rebut Verizon's assertions as to the self-provisioning and wholesale triggers for dedicated transport.[1]

In its *Triennial Review Order* ("*TRO*"),[2] the FCC determined that incumbent local exchange carriers ("ILECs") must continue to provide CLECs with access to dedicated transport at the DS1, DS3, and dark fiber capacity levels ("dedicated transport"). In support of this, the FCC conducted a comprehensive analysis that resulted in the determination that CLECs are impaired without access to dedicated transport at the national level. Recognizing that there may be individual customer locations or transport routes where competitively provisioned transport ***has been deployed*** to such an extent that CLECs may be deemed not to be impaired, the FCC developed a procedure known as the trigger analysis ("triggers"). The triggers are designed to give ILECs an opportunity to demonstrate to their respective state commissions that CLECs are not impaired without access to unbundled transport at *specific* customer locations or on *specific* dedicated

[1] According to Verizon's Direct Panel Testimony (Mass Market Switching, Transport, and Loops) filed December 8, 2003, at p. 44, Verizon is not presenting evidence in this docket that any CLECs meet the FCC's two triggers for high capacity loops. As such, this testimony will not address the FCC's triggers for loops as described in the *TRO*.

[2] Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers (CC Docket No. 01-338); Implementation of the Local Competition Provisions of the Telecommunications Act of 1996 (CC Docket No. 96-98); Deployment of Wireline Services Offering Advanced Telecommunications Capability (CC Docket No. 98-147)*, FCC No. 03-36 (rel. Aug. 21, 2003).

transport routes for specific capacity levels. A unique characteristic of triggers is that they focus exclusively on consideration of what currently exists on the specific transport routes at issue. Thus, a decision as to whether a trigger is satisfied may not be influenced by arguments that it may be possible for a carrier to provision a specific loop or provide transport facility at some point in the future. Any such review of possible future activity is the exclusive province of a potential deployment analysis, which is not the subject of this proceeding since Verizon has not advanced a potential deployment case.

In my testimony, I show that Verizon, through its Panel Testimony of O'Brien & White, has not and cannot meet the self-provisioning and wholesale triggers for dedicated transport.

**Q. HOW IS YOUR TESTIMONY ORGANIZED?**

A. My testimony is divided into seven sections. Section I is a discussion of my background and the general scope and purpose of my testimony. Section II discusses the FCC's impairment analysis and how it relates to transport services necessary for a facilities-based CLEC to effectively compete with the ILECs. In Section III, I explain the self-provisioning triggers that the FCC devised for dedicated transport at the DS3 and dark fiber capacity levels, and will provide the proper framework for interpreting Verizon's claim that the triggers have been met. In Section IV, I show that Verizon's self-provisioning analysis is incomplete, non-specific and unusable for any decision making by the Commission. Section V explains the wholesale triggers for transport, and will explain the additional requirements (which Verizon has failed to address in its testimony) needed to define a carrier as a wholesale provider. In Section VI, I critique Verizon's wholesale trigger analysis. Lastly, in Section VII, I describe the transitional issues this

Commission should address if it finds that "delisting" any transport routes is justified. Such transition issues must be resolved in a manner that protects CLECs and their customers from unwarranted disruption to their services and rates.

**Q. WHAT DOCUMENTS DID YOU REVIEW TO PREPARE TO GIVE THIS TESTIMONY?**

A. In preparation for this testimony, I reviewed the materials relating to this proceeding, but with particular emphasis on the TRO itself, the testimony submitted by Verizon and accompanying attachments, certain discovery requests and responses of Verizon and certain CLECs. In addition to these materials, I reviewed AT&T databases.

## II. THE FCC CONCLUDED IN THE TRO THAT CLECS ARE IMPAIRED WITHOUT UNBUNDLED ACCESS TO DEDICATED TRANSPORT.

**Q. WHAT STANDARDS DID THE FCC APPLY TO DETERMINE IMPAIRMENT FOR UNBUNDLED NETWORK ELEMENTS?**

A. The FCC based its impairment findings upon a determination that "[a] requesting carrier is impaired when lack of access to an incumbent LEC network element poses a barrier or barriers to entry, including operational and economic barriers, that are likely to make entry into a market uneconomic." *TRO* ¶ 7. The FCC also found that "[a]ctual marketplace evidence is the most persuasive and useful evidence to determine whether impairment exists."

**Q. WHAT DID THE FCC CONCLUDE SPECIFICALLY WITH REGARD TO DEDICATED TRANSPORT?**

A. The FCC concluded that competing carriers are impaired on a national level without access to unbundled transport (DS1, DS3, and dark fiber). *See TRO* ¶ 359 (stating that the FCC finds "on a national level that requesting carriers are impaired without access to unbundled dark fiber transport facilities … [DS3 transport and DS1 transport]." As a

result, the FCC rules require that competing carriers have access to transport everywhere unless a state commission finds a lack of impairment as to specific routes (transport).

**Q. DID THE FCC'S IMPAIRMENT ANALYSIS DISTINGUISH BETWEEN DIFFERENT TYPES OF UNBUNDLED TRANSPORT?**

A. Yes. The FCC segregated dedicated transport by levels of capacity before performing its impairment analysis, stating that this would "be the most informative manner to review the economic barriers to entry that affect how a competing carrier is impaired without access to unbundled transport." *TRO* ¶ 380. The FCC performed separate impairment analyses for OC(n) Transport, Dark Fiber Transport, DS3 Transport, and DS1 Transport.

**Q. WHAT WAS THE FCC'S BASIS FOR FINDING THAT COMPETING CARRIERS ARE IMPAIRED WITHOUT ACCESS TO UNBUNDLED DEDICATED TRANSPORT AT THE DARK FIBER, DS3, AND DS1 CAPACITY LEVELS?**

A. The FCC stated that its "impairment findings with respect to DS1, DS3, and dark fiber transport facilities recognize that competing carriers face substantial sunk costs and other barriers to self-deploy facilities and that competitive facilities are not available in a majority of locations, especially non-urban areas." *TRO* ¶ 360 (citations omitted). The FCC concluded that it would be extremely difficult to recover these costs and to be a viable competitor in the marketplace. Indeed, the FCC concluded that "[d]eploying transport facilities is an expensive and time-consuming process for competitors, requiring substantial fixed and sunk costs." *TRO* ¶ 371 (citations omitted). The FCC elaborated that the costs of self-deployment include collocation costs, fiber costs, costs to physically deploy the fiber, and costs to light the fiber. *Id.* From a practical standpoint, self-provisioning dedicated transport requires that the CLEC conclude that it is both practical and economic to connect two points – both of which are physical locations owned by and

located within the network of the CLEC's primary competitor – and invest its scarce capital to do so.

**Q. ARE THERE NON-ECONOMIC COSTS TO CONSTRUCTING DEDICATED TRANSPORT?**

A. Yes. CLECs also encounter delays in constructing dedicated transport due to having to obtain rights-of-way and other permits. *Id.*

**Q. DID THE FCC FIND THAT THERE WAS ANY EVIDENCE OF NON-IMPAIRMENT FOR DEDICATED TRANSPORT AT THE DARK FIBER, DS3, AND DS1 LEVELS?**

A. In making a national finding of impairment for transport, the FCC found that any evidence of non-impairment was minimal. For example, the FCC found that "alternative facilities are not available to competing carriers in a majority of areas." *TRO* ¶ 387. Indeed, even relying on ILEC data, which was not subject to cross-examination in the FCC proceeding, the FCC found that at most 13 percent of Bell Operating Company wire centers have a single competing carrier collocated using non-ILEC transport facilities. *TRO* fn. 1198.

**Q. ARE THE FCC'S FINDINGS ON IMPAIRMENT CONSISTENT WITH TYPICAL CLEC FACILITIES-BASED NETWORKS, INCLUDING THE NETWORKS OF THE CLECS ON WHOSE BEHALF YOU ARE TESTIFYING?**

A. Yes. Generally, facilities-based CLECs have constructed one or more fiber rings of varying scope, and then connect customers to their network using those fiber rings whenever practical. Nevertheless, in a majority of instances, the CLEC will still need access to unbundled loops and loop/transport combinations (i.e., "enhanced extended links", or "EELs") to connect the majority of retail customers to its network. The CLEC's fiber rings connect aggregation points, such as collocation arrangements, and major customer sites to the carrier's switching or hub site. Although a CLEC may

possess a facility that passes by two collocations, it will only rarely *connect* those two collocations to create a service configuration that is functionally equivalent to the dedicated transport UNE.

Facilities-based CLEC networks typically rely on UNE loops to serve the majority of their customers, as the fixed and sunk costs associated with building out loop facilities, as well as the delays in constructing such facilities, would place the CLECs at such a disadvantage that they would not be able to compete with the ILEC's already deployed infrastructure. Regardless of how they are configured, loop facilities are the fundamental component to serving customers. From a CLEC perspective, a loop is the connection between the retail customer's premises and the CLEC's telecommunication's network. Critically, however, the loop UNE provides only a portion of the path between the customer and the CLEC's network, i.e., the connection between the customer's premises and the incumbent wire center that would ordinarily serve that location (if the incumbent provided the retail service). The CLEC's entire loop may consist of a UNE loop that is cross-connected to a self-provided backhaul facility; a UNE-Loop that is obtained in combination with dedicated transport (i.e., an EEL); a UNE-Loop that is cross-connected (in a CLEC collocation) to leased transport, which in turn connects to a self-provided facility (a loop provided with hubbed/aggregated transport); or, in rare instances, a completely self-provided facility. Similarly, dedicated transport – the unswitched connection between two incumbent buildings – is typically used as the functional equivalent of the incumbent's loop feeder plant. It links the loops coming from a broad number of customer premises to a dedicated facility that connects to the CLEC's local network.

The critical point is that *both* loop UNEs *and* dedicated transport UNEs are employed by CLECs to provide what is *the functional equivalent of a loop in the incumbent's network*. Thus, when the Commission considers Verizon's requests to limit access to transport UNEs, the Commission should recognize that Verizon is seeking to limit the CLECs' ability and options to connect customers to its network, thereby limiting CLEC facilities-based competition.

**Q. WHY MIGHT A CLEC DEPLOY MULTIPLE RINGS IN A SINGLE GEOGRAPHIC AREA?**

A Multiple rings may exist in the same locality for the same CLEC for a number of reasons, including the timing and availability of construction funding, unanticipated capacity requirements and/or building issues (such as ROW access or construction moratoriums) that may have precluded a comprehensive and cohesive build-out strategy. However, the physical routing of a cable is not dispositive as to and how a CLEC deploys service. A single fiber cable contains many individual fiber strands. Thus, one cannot automatically conclude that two offices on a ring are necessarily connected in a manner that allows traffic to pass between them simply because a common cable passes through each office. In fact, it is just as likely that two offices are on *different fibers* in *different sheathes* within the cable and are not connected to each other. But even if the two ILEC offices were on the same strand, it is not generally the case that the CLEC's network is designed to pass traffic between the two offices. Although it is theoretically possible to connect central offices on different fiber rings (indeed it is "theoretically possible" to connect any two points), transport routes linking the two central offices are not generally provisioned in such circumstances because, as I pointed out earlier, the CLEC's primary interest is connecting the retail customer location to its network.

## III. SELF-PROVISIONING TRIGGERS FOR DEDICATED TRANSPORT.

**Q. WHAT IS THE PURPOSE OF THE FCC'S SELF-PROVISIONING TRIGGERS FOR TRANSPORT?**

A. In the TRO, the FCC made a national finding that CLECs are impaired with respect to access to dedicated transport. The FCC allowed ILECs to challenge these impairment findings on a route-specific basis before state commissions. One of the ways ILECs may demonstrate non-impairment is by showing that specific CLECs provide dedicated transport on their own and to a degree that is sufficient, at least in theory, to provide customer choice and to exert competitive discipline upon the incumbent at or between particular locations. These are known as the "Self-Provisioning Triggers."

**Q. WHAT CAPACITY LEVELS ARE SUBJECT TO THE SELF-PROVISIONING TRIGGERS?**

A. The Self-Provisioning Triggers only apply to DS3 and dark fiber transport. DS1 transport is not included under these triggers.

**Q. WHAT MUST VERIZON DEMONSTRATE TO THE COMMISSION TO SHOW A SELF-PROVISIONING TRIGGER IS MET FOR DEDICATED TRANSPORT?**

A. Verizon must demonstrate there are ***three or more*** unaffiliated competing providers use their own self-deployed facilities to deliver traffic between two local offices at transmission capacities below 12 DS3s. In other terms, the facility in question must carrier 12 or fewer DS3s of capacity that originates in the one office and terminates in the other office on the defined route.

**Q. WHAT MUST VERIZON DEMONSTRATE TO PROVE THAT THE SELF-PROVISIONING TRIGGER IS SATISFIED FOR DEDICATED TRANSPORT BETWEEN TWO VERIZON WIRE CENTERS?**

A. Verizon must demonstrate that, for each of the three competitive providers, that:

- They not affiliated with each other or the Verizon;

- Each counted self-provisioned facility along a route must be operationally ready to provide transport between two Verizon central offices;
- Each counted self-provisioned facility terminates in a collocation arrangement;
- It is serving customers using its own facilities on the route at the relevant capacity levels (fewer than 12 DS3s or dark fiber).

**Q. FOR THE SELF-PROVISIONING TRIGGERS TO APPLY, MUST A CLEC SELF-PROVISION THE SPECIFIC CAPACITY LEVEL IN QUESTION?**

A. Yes. The *Triennial Review Order* contemplates that the Self-Provisioning Triggers apply when a CLEC self-provisions the particular capacity level in question. For example, a CLEC that self-provisions at the OC(n) capacity level does not necessarily self-provision at the DS1 or DS3 capacity level.

**Q. WHAT ARE THE KEY TERMS UNDER THE SELF-PROVISIONING TRIGGERS FOR WHICH THE COMMISSION MUST ENSURE THAT VERIZON IS USING THE APPROPRIATE INTERPRETATION?**

A. The first key issue is to ensure that Verizon is defining transport routes in a manner consistent with the FCC's order, and is applying those definitions appropriately. The FCC defined a transport route as "a connection between wire center or switch 'A' and wire center or switch 'Z'." The FCC elaborated that "even if, on the incumbent LEC's network, a transport circuit from 'A' to 'Z' passes through an intermediate wire center 'X,' the competing providers must *offer service* connecting wire centers 'A' and 'Z,' but do not have to mirror the network path of the incumbent LEC through wire center 'X'." Thus, the FCC requires that transport service must be offered between the two wire centers in question and that, regardless of how the facility is physically routed, there are points on entry and exit for traffic at both of the two offices under consideration. On the other hand, it is not correct to interpret the definition to mean that the connection may

rely on either a circuit switch or a packet/data switch to create the end-to-end path. If the connection gets switched between the two ends of the path, it is not *dedicated* transport.

**Q. WHAT IS THE APPROPRIATE EVIDENCE THAT VERIZON SHOULD PROVIDE TO MEET THE FCC'S REQUIREMENT OF OPERATIONAL READINESS FOR THE SELF-PROVISIONING TRIGGERS?**

A. The only effective and practical way of demonstrating that a CLEC is operationally ready under the Self-Provisioning Triggers is to produce evidence that the CLEC is actually providing service at the identified capacity level on the given transport route. This is consistent with the FCC's requirement that evidence be provided that CLECs *offer service* between two wire centers on a given transport route. While the existence of CLEC facilities is obviously a prerequisite to the provision of service, the mere existence of such facilities does not demonstrate whether the equipment can be used to provide the service to satisfy the trigger, whether the CLEC can provide service at the requisite capacity level, or whether the CLEC has performed the necessary engineering, provisioning, and administrative tasks to ensure that service can be provided at all or in a sufficiently timely manner to permit it to provision services to customers seeking those services within a competitive timeframe.

**Q. FOR PURPOSES OF APPLYING THE TRIGGERS, WHICH FACILITIES COUNT AS "OWNED FACILITIES"?**

A. There are two ways to demonstrate carrier ownership of the facilities: (1) the carrier can have legal title to the facilities or (2) the carrier can have a "long-term" (*i.e.,* 10 years or more) dark fiber indefeasible right of use ("IRU"), provided the carrier has attached the optronics (to which it has legal title) necessary to provide service or to "light" the fiber. If the carrier does not use its own facilities, then the carrier cannot count for purposes of the self-provisioning trigger.

**Q. WHICH FACILITIES DO NOT COUNT AS "OWNED FACILITIES"?**

A. Facilities obtained from other sources such as through special access arrangements, UNEs, capacity leases (unless they are long term IRUs), and all third party provided facilities do not count as "owned facilities." The FCC specifically emphasized that a CLEC "using the special access facilities of the incumbent LEC or the transmission facilities of the other competitive provider … would *not* satisfy the definition of a self-provisioning competitor for purposes of the trigger." *TRO* ¶ 333.

In addition, the triggers are designed to prevent double counting of facilities. Therefore, for purposes of the self-provisioning test, a carrier may not be using "facilities owned or controlled by one of the other two providers on the premises [for loops]." *TRO* ¶ 333.

**Q. IF A CARRIER SATISFIES THE REQUIREMENTS FOR THE SELF-PROVISIONING TRIGGERS, WILL IT AUTOMATICALLY QUALIFY AS AN ELIGIBLE PROVIDER UNDER THE COMPETITIVE WHOLESALE FACILITIES TRIGGERS OR VICE VERSA?**

A. No. The FCC emphasized that the two types of triggers are separate and distinct. The Self-Provisioning Trigger examines whether CLECs have actually deployed their own facilities on a particular route and then made those facilities available on a retail basis. In contrast, the Wholesale Trigger examines whether the provider makes its facilities available to other carriers (rather than just to retail customers). Indeed, some carriers that self-provide facilities may be relevant to both wholesale and self-provisioning triggers.

## A. CRITIQUE OF VERIZON'S SELF-PROVISIONING TRIGGER ANALYSIS FOR DEDICATED TRANSPORT.

**Q. HAVE YOU REVIEWED VERIZON'S TESTIMONY CONCERNING THE APPLICATION OF THE SELF-PROVISIONING TRIGGER TO DEDICATED TRANSPORT ROUTES?**

A. Yes, I have reviewed the initial panel testimony of Theresa L. O'Brien and John White.

**Q. WHAT WERE THE CONCLUSIONS OF THE SELF-PROVISIONING TRIGGER ANALYSIS AS PROVIDED BY VERIZON?**

A. Verizon asserts that 20 routes between pairs of Verizon wire centers satisfy the self-provisioning trigger for dark fiber transport. Verizon also asserts that 6 routes satisfy the self-provisioning trigger for DS3 dedicated transport. O'Brien & White Initial Testimony, pp. 30-32.

**Q. WHAT WAS THE PROCESS VERIZON USED TO IDENTIFY THE DEDICATED TRANSPORT ROUTES THAT IT CLAIMS SATISFY THE SELF-PROVISIONING TRIGGER?**

A. Verizon developed a list of wire center pairs where collocation arrangements house equipment that terminates CLEC fiber facilities. Verizon asserts that this determination reflected information gathered in discovery and through examination of its own collocation records and facilities. O'Brien & White Initial Testimony, pp.34-35. Verizon then simply *assumed* that transport routes exist between each and every collocation arrangement for a given carrier and then apparently hopes through a "leap of faith" that the identified carrier provides service at the capacity levels required to satisfy both the DS3 and dark fiber triggers. *Id.* pp. 36-37.

**Q. DID VERIZON PERFORM THE APPROPRIATE ANALYSIS TO DEMONSTRATE THAT THE SELF-PROVISIONING TRIGGERS WERE SATISFIED FOR EACH OF THE IDENTIFIED DEDICATED TRANSPORT ROUTES?**

A. No. Instead of collecting and analyzing information on specific routes between wire centers "a" and "z" for each competing provider as required by the FCC, Verizon only gathered enough information to implement what I call a "connect the dots" methodology. Verizon assumes that transport routes exist between each and every collocation arrangement for a given carrier, without regard for the carrier's actual use of the

collocation arrangement. However, I found no information in the referenced discovery that provided affirmation by any carrier that it was **actually providing** dedicated transport at the specific DS3 or dark fiber levels.

What Verizon fails to do, in particular, is to start with a valid definition of "dedicated transport." Lacking this correct foundation, the remainder of its analysis, which is also flawed, fails to make the required demonstration.

**Q. WHAT IS THE APPROPRIATE DEFINITION OF DEDICATED TRANSPORT FOR PURPOSES OF THE COMMISSION'S IMPAIRMENT EXAMINATION?**

A. In contrast to the rules that existed before the FCC issued the TRO, the definition of dedicated transport has been limited to transmission facilities that connect two endpoints *within the incumbent's network*. Previously, ILEC facilities that connect a CLEC collocation (i.e., a location within the incumbent's building) and a CLEC's switch or transport node (facilities commonly referred to as entrance facilities) were classified as dedicated transport. These facilities are now excluded from the category of "dedicated transport" under the FCC's UNE rules and cannot properly be used to demonstrate that a carrier "provides dedicated transport."[3]

This fact is important to understand. For example, AT&T, which Verizon counts as a CLEC meeting each of the FCC triggers, does *not* provide dedicated transport

[3] Entrance facilities represent a point of high demand concentration, because they provide the CLEC with connectivity between two networks (the ILEC's and its own). As such, they are the first place a CLEC will find it practical to build facilities. In such cases, the CLEC is extending its facilities from *its* network closer to its retail customers. From a conceptual standpoint, the configuration has a "hub-and-spoke" appearance, with the CLEC central network location, such as a switch, as the hub and high volume collocations where customer loops are accessed as the "fiber" spokes. Accordingly, it is likely that a CLEC with a robust network will have a number of fiber collocations in a single geographic market. However, such facilities are not "dedicated transport" because they do not provide connectivity between two points on the ILEC's network.

between the AT&T-identified collocations. Rather, these collocations are exclusively employed to provide entrance facilities or to terminate and/or cross-connect interconnection trunks, none of which represent the provision of "dedicated transport" as now defined by the FCC. Recognizing this fact and the need to apply appropriate definitions to the Commission's unbundling decisions is critical at this juncture.

It is also essential to recognize that *dedicated* transport facilities are, by definition, facilities that ***do not*** rely on switching functionality to establish the end-to-end path. Indeed, the entire debate between incumbents and their competitors on this issue has focused on whether the ILECs must offer dedicated transport as a UNE or can require competitors to purchase *special* access services as a substitute. It goes without saying that special access services (as opposed to "switched" or "common" transport,) include no switching, and rates for ILEC dedicated transport (as a UNE) also include no switching costs. Accordingly, when reviewing CLEC deployment of "dedicated transport" for the purposes of determining impairment, under either the trigger or potential deployment analysis, the Commission should act in a consistent manner and consider only facilities that provide *direct connectivity* between two points on the incumbents' networks, without the use of any intervening switching.

**Q. WHAT IS THE SIGNIFICANCE OF THIS TO THE APPLICATION OF DEDICATED TRANSPORT TRIGGERS?**

A. The significance is two-fold. First, CLECs generally deploy fiber to provide connectivity between their retail customers and their own network nodes rather than to provide connections that only connect two incumbent LEC offices. Second, merely identifying a carrier's fiber-based collocations most likely identifies only where the CLEC has

deployed one end of an *entrance facility*. It certainly is not dispositive as to whether the CLEC has established dedicated transport between two fiber-based collocations.

In this regard, the Commission should also recognize the severe consequences of using entrance facilities -- which do not qualify as UNEs -- to meet the self-provisioning trigger for dedicated transport. The harm is especially acute for other CLECs that require a facility between the identified ILEC offices for the purpose of obtaining an EEL or for engaging in transport "hubbing" in order to gain sufficient scale to construct their own facilities. If the incumbent's assertions on this issue resulted in an (erroneous) finding that the self-provisioning transport trigger is met solely because three or more CLECs provide *entrance facilities* to the same set of incumbent offices, then all other competitors would be denied access to dedicated transport on that route, and their ability to use EELs to support additional facilities construction will be impaired.

**Q IF A FIBER CABLE RUNS BETWEEN TWO COLLOCATIONS OF THE SAME CLEC IS IT THEN APPROPRIATE TO CONCLUDE DEDICATED TRANSPORT IS PROVIDED?**

A. No. The mere existence of a fiber cable running past (or even through) two points proves nothing with regard to its use to provide direct (non-switched) connectivity between those points. First, the Commission should understand that a fiber cable is not a single transmission path. Rather, a single fiber cable is composed of multiple bundles (sheaths) each of which contains multiple fibers strands. Although a cable route may "run through" both ILEC office A and office B, the two offices may not even be connected to the same fiber, much less to fiber in the same bundle.[4] If the two ILEC offices have not

[4] In fact most of the fiber sheathes may only pass by the wire center, remaining in the conduit running down the street in front of the building rather than being split off to enter the wire center. In addition, there is no guarantee (continued...)

been configured to provide termination of the same fiber pairs on the same transmission system, then the CLEC does not (and cannot) have physical connectivity between the two locations unless a grooming and cross-connection function is provided at a third physical location on the same pairs and system.

In fact, AT&T typically connects its facility-based collocations, that is collocations to which it has constructed fiber facilities to (i.e., an entrance facility), to its network using two-point rings, where one point is the collocation and the second is the AT&T network location (e.g., an AT&T switching center or point of presence).[5] Accordingly, it is not possible to provide "dedicated transport" because, even though more than one collocation is on the came cable route, they are not on the same fiber.

**Q WHY WOULD A CLEC PUT A COLLOCATION ON THE SAME FIBER CABLE BUT NOT THE SAME FIBER?**

A There are a number of practical reasons. First, the ability to place a collocation on a particular fiber presumes operational readiness of all the collocations on the fiber at the essentially same time the fiber strand/system was activated. Said another way, the entire transmission system can only be activated when the last node is ready. Past experience

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(continued...)

that all the fibers that are "peeled off" the main cable actually run to the CLEC's collocation. Once the fiber strands enter the cable vault of the wire center, the incumbent generally provides the connection between the cable vault and the collocation. Frequently, there is a sizeable charge applied *per fiber strand* connected. Hence, the CLEC may not opt to even connect all strands within a sheath to its collocation.

[5] In some instances a third location may be on the ring. This third location will typically be an access point to one or more long distance carriers. In any event, new ring construction practices do not provide for multiple incumbent wire centers on the same ring. In the rare instances that multiple incumbent wire centers exist on the same ring, this condition is likely to be the result of (1) acquiring the fiber network of a company that deployed such configurations or (2) sales force error (e.g., sales personnel making commitments based on an erroneous belief that a building was on AT&T's network when it was not). In any event, the presence of multiple incumbent wire centers on the same ring/transmission system is a rare operational exception to AT&T's network engineering practices.

has shown that delay at one or more sites is frequently experienced. For example, delays in collocation readiness or construction impediments at only one location may force the carrier to choose between a deferral of activation for the entire system or to implement a different network design. Such a delay, in turn, may make the difference between whether or not a large retail customer accepts service from the CLEC. Therefore, the more practical approach is to run the fiber cable into a location (or to the access point just outside the wire center), if possible, and then activate each collocation on its own two-point ring using it own fiber pair.[6] This has the advantage of divorcing the timing of the cable construction from the timing of collocation activation or augment. A second major advantage is that extremely precise projections of the demand accessible at the collocation are not required – just a reasonable assurance that a minimum critical mass will be achieved. After that, capacity needed to provide service can be achieved using the existing capacity of the two-point system (i.e., by adding plug-in modules) or by upgrading the system to higher transmission capacities (e.g., from OC48 to OC192). Should such an upgrade be required, it impacts only the customers served out of that particular wire center. In contrast, if multiple wire centers were on the same transmission system (i.e., fiber) all the wire centers on that fiber are potentially affected by a reconfiguration.

[6] The term "fiber pair" is used here as a term of convenience. Typically, a bi-directional (protected) transmission system utilizes one pair of fibers to transmit traffic in one direction (e.g., a clockwise direction) with a second pair is assigned to provide transmission in the opposite direction (e.g., the counterclockwise direction). This provides for immediate restoration capability in the event of a fiber cut or transmission equipment failure on the active path. Accordingly four fiber strands terminate on the optical multiplexer but two fiber strands (one in the transmit and one in the receive direction) are required for the entire "circumference" of the ring. Note, however, that the segment from A to B does not necessarily occupy the same fiber pair as the connection from B to A

**Q ISN'T IT TECHNICALLY FEASIBLE FOR A CLEC TO CREATE A CONNECTION IF THE TWO OFFICES ARE ON THE SAME FIBER CABLE?**

A Yes, but there is a significant distinction between what is technically feasible and what is operationally and economically practical. Even though technology may permit a carrier to create a dedicated transport path between two points, the cost of doing so can be substantial, particularly given that the demand between the two endpoints in the incumbent's network will likely be very small. Accordingly, the FCC's trigger analysis properly requires that a "trigger firm" actually be providing service between the identified offices that form a dedicated transport route. As with all facilities construction, a carrier cannot rationally be expected to incur the costs of providing connections unless it is a rational approach to the serving arrangement and has the prospect to generate revenues sufficient to cover the costs incurred. And it is highly likely that a CLEC's demand for capacity between two ILEC wire locations on its own ring would be too small to justify such an approach.

**Q WHY DO YOU SAY A CLEC WOULD NOT BE IN THE BUSINESS OF PROVIDING THE EQUIVALENT OF DEDICATED TRANSPORT ON A RETAIL BASIS?**

A The practical purpose of connecting one ILEC office to another (as opposed to connecting each office to the CLEC's network) is either (1) to provide a dedicated (private line) retail service between two customer premises, one of which is served by a loop from office A and the other served by a loop from office B, or (2) to provide wholesale service to other carriers between those two endpoints. Only the former situation would result in a condition appropriate for consideration in a self-provisioning trigger, and even then only if the total demand were less than 12 DS3s worth of capacity (the only capacity that can be obtained as a UNE).

Using such a configuration for a retail service strains credibility. A customer that might have substantial demand between two ILEC wire centers would also (most likely) have even more traffic running to locations well beyond those two wire centers. That is, a customer is unlikely to have multi-megabits of transmission between two points in close proximity unless those two points are also connected to many other locations outside the local area. Given that such a hypothetical customer would be a very large enterprise customer, the CLEC would likely also build the loop out to the customer location. Accordingly, the CLEC would not be using or providing "dedicated transport" in that case, because the end-points of the facility are two customer premises, not two incumbent wire centers. Furthermore, the interconnection of the segments (loop and transport) would not likely occur in the incumbent's offices but would instead be made in a building where the CLEC has unrestricted access, typically one owned (or leased) by the CLEC. Again, such a configuration would not connect two ILEC wire centers and therefore could not even be considered a dedicated transport configuration.

**Q WHY WOULD THE CLEC LIKELY CONNECT THE SELF-PROVIDED LOOP AND INTERPREMISES SEGMENT AT A LOCATION OTHER THAN THE TRADITIONAL SERVING WIRE CENTER (OF THE INCUMBENT) FOR THE PREMISES?**

A The self-constructed loop facility would generally run back to the CLEC's network node, rather than to ILEC collocation, and then be connected to other fiber as the particular customer design warrants. This affords the CLEC a better ability to control service quality, because its nodes are generally manned round-the-clock, or at least are generally accessible. In addition, fewer potential points of failure (splice points and add/drop multiplexers) are generally involved. Furthermore, CLECs generally employ collocation to obtain interconnection with the incumbent LEC's network and to gain access to UNEs.

In this instance, neither are involved. As a result, a CLEC would not ordinarily use costly collocations to create the connection, particularly one that connects facilities that it self-provides entirely from the customer's premises to its network.

**Q ARE THERE OTHER REASONS WHY A CLEC WOULD NOT PROVIDE "DEDICATED TRANSPORT" DESPITE HAVING A CABLE BETWEEN TWO INCUMBENT OFFICES?**

A Yes. Equally important from an operational/network perspective, is the fact that transmission capacity on multi-node fiber ring is "zero sum." That means that if capacity is "drained off" to provide direct termination of traffic between two points on the ring (i.e., to provide dedicated transport between two ILEC offices), it reduces the CLEC's capacity to terminate traffic at other points on the same ring. This occurs because all traffic on a protected ring travels around the entire ring on a transmission system that has fixed capacity.[7]

A simple example can help illustrate the constraint. The table below describes an OC48 system on a hypothetical CLEC ring that passes through two ILEC central offices and a CLEC switching node. In this example, all traffic from ILEC office A is routed directly to the CLEC's switching node and all traffic from ILEC office B is also routed directly to the CLEC's switching node, and there are no direct connections between ILEC offices A and B. In that case, the ring has characteristics shown below:

| Task | Direction | Collo A | CLEC Node N | Collo B |
|---|---|---|---|---|
| Transmit | Clockwise | A-N: 24 | N-B: 24 | N-B-A: 24 |

[7] This characterization is a simplification. In actuality, it is more likely that the transmission segment will be active in only one direction. In the event that a transmission failure is detected, the system will automatically activate a transmission path in the opposite direction.

| | | | | |
|---|---|---|---|---|
| | | B–A–N: 24 | N-B-A: 24 | B-A-N: 24 |
| Receive | Clockwise | N-B-A: 24;<br>B-A-N: 24 | A-N: 24<br>B-A-N: 24 | N-B: 24<br>N-B-A: 24 |
| Transmit | Counter clockwise | A-B-N: 24<br>N-A-B: 24 | N-A-B: 24<br>N-A: 24 | A-B-N: 24<br>B-N: 24 |
| Receive | Counter clockwise | N-A-B: 24<br>N-A: 24 | A-B-N: 24<br>B-N: 24 | A-B-N: 24<br>N-A-B: 24 |

The entire capacity of the system is utilized in the above example.

However, if the CLEC were to reconfigure its ring to permit the direct exchange of traffic between ILEC offices A and B, the capacity available to permit ingress and egress at the CLEC's network (i.e., A to N and B to N) is reduced. In this case, let us assume 6 DS3s are required between A and B. The carrier's revised network configuration is reflected in the following table:

| Task | Direction | Collo A | CLEC Node N | Collo B |
|---|---|---|---|---|
| Transmit | Clockwise | A-N: 21<br>B–A–N: 21<br>A-N-B: 6 | N-B: 21<br>N-B-A: 21<br>A-N-B: 6 | N-B-A: 21<br>B-A-N: 21<br>B-A: 6 |
| Receive | Clockwise | N-B-A: 21;<br>B-A-N: 21<br>B-A: 6 | A-N: 21<br>B-A-N: 21<br>A-N-B: 6 | N-B: 21<br>N-B-A: 21<br>A-N-B: 6 |
| Transmit | Counter clockwise | A-B-N: 21<br>N-A-B: 21<br>A-B: 6 | N-A-B: 21<br>N-A: 21<br>B-N-A: 6 | A-B-N: 21<br>B-N: 21<br>B-N-A: 6 |
| Receive | Counter clockwise | N-A-B: 21<br>N-A: 21<br>B-N-A: 6 | A-B-N: 21<br>B-N: 21<br>B-N-A: 6 | A-B-N: 21<br>N-A-B: 21<br>A-B: 6 |

Thus, the direct routing of traffic between intermediate points on a ring will be the rare exception rather than the rule, because it "steals" capacity from the mainstream purpose of the CLEC's self-provided facilities – to connect retail customers to its network.

**Q WOULD THE SUBOPTIMIZATION YOU DESCRIBED ABOVE BE ADDRESSED BY EFFECTIVELY MAKING A CONNECTION BETWEEN THE TWO INCUMBENT OFFICES AT THE CLEC'S NODE?**

A No, not without the insertion of additional grooming functionality. This grooming capability is provided through a device such as a Digital Cross-connection System (DCS). A DCS is not an inexpensive device and itself consumes floor space and power resources. Nevertheless, the Commission must keep in mind that technical feasibility is not sufficient evidence to conclude that there has been actual provisioning of dedicated transport. I believe that it is a rare instance when the following converge:

- Two customer premises with substantial inter-premises demand justifying a dedicated connection for only that demand, and
- The two locations home on different ILEC wire centers in the same local area, and
- A CLEC has deployed a fiber cable between the two wire centers and connects the collocations within the each wire center, and
- The two wire centers are connected to a common CLEC network location on a transmission system having sufficient available capacity, the same transmission system on the same fiber, and
- The CLEC finds that the point-to-point demand between the locations, when combined with other demand at those premises is insufficient to build its own loop, (or in the alternative, chooses to build a loop to the collocation in the ILEC office rather than to its own network access point), and
- The CLEC has sufficient spare capacity for backhaul to its own network that the carrier can afford to dedicate demand to the point-to-point application.

Each condition is unlikely to occur. The joint probability of all six occurring is practically nil.

**Q. PLEASE EXPLAIN YOUR POSITION THAT VERIZON HAS FAILED TO PRESENT THE INFORMATION NECESSARY TO IDENTIFY ROUTES SERVED BY COMPETITIVE PROVIDERS.**

A. As I stated in Section III above, the FCC has defined dedicated transport as "a connection between wire center or switch 'A' and wire center or switch 'Z'." The FCC elaborated that "even if, on the incumbent LEC's network, a transport circuit from 'A' to 'Z' passes through an intermediate wire center 'X,' the competing providers must *offer service* connecting wire centers 'A' and 'Z,' although the physical facilities need not follow the same path through the network as that employed by the incumbent LEC.

**Q. IF THERE IS AN INTERMEDIATE SWITCH ON THE PATH THAT IS REQUIRED TO CONNECT POINTS "A" AND "Z", IS THE PATH DEDICATED TRANSPORT?**

A. No. In fact two separate dedicated paths exist that are temporarily connected by a switch. As noted above, there is no historical precedent to justify the designation of a path that requires intermediate switching as "dedicated" transport.

It is, frankly, a completely unrealistic view of how AT&T's or any efficient CLEC's network works or should work. From an engineering standpoint, it makes no sense to say that AT&T should use its switches to provide a "dedicated transport-like" function that connects two ILEC wire centers. As a matter of definition, "dedicated transport" is an uninterrupted transmission path between two ILEC wire centers that remains on the ILEC network. If transport is *switched* through AT&T's network, the switching breaks that transmission path.

While it may be theoretically possible to create a switched path to carry traffic between two ILEC wire centers in which AT&T has collocations, that still would not be dedicated transport. Aside from the fact that the use of "switching" by definition eliminates the notion that traffic between two points is "dedicated," it makes no sense at all for a carrier to employ its own costly switching capacity to create a substitute for the ILEC dedicated transport that is available as an unbundled network element. The essence of dedicated transport is that its connections are always "open," that is, the circuits are always available because they are dedicated to the user. This is the exact opposite of a switched connection, which is only designed to be in place during the time a specific communications is taking place.

**Q. WHY IS IT NECESSARY FOR VERIZON TO DEMONSTRATE THAT DEDICATED TRANSPORT SERVICE IS BEING PROVIDED ON EACH ROUTE?**

A. As I stated earlier in my testimony, CLECs generally establish collocation arrangements primarily, if not exclusively, for the purpose of aggregating unbundled loop facilities and connecting them to a facility terminating at the CLEC network (i.e., on a switch or at a network node). Thus, dedicated transport purchased from the ILEC is typically employed within the CLEC network as the functional equivalent of ILEC loop feeder plant,[8] not to provide service between two intermediate ILEC offices on the CLEC's local ring. Because collocations are generally not used to provide transport connectivity between ILEC wire center pairs, Verizon's "connect the dots" approach drastically overstates the

[8] The Commission should note that the feeder subloop UNE is not eligible for unbundling relief.

number of actual transport routes connecting wire centers and cannot be used to support its transport trigger claims.

**Q. WHY WAS IT NECESSARY FOR VERIZON TO IDENTIFY THE SPECIFIC CAPACITY LEVELS IN SERVICE AT EACH LOCATION?**

A. Similar to the loop trigger provisions, it is essential that equipment being used for OC(n) level services be distinguished from equipment providing DS3 or dark fiber transport. As the FCC determined, carriers generally configure transport facilities at much higher capacity levels than a DS3, so a reasonable assumption is that, even if there actually is a connection between two Verizon wire centers, it is most likely provisioned at an OC(n) level of capacity for data networking purposes, which would make it inapplicable for the self-provisioning trigger. Verizon has not done this. Rather, Verizon has simply assumed that where the competing carriers are providing OCn level services they also deploy DS3 and DS1 circuits over their OC transport facilities. O'Brien & White Initial Testimony, pp. 37-39.

**Q. BASED UPON THE INFORMATION PRESENTED BY VERIZON, IS IT POSSIBLE TO DETERMINE WHETHER ANY TRANSPORT ROUTES MEET THE SELF-PROVISIONING TRIGGER?**

A. No. Due to the fundamental errors in Verizon's approach, it has not collected or presented the appropriate information nor has it performed the required follow-on analysis. The only information that Verizon has presented or collected at the present time is an over-inclusive list of collocations, each of which may or may not be currently part of a transport route, and as to each identified route, the capacity level is undetermined. The incumbent's connect-the-dots approach thus relies upon multiple leaps of faith, not an examination of fact.

**Q. ARE THERE ANY OTHER FLAWS THAT YOU OBSERVED IN VERIZON'S ANALYSIS AS TO DEDICATED TRANSPORT?**

A. Yes. In addition to the fact that Verizon failed to elicit the appropriate data concerning connections between wire centers, Verizon also did not attempt to determine for any of the identified routes whether the routes pass through a CLEC switch. As I discussed above, dedicated transport does not rely upon an intermediate switch to create the end-to-end connection. To constitute dedicated transport under the self-provisioning trigger, not only must all or part of the facility be dedicated to a particular carrier or use, but there also cannot be any switching interposed along the transport route. For example, if a CLEC has a transport route that runs from its collocation space to its own switch (i.e., the CLEC deployed an entrance facility), that route is *not* dedicated transport under the TRO and may not be counted toward the self-provisioning (or wholesale) trigger.

**Q. HOW SHOULD THE COMMISSION PROCEED TO THE EXTENT THAT VERIZON HAS NOT COLLECTED ALL OF THE DATA NECESSARY TO DEMONSTRATE THE TRIGGERS ARE MET?**

A. The burden of proof on these matters is on the incumbent to demonstrate that the FCC's national findings of impairment do not apply for customer locations (for loops) and routes (for dedicated transport). And critically, CLECs will be irreparably harmed if they are denied access to loops or transport for locations or routes where they are actually impaired, as would occur if the Commission were to accept the incumbent's superficial "connect the dots" approach. There is no doubt that the analysis required by the TRO requires rigorous data collection and careful assessment, examination and verification. The CLECs should not be penalized (and the incumbent rewarded) if the incumbent elects not to do its homework.

## IV. WHOLESALE TRIGGERS FOR DEDICATED TRANSPORT.

**Q. WHAT IS THE PURPOSE OF THE FCC'S WHOLESALE TRIGGERS FOR DEDICATED TRANSPORT?**

A. In the TRO, the FCC made a national finding that CLECs were impaired with respect to access to dedicated transport. The FCC allowed that ILECs may challenge these impairment findings on a location- and route-specific basis before the state Commissions. One of the ways Verizon may demonstrate non-impairment is by showing that a sufficient number of other carriers offer dedicated transport on a wholesale basis. These are known as the "Wholesale Triggers."

The Wholesale Triggers provide Verizon an opportunity demonstrate that there is no impairment for a specific customer location or route by identifying locations for which there are alternative providers offering wholesale transport services to CLECs. In addition to evidence provided under the self-provisioning trigger, Verizon is also obliged to demonstrate that the alternative provider: (1) is actually offering wholesale service on a widely available basis for the specific route at the requisite capacity level; (2) has equipped its network to facilitate numerous wholesale customers; and (3) has developed the appropriate systems and procedures to manage a wholesale business.

**Q. WHAT CAPACITY LEVELS ARE SUBJECT TO THE WHOLESALE TRIGGERS FOR DEDICATED TRANSPORT?**

A. Wholesale transport at both the DS1 and DS3 level are subject to the Wholesale Triggers. Dark fiber transport is subject to the Wholesale Trigger.

**Q. WHAT MUST VERIZON DEMONSTRATE TO THIS COMMISSION TO SATISFY THE WHOLESALE TRIGGERS FOR DEDICATED TRANSPORT?**

A. The Wholesale Triggers examine whether there are competing providers offering a bona fide product at the specific location or on the specific route.

**Q. WHAT MUST VERIZON DEMONSTRATE TO SATISFY THE WHOLESALE PROVISIONING TRIGGER FOR DEDICATED TRANSPORT?**

A. The wholesale trigger for dedicated transport requires specific evidence that:

- *Two or more competing providers not affiliated with each other or with Verizon are present on the route*|
- *Each provider has deployed its own transport facilities "and is operationally ready to use those facilities to provide dedicated … transport along the particular route";*
- *Each provider "is willing immediately to provide, on a widely available basis," dedicated transport to other carriers on that route;*
- *Each provider's "facilities terminate in a collocation arrangement at each end of the transport route that is located at an incumbent LEC premises and in a similar arrangement at each end of the transport route that is not located at an incumbent LEC premises";*
- *Requesting telecommunications carriers are able to obtain reasonable and nondiscriminatory access to the competing provider's facilities through a cross-connect to the competing provider's collocation arrangement.*

*See* 47 C.F.R. § 51.319(e)(1)(ii) [DS1 transport], 51.319(e)(2)(i)(B) [DS3 transport], 51.319(e)(3)(i)(B) [dark fiber transport].

**Q. FOR THE WHOLESALE TRIGGERS TO APPLY, MUST A CARRIER OFFER AT WHOLESALE THE SPECIFIC CAPACITY LEVELS IN QUESTION?**

A. Yes. The *Triennial Review Order* contemplates that the Wholesale Triggers apply when a carrier offers for wholesale the particular capacity level in question. For example, a carrier that is a wholesale provider of transport at the OC(n) capacity level would not necessarily offer transport at the DS1 and DS3 levels on a "widely available" basis.

**Q. IN ADDITION TO THE ISSUES YOU HAVE IDENTIFIED THAT NEED TO BE ADDRESSED IN THE SELF-PROVISIONING ANALYSIS, ARE THERE ADDITIONAL ISSUES VERIZON NEEDS TO ADDRESS IN ORDER TO SATISFY THE WHOLESALE TRIGGERS?**

A. Yes. A significant threshold issue is to ensure that Verizon is not overly broad in its identification of wholesale providers. Many carriers may provide some wholesale

services, but may not be in a position to, or elect to, offer the specific loop or transport services necessary to satisfy the Wholesale Triggers. For example, a carrier may offer wholesale long distance voice services, and may also have established collocation arrangements for the self-provision of a data service for a specific retail customer. The fact that the carrier is a wholesale provider of an unrelated service is not relevant to the trigger analysis if the carrier is not offering wholesale services specific to its collocation arrangements.

**Q. DOES THE REQUIREMENT OF OPERATIONAL READINESS NEED TO BE EXPANDED FOR THE WHOLESALE TRIGGERS?**

A. Yes. In addition to the requirements of the self-provisioning triggers, Verizon must demonstrate that the wholesale provider is operationally ready and willing to provide transport to other carriers at each capacity level. At a minimum, Verizon must show that each wholesale provider:

- *Has sufficient systems, methods and procedures for pre-ordering, ordering, provisioning, maintenance and repair, and billing;*
- *Possesses the ability to actually provision wholesale high-capacity loops to each specific customer location identified or to provide dedicated transport along the identified route;*
- *For loops, has access to an entire multi-unit customer premises;*
- *Is capable of providing transport at a comparable level of capacity, quality, and reliability as that provided by Verizon;*
- *For transport, is collocated in each central office at the end point of each transport route;*
- *Has the ability to provide wholesale high capacity loops and transport in reasonably foreseeable quantities, including having reasonable quantities of additional, currently installed capacity;*
- *Reasonably can be expected to provide wholesale loop and transport capacity on a going-forward basis;*

- *Can provide service in a commercially reasonable timeframe, because if it takes to long to receive service customers will not sign up with CLECs.*

- *See 47 C.F.R. § 51.319(e)(1)(ii) [DS1 transport], 51.319(e)(2)(i)(B) [DS3 transport], 51.319(e)(3)(i)(B) [dark fiber transport].*

**Q. WHAT DOES "WIDELY AVAILABLE" MEAN FOR THE WHOLESALE FACILITIES TRIGGERS?**

A. To be widely available, service must be made available on a common carrier basis, for example, through a tariff or standard contract. An offer to negotiate an individualized private carriage contract does not constitute being widely available. In addition, each carrier identified as a wholesale provider must be able "immediately to provide" wholesale service. 47 C.F.R. § 51.319(e). If the carrier is required to construct facilities in order for the service to be made available, then the service is not widely available.

**Q. WHAT DOES IT MEAN TO HAVE REASONABLE ACCESS TO THE WHOLESALE PROVIDER?**

A. One example is that requesting carriers have access to ILEC-provided cross-connects, whether to other CLEC collocations or to other forms of incumbent wholesale transport at nondiscriminatory rates, terms, and conditions in accordance with FCC and state commission rules. If carriers are not able to cross connect at the Verizon central office, then they cannot obtain access to the wholesale providers' facilities.

Similarly, functional and efficient systems and processes for ordering and provisioning and maintaining capacity must exist for the identified wholesaler. Without workable means to order and support services, the service is not of equivalent quality to the ILEC's and reasonable access to the wholesaler does not truly exist. Furthermore, requesting carriers also must be able to order circuits to terminate in all qualified

wholesale providers' collocation space without unreasonable limitations as to quantity or quality.

**Q. IF THIS COMMISSION FINDS THAT A TRIGGER IS SATISFIED, IS IT REQUIRED TO MAKE A FINDING OF IMPAIRMENT ON A PARTICULAR LOOP LOCATION OR TRANSPORT ROUTE?**

A. Verizon has not provided sufficient evidence in this case to justify a finding that the triggers are met. However, if the evidence were to show that a trigger is facially satisfied but the Commission believes that impairment still exists, then it may petition the FCC for a waiver to continue the unbundling requirement until the barrier(s) to deployment identified by the Commission no longer exist. For example, in the TRO, the FCC explained that a state commission might find impairment – despite the existence of a trigger – if "a municipality has imposed a long-term moratorium on obtaining the necessary rights-of-way such that a competing carrier can not deploy new facilities." *TRO* ¶ 411. As another example, ILECs have claimed collocation exhaust in many central offices. If a CLEC cannot collocate in one or both of the central offices on a route, then CLECs clearly remain impaired on that route, regardless of whether a trigger is facially satisfied.

## A. CRITIQUE OF VERIZON WHOLESALE TRIGGER ANALYSES REGARDING DEDICATED TRANSPORT

**Q. HAVE YOU REVIEWED VERIZON'S TESTIMONY CONCERNING THE APPLICATION OF THE WHOLESALE TRIGGER TO DEDICATED TRANSPORT ROUTES?**

A. Yes, I have reviewed the Initial Panel Testimony of O'Brien & White.

**Q. WHAT WERE THE CONCLUSIONS OF THE WHOLESALE TRIGGER ANALYSIS AS PROVIDED BY VERIZON.**

A. Verizon has asserted that 23 pairs of Verizon wire centers meet the FCC's wholesale trigger. Initial Testimony of O'Brien & White, p. 29. The specific transport routes are listed in Attachments 6(B) and 6(E) to the Initial Panel Testimony of O'Brien & White.

**Q. PLEASE DESCRIBE VERIZON'S PROCESS USED TO IDENTIFY DEDICATED TRANSPORT ROUTES IT BELIEVED MET THE WHOLESALE PROVISIONING TRIGGER.**

A. Verizon used the same "connect the dots" approach to collecting data that I described above in my critique of the self-provisioning trigger. Accordingly, the approach to wholesale triggers suffers from the same defects in process, accuracy, reliability and completeness. Verizon used the same broad-brush approach to identify wholesale service providers as it used for loops, essentially assuming without supporting evidence that every competitive provider of transport is providing wholesale on each and every route.

**Q. DOES VERIZON'S ANALYSIS OF THE WHOLESALE TRIGGERS FOR TRANSPORT SATISFY THE FCC REQUIREMENTS?**

A. No. Verizon's analysis of the wholesale trigger for transport incorporates all of the flaws of the self-provisioning analysis mentioned in Section IV. There are also several additional erroneous assumptions Verizon makes specific to the wholesale requirements, including: (1) describing at least two competitors as wholesale providers even though these carriers have not indicated through discovery that they in fact provide wholesale services; and (2) listing routes despite a lack of evidence regarding the capacity levels available.

**Q. PLEASE EXPLAIN HOW VERIZON ERRONEOUSLY LABELED COMPETITIVE PROVIDERS AS WHOLESALE PROVIDERS OF TRANSPORT BETWEEN VERIZON WIRE CENTERS?**

A. My review of the discovery responses showed that several carriers specifically stated that they do not provide wholesale transport between ILEC wire centers. For example,

AT&T indicated in PUC-ATT-1-8 that it "does not offer wholesale dark fiber, DS-1, or DS-3 dedicated transport over its own facilities." Despite this response, Verizon has counted AT&T as a wholesale provider for multiple dark fiber, DS1, and DS3 transport routes (see Attachment 6(B) and 6(E) to the Initial Panel Testimony of O'Brien & White). Without AT&T as a trigger candidate, many of the identified transport routes do not meet the wholesale trigger.

Additionally, Verizon has identified <**BEGIN PROPRIETARY**> XXXXX <**END PROPRIETARY**> as a carrier offering wholesale dark fiber, counting it toward the trigger on <**BEGIN PROPRIETARY**> XX <**END PROPRIETARY**> routes, but <**BEGIN PROPRIETARY**> XXXXXX <**END PROPRIETARY**> has not responded to the Commission's data requests. There is, therefore, no basis for Verizon's claims that this CLEC meets the trigger.

Likewise, Verizon has counted <**BEGIN PROPRIETARY**> XXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXX <**END PROPRIETARY**> toward the trigger for DS1 and DS3 on <**BEGIN PROPRIETARY**> XX <**END PROPRIETARY**> routes and toward the trigger for dark fiber on <**BEGIN PROPRIETARY**> XX <**END PROPRIETARY**> routes. <**BEGIN PROPRIETARY**> XXXXX **END PROPRIETARY**> responses to the Commission's second set of data requests, however, indicate that <**BEGIN PROPRIETARY**> XXXX <**END PROPRIETARY**> only has dark fiber available for wholesale on <**BEGIN PROPRIETARY**> XX <**END PROPRIETARY**> routes, and that <**BEGIN PROPRIETARY**> XXXX <**END PROPRIETARY**> is only collocated at the <**BEGIN PROPRIETARY**> XXXXXXXXX <**END PROPRIETARY**> wire center. In the other

wire centers specified in the Commission's data requests – <**BEGIN PROPRIETARY**> XXXXXXXXXXXXXXXXXXXXXXXXXXX <**END PROPRIETARY**> – access to <**BEGIN PROPRIETARY**> XXXXXX <**END PROPRIETARY**> fiber is available by means of a Competitive Alternative Transport Terminal ("CATT") only. Under the CATT agreement, a collocated carrier would use a Verizon facility to connect its collocated equipment to the <**BEGIN PROPRIETARY**> XXXXX <**END PROPRIETARY**> fiber splice point located in the wire center cable vault. Thus, this does not satisfy the requirements of dedicated transport.

Finally, Verizon counts <**BEGIN PROPRIETARY**> XXXXX <**END PROPRIETARY**> as satisfying the wholesale trigger for dark fiber for <**BEGIN PROPRIETARY**> XXX <**END PROPRIETARY**> pairs of wire centers. <**BEGIN PROPRIETARY**> XXXXXX <**END PROPRIETARY**> response to PUC-CLEC 1-8, however, reveals that <**BEGIN PROPRIETARY**> XXXXXXXXXXXXXXXXXXX XXXXXXXXXX <**END PROPRIETARY**> indicating only <**BEGIN PROPRIETARY**> X <**END PROPRIETARY**> wholesale dark fiber routes. Given that Verizon is not claiming that many routes meet the wholesale triggers, these numbers significantly undermine Verizon's assertions regarding trigger candidates.

**Q. IS IT POSSIBLE FOR A CARRIER TO BE PROVIDING SERVICE TO ANOTHER CARRIER ON A GIVEN TRANSPORT ROUTE, BUT NOT BE CONSIDERED A WHOLESALE PROVIDER UNDER THE FCC TRIGGERS?**

A. Yes. A key requirement under the FCC triggers is that the wholesale service be "widely available." Carriers occasionally will provide service to other carriers on an individual case basis or based on unique circumstances. One such example would be capacity swapping agreements in which capacity is not generally offered at wholesale but capacity

on route A is provided by carrier 1 to carrier 2 in exchange for carrier 2's providing carrier 1 capacity on its route B. These types of individual contract-type arrangements are not "widely available" to others and thus do not qualify for the wholesale trigger. Verizon must demonstrate that service between the specific locations meets the FCC requirements that the service be widely available, and also that requesting carriers have nondiscriminatory access to such arrangements. It has failed to do both.

**Q. WHAT ARE THE IMPLICATIONS OF REMOVING CARRIERS FROM VERIZON'S LIST OF WHOLESALERS?**

A. Removing AT&T and **<BEGIN PROPRIETARY>** XXXXXXX **<END PROPRIETARY>** and eliminating Verizon's asserted but unsupported routes based on **<BEGIN PROPRIETARY>** XXXXXXXXXXX **<END PROPRIETARY>** responses to discovery narrows Verizon's list of routes significantly.

**Q. IS THIS ADJUSTMENT ALL THAT IS REQUIRED TO CORRECT VERIZON'S APPROACH?**

A. No, the above merely demonstrates the significant impact of just one arbitrary assumption on the trigger results. As I stated in my analysis of the self-provisioning trigger analysis for transport, the majority of the routes Verizon has identified do not meet the FCC definition for a transport route, so they, in turn, cannot be used to support the triggers. That is, no showing is made that the collocations asserted to be the end points of the transport routes are anything other than collocation established to terminate CLEC entrance facilities.

**Q. BASED UPON YOUR REVIEW OF THE INFORMATION COLLECTED AND PROVIDED BY VERIZON, HOW MANY TRANSPORT ROUTES SATISFY THE WHOLESALE TRIGGERS?**

A. Verizon has simply not made the showing necessary the Commission to conclude that the wholesale triggers have been met for any of the locations it has identified. Accordingly, the Commission should not make a finding other than impairment still exists for and transport.

## V. THE COMMISSION SHOULD CONSIDER CERTAIN TRANSITION ISSUES IF THE COMMISSION MAKES FINDINGS OF NON-IMPAIRMENT.

**Q. WHAT TRANSITION ISSUES MUST THE COMMISSION ADDRESS IF IT MAKES ANY FINDINGS OF NON-IMPAIRMENT IN THIS CASE?**

A. Regardless of the route taken to the ultimate conclusion, if the Commission finds that requesting carriers are not impaired without access to unbundled transport on any particular route, then the Commission must address various transition issues. Specifically, in the TRO, the FCC required state commissions to establish an "appropriate period for competitive LECs to transition from any unbundled [transport] that the state finds should no longer be unbundled." *TRO* ¶¶ 339, 417.

**Q. WHAT PRINCIPLES SHOULD GUIDE THE SETTING OF AN APPROPRIATE TRANSITION PERIOD?**

A. At a minimum, the Commission should set a transition period that provides competing carriers a reasonable period of time to self-provision the transport in question and continue to offer service using UNEs pursuant to existing contracts. The latter is essential because services to enterprise customers are contract-based and generally do not allow the provider to terminate or modify the contract based upon sudden cost increases. Without a transition period, CLECs and their customers would face significant

disruptions to their services if access to unbundled loops were disconnected or migrated to other services.

**Q. WHAT IS YOUR RECOMMENDATION REGARDING THE SETTING OF A TRANSITION PROCESS?**

A. I recommend that the Commission develop a multi-tiered transition process such as the one applicable to mass-market switching. First, there should be a transition period of nine months in which CLECs may order new UNEs for routes where the Commission found a trigger is met. Second, CLECs should have a transition period equal to that applied to line sharing and mass-market switching, which provides a 3-year transition process, with one-third transitioned within 13 months, and another one-third transitioned within 20 months. Third, all transport UNEs should continue to be made available at TELRIC/TSLRIC rates until migrated.

**Q. SHOULD THE COMMISSION ESTABLISH AN EXCEPTION PROCESS FOR LOCATIONS AND ROUTES WHERE THE TRIGGERS HAVE BEEN MET?**

A. Yes. If a carrier demonstrates that it is attempting in good faith to construct facilities for a location or route for which UNEs are no longer available and that it is incurring a specific problem that makes construction within the applicable timeframe unachievable (e.g., issues with rights-of-way or building access), it should be permitted to seek an exception from the Commission consistent with the problem it faces. The CLEC should be permitted to continue to purchase the identified facility as a UNE until the Commission acts on its request.

**Q. ARE THERE ADDITIONAL TRANSITION ISSUES THE COMMISSION SHOULD CONSIDER?**

A. Yes. The Commission should ensure that Verizon maintains an adequate process for ordering and provisioning combinations of loops and transport, in situations where one or

both network elements of the combination are no longer available as unbundled network elements. In the *Triennial Review Order*, over ILEC objections, the FCC specifically stated that competing carriers are permitted to continue to have access to combinations of loops and transport regardless of whether one of the network elements are no longer available on an unbundled basis. *See TRO* ¶ 584. Similarly, the Commission should ensure that Verizon has adequate billing processes and procedures in place for CLECs to purchase delisted network elements, whether individually or in combination.

**Q. WHAT OTHER MATTERS SHOULD THE COMMISSION CONSIDER IF A LOOP TRIGGER IS MET?**

A. At least two additional safeguards should be instituted:

1. The Commission should adjust its performance measurement and incentive plans so that the incumbent is obligated to report performance for unbundled elements provided subject to section 251 obligations in comparison to elements provided subject to section 271 obligations and consequences result for discriminatory performance, and

2. A mechanism should exist so changed situations may result in the re-imposition of unbundling requirements, for example where two unaffiliated carriers no longer serve the same location.

**Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

A. Yes, it does.

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**PROFESSIONAL EXPERIENCE:**

**2001 - 2003: AT&T Corporation - Broadband IT Telephony Provisioning OSS, Englewood, Colorado.**
*Director; IT OSS Architecture and Planning – Provisioning/Service Activation*

- In this position, I was responsible for leading a team of 16 Members of Technical Staff (MTS) in the acceptance, deployment, and Tier II and III Technical Support for the local telephony provisioning and service activation solution (OSS) platform. Responsibilities also include Enhancements Requests (ER), Vendor and Contract Management, RFx Management, OSS Feature/Functionality Requirements, Data Extraction, Processing, Loading and Testing, and OS/OS and OS/NE Interoperability Testing, and Maintenance. Successfully deployed Xpercom Inventory and Design Solution and MediaVantage Provisioning/Service Activation OSS Solution in 16 Markets (cities) with a 95% flow-through rate.

**1998 - 2001: Lucent Technologies, Broadband Global Service Provider (GSP) Highlands Ranch, Colorado.**
*Account Management: Sales Account Executive & Systems Engineer; OSS Software Products Group (SPG)*

- In this position, I was responsible for providing sales, account management, and technical support of communications software (OSS) to the AT&T Broadband Account Team. I was responsible for exploring and identifying new opportunities, joint development partnerships, AT&T customer technical requirements, systems engineering, pricing, negotiations, and adaptive OSS development to meet the needs of the Customer. As the Sales/Systems Engineer, I provided input, and project priority to the R&D allocation/funding process. I provided monthly reporting on sales results/revenue, and new growth opportunities to Product Management, and gathered cost, price, and data/responses for bids and proposals (RFPs). I also provided technical consultation on new and emerging technologies/services, project management for OSS implementation, and identified operations and process gaps. Providing OSS Systems (Xpercom, NFM, Netminder, and ConnectVu) Engineering and Technical Support required familiarity with TMN/TMF concepts per ITU M30.10 Requirements and Objectives. I also provided Contract Management Expertise in working with Customer/Clients and other Vendor/Suppliers.

**1996 - 1998: AT&T Corporation, Local Services Division (LSD); Denver, Colorado.**
*District Manager (SGC); Local Services Division, Local Connectivity Costing/Pricing*

- In this position, I was responsible for leading a team of 16 managers responsible for identifying the appropriate price AT&T should pay to Incumbent Local Exchange Carriers (ILECs) for Network Elements (NE), Operations Support Systems (OSS), and functions/services that are primarily non-recurring or transactional in nature. My team's primary focus was on connectivity charges that are applicable for Local Market Entry, analyzing ILEC recurring and Non-Recurring Cost (NRC) studies, and for creating NRC technical and economic cost models which reflected total element long run incremental cost (TELRIC) based, and forward looking/least cost networks. I developed a Non-Recurring Cost Model (NRCM) which reflected a forward-looking network and closely coupled OSS architecture, and that was held up and supported by the State PUCs in Major Markets throughout the US. Retired (VRIP) from AT&T in June 1998.

**1995 - 1996: AT&T Corp. Network Services Division (NSD); Denver, Colorado.**
*Network Technical Support Manager (SGB); Local Infrastructure Access Management, Network Services Division (NSD)*

- In this position, I was responsible for leading technical discussions and support surrounding AT&T's access and local entry policies and requirements within the U S WEST states - including the negotiations on interconnection, unbundling, LNP, and collocation. I was responsible for providing expert written testimony in subsequent PUC Arbitration proceedings. I was also responsible for identifying the implications of proposed network architectures and its components on service assurance, capacity delivery, and ensuring the availability and quality of the carrier access services required to meet AT&T's service capability needs. Additionally, I was responsible for negotiating technical issues with independent telephone companies, and providing technical testimony/witnessing and presentations to the various State Public Utility Commissions (PUC) and the AT&T Law and Government Affairs (L&GA) and Local Services Organizations (ALS).

**1993 - 1995: AT&T Corp. Network Systems Group (NSG), OSS Applications Software; Denver, Colorado.**
*Senior Market Planner (SGB), OSS Business Unit/ Custom Engineering and Development (OSBU/CEAD)*

- In this position, I was responsible for exploring and identifying new OSS (Operations Support System) market opportunities, joint development partnerships, Customer technical requirements, tier one systems engineering, and adaptive OS development to meet the needs of the Customer. As the Senior Market Planner, I managed the Pacific West Customer Business Unit Competitive Market Planning Process and the R&D allocation/funding process for the Bell Labs OS Product Teams. I provided monthly reporting on sales results/revenue to Product Management, and gathered cost, price, and MOI information and data for bids and proposals (RFP), and determined price and cost recovery strategies. I

also provided technical consultation on new and emerging technology/service, and identified new OS business opportunities for the local OS, Transmission, Switching, and Broadband Customer teams.

- In 1995, I was temporarily assigned to the AT&T Wireless Group, where I was responsible for the planning, design, and tier one OSS technical support for the Customer's PCS/Wireless MTAs. This included support for the Autoplex ECP, 5ESS/DCS, Base Stations/Cell Sites, RAD/RASP, and associated SONET and DWDM Facilities. I was also involved with my Customers on a daily basis on contract management issues and assisting their marketing, forecasting/planning, engineering, design, and operations processes.

**1992 - 1993: U S WEST (QWEST) Communications Network & Technology Services/Service Assurance; Denver, Colorado.**
*Manager, N&TS/Service Assurance Technical Support*

- In this position, I was responsible for providing tier-two ESAC (Electronic Switching Assistance Center) technical support and service assurance for network equipment (LDS & SONET), technologies, and services within the U S WEST Communications 14 states. I provided expert technical direction and consultation, system change analysis, OSS systems strategies, and long term/root cause analysis, and employee development and education. I was also the U S WEST Communications Transport, Switching, and OSS (OSMINE) Product Team representative to Bellcore.

**1988 - 1992: U S WEST (QWEST) Communications Network & Technology Services ME/QA; Denver, Colorado.**
*Regional Staff Manager, N&TS/Technical Support Maintenance Engineering/Quality Assurance (ME/QA)*

- I was responsible for the U S WEST 14 state region for Maintenance Engineering and Quality Assurance (ME/QA). In this position, I provided expert technical direction and quality assurance support for the evaluation, selection, planning, design, engineering, analysis, maintenance, operation, and repair of SONET and Switching (stored program control) Network Elements. I was also the U S WEST Project manager (budgeting/funding) for the Bellcore Network and Technology work programs. In this capacity, I was responsible for managing approximately $23.5M (million) expense budget designated for Bellcore (Telcordia) engineering projects and contract management processes for the Vendor/Supplier environment.

**1986 - 1988: U S WEST (QWEST) Communications; Denver, Colorado.**
*Regional Staff Manager, Technical Operations/Product Support*

- I provided 14-state regional technical support to the Large Business and Carrier Marketing Units for newly tariffed products and services offered in U S WEST. In this position, I also developed detailed Methods and Procedures (M&Ps) for the acceptance/turn-up, provisioning, surveillance, testing, maintenance, and inventory of these products/services.

**1984 - 1986: Mountain Bell Telephone Co; Denver, Colorado.**
*Central Office (CO) Assistant Manager, Network Switching - SCC/NTEC*

- I managed the effective and timely provisioning, maintenance, testing, restoration, and customer response activities and provided effective and timely provisioning and maintenance of central office equipment and facilities. I also facilitated the achievement of my subordinates communicating goals clearly, helping others to obtain necessary resources, providing opportunities and stimulus for growth and skill development, delegating task responsibility, and holding employees accountable for results.

**1980 - 1984: AT&T Corporation; Denver, Colorado.**
*Communications Technician (CT), Network Operations*

- Installed, tested, monitored, and maintained switched and private line voice and data services in a Central Office (CO) and Network Operations Center (NOC) environment.

**1973 - 1980: Lackawanna County Area Vocational Technical School; Scranton, Pennsylvania.**
*Instructor/Facilitator; Basic Electronics and Electricity*

- Developed course syllabus, curriculums, and lesson plans. Lectured on theory, logic, basic electronics and electricity, and the use of tools and test equipment. Facilitated and supervised hands-on training in a classroom and laboratory environment.

**EDUCATION:**

- University of Denver (DU), Denver Colorado; Successfully completed course work (approx. 50%) towards Masters of Technology Management (MOTM).
- Wharton School of Business/ University of Pennsylvania; Masters Certificate in General Business.
- Regis University, Denver Colorado; BS Degree in Technical Management (Emphasis on Electrical Engineering Technology [EET]), and a Minor in Economics. Graduated Cum-Laude.
- Pennsylvania State University, Scranton Pennsylvania (EET Undergraduate Studies).

**PERSONAL:**

- IEEE - Member, Institute of Electrical and Electronic Engineers.
- VICA – Member, Vocational Industrial Clubs of America.

**TRAINING:**

- Technical (SONET, DWDM, PCS/Wireless, GR303, 5ESS, DCS, OSS, FITL, VoIP, ATM, HFC, etc), Regulatory, Process Management, Project Management, Computer, and Diversity. College Transcripts and Training records are available upon request.

**AWARDS/RECOGNITION**

- AT&T Local Services Division Vice Presidents Award - 1998
- Nominated (which led to subsequent District Manager promotion) for AT&T Leadership Career Plan (LCP) - 1996