Before The
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Technology Transitions	)	GN Docket No. 13-5
	)	
AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition	)	GN Docket No. 12-353

COMMENTS OF COMPTEL

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TABLE OF CONTENTS

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	)	
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	)	
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COMPTEL respectfully submits these comments, pursuant to the Commission's Public Notice released on February 28, 2014 (DA 14-285), with regard to the AT&T Proposal for Wire Center Trials submitted on February 27, 2014 in the above-referenced dockets.[1]

Introduction and Summary

COMPTEL members transform the wholesale inputs they obtain from AT&T into competitive, innovative retail products, primarily for customers in the retail business market. Wholesale access is vital and is the lynchpin for achieving the enduring value of competition. With an effective wholesale market, retail competition will thrive, spurring economic growth, job creation and even greater innovation. As such, our comments focus on the gaps and deficiencies in AT&T's proposal as it applies (or does not apply) to its

[1] Letter from Christopher M. Heimann, General Attorney, AT&T Services, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket Nos. 13-5, 12-353, (filed Feb. 27, 2014) ("AT&T Proposal for Wire Center Trials") at Attachs.("AT&T Plan").

wholesale consumers. The comments also highlight some of the other areas where AT&T's Plan is deficient in spurring the technological transitions, preserving core statutory values, or assisting in the making of data-driven decisions with regard to the transitions. While AT&T's trials offer a narrow and very limited test, we look forward to a variety of proposals that will enable the Commission and industry to paint a complete picture of how the transition will impact the services and applications offered across the country, in all markets.

AT&T has proposed a plan for conducting TDM to all-IP trials in two wire centers (Carbon Hill, Alabama and King Point, Florida) – the AT&T Wire Center Trial Operating Plan (the "AT&T Wire Center Plan" or the "AT&T Plan").[2] While some parties have proposed trials to test the impact of the transition on a particular product/service,[3] AT&T claims that its trial will "replicate on a small scale the broader TDM sunset and migration to all-IP networks and services."[4] AT&T goes so far as to state that "[e]xcluding particular customer segments and/or services (such as dedicated or wholesale services) from the trial will deprive the Commission, consumers, industry and others of important real-world experience needed to prepare for the IP

[2] To be precise, AT&T has actually proposed a *partial* plan to convert its network from a TDM-based architecture to IP in that AT&T is quite clear that the end-point will be all IP, but that the path to that end-point for some customers/services – in particular, wholesale customers and the critical inputs they require such as interconnection and last-mile access – remain unanswered. In our comments below, we focus on the gap in AT&T's filing that claims it will achieve an all-IP network without providing any details as to how its competitors will obtain last-mile access to serve their business customers.

[3] *See e.g.*, Application of Iowa Network Services Inc. for Authority to Conduct a Service-Based Experiment Concerning the TDM-to-IP Transition for Centralized Equal Access Service, *In the Matter of Technology Transition*, GN Docket No. 13-5, filed Feb. 20, 21014.

[4] AT&T Plan at 2.

transition."[5] Additionally, the Commission has stated that the "purpose of these experiments is to speed market-driven technological transitions and innovations by preserving the core statutory values as codified by Congress – public safety, ubiquitous and affordable access, competition, and consumer protection – that exist today."[6] AT&T seems to agree stating that its plan "explains how AT&T will preserve and protect the enduring principles and values articulated by the Commission in its order authorizing trials."[7]

Unfortunately, the experiment proposed by AT&T does not live up to its stated intent or the Commission's criterion for wholesale services (in addition to certain other devices and services). It lacks the necessary elements to spur a voluntary transition by wholesale customers to IP-based services. It also fails to offer a framework to demonstrate how competition could be fostered in an all-IP world. Namely, AT&T does not identify any replacement products (or "catch products" as AT&T refers to them) that meet the criterion established by the Commission in its *Technology Transitions Order* and that will allow AT&T's wholesale customers to continue to effectively serve their end-user customers in an all-IP world. As structured, AT&T is proposing to pull the foundation of business competition out from under the business market, without creating a replacement structure to protect business customers from seeing their choices dwindle and their prices climb. Therefore, AT&T's proposal does not offer a transitional path that preserves (as required by the Commission's *Technology Transitions Order*) at least one of

[5] *Id.*

[6] Order, Report and Order and Further Notice of Proposed Rulemaking, Report and Order, Order and Further Notice of Proposed Rulemaking, Proposal for Ongoing Data Initiative, *Technology Transitions, et al*, GN Docket No. 13-5, *et al*, FCC 14-5, ¶1 (Jan. 31, 2014)(" *Technology Transitions Order*").

[7] AT&T Plan at 1.

the core statutory values – competition.[8] The Commission should not consider any 214 application for wholesale products, and should put a halt to copper retirement, until AT&T offers sufficient replacement services that meet the Commission's standard of functionality and pricing equivalency. AT&T also makes inappropriate presumptions about the regulatory status of its services,[9] which the Commission must disregard. As AT&T's semi-fixed wireless and VoIP services are being proposed as replacements for and successors to its wireline local exchange service, AT&T is - and should be treated as - an incumbent LEC when providing the service. AT&T's proposal confirms the need for the Commission to move quickly on the managerial framework to guide the technology transition.

Indeed, with regard to many of the key wholesale inputs competitors will need to serve business customers, AT&T merely lists the replacement products as "TBD" or cites to products/services that it *already* offers in the market - in other words its proposal offers nothing new to test. We already know the status quo in the wholesale market has failed as a catalyst to transition the industry to IP technology. Instead, what is needed is a plan that outlines and tests <u>in detail</u> an Ethernet offering structured as a replacement wholesale input (i.e., with the flexibility to support a broad range of retail replacement services), <u>*and*</u> at pricing that sustains a

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[8] We note that in those states that have implemented significant deregulation of AT&T's retail services, competition is also the tool that achieves the Commission's enduring value of consumer protection. Consequently, the issues raised herein *directly* impact no less than half of the Commission's stated objectives for these experiments.

[9] *See* AT&T Plan at n. 111 ["It is clear that any equal access obligations that are now captured in the provisions of the 1996 Act will no longer apply in an all-IP environment. For example, the dialing parity requirement established in 47 U.S.C. §251(b)(3) is imposed on Local exchange carriers." Thus, insofar as AT&T, as a VoIP provider, is not providing that service as a common carrier and no longer will provide telephone exchange service or exchange access, it no longer would be subject to that obligation. The provision also would be inapplicable to VoIP service, which is by its nature distance agnostic, because it is not properly classified as "telephone exchange service" or "telephone toll service."']

competitive retail market for business customers. In other words, a viable plan that would promote not only functioning networks, but also functioning markets. Namely, one that produces useful wholesale services, so that retail business customers can obtain their services in conformance with free market forces of competition and innovation.

The Commission, in the *Technology Transitions Order*, recognized the importance of ensuring "that comparable services are available during [each stage of] the experiment at equivalent prices, terms, and conditions. [And that] any proposal of an ongoing experiment of this kind would, in addition, offer to replace wholesale inputs with services that offer substantially similar wholesale access to the applicant's network."[10] However, while AT&T *asserts* that it has included in its plan a description "with details" of how it intends to proceed with respect to wholesale issues, noting the importance of transparency with regard to wholesale issues,[11] its plan *in reality* lacks any detail on functionality and pricing of replacement products – and in some cases it identifies no replacement product at all.

In Appendix B, the Commission outlined five (5) specific factors it would consider for experiments related to the transition of wholesale customers.[12] As we explain below, the AT&T Plan fails to meet any of these criteria with regard to its wholesale customers:

> **(1) Ensure that the same types of wholesale customers can continue to use its network:**
>
> AT&T provides no assurance with regard to continued use of its network, as it transitions from copper to fiber facilities and from TDM to IP technology, for wholesale customers that use unbundled elements. With regard to leasing DS1s and DS3s as UNEs, it merely states that it will "retire the TDM electronics and other facilities used to provide those TDM services (and UNEs)." It doesn't describe a

[10] *Technology Transitions Order* at ¶59

[11] *AT&T Proposal for Wire Center Trials* at 10.

[12] *Technology Transitions Order*, App. B, ¶35.

replacement product for these UNEs, nor does it explain why such services cannot continue to be offered over an IP network. Moreover, with regard to those wholesale customers that purchased the bare copper loop as a UNE, AT&T provides no discussion on what alternative will be available to these wholesale customers when AT&T retires the copper loop. With regard to its wholesale customers that purchase it Local Wholesale Complete, the solution is yet "TBD".

(2) Ensure that the access provided during the experiment – whether provided through unbundling, resale, or purchase of special access – is functionally equivalent to that provided immediately before the experiment:

While AT&T identifies "catch products" for its TDM special access services, it does not explain the functionality of these services. Using the description of AT&T's Switch Ethernet ("ASE") service in its publicly available Interstate Access Guidebook, AT&T's ASE "catch product" lacks key functionality such as the same potential quantity of devices served per customer, the same potential quantity of customers served per 100Mbp port, and the ability to synchronize packet flows to emulate TDM services.

(3) Ensure that the prices or costs of such access do not increase as a result of the experiment:

AT&T also does not provide pricing information for the "catch products" for its TDM special access services. Again, using its publicly available Interstate Access Guidebook, AT&T's "catch products" would result in *at least* nearly a 100% rate increase – and, in the case of a DS1, a 1000% rate increase – of existing DSn services.

(4) Ensure that neither wholesale nor retail customers are penalized as a result of the experiment (e.g., purchases of alternative services count towards discounts for purchases outside of the experiment areas, early termination fees are waived if early termination is caused by the experiment):

AT&T provides no discussion of this and, therefore, provides no such assurances.

(5) Whether the experiment will have any other impact on the provider's wholesale customers.

Given the near-complete lack of detail offered by AT&T as regards many of its wholesale offerings, it is impossible to comprehensively catalog the full range of impacts that its replacement offerings (when disclosed) will have on COMPTEL members and their customers. For instance, there is no reason why AT&T could not expand its Ethernet offering to include the packet synchronization and DSn interface capabilities needed to enable business customers to effect the transition to IP while preserving existing investment in customer premise equipment (CPE). Such a capability would place business customers on a footing equivalent to residential

> customers – after all, AT&T' "VoIP service" supports the same RJ-11 jack and interface that customers have equated to "phone service" for decades. Just as AT&T's IP network will provide residential customers an interface that will preserve the millions of handsets in the residential market, business customers should be able to participate in the IP transition without having to replace all of their terminal gear.

AT&T's proposal is not only deficient with regard to its wholesale customers, there are also substantial gaps with regard to other services and devices, as summarized in Section III below. While the purpose of the experiment is to develop information (which necessarily assumes that some questions will not be fully understood until the experiments are underway) it is important to note that AT&T's proposal starts with a number of critical services and devices not even having a replacement identified, including services and devices that the Commission has already deemed important. Certainly, with such an extensive list of deficiencies, one could ask why AT&T felt the need to propose these trials *now*. After months of chiding the Commission for not moving fast enough,[13] it is clear AT&T still has substantial gaps in its own view of what services it can and should offer.

Given that AT&T ignores the effect of the IP transition on its wholesale customers - thereby trivializing the effect the transition could have on the broader business market - and is still in the development stage for other key services, AT&T's proposal cannot be viewed as *comprehensive* overview of the impact of the transition or one that provides hope for the preservation of the core statutory values. Instead, it demonstrates the need for the Commission to implement the wholesale recommendations in the National Broadband Plan. Namely, that the Commission should (1) undertake a comprehensive review of its wholesale regulations and

[13] *IP Technology Transition Trials Proposed By FCC Met With Mixed Response*, Fierce Telecom, May 13, 2013, reporting an AT&T Senior EVP complaining "that further delays by the FCC in moving to such trials, which they themselves would control, creates more investment uncertainty." http://www.fiercetelecom.com/story/ip-technology-transition-trials-proposed-fcc-met-mixed-response/2013-05-13#ixzz2wnyLVaMb

"develop a coherent and effective framework . . . to ensure widespread availability of inputs for broadband services provided to small businesses, mobile providers and enterprise customers";[14] (2) ensure that rates, terms, and conditions for both TDM-based and packet-based special access services are just and reasonable;[15] (3) clarify statutory rights and obligations regarding interconnection, including IP interconnection;[16] and (4) "ensure appropriate balance in [the Commission's] copper retirement policies."[17]

I. AT&T's Plan Does Not Ensure Continued Network Access to Wholesale Customers That Rely on Unbundled Network Elements

AT&T fails to address the impact of the transition on the availability of unbundled loops, a key wholesale product for last-mile access, merely stating the following:

> "[W]hile AT&T will continue to meet its wholesale obligations under Section 251(c) of the Act (including making UNEs available through the current stage of the trial), AT&T intends eventually not only to withdraw its legacy TDM services but also to retire the TDM electronics and other facilities used to provide those TDM services (and UNEs). At the same time, wholesale customers will have the opportunity to obtain bare copper loops and utilize their own electronics to provide high capacity services to their end user customers – TDM or IP or any other technology the wholesale customer desires to provision."[18]

There are two means for wholesale customers to order the unbundled loop from AT&T. For one, wholesale customers can order a bare copper loop and add their electronics to provide service to their end-user customers. The other is the purchasing DS1s and DS3s as an unbundled network element ("UNE") pursuant to Commission rules. AT&T's proposal does not address

[14] FCC, Connecting America: The National Broadband Plan, at 48 (Recommendation 4.7), rel. Mar. 16, 2010 ("National Broadband Plan").

[15] *Id.* (Recommendation 4.8).

[16] *Id.* at 49 (Recommendation 4.10).

[17] *Id.* at 48 (Recommendation 4.9).

[18] *AT&T Proposal for Wire Center Trials* at 29.

how wholesale purchasers will be able to continue to lease *either* form of unbundled loops pursuant to Section 251(c) as AT&T transitions from copper to fiber facilities and TDM to IP technology. More specifically, AT&T makes no proposal as to how it will introduce an alternative local loop transmission to the unbundled loop as it "retires" copper loops and discontinues offering DS1s and DS3s, let alone at reasonable prices that reflect the use of such services as wholesale inputs. Additionally, AT&T's proposal does not provide a replacement product for wholesale purchasers that lease a more complete set of network elements – namely, Local Wholesale Complete – which is currently used to serve millions of business lines at locations not needing DS1 level service.[19] The Plan merely lists it as "TBD."

AT&T's proposal fails to identify a similarly priced, functionally equivalent alternative for the bare copper loop as an unbundled element under Section 251.

The ability to lease the unbundled loop from the incumbent is one tool in competitors' ability to offer an affordable and innovative alternative to the incumbent's broadband services. As COMPTEL and competitive carriers have discussed in numerous pleadings to the Commission, competitors lease the unbundled copper loop from the incumbent and, by adding their own electronics to the loop, have transformed it into innovative and affordable Ethernet-over-copper services that they provide to their end-user customers, particularly to small and medium size businesses. Ethernet-over-copper has given small and medium size businesses an affordable choice for competitive, ultra-high-speed broadband service offerings, up to 100 Mbps, such as "triple play," HDTV, VoD, high-speed data, mid-band Ethernet, VoIP, high speed Internet access, videoconferencing, virtual private networks, PBX Extensions, and video surveillance.

[19] We understand AT&T to offer this bundled product pursuant to its obligations under Section 271.

Indeed, one incumbent recently touted how Ethernet-over-Copper – for which the CLEC relies on the availability of the unbundled loop at TELRIC rates pursuant to Section 251 of the Act and Commission implementing rules – provides not only one needed option but has created a significant portion of the competition in the broadband market.[20] We do not necessarily agree that the services created from Ethernet-over-Copper are *always* sufficient to satisfy an enterprise customer's demand, but we do agree that the availability of wholesale last mile access from the incumbent at just and reasonable rates can – and, to the extent possible under existing Commission rules, does – provide valuable competitive alternatives for business consumers.

AT&T's proposal fails to identify a similarly priced, functionally equivalent alternative to the bare copper loop as an unbundled element under Section 251. It is unclear what AT&T means by saying their wholesale customer will have the "opportunity" to obtain the bare copper loop throughout the experiment. AT&T is required to provide the unbundled bare copper loop until it "retires" it in accordance with Commission rules. Consequently, even where the copper loop can provide a viable last-mile solution, it is the threat of a "retirement" of the copper loop without offering a similarly priced and functionally equivalent alternative that poses the problem to wholesale customers, and the end-user customers they serve, as AT&T transitions from a copper to a hybrid or fiber loop.

While AT&T sometimes may replace the entire copper loop with fiber optic, it more commonly puts fiber in the feeder – a more economically attractive tactic than building fiber to the premise - and then lists that copper loop as unavailable to wholesale customers as an UNE.

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[20] *CenturyLink's Petition* for Forbearance Pursuant to 47 U.S.C. §160(c) from Dominant Carrier Regulation and Computer Inquiry Tariffing Requirements on Enterprise Broadband Services, WC Docket No. 14-9, at 29-30 (filed Dec. 13, 2013); *See also, CenturyLink Reply Comments* at 29 ["Competitors Are Increasingly Using Copper Loops Successfully to Provide Enterprise Broadband Services."]

Currently, as a practical matter, bare copper is only useful as an input if it provides home-run connectivity between the customer premises and the central office where the wholesale customer can collocate its electronics and connect to its backhaul network. Consequently, having access to the copper loop at a remote terminal that can serve only a portion of the market (that had been serviceable from the central office) is unlikely to support competitive entry. Since AT&T's proposal provides no discussion of how its wholesale customers can still obtain the unbundled loop when it replaces the copper loop with fiber, either in its entirety or partially, it fails to comply with the Commission criterion for experiments.

AT&T's Plan fails to explain how it intends to continue to comply with its obligation to provide DS1s and DS3s on an unbundled basis and fails, as required by the Technology Transitions Order, to identify the comparable IP services it will offer under similar prices, terms and conditions.

Pursuant to the Commission rules, implementing the unbundling provisions of the Act, an incumbent LEC must provide a requesting telecommunications carrier with nondiscriminatory access to: 1) a DS1 loop on an unbundled basis to any building (a maximum of 10 unbundled loops per single building) not served by a wire center with at least 60,000 business lines and at least four fiber-based collocators;[21] and, 2) a DS3 loop on an unbundled basis to any building not served by a wire center with at least 38,000 business lines and at least four fiber-based collocators.[22] A DS1 loop is a digital local loop having a total digital signal speed of 1.544

[21] 47 CFR 51.319(a)(4). A DS1 loop is a digital local loop having a total digital signal speed of 1.544 megabytes per second. DS1 loops include, but are not limited to, two-wire and four-wire copper loops capable of providing high-bit rate digital subscriber line services, including T1 services. *Id.*

[22] 47 CFR 51.319(a)(5). A DS3 loop is a digital local loop having a total digital signal speed of 44.736 megabytes per second. *Id.*

megabytes per second,[23] and a DS3 loop is a digital local loop having a total digital signal speed of 44.736 megabytes per second.[24] DS1s and DS3s are offered over copper or fiber facilities and, while considered a TDM service, can be offered over IP facilities using circuit-emulation technologies.[25]

AT&T does not mention DS1s and DS3s specifically in the context of those wholesale customers that purchase them as an unbundled loop but states that its intent is "eventually not only to withdraw its legacy TDM services but also to retire the TDM electronics and other facilities used to provide those TDM services (and UNEs)."[26] In other words, AT&T's proposal appears to indicate its intention to cease offering DS1s and DS3s as unbundled elements (as well as special access or other services), but fails to identify an alternative that would provide the purchasers of these wholesale products as UNEs equivalent functionality and pricing.

As an initial matter - aside from ignoring the Commission's criterion that the applicant identify the comparable wholesale service being offered at the equivalent prices, terms and conditions - the Commission's unbundling rules do not provide the incumbent with the option of simply discontinuing DS1s and DS3s as unbundled loops (but for the cap and facilities restriction presented in the rules). The rules related to DS1s and DS3s provide no condition on the obligation based on whether the incumbent replaces copper loops with fiber loops or use TDM or

[23] 47 CFR 51.319(a)(4).

[24] 47 CFR 51.319(a)(5).

[25] *See* Letter from Karen Reidy, COMPTEL, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 13-5 *et al.*, Attachment, at 26 (filed Dec. 6, 2013).

[26] *AT&T Proposal for Wire Center Trials* at 29.

IP equipment.[27] Indeed, as a technical matter, DS1s and DS3s can be provided over copper loops and using IP technology. So there is no need for the incumbent to cease its provision of DS1s and DS3s as UNEs during (or upon completion) of the transition. AT&T, as part of this proposal, must explain how it intends to continue to comply with its obligation to provide DS1s and DS3s on an unbundled basis, consistent with Commission rules, and, as required by the *Technology Transitions Order*, identify the comparable services it will offer as a replacement under similar prices, terms and conditions.

II. AT&T's Special Access "Catch Products" Do Not Offer A Comparable Service at Equivalent Prices, Terms, and Conditions

AT&T has identified three types of TDM special access products – DS0s, DS1s and DS3s – that it intends to withdraw, claiming a need to do so as a result of its ultimate transition to IP technology. As a threshold matter, these services can be provisioned over an IP network so

[27] *See* Second Order on Generic Proceeding, *In re: Petition to establish generic docket to consider amendments to interconnection agreements resulting from changes in law, by BellSouth Telecommunications, Inc*., Before the Florida Public Service Commission, Docket No. 041269-TP; Order No. PSC-06-0299-FOF-TP, at 35-36, Apr. 17, 2006. ["BellSouth appears to be concluding that new construction of fiber to a building is "greenfield", that the CLEC… [is] therefore not entitled to DS1 or DS3 UNEs. BellSouth's interpretation is contrary to the intent of the TRO and the TRRO. The best example supporting our belief is found in Exhibit 37, which is the FCC's brief filed with the D.C. District Court of Appeals in opposition to Allegiance Telecoms' motion for stay pending review, where in the FCC's own words it stated '[t]he text, as well as the rules themselves make it clear that DS1 and DS3 loops remain available as UNEs at TELRIC prices'…Decision BellSouth is under no obligation to offer unbundled access to "greenfield" FTTH/FTTC loops used to serve residential MDUs. In those wire centers where impairment exists, a CLEC's access to unbundled DS1 and DS3 loops was not exempted and BellSouth, upon request, shall unbundle the fiber loop to satisfy the DS1 or DS3 request."]; *See also*, 47 CFR 51.319(a)(2)(ii) ["*Broadband services.* When a requesting telecommunications carrier seeks access to a hybrid loop for the provision of broadband services, an incumbent LEC shall provide the requesting telecommunications carrier with nondiscriminatory access to the time division multiplexing features, functions, and capabilities of that hybrid loop, including DS1 or DS3 capacity (where impairment has been found to exist), on an unbundled basis to establish a complete transmission path between the incumbent LEC's central office and an end user's customer premises. This access shall include access to all features, functions, and capabilities of the hybrid loop that are not used to transmit packetized information."]

there is no need to decommission these services in order to accommodate the transition to IP.[28] Second, as explained below, the "catch products" that AT&T identifies as replacement for DS0s, DS1s, and DS3s do not meet the Commission's criteria for experiments, namely the offering of a comparable service at equivalent prices, terms and conditions. Third, because AT&T's so-called replacement products are already available, these are services that many wholesale customers have already chosen *not* to obtain on a voluntary basis as part of a natural market transition, most certainly for the same reason they do not meet the Commission's criterion – they are not equivalent in terms of pricing or functionality. This does not mean that, for example, Ethernet could not be a suitable replacement product - but the specific AT&T offering is not.

AT&T is Proposing What the Market Has Already Found Wanting

Importantly, the "catch products" AT&T has identified are products they currently offer wholesale customers. Consequently, there has already been a market test as to whether these services meet the needs of AT&T's wholesale customers as well as the business customers the wholesale customers serve. The fact that DSn services are still popular demonstrates that AT&T's replacement products are generally not substitutable for the existing TDM services. In pure and simple terms, AT&T's so-called "catch products" are the services that these consumers *rejected* when they choose to obtain the DSn services they receive today. Consumer sovereignty is an important feature of a market economy, for by revealing their own preferences through the services they select, carriers (including COMPTEL members) are forced to accommodate the native demand of their customers. If the AT&T "catch products" were actual substitutes, then we would see more customers choosing – indeed preferring – them over the services that AT&T proposes to eliminate. New technologies should *expand* choice and empower customers, not be

[28] *See supra* n. 25.

used as an excuse to withdraw products that consumers' desire. Clearly, there are no technical issues to be tested in the provision of these services and, more importantly, if these services were adequate replacement products for the DSn services, wholesale customers would already have switched to these products on a large scale.[29] That is not the case. This is because, as discussed below, these "catch products" are not similarly priced, functionally equivalent services.

Price Disparity of Catch Products:

AT&T identifies AT&T's Switched Ethernet service ("ASE") as a "catch product" for its DS0 services, DS-1 Private Line services and DS-3 Lightgate Private Line services.[30] AT&T, however, does not provide a detailed description of the ASE service it is offering as part of the experiment. Thus, AT&T fails to explain how this "catch product" meets the criterion that experiments must identify comparable services at similar price, terms and conditions. It also does not provide the transparency AT&T claims it provides in its proposal. Nevertheless, for purposes of analysis COMPTEL uses the description of ASE as provided in its publicly available Interstate Access Guidebook, Part 5, Section 4 entitled "AT&T Switched Ethernet Service." This appears to be the only ASE product that AT&T offers generally to all carriers on a non-discriminatory basis.

The most glaring impact to AT&T's wholesale customers of its private line services in switching to ASE is the enormous cost increase because of the lack of availability of smaller capacity circuits. Specifically, AT&T proposes to replace DS0 (64Kbps) and DS1 (1.544Mbps)

[29] At some point in this process, COMPTEL would hope that AT&T would address the problems we identify here that limit the usefulness of AT&T's services as a wholesale input, including price. While there should be no technical issue as to AT&T's ability to *offer* a meaningful wholesale substitute, there will be questions concerning AT&T's ability to *transfer* customers through a hot-cut process that minimizes any potential disruption to the end-user customer itself.

[30] AT&T Plan at Exhibit E.

TDM circuits with its ASE service which has a minimum port speed available of 100Mbps.[31] While an increase in capacity is not a negative in and of itself, there is a corresponding increase in the cost. The result of this capacity disparity is that the cost of simply replacing raw transmission capacity for DS0 and DS1 services is unduly high because of the minimum capacity requirement of AT&T's ASE service. In the case of a 24-month term for example, ***the cost increase for a DS1 replacement is approximately 1000%.***[32]

DS3 special access service operates at 44.736 Mbps. Again, with the minimum port capacity of ASE fixed at 100Mbps, the port is twice the size of that necessary to replace a DS3 facility. With the addition of the EVC at a CIR of 50Mbps, the cost of an ***ASE replacement is almost twice the cost of the existing DS3 special access service***.[33] The same is true of the Wave Length Channel Service (WCS) as a catch product for DS3 TDM Private Line Special Access Services. While the capacity is significantly greater, the cost of the raw replacement capacity is almost twice the cost of the existing DS3 private line special access facility.[34] To this cost of raw capacity must be added the additional cost of equipment necessary to provide a DS3 interface to the customer for compatible interconnection to the customer's equipment.

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[31] *See id; See also* Guidebook, 2nd Revised Page 1, section 4.1(H)(1)(a) and 6th Revised Page 4, section 4.1(H)(2)(a). Further, the minimum speed for the "Committed Information Rate" (CIR) of the connected "Ethernet Virtual Circuit" (EVC) - which provides the ability to transport traffic between two or more locations - is 2Mbps. *See* Guidebook, 2nd Revised Page 2, section 4.1(H)(1)(b) and 6th Revised Page 4, section 4.1(H)(2)(b). AT&T ASE section of Guidebook available at: http://cpr.att.com/pdf/is/0005-0004.pdf .

[32] *See attached* Exhibit, Table 1.

[33] *See id.*, Table 2.

[34] *See id.*, Table 3.

This issue of the substantial increase in costs associated with the minimum bandwidth requirement of the ASE offering is especially important because many business locations do not require, ***and should not have to bear the costs associated with***, the high-bandwidth ports. This particularly impacts smaller commercial customers and the smaller locations of larger, multi-location commercial customers. These customers often require modest broadband facilities; enough to serve two to three voice lines and provide occasional access to "private virtual network" connections to a main headquarters, along with occasional Internet access.

Consider the example of small commercial customer, Farm Supply Company, a 60 year old cooperative owned by 2700 farm families and served by COMPTEL member Blue Rooster Telecommunications of San Luis Obispo, California.[35] Farm Supply has 5 locations in California which are each served by DS1s. Four locations are served by one DS1 each and one location is served by two DS1s. The current charges to Farm Supply from Blue Rooster for these DS1s is between $200/mo and $240/mo each, depending on the distance of the access facility from the customer location to the Blue Rooster aggregation point. For the DS1s currently in service, Farm Supply spends a total of approximately $1,320/month. If Blue Rooster were to use AT&T's ASE offering to serve Farm Supply it would be forced to purchase 100Mbps ports at each location. This would drive the cost of service far beyond Farm Supply's ability to afford, since the comparable total charges to serve Farm Supply using AT&T's ASE service as a replacement for the DS1s would be $6,340/month, an increase of more than 480%. Farm Supply uses the DS1s to support voice service, but it also has a requirement for low-latency interconnection between all of its locations in order to support its private network applications.

[35] Although not located within one of the two wire centers selected by AT&T for its proposed experiment, COMPTEL considers this example typical and, as such, a useful illustration of the deficiencies in AT&T's proposal.

Again, Farm Supply's capacity requirements are modest but its connectivity requirements are critical for running its business.

As mentioned above, the "ASE alternative" also impacts the small business *locations* of larger, multi-location customers, such as gas stations, quick-care health facilities, retail stores or other low-volume user locations with modest capacity requirements that shouldn't be burdened with the costs of unnecessary capacity because of AT&T's experiment (and ultimate transition to IP). For example, the typical convenience store that is part of a national or regional chain may have two business lines, 3 point-of-sale terminals and a modest need for Internet access. A competitor could provide all of those services using a DS1 access facility that it obtains from the ILEC as special access for approximately $126/month (or less if obtained as a UNE). The entire retail charges to that convenience store for *all* of its services may amount to less than $300/month. If the same customer is served using AT&T's ASE service, just the wholesale cost for the access facility would be approximately $1,200/month – a dramatic and unnecessary increase in cost. Nevertheless, the need for *connectivity* is critical. Consequently, it is vital that in order to meet the needs of such customers, *affordable* options be available at the *capacity* requirements they desire. This is exactly the option provided by competitive carriers using DS1 facilities.[36]

In addition, frequently, smaller commercial customers will use the smaller capacities to initially obtain broadband, and then add capacity as they grow. In response, many competitive carriers use a technology that allows for "bonding" of DS1s in order to provide the granular gradations in capacity those customers require. For example, a customer may order a single DS1

[36] This is not to say that the only access option needed in the transitional marketplace is a DS1 (or DS3 connection). Rather our point is (and has always been) that a broad array of last-mile access options must be available to fully serve the diverse requirements of the business market.

broadband facility to support three voice lines and a modest data requirement. Later, the customer may double or even quadruple in size. In such cases, the competitive provider is able to order additional DS1s to increase that customer's capacity in 1.544 Mbps increments. If the customer continues to grow, these bonded configurations can be duplicated until the customer can justify the cost of a DS3 facility. However, DS3 facilities are also slated for expiration under AT&T's plan.

Functionality Disparities of the Catch Products

Ethernet is a robust technology with vast capabilities. While it is true that only a subset of Ethernet capabilities would theoretically be required to create functional replacements for TDM services, there exist certain TDM functions that cannot be supported without relying on some of Ethernet's more advanced capabilities. In addition to the lack of pricing information of its wholesale replacement products, AT&T fails to provide details on the functionality they will offer through these services even though they are critical to an evaluation of ASE as an acceptable catch product for TDM services. Public information is relied upon here, however, to perform a limited comparison of AT&T's ASE service to what a wholesale customer would require. As described in AT&T's guidebook, ASE imposes arbitrary limitations on the underlying Ethernet technology that limit the effectiveness of AT&T's products to serve as a prospective TDM replacement technology. The examples below are not exhaustive by any means.

For one, competitive carriers often use a DS3 facility to connect (up to) 28 single location customers. This multiplexing function can be provided through the competitive carrier's own collocated equipment or by purchasing the function from the ILEC under special access. This ability is not feasible, however, using AT&T's ASE product as described in it Interstate Access

Guidebook. The wholesale purchaser would not only incur the expense of a needlessly over-sized replacement facility (since the ASE port, at 100Mbps, is more than twice the capacity required for a DS3 substitute), it would also be subject to an AT&T-imposed limit of being able to serve only eight customers for each 100Mbps port. This is because AT&T limits the number (to eight) of EVCs (Ethernet Virtual Circuits) per 100Mbps port a wholesale customer can configure using its ASE product.[37] And, because an EVC is used to provide an isolated security and performance environment, each customer must be assigned its own EVC in order to keep that customer's traffic isolated from the traffic of other customers. Because of this arbitrary and artificially imposed limit of eight EVCs per port, a competitive provider can only support eight customers on that 100Mbps ASE port even though the capacity of that port is more than double the capacity required to supplant the DS3 service which had been supporting 28 DS1s, possibly each from a different customer. This would drive up the cost of access by *both* increasing the minimum capacity per port, while significantly reducing the number of customers each port can support.

In addition, as practical matter, this also results in an arbitrary limitation on the number of telephones that could be supported for both single and multi-location customers, to 250 (optionally 500) telephones using ASE. This is due to the fact that ASE imposes a limit of 250 devices (optionally, 500) on any single EVC (Ethernet Virtual Circuit)[38] and, as discussed above, due to the 8-EVC per port limitation, as a practical matter the wholesale customer generally only

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[37] *See* Guidebook, 2nd Revised Page 3, section 4.1(H)(1)(c) and 3rd Revised Page 5.1, section 4.1(H)(2)(e).

[38] *See* Guidebook, 6th Revised Page 4, section 4.1(H)(1)(c) and 3rd Revised Page 5.1, section 4.1(H)(2)(e) and 1st Revised Page 5.2, section 4.1(H)(3)(b). An EVC provides a logical connection to enable the flow of Ethernet traffic for point-to-point and multipoint Customer configurations

provisions one EVC per customer. Thus, if a customer were to have a headquarters location with, for example, 300 employees, and twenty-five satellite locations with 10 employees each, a simple Ethernet bridged configuration of the IP Phones for those employees could not be supported on one EVC (even though the minimum bandwidth that must be ordered would far exceed the bandwidth required). In other words, the customer would pay for far more capacity than is needed and, conceivably, would still not be able to connect the number of telephones required to serve its needs. Whereas, the number of phones supported by DSn services is based on customer's actual call volume. Traffic engineering calculations for DS1 facilities are indifferent to the *number* of telephones that generate the specified call volume. In a multi-location environment, each DS1 facility provides a certain amount of call volume capacity, and the number of DS1s ordered to each location is determined by the call volume at each location (not by the number of telephones).

Importantly, these are not limitations of Ethernet technology. Even the most basic form of Ethernet VLANs[39] provides for support of up to 4092 EVCs per port (excluding reserved IDs). Indeed as the IEEE standard shows, using double-tagging techniques, more than 16 million EVCs could be supported. Finally, using Ethernet Provider Backbone Bridging techniques[40], even more EVCs could be supported by the technology in a fully-isolated manner. Again, the limitations AT&T has placed on ASE service, which constrain its ability to serve as a replacement for TDM private line service, are not inherent limitations of the technology but, rather, imposed by AT&T.

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[39] *See* IEEE Std 802.1Q™ -2011 "Media Access Control (MAC) Bridges and Virtual Bridge Local Area Networks", clause 9.6, available at: http://standards.ieee.org/findstds/standard/802.1Q-2011.html

[40] *Id* at clause 16.

Furthermore, TDM networks, and the endpoint customer equipment to which they connect, require clocking and synchronization in order to operate efficiently and without error. TDM networks maintain Stratum 1 & 2 clock sources for this purpose, and TDM facilities carry the clocked bitstreams throughout the network, maintaining this synchronization. Ethernet is not natively supportive of synchronization (although, as we explain below, the capability can be integrated into the Ethernet service). The lack of synchronized timings can pose a major problem when ASE is used as a replacement service for TDM on one end of a private line, while a true TDM circuit serves the other end of that same private line service. This could happen, for example, with DS1 tie-trunks between the PBXs of two locations of a commercial customer, each resident in a different city.

Standards such as the ITU-T's "Synchronous Ethernet" standard and IEEE's 1588-2008 Precision Time Protocol were expressly designed for the purpose of supporting networks and equipment that require precise timing sources unachievable using a standard Network Timing Protocol or GPS. However, based on available information, AT&T does not make the capability available in the ASE service that it offers. In summary, as a replacement service for TDM, ASE is unacceptable as a wholesale offering because its narrow construction will not support a number of services that commercial customers can today obtain from competitors.

AT&T's alternatives to ASE fare no better (although for different reasons). AT&T's proposal to use AT&T Network Based IP VPN Remote Access (ANIRA) as a replacement product for TDM Private Line Special Access Service is also unacceptable because it uses the Internet as a transport vehicle. The Internet cannot guarantee the performance necessary to support the rigid timing requirements of isochronous communications, such as that provided over TDM circuits. Further, while security considerations are partially alleviated through the use of

IPSec and other security protocols, the fact remains that denial-of-service attacks (for example) could easily be used to maliciously compromise service availability. For these reasons, ANIRA is an unacceptable catch product for TDM private line special access service.

AT&T Fails to Identify Operational Impacts of Wholesale Replacement Products on End-User Customers

The *Technology Transitions Order* states that service experiments should identify operational issues posed by technology transitions and their impacts on customers, including any operational challenges arising between applicants and their wholesale customers and competitors. One such issue posed by AT&T's replacement product is the end-user customer interface. The interface to ASE is an Ethernet interface, while the existing DSn service ASE presumes to replace connects through a TDM interface. While it is true that TDM service could be transported over ASE, the interface to existing customer equipment cannot directly connect to the Ethernet interface of ASE without a service-adaption function. This function begins with the interface. For ASE to be considered a replacement for TDM services, it must continue to provide the same interface to endpoint customer equipment (regardless of the underlying transport technology) as the replaced service. Otherwise, the endpoint customer (or the wholesale customer) will be forced to immediately purchase adaption equipment or, in extreme cases, brand new customer equipment in order to use the "catch product" replacing the existing service.

III. AT&T's Plan Falls Short in Other Respects – Specifically Replacements for Services and Devices that the Commission Deemed Important

In its *Technology Transitions Order*, the Commission requested experiments and data collection that would allow it and the public "to evaluate how consumers are affected by the historic technology transitions that are transforming our nation's voice communications services

– from a network based on time-division multiplexed (TDM) circuit-switched voice services running on copper loops to an all-Internet Protocol (IP) network using copper, co-axial cable, wireless, and fiber as the physical infrastructure."[41] The Commission emphasized that "the goal of all of these experiments and initiatives is to learn about the impact of the technology transitions on the customers – and communities – that rely on communications network."[42] One of the key purposes of the experiments is to determine how consumers will continue to use the devices and services they have come to depend on and which, in some cases, are critical.

AT&T's proposal, which is supposed to be a comprehensive wire center proposal, fails to address the continued usability of key devices and services post-transition, including devices and services that were specifically identified by the Commission in its *Technology Transitions Order*. Rather, AT&T either states, in essence, that it is still working on it, or AT&T admits that the post transition service it identifies won't provide these service/functions. For example, (and this is not an exhaustive list):

Commission Criterion: Preservation of 911/E911 and Next Generation 911 capabilities.[43]

> AT&T Response: "Currently, Wireless Home Phone and Wireless Home Phone and Internet… do not provide E-911 with street address."[44] But AT&T knows that these applications are vitally important to its customers.[45] (*i.e.*, AT&T is still working on this.)

[41] *Technology Transitions Order* at ¶1.

[42] *Id.* at ¶8.

[43] *Technology Transitions Order* at ¶ 39.

[44] AT&T Plan at 15.

[45] *Id.*

Commission Criterion: Testing the use of burglar alarms, medical monitoring devices, credit card readers.[46]

AT&T Response: "Nor does Wireless Home Phone and Wireless Home Phone and Internet currently support alarm monitoring, medical alert and credit card validation applications."[47] But AT&T knows that these applications are vitally important to its customers.[48] (*i.e.*, AT&T is still working on this.)

Commission Criterion: Ensuring that people with disabilities continue to have access to evolving technologies.[49]

AT&T Response: "TTY compatibility and accessibility for Wireless Home Phone and Internet services is being carefully assessed."[50] But no explanation as to if and how persons with disability will obtain access. (Presumably AT&T is still working on this.)

Commission Criterion: Applicant's Plan must ensure that the same type of wholesale customers can continue to use its network.[51]

AT&T Response: Switch Access Feature Group B "catch product" "**none"**.[52] (*i.e.*, Customer out of luck.)

Commission Criterion: The Commission will look, *at a minimum*, to understand how the proposed network changes will affect making dial-around calls, reaching an operator by dialing "0", the ability to accept collect calls, and ankle bracelets.[53]

AT&T Response: U-Verse Voice and/or Wireless Home/Business Phone do not support these services.[54] (*i.e.*, Customers out of luck).

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[46] *Technology Transitions Order*, App. B, ¶5.

[47] AT&T Plan at 15.

[48] *Id.*

[49] *Technology Transitions Order*, App. B, ¶28.

[50] AT&T Plan at 15.

[51] *Technology Transitions Order*, App. B, ¶35.

[52] AT&T Plan, Exhibit E.

[53] *Technology Transition Order*, App. B, ¶5.

[54] AT&T Plan at 14.

The significant gaps in AT&T's proposal is evidence that they are not ready and consumers would be harmed by the elimination of existing services.

Conclusion

AT&T's proposal for wire center trials lacks significant details necessary for evaluation and it is obvious AT&T is not prepared to conduct a service based experiment in King Point, Florida, Carbon Hill, Alabama or elsewhere. As such, the Commission should not approve or in any manner endorse AT&T's plan.

More importantly, AT&T's plan demonstrates that in order to promote the technology transitions, while ensuring the core statutory values, the Commission must implement the wholesale recommendations in the National Broadband Plan. Namely, the Commission should (1) undertake a comprehensive review of its wholesale regulations and "develop a coherent and effective framework . . . to ensure widespread availability of inputs for broadband services provided to small businesses, mobile providers and enterprise customers";[55] (2) ensure that rates, terms, and conditions for both TDM-based and packet-based special access services are just and reasonable;[56] (3) clarify statutory rights and obligations regarding interconnection, including IP interconnection;[57] and (4) "ensure appropriate balance in [the Commission's] copper retirement policies."[58]

[55] *National Broadband Plan* at 48 (Recommendation 4.7).

[56] *Id.* (Recommendation 4.8).

[57] *Id.* at 49 (Recommendation 4.10).

[58] *Id.* at 48 (Recommendation 4.9).

Respectfully submitted,

/s/

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Exhibit

Table 1

24-Month Service	Cost/Mo
ASE Basic Port Charge (100Mbps)*	$ 750.00
Basic Real-time CIR @ 2Mbps*	$ 510.00
Total ASE Cost/Mo @2Mbps*	**$ 1,260.00**
Local Channel - Per DS1 (Zones 2 & 3)**	**$ 126.00**
Cost Differential	**1000%**

*** See AT&T Guidebook, Part 5, Section 4.6 "Rates and Charges"**
**** See BellSouth Tariff FCC #1, Original Page 7-246**

Table 2

24-Month Service	Cost/Mo
ASE Basic Port Charge (100Mbps)*	$ 750.00
Basic Real-time CIR @ 50Mbps*	$ 1,460.00
Total ASE Cost/Mo @2Mbps*	**$ 2,210.00**
Local Channel - Per DS3 (Zones 2 & 3)**	**$ 1,232.50**
Cost Differential	**179%**

*** See AT&T Guidebook, Part 5, Section 4.6 "Rates and Charges"**
**** See BellSouth Tariff FCC #1, Original Pages 7-263 & 7-264**

Table 3

24-Month Service	Cost/Mo
Wave Length Local Channel (1Gbps)	$ 2,415.00
Total WCS Cost/Mo @1Gbps*	**$ 2,415.00**
Local Channel - Per DS3 (Zones 2 & 3)**	**$ 1,232.50**
Cost Differential	**196%**

*** See AT&T Guidebook, Part 11, Section 28.3, Original Page 13**
**** See BellSouth Tariff FCC #1, Original Pages 7-263 & 7-264**

*AT&T Guidebook, Part 5 section 4 available at: http://cpr.att.com/pdf/is/0005-0004.pdf ; Part 11 section 28 available at: http://cpr.att.com/pdf/is/0011-0028.pdf

** BellSouth Tariff FCC #1 available at: http://cpr.att.com/pdf/fcc/1007.pdf