customers at speeds ranging from 10 Mbps to 1 Gbps, and generated a net present value over a **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** investment term that was well below the standards for a viable investment case.[63] In the nearly 18 months after its Fox Valley trial, TDS CLEC was unable to identify a second workable target for a fiber deployment trial. TDS CLEC concluded that the modest profit margin yielded by the Fox Valley trial was as good as it gets, and abandoned the initiative.[64]

TDS CLEC has also explored utilizing its own wireless end user connections to business customers. In 2007, TDS CLEC acquired spectrum licenses in the 2.5 GHz range from a company in Madison, Wisconsin and deployed infrastructure to provide fixed wireless last mile connections to business customer locations in that area. TDS CLEC encountered a series of operational challenges, including an inability to obtain tower space at reasonable rates and difficulty obtaining permission from building owners to place equipment on multi-tenant buildings. In addition, fixed wireless technology proved insufficient to meet consumers' needs for bandwidth and reliability. This technology could not simultaneously support both voice and data services, and customers generally did not view the quality of the service as comparable to dedicated wireline connections.[65]

TDS CLEC also conducted a trial of unlicensed fixed wireless connections in the Fox Valley region of Wisconsin over a period of years, primarily between 2005 and 2015. TDS CLEC has concluded that the unlicensed technology it has trialed would only support Internet access speeds up to 4 Mbps and would not reliably support voice service. Moreover, this

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[63] Loch Declaration, ¶ 4, Loch Second Declaration, ¶ 7.
[64] *Id.*
[65] Butman Declaration, ¶ 21.

technology is also subject to the operational challenges discussed above with respect to licensed wireless service (*i.e.*, obtaining tower space and permission of building owners). Thus, TDS CLEC has decided not to pursue this trial any further and closed it down last year.[66]

TDS CLEC conducted an extensive study of the economic viability of deploying Ethernet over Copper in its suburban, exurban, and rural market areas. After thorough analysis, TDS CLEC concluded that high capital costs and lack of certainty whether and when AT&T would remove/retire copper made this approach economically infeasible.[67]

Finally, in considering whether RBOCs face the type of competition that can discipline their pricing of 10-100 Mbps and above Ethernet, it is important to consider that many business customers needing this type of service operate at multiple locations and desire a single source of supply at all, or virtually all, of their locations.[68] Even if a CLEC or cable competitor can serve some of the locations on an economical basis, the competitor's inability to build economically to all, or nearly all, of the locations dooms competition for these customers unless the Commission maintains reasonably priced wholesale access to last mile facilities. For the most part, these customers are simply not interested in ordering service from a carrier that cannot serve a substantial majority of their locations within a single state at a competitive price.[69]

2. RBOCs are abusing their market power for provision of Ethernet in second and third tier markets.

RBOCs are and have been abusing their market power in the market for wholesale Ethernet services in second and third tier markets, demanding rates that are plainly not "just and

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[66] *Id.*, ¶ 22.
[67] *Id.*, ¶ 28.
[68] Loch Second Declaration, ¶ 3.
[69] *Id.*

reasonable" because the wholesale rates exceed retail rates, with no legitimate business reason for doing so. This imposition of a price squeeze, abusing power in the wholesale market, has ripple effects in the retail market. Wholesale customers who must pay unjust and unreasonable, above-retail rates for wholesale inputs cannot apply any competitive pressure on the RBOCs' retail rates.

In its recent *Technology Transitions Order*, the Commission recognized that the transition from regulated TDM service to unregulated IP service created the possibility that incumbents might seek to stifle competition by charging significantly more for wholesale service than for retail service, thus impeding CLEC competition, particularly in "suburban, remote, rural and other areas not served by cable or other modes of service where the only competition that exists at the retail level is between an incumbent LEC and a competitive LEC that needs wholesale access from the incumbent LEC in order to compete at the retail level."[70] The Commission further noted that, to the extent that the cost of packet-based wholesale services are unreasonably high, a CLEC may not be able to absorb the "cost of the wholesale inputs without losing customers or losing revenue and potentially exiting the market, to the detriment of its customers and the public . . .."[71]

In the *Technology Transitions Order*, the Commission took steps to ensure that ILECs did not discontinue TDM special access service without offering comparable rates, terms and conditions for replacement packet-based service, at least until an effective order was issued in this proceeding. Even where the ILEC leaves the TDM service in place, customers' higher bandwidth demands and the price and non-price efficiencies of Ethernet technology, as

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[70] *Technology Transitions Order*, 30 FCC Rcd 9372, 9466, ¶¶ 167-168.
[71] *Id.*, 30 FCC Rcd at 9447 ¶ 136.

in the same building.[74] While this demonstrates that competition can act to constrain prices in certain instances, it violates Section 202(a)'s "absolute obligation to prevent such discrimination."[75] It also shows that competition in one building in a geographic area does not necessary discipline prices in another building in the same area for the same basic service. This can be contrasted with AT&T's DS1 pricing, for example, where "AT&T does not charge different rates for different locations within an MSA" and argues "the intense competition for buildings with large amounts of business provides a competitive constraint for all DS1s throughout an MSA."[76] The fact that an RBOC is varying wholesale Ethernet rates by building is further evidence that competition does not ensure just and reasonable rates, at least for those customers in buildings where the RBOC charges higher rates.

The higher wholesale prices demanded by the RBOCs that TDS CLEC competes with are unjust and unreasonable, in violation of § 201(b), and unreasonably discriminatory, in violation of § 202(a). The RBOCs do not experience higher costs when they sell at wholesale. To the contrary, RBOCs offering Ethernet on a wholesale basis logically should experience lower costs when selling at wholesale, avoiding certain costs such as retail billing and collection, customer service, and marketing/sales.[77] This is consistent with Section 252(c)(3), the Commission's rules,[78] and the findings of the state commissions implementing the Commission's rules, that carriers experience significantly lower costs when they sell at wholesale, rather than at retail. The fact that RBOCs are demanding above-retail rates from wholesale customers on its face (1)

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[74] *Id.*, ¶ 13.
[75] *Western Union International, Inc., v. FCC*, 568 F.2d at 1018.
[76] AT&T Direct Case at n.103.
[77] Loch Second Declaration, ¶ 24.
[78] 47 C.F.R. § 51.601 *et seq.*

creates a price squeeze preventing wholesale competition; (2) reflects that the RBOC has market power, because it would otherwise be ceding the wholesale market to its competitors; and (3) makes no business sense, apart from a desire to exclude competition. Moreover, there are no pro-competitive benefits resulting from this approach.[79]

b. A comparison with NECA retail rates shows that RBOCs are offering Ethernet at wholesale at unjust and unreasonable rates.

As another means of judging the reasonableness of RBOCs' wholesale Ethernet rates, TDS CLEC also compared NECA Rate Band 10 (fairly rural) retail Ethernet rates and the RBOC average retail Ethernet rates (typically in significantly more urban areas). For bandwidth between 10 and 100 Mbps, the retail rates that the RBOCs offered to its customers exceeded NECA retail rates by between 18% and 175%, depending on bandwidth. Although TDS CLEC compared RBOC rates to NECA Band 10, Bands 1-9 of NECA rates would result in an even larger percentage difference between RBOC average rates and NECA rates.[80] Given that costs should be much lower in the RBOCs' more densely populated territory, this comparison provides further confirmation that RBOCs' wholesale Ethernet rates to CLECs, which typically are above the RBOCs' retail rates, are excessive, unjust and unreasonable.

c. The effect of RBOCs offering Ethernet at wholesale at above-retail pricing and unjust and unreasonable rates is to impede competition.

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[79] *See* United States Department of Justice, "Competition and Monopoly: Single Firm Conduct under Section 2 of the Sherman Act", Chapter 3 available at http://www.justice.gov/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-3 ("If conduct does not make economic sense at the time it is undertaken except for its exclusionary effect on competition, it likely will be difficult to defend").

[80] Loch Second Declaration, ¶ 23.

As a result of RBOC pricing of wholesale Ethernet at prices above retail for the same service, TDS CLEC has only been able to find a small number of its larger business customers out of over **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** for which it could earn any profit at all using RBOC Ethernet, and even for these few customers, the economics are not all that attractive for TDS CLEC. A five-year financial analysis shows that the circuits sold thus far will require TDS CLEC to invest over **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** to earn a **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** internal rate of return (compared with a common industry objective of 25% (or higher)) with a negative net present value.[81] Moreover, the larger sized customers that TDS CLEC serves in this manner are not representative of traditional SMBs. The customers generally have more sophisticated data requirements and larger budgets that they can leverage to satisfy these requirements.[82] Ethernet purchased from the RBOCs at unregulated rates does not offer a cost-effective solution to meet the needs of the vast majority of SMBs that do not meet this profile. Less than 20% of TDS CLEC customers have more than 20 employees per location,[83] and that sample is approximately representative of the universe of business customers nationwide. The bottom line is that by offering Ethernet to wholesale customers at above-retail prices, the RBOCs eliminate competition from LECs that do not own, and CLECs that cannot economically build, their own last-mile facilities. As discussed above, for customers needing Ethernet in second and third tier markets, construction of last mile facilities by CLECs is not economically feasible. And, even where it is, because multi-location customers prefer a single supplier, without

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[81] Loch Declaration, ¶ 5.
[82] *Id.*, ¶ 6.
[83] Loch Second Declaration, ¶ 3.

reasonably priced wholesale access, even competitors that can build to some locations cannot compete with an RBOC that can serve all locations. Therefore, the RBOC preserves its monopoly power through this tactic.

D. RBOC wholesale Ethernet rates should be capped at retail less avoided costs.

1. Wholesale rates that exceed retail rates for the same or similar service are not just and reasonable.

The *Technology Transitions Order* found that "depending on the competitive state of various markets, there may be an incentive for the incumbent to charge higher rates at the wholesale level in order to prevent or disadvantage competition at the retail level."[84] As explained above, TDS CLEC's experience in its second and third tier markets for SMB customers is that RBOC wholesale Ethernet rates exceed retail rates for the comparable service, putting TDS CLEC at a severe competitive disadvantage. As the Commission recently observed, where the answer to the question "[w]ill an incumbent's wholesale charges for the IP replacement product exceed its retail rates for the corresponding offering?" is positive, it "weigh[s] toward a conclusion that reasonably comparable rates, terms, and conditions are not being offered."[85]

2. Wholesale rates should be based on the costs avoided by the RBOC.

The conclusion that "reasonably comparable rates, terms, and conditions are not being offered"[86] is further supported where "there is not a sound reason for any [price] differences in offerings."[87] As Mr. Loch explains, the RBOC should avoid costs when offering Ethernet at

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[84] *Technology Transitions Order*, 30 FCC Rcd at 9466, ¶ 167.
[85] *Id.*
[86] *Id.*
[87] *Id.*

wholesale, not incur additional costs that might justify a higher rate.[88] Yet instead of reducing the wholesale rate to recognize costs actually avoided, in TDS CLEC markets, the RBOC average wholesale rate is typically higher than Ethernet retail rates.

TDS CLEC submits that the Commission should develop a proxy for costs avoided when Ethernet is sold at wholesale. The state commissions have all calculated avoided costs pursuant to Section 252(d)(3). For example, TDS CLEC's interconnection agreements with RBOCs reflect avoided cost discounts for resold services of 17.66% in Minnesota, 16.62% in Michigan, and a range of 17-25% in Wisconsin.[89] Such a percentage discount proxy could then be used for wholesale Ethernet. CLECs and the Commission could then use that avoided cost proxy, and disclosed RBOC retail rates (discussed below), to determine whether an RBOC may be offering unjust and unreasonable rates.

3. The FCC should adopt retail pricing disclosure requirements to enable detection of unjust and unreasonable rate discrimination.

The Commission recognizes the value of price disclosures in detecting unjust or unreasonable discrimination.[90] The current RBOC practice of subjecting the rates, terms and conditions of commercial Ethernet agreements to confidentiality restrictions[91] impedes TDS CLEC's ability to advocate in support of new rules and detect unreasonable and discriminatory

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[88] Loch Second Declaration, ¶ 24.

[89] TDS CLEC reviewed its interconnection agreement and amendments with AT&T in Illinois, but could find no provision regarding percentage discounts for resale rates.

[90] *Technology Transitions Order,* 30 FCC Rcd 9466 at ¶168 (agreeing that "incumbent LECs should not preclude their wholesale customers that receive an IP replacement service… from disclosing the rates, terms, and conditions to a regulator in the context of an action before the Enforcement Bureau.").

[91] Loch Second Declaration, ¶¶ 15-16.

rates. It also impedes the Commission's ability to rely on the most up-to-date information about pricing and competition in today's Ethernet markets.

TDS CLEC does not suggest that the Commission require RBOCs to post and maintain a schedule of all Ethernet rates, whether wholesale or retail, for each and every customer.[92] Some RBOCs already file commercial UNE-P replacement and transit agreements under Section 211(a), which establishes precedent for the filing of commercial carrier-to-carrier agreements with the Commission, while others make such contracts public by posting on their website. Under Section 211(b), the Commission may require the filing of "any other contracts of any carrier" and exempt from such filing requirements minor contracts. TDS CLEC submits that the Commission should adopt a contract filing or website posting requirement for retail Ethernet contracts that is designed to require pricing disclosures without being unduly burdensome.

IV. CONCLUSION

For the reasons explained herein, the Commission should take the actions recommended by TDS CLEC to ensure that RBOCs offer wholesale Ethernet at just, reasonable, and non-discriminatory rates, terms and conditions. Specifically, the Commission should establish a benchmark that wholesale rates should not exceed retail less avoided costs and retail rates should be published to enable competitors and the Commission to detect and prevent unlawful discrimination. As the Commission recognizes, "[t]he guarantee of competitive wholesale access free of unreasonable discrimination has played a bedrock role in facilitating the market

[92] *Technology Transitions Order*, 30 FCC Rcd at 9470, ¶ 179 (rejecting suggestions that ILECs post rates, terms and conditions of replacement service offerings on their websites).

competition that exists today."[93] Although TDS CLEC's customers have benefitted from that guarantee in the past, the market shift to Ethernet without the same wholesale Ethernet guarantee threatens TDS CLEC's ability to continue to offer SMBs a competitive option. The technology transition is not an excuse to abandon the guarantee of nondiscriminatory wholesale access, which has resulted in the "benefits of additional choice to an enormous number of small- and medium-sized businesses, schools, government entities, healthcare facilities, libraries, and other enterprise customers."[94] TDS CLEC looks forward to working with the Commission to preserve, throughout the technology transition, the benefits that competition brings to consumers, including "lower prices, higher output, and increased innovation and quality."[95]

Respectfully submitted,

/s/ Tamar E. Finn

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Dated: January 27, 2016

[93] *Technology Transitions Order*, 30 FCC Rcd at 9466, ¶ 168.
[94] *Id.*, 30 FCC Rcd at 9427, ¶ 101.
[95] *Id.*

REDACTED - FOR PUBLIC INSPECTION

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

In the Matter of	)	
Special Access for Price Cap Local Exchange Carriers	)	WC Docket No. 05-25
AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services	)	RM-10593

SECOND DECLARATION OF MATTHEW J. LOCH

1. I am the Vice President of Sales for TDS Telecommunications Corporation ("TDS"), a wholly owned subsidiary of Telephone and Data Systems, Inc. In my role, I have responsibilities for all wireline commercial sales functions.

2. This declaration is in support of the Comments of TDS Metrocom, LLC ("TDS CLEC") in response to the Federal Communications Commission's *Special Access FNPRM* which seeks comments on proposed changes to rules for special access services provided by Incumbent Local Exchange Carriers ("ILECs") in price cap areas. I previously filed a declaration in this docket on June 22, 2015.

3. Over 80% of the businesses that TDS CLEC serves are small and medium-sized businesses ("SMBs") or other customer locations that have fewer than 20 employees. Many of these SMB locations are part of a multi-location customer network, such as insurance companies, attorney offices, medical offices and chain businesses. Most multi-location

customers desire a single provider at all, or virtually all, of their locations. While TDS CLEC has deployed "on-net" Ethernet facilities to a few locations of multipoint customers, TDS CLEC usually needs to lease alternative last mile facilities to complete the customer-required network.

4. Today, SMB customer bandwidth demands start at 10 Mbps, but are quickly migrating to 20 Mbps or higher. While some very small businesses are satisfied with cable best efforts broadband, even TDS CLEC's smaller business customers prefer dedicated connections with symmetrical speeds to operate and support cloud-based applications.

5. Cable modem service using DOCSIS is provided over facilities that are common to (shared by) several customers on the same route and aggregated with other traffic. Thus, heavy use by one of several customers sharing facilities will slow down the other customers' service. Because cable modem service is a best efforts service, and does not prioritize voice over data during periods of heavy use, it cannot guarantee the quality of dedicated symmetrical bandwidth that most TDS CLEC SMB customers demand.

6. The vast majority of the SMB customers that TDS CLEC serves are not located in buildings served by multiple fiber providers. For example, Madison, Wisconsin, is one of TDS CLEC's primary markets. Yet even in Madison, TDS CLEC has built fiber into less than **[BEGIN CONFIDENTIAL]** ■ **[END CONFIDENTIAL]** of the business locations.

7. As Mr. Butman explained, TDS CLEC faces fundamental fiber build cost disadvantages vis-a-vis its ILEC affiliate that contribute to TDS CLEC's low success rate in economically deploying fiber loops to serve its customers.[1] For example, even though TDS CLEC provided on-net services ranging from 10 Mbps to 1 Gbps to customers in its Fox

[1] *See* Letter from Matthew Jones, Counsel for TDS Telecommunications Corporation, to Marlene Dortch, FCC Secretary, attaching Declaration of James Butman, ¶¶ 7-14 (filed March 26, 2015) ("Butman Declaration").

Valley, Wisconsin fiber deployment trial, that trial fell well below the standards of a viable business case.[2]

8. Mr. Butman also explained that TDS CLEC has explored multiple alternative methods of obtaining last mile access, including self-deployment, unbundled network elements ("UNEs"), special access, licensed and unlicensed wireless technologies, cable Ethernet, Ethernet over Copper and now RBOC commercial fiber based Ethernet.

9. I previously explained that TDS CLEC has been able to provide services using RBOC Ethernet as the last-mile connection in limited situations for larger customers and even then at a lower than reasonable rate of return. This declaration provides additional information to explain why RBOC wholesale Ethernet at current commercial rates is not an economically viable means of offering competitive voice and broadband services to SMB customers.

10. In my role at TDS CLEC, I am familiar with the wholesale Ethernet rates RBOCs offer TDS CLEC and to some extent the retail Ethernet rates the RBOCs quote our customers. Following are my observations with regard to what we have seen from the RBOCs as we attempt to compete to provide needed Ethernet services in the markets we serve.

11. Some RBOCs charge TDS CLEC a monthly recurring charge for a Network-to-Network Interface ("NNI") Port to aggregate and connect Ethernet circuits that reach TDS CLEC customer locations. The NNIs are established with either 1 Gbps or 10 Gbps capacity. The RBOCs have varying approaches as to the cost of those NNIs and those charges can be quite high relative to what TDS projects for NNI Port costs in its own ILEC business.

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[2] *See* Letter from Matthew Jones, Counsel for TDS Telecommunications Corporation, to Marlene Dortch, FCC Secretary, attaching Declaration of Matthew Loch, ¶ 4 (filed June 22, 2015) ("Loch Declaration").

12. The RBOC wholesale Ethernet rates charged to TDS CLEC generally vary depending on whether the building is on-net (already served by fiber) or off-net (requiring construction), with off-net buildings priced significantly higher.

13. Understandably, the RBOC charges TDS CLEC a lower rate for on-net buildings where fiber is available and no additional construction costs are required. However, TDS CLEC has been charged higher rates by an RBOC for the same basic service offering in an on-net building where there were no viable competitors in the same building.

14. For off-net buildings, the RBOCs require TDS CLEC to pay for the cost to place conduit from the right-of-way to the minimum point of entry in the subject building. TDS CLEC must either contract with a third party for the construction and placement of the conduit (estimated at up to $10,000) or in one case the RBOC has agreed to provide the conduit for a lower, flat non-recurring charge.

15. The wholesale Ethernet rates being offered to TDS CLEC by the RBOCs in the period 2014-2016 are subject to confidentiality provisions in the contract that prevent TDS CLEC from revealing them in this docket, even under Highly Confidential treatment, unless required by law, governmental authority or legal process.

16. The RBOCs typically include confidentiality provisions in their retail SMB customer contracts as well, which makes it difficult for TDS CLEC to determine what the RBOCs are offering for retail Ethernet rates.

17. Nonetheless, I have seen standard Ethernet SMB model contracts offered by the RBOCs that at times have become available over the Internet.

18. TDS CLEC has also polled a portion of its existing and prospective customers who may have received RBOC Ethernet quotes to gain some perspective of what retail rates are

being offered by RBOCs in the marketplace. This retail pricing that I reviewed offered no volume-based discounts.

19. Based on my familiarity with the RBOC wholesale rates currently offered to TDS CLEC and the RBOC retail rates that I reviewed, I conclude that the wholesale rates available to TDS CLEC are typically higher. This is the case for various bandwidths generally in demand by the SMB customers in TDS CLEC markets and in some cases even more so for bandwidths in excess of 100 Mbps.

20. I calculated the average RBOC retail Ethernet rate by using customer-supplied prices. For bundled voice and data services, I reduced the package price by $200, which I believe is a reasonable proxy for the local and long distance services that are included in the RBOC Ethernet package. A simple comparison showed that the standard retail Ethernet rates offered by the RBOC typically were lower than the wholesale rates currently available to TDS CLEC.

21. Further, I calculated the standard TDS CLEC retail Ethernet rates by starting with our wholesale rate from the RBOCs for the same bandwidth and a comparable contract term. I added the TDS equipment costs (e.g. customer premises equipment) and the standard mark-up TDS uses to offer its Ethernet retail product.

22. Based on the best available information, TDS CLEC calculated the percentage differences shown below between the RBOCs' retail and TDS CLEC's retail Ethernet prices. These percentage differences show that the RBOCs' retail rates are well below what TDS CLEC must charge its retail customers for basically the equivalent service based on the underlying wholesale input costs TDS CLEC must pay the RBOCs.

Bandwidth	TDS CLEC Necessary Average Retail Ethernet Rate based on wholesale purchase from RBOC expressed as a percentage of RBOC Average Retail Ethernet Rate
10 Mb	235%
20 Mb	162%
50 Mb	149%
100Mb	117%

23. I also compared NECA Rate Band 10 (fairly rural) retail Ethernet rates and the much higher RBOC (significantly more urban) average retail Ethernet rates. Although Bands 1-9 of NECA rates would result in an even larger percentage difference between RBOC average rates and NECA rates, I used Band 10 because that is the Band TDS ILECs use for the least rural of their exchanges under the NECA tariff #5 dated January 1, 2016.

Bandwidth	RBOC Average Retail Ethernet Rate Expressed as a percentage of NECA Retail Ethernet Rates for Band 10 dated 1/1/16
10 Mb	118%
20 Mb	179%
50 Mb	212%
100 Mb	275%

24. I am not aware of any cost differences between a retail and wholesale Ethernet service that would justify a higher rate for the service when offered to a wholesale customer. To the contrary, the RBOCs offering Ethernet on a wholesale basis logically should avoid certain costs. These avoided costs include costs associated with retail billing and collection, as well as customer service and marketing/sales costs.

25. Without access to reasonably priced wholesale Ethernet, TDS CLEC is increasingly not able to meet the bandwidth demands of its SMB customers at competitive retail prices. As Mr. Butman explained, bonding DS-1s purchased as UNEs or special access does not allow TDS CLEC to offer higher bandwidth services to SMBs at affordable prices.[3]

26. As I have explained, TDS CLEC is very seldom able to obtain DS-3s as UNEs, which could in theory provide up to 45 Mbps of bandwidth if they were available.[4] To deliver a UNE DS-3, an RBOC must have an existing TDM OCn facility that has a DS-3 vacancy. If an OCn facility is not deployed, or if a deployed facility is exhausted, the RBOC will only provide a DS-3 at the special access rate. Because both retail and wholesale pricing of DS-3s in the RBOC territories in which TDS CLEC competes are much higher than retail pricing of 50 Mbps Ethernet, this option typically is not economically viable.

27. Even if bonded DS-1s or a DS-3 special access input were economically viable, Ethernet over fiber offers customers non-price advantages that make bonded DS-1s and DS-3s the second-best choice. Ethernet over fiber has nearly limitless bandwidth, which can be upgraded without any major capital expenditures. Thus, a customer can order 30 Mbps of bandwidth and upgrade to 50 Mbps as needed, with little additional cost. In contrast, using TDM technology, a customer needing 30 Mbps is forced to order a 45 Mbps DS-3 up front and the customer's decision to increase bandwidth to 50 Mbps would require a second DS-3. Once a carrier has deployed Ethernet capability, it incurs little cost to increase bandwidth from 10 Mbps up to 1 Gbps. This can be contrasted with TDM, which requires substantial costs, including electronics, to upgrade to higher bandwidths.

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[3] Butman Declaration, ¶ 28.
[4] Loch Declaration, ¶ 7.

28. Moreover, Ethernet enables cloud technology for applications and data storage and provides SMB businesses with an affordable upgrade option for adding bandwidth to take full advantage of the increased efficiencies and enhanced capabilities of cloud based services. Finally, Ethernet will provide SMB customers with the capability for video conferencing and applications such as "Go to Meeting," and WebEx for communications to remote locations, customers and vendors.

29. TDS believes that the RBOCs must be required to take the following steps to ensure healthy competition and better broadband options for the vast majority of business customers in the USA:

- Charge wholesale customers rates that are no higher than standard retail offers.
- Provide wholesale customers with a discount off retail rates for the actual marketing, billing, collection and other costs avoided by the wholesale provider.
- Provide wholesale customers with terms and conditions at minimum comparable to those offered to retail customers.
- Publish on a regular basis a list of retail Ethernet rates (net of any and all discounts) in each market, including any difference in rates when the customer location had to be connected to the RBOC network in order to provide service.

30. In summary, TDS CLEC needs access to scalable, fiber-based, reasonably priced Ethernet services to continue to meet the increasing bandwidth needs of SMBs and other customers.