July 30, 2015

VIA ELECTRONIC SUBMISSION

Ex Parte

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, D.C. 20554

Re: *In the Matter of Technology Transitions* (GN Docket No. 13-5); *Special Access for Price Cap Local Exchange Carriers* (WC Docket No. 05-25)

Dear Ms. Dortch:

The United States Telecom Association (USTelecom) respectfully submits this letter for consideration in the above-referenced proceedings in response to a cost study filed with the Commission purporting to demonstrate that CLECs cannot feasibly construct last mile facilities.[1] We ask that the Commission not draw conclusions regarding the feasibility of competitive network deployment, or make even interim policy decisions related to the need for wholesale access, based on the results of this CostQuest study. Neither the cost nor the revenue assumptions underlying the analysis sufficiently reflect current marketplace realities.

The cost assumptions are based on a 2002 AT&T analysis of the feasibility of CLEC last mile construction. While certain input prices and components have appropriately been updated to reflect changes since 2002, the broader network architecture and demand characteristics have not been updated to reflect fundamental changes over the last decade and a half. The revenue assumptions are based on a single isolated service without regard to margin contributions of additional components of the bundled service packages customers typically purchase. Recent developments on the demand and supply side must be taken into consideration when considering the feasibility of competitive last mile facility deployment.

On the demand side, the period since 2002 – especially in more recent years – has seen, among other things: the rapid adoption of fourth generation mobile wireless broadband and the conversion to fiber- and Ethernet-based backhaul, along with the growth of WiFi hot spots and emerging small cell architectures; the proliferation of data centers, content distribution

[1] *See* Ex Parte Letter to Marlene H. Dortch, Secretary, FCC, from Jennie B. Chandra, Vice President – Public Policy and Strategy, Windstream (Jun. 8, 2015) (attaching CostQuest Associates White Paper # 1, *Analysis of Fiber Deployment Economics for Efficient Provision of Competitive Service to Business Locations*).

networks, and non-ILEC collocation facilities and traffic exchange points, with extraordinarily large capacity requirements; and the increasing adoption of fiber services by large anchor tenants from industries such as hospitality, education, finance, and the public sector.

On the supply side, this period – also particularly in recent years – has seen, among other things: the widespread entry of cable operators into the business marketplace, initially serving smaller businesses but recently migrating up market to larger enterprises; the development and standardization of a wide range of carrier-class Ethernet services to meet the diverse needs of a diverse range of customers; and the actual deployment of new fiber-based networks by traditional ILECs and competitors with architectures designed to meet the combined demand of this diverse group of customers.

Both costs and revenues in the study are based on averages, which are likely to yield over-inclusive conclusions with respect to the infeasibility of competitive last mile facility deployment. The Commission has typically sought more granular analysis. Even the special access pricing flexibility regime, which the Commission is currently evaluating, is based on competitive conditions at the Metropolitan Statistical Area level.

In sum, a generalized model based on 2002 architecture and demand assumptions, and averaged inputs, cannot accurately and completely capture the economics of today's diverse business services marketplace. Moreover, the analysis is static, not accounting for the combined impact of demand growth; increased scale and scope; and share shifts that alter industry economics over time. Attachment 1 discusses the specific components of the CostQuest model and how it does not accurately reflect the economics of the actual marketplace.

Sincerely,

Patrick S. Brogan
Vice President, Industry Analysis

Attachment

Copy via e-mail to:
Chairman Tom Wheeler
Commissioner Mignon Clyburn
Commissioner Jessica Rosenworcel
Commissioner Ajit Pai
Commissioner Michael O'Rielly
Matthew DelNero, Wireline Bureau Chief

Attachment: Review of CostQuest Analysis

Overview of the CostQuest Analysis

CostQuest first develops a cost model for CLEC network deployment. Next, it performs a revenue hurdle analysis to determine the revenues a provider must generate in order to justify the costs of deployment. Finally, it performs a build vs. buy analysis comparing the cost of building against the cost of leasing wholesale facilities.

Cost model

CostQuest begins its analysis by developing a model for green-field build-out by a purportedly efficient hypothetical competitive provider based on average cost conditions. The model is based on a 2002 FCC filing by AT&T that posits a 30 mile fiber ring with two strands of fiber per building on the ring and 20 connected buildings on that ring. In the CostQuest model, each building is connected with a 500-foot, 12-fiber strand lateral. The model assumes there are electronics placed in the local network serving office and in each customer building, requiring a building rental fee of $678. In order to reflect more modern networks, CostQuest tweaks some of AT&T's original assumptions with respect to the factors such as fiber cable capacity; placement of cabling underground, in conduit, or on poles; the electronics deployed; and labor and material input costs, for which it depends on the Commission's CAM model used for universal service funding. From this model CostQuest develops an average monthly cost per building to deploy the ring and laterals. It finds the average monthly building cost, based on 20 buildings, is $2,712 for 1 Gbps per second service and $2,994 for 1 Gbps to 10 Gbps service.

Revenue Hurdle Analysis

In its revenue hurdle analysis, CostQuest compares the average building costs to provide 1 Gbps service from its cost model to average monthly retail pricing for a certain type of 1Gbps Ethernet services known as Direct Internet Access. The retail rate data is based on the average price for 1 Gbps DIA service in 22 cities surveyed by market researcher, Telogical. Charges for customer premises equipment and transport charges were removed if specified by the surveyed respondent. The average price is $2,157, which is $555 less than the model calculated monthly cost per building of $2,712.

So, in this scenario, CostQuest concludes a CLEC must sell more than 1Gbps per building in order to justify investing in its own last mile facilities. Alternatively, CostQuest looks at the number of circuits per building that could yield break even revenues at 1 Gbps and lower capacities. CostQuest notes that pricing does not move on a one-for-one scale with capacity. Its analysis shows that 6.4 10 Mbps circuits, 4.4 20 Mbps circuit, 2.4 50 Mbps circuits, 2.3 100 Mbps circuit, or 1.3 1 Gbps circuits per building, on average, would be required for a CLEC to break even at a cost of $2,712. Fractional circuits are not typically available, so the next highest integer is the more likely breakeven point; and presumably various combinations of these circuits within and across buildings could generate the revenue required.

CostQuest notes [page 10 of Attachment A] that the monthly building rental fee of $678 constitutes a large portion of the cost and states that "if the presumed building rental fee did not apply, a single 1 Gbps circuit could be economically deployed to each building, with the number of lower capacity circuits necessary to achieve the revenue hurdle also reduced."

Significantly, in addition CostQuest offers [Page 10 of Attachment A] the caveat that market share and business density are important variables, noting, "[i]f the CLEC add more locations onto the ring, the average cost per served location drops and thus the revenue hurdle drops." It later goes on to provide [Page 13-17 of Attachment A] a sensitivity analysis based on market shares and business density. It assumes a 200-building market and varies market share and business density, adjusting the size of the fiber rings and cost accordingly. The results are shown in Table 5 on page 15 of Attachment A. From this table, CostQuest presents two charts. The first, Figure 5 on page 16 of Attachment A, shows the monthly cost per building for a first entrant and a competitor, based on constant market shares of 58% and 10.5%, respectively. The second, Figure 6 of page 17 of Attachment A, shows how average building costs decline as market share increases for a thirty-mile ring in a market of 200 buildings.

Critique of CostQuest Analysis

We suggest two broad critiques of the CostQuest analysis. First, it is based on 2002 scenarios that do not reflect efficient network architecture and the diverse nature of market demand and supply today. Second, it is static. It does not account for recent and ongoing changes in market conditions. Setting wholesale access policies based on a static market snapshot would halt the dynamic competitive investment process and deprive the market of the benefits that come from it, including further facilities-based market share shifts and innovations, both of which can serve to drive down competitor costs.

The economics of fiber deployment have been undergoing significant changes in recent years. The 20 building, 30 mile assumptions underlying CostQuest's average building cost assumption are likely not reflective of today's market place.

For example, as far back as 2010, in its third quarter earnings call, Level 3 described the evolving marketplace in exchanges with investors with respect to the rationale behind its network expansion. Two such exchanges are described below:

Exchange 1[1]

Investor: … my second question has to do with your build out of the network. Can you talk a little bit more about where specifically you're building up the metro, what kind of opportunities you're seeing there that are allowing you to do that or are we talking specifically wireless back off?

[1] Morningstar, Level 3 Communications Inc. Q3 2010 Earnings Call Transcript (October 28, 2010) at http://www.morningstar.com/earnings/18613105-level-3-communications-inclvlt-q3-2010-earnings-call-transcript.aspx?qindex=2 (visited July 30, 2015).

Level 3: …As many on the call know, the word building is used interchangeably to cover a several 100,000 square foot data center, a large several million square foot corporate headquarters, and a mid-market building with ten tenants and there are cell towers powers to think of there are central offices with more demand than many, many buildings added together, the same is true with cable head ends and mobile switching centers. That's why we prefer the term TAP or Traffic Aggregation Point.

What we believe we are uniquely situated to do is aggregate all those forms of traffic aggregation that I just mentioned to you. Central offices, cable head-ends, [an earlier presenter] mentioned that wireless and cable were among our fastest growing wholesale customers, that's because we have a lot of facilities which generate substantial amounts of traffic already On-Net and we add more. Because we can add all of the sources of demand together, we have all sorts of opportunities both to lower our network expense and to grow revenue …

… So, the conclusion I think is clear. If you want to build networks you got to able to address all of those, [if you] just simply limit yourself to enterprise buildings, you can have a good business, but you're going to miss an enormous amount of future growth.

Exchange 2[2]

Level 3: Let me make sure I understand the second part of your question. You're saying …when would our portion of our revenue equal the portion of demand that wireless represents?

Investor: Yes.

Level 3: It already does. Probably it's bigger than 15% because as [a previous presenter] said wireless is among the fastest growing. So think about a network, the big demand is to connect mobile switching centers, then mobile switching centers out at the towers and there is a little bit of wireless at the end. So, as I believe, AT&T has pointed out more than once, the wireless side is more straight forward than the backhaul side

We are already a major player in machine-to-machine intermachine trunking and an increasingly large player in central office or mobile switching center to tower. If you would form a mental picture of any city and you'd plot on that mental picture, that map all of the places where customers present their demand to us you'd have cable head ends and switching centers.

Like in wireless, you'd have towers, which are spread all across the whole of the area and we have far better economics to expand our network [than] I would argue anyone other than the incumbents in their own service territory[;] that is[,] we have by far the largest density and the ability to add not just the wireless towers, but the building next door or the data center down the street or the content side [if it's] in LA, up the road. Given that dynamic, we continuously expand and continuously [add] towers. Now we've

[2] Seeking Alpha, Level 3 Communications Inc. Q3 2010 Earnings Call Transcript (October 28, 2010) available at www.SeekingAlpha.com (downloaded November 4, 2010).

done that largely on a success basis. And I expect that will continue at least for the foreseeable future.

Recent fiber expansions rely on a similar rationale – winning long-term contracts to serve anchor tenants with significant demand and targeting additional customers along the fiber route for incremental revenues.

For example, Zayo bandwidth recently announced fiber expansion in Seattle, WA, and Nashville, TN. These expansions are driven by twenty-year wireless backhaul contracts, with incremental revenue potential from small cell sites and business customers:

Seattle (July 14, 2015):[3]

Zayo Group … a global provider of bandwidth infrastructure, today announced that as part of its mobile infrastructure expansion strategy the company will provide fiber-to-the-tower (FTT) to more than 500 towers to serve a major wireless carrier customer. More than 350 of the towers will be located in the Greater Seattle area, with 90 percent as single tenant expansion sites.

The underlying wireless customer sale (closed in the June fiscal quarter) has a contract term of 20 years and is expected to generate an initial unlevered cash flow yield of approximately 11 percent per annum on $61 million of expected capital investment, based solely on the initial anchor sale. Zayo expects to utilize the expansion to serve additional wireless tenants at these towers, plus provide fiber-based services to non-wireless customers such as universities, school districts, hospitals and content providers. The capital investment will primarily fund the construction of over 350 route miles of new fiber network…

"Zayo has a successful history of leveraging assets and capital associated with signed customer transactions," said Matt Erickson, president and COO of Zayo's Physical Infrastructure segment. "Our extensible network will have the capacity not only to provide FTT infrastructure for one of the nation's leading wireless carriers but also the fiber capacity that other existing and prospective customers need as they grow…"

…Zayo's Seattle network expansion will increase its metro network footprint to more than 900 route miles and provide capacity to deliver high-performance connectivity to businesses in an area that stretches from South Tacoma to Everett to Bellevue and the Eastside communities

[3] Zayo Press Release, "Zayo Continues to Execute Mobile Infrastructure Strategy in Seattle" (July 14, 2015) at http://www.zayo.com/news/zayo-continues-to-execute-mobile-infrastructure-strategy-in-seattle.

Nashville (July 22, 2015):[4]

Zayo Group … a global provider of bandwidth infrastructure, today announced the expansion of its fiber-to-the-tower (FTT) footprint in Nashville, Tennessee to serve an anchor wireless service provider. This is Zayo's first FTT sale in Nashville. Zayo will extend its existing 120-route mile network to provide this FTT service to 147 new towers. Additionally, Zayo is pursuing opportunities to leverage its Nashville network to provide dark fiber service to small cell nodes.

The underlying wireless customer sale (closed in the June fiscal quarter) has a contract term of 20 years and is expected to generate an initial unlevered cash flow yield of approximately six percent per annum on $39 million of expected capital investment, based solely on the initial anchor sale. Zayo estimates the unlevered cash flow yield on the incremental small cell opportunity to be 17 percent per annum, highlighting the attractive follow-on economics. In addition, Zayo will be able to leverage its Nashville network to provide service to second tenants on the 147 towers and to provide additional lit and dark fiber services that leverage the 350 route miles of newly constructed network…

…"Zayo continues to support our customers' requirements for network capacity that can scale as they grow," said Dave Jones, SVP of Zayo's Mobile Infrastructure Business. "We expect additional services to be provided on this network which will increase the yield over time. We've had significant interest in both small cell deployments and additional FTT services to these 147 towers."

Nashville, long known for its thriving music industry, has experienced significant growth in healthcare, technology and automotive industries. Zayo's fiber network expansion will significantly enhance its ability to deliver high-capacity connectivity to businesses, school districts and other government entities in the broader metropolitan area.

Competitive fiber providers may also start with non-wireless anchor tenants. Sometimes, they may have other large tenants, such as data centers or enterprises, and may see wireless backhaul and additional business customers as incremental growth opportunities. For example, as described in a press release, PEG Bandwidth recently purchased an underutilized private fiber network from W.L. Gore & Associates with the intention to add customers to the network.[5]

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[4] Zayo Press Release, "Zayo to Significantly Expand Fiber-to-the-Tower Footprint in Nashville" (July 22, 2015) http://www.businesswire.com/news/home/20150722005491/en/Zayo-Significantly-Expand-Fiber-to-the-Tower-Footprint-Nashville#.VbpJxWfbJ01.

[5] PEG Press Release, "PEG Bandwidth Acquires Fiber Network from W.L. Gore & Associates, Inc." (July 21, 2015) http://pegbandwidth.com/gore-acquisition/.

> PEG Bandwidth, a leading provider of bandwidth and wireless infrastructure solutions, has acquired a 48-mile fiber network from W.L. Gore & Associates, Inc. …
>
> PEG Bandwidth operates a 15,000-route mile network throughout an 18-state footprint, including the Mid-Atlantic region. The acquired network spans a geography covering Newark, DE to the north, Elkton, MD to the south and Fair Hill, MD to the west and was built with high-strand counts of fiber totaling almost 3,500 fiber miles. There are 22 buildings on-net to the network including several data centers, enterprise buildings and government facilities.
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> "We look forward to leveraging the Gore fiber network with our existing fiber network to connect nearby businesses with major commercial data centers from Virginia to New York," states Michael Friloux, President and Chief Executive Officer at PEG Bandwidth. "We intend to invest in this network to broaden the base of customers throughout this growing area who can use it."

In press accounts, PEG officials explicitly described how they plan to leverage their fiber footprint by targeting a range of potential new customers:[6]

> Another big piece of the network it is acquiring is the on-net and near-net reach of the fiber network. The Gore network currently has 22 on-net buildings, including a mix of data centers, enterprise buildings and government facilities.
>
> "There are 22 buildings on-net and there's significant opportunity for what we call near-net," [Greg] Ortyl [senior VP of sales and marketing] said. "There are about five or six data centers in the area, a couple of which are on-net so there's dozens of opportunities to splice access points that we can tap into to build out to new customers."
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> Ortyl added because the fiber network has a large strand count, they can pursue a large mix of enterprise and wholesale opportunities, including selling wireless backhaul services to wireless operators or other carriers looking for entry into these markets.
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> "It is heavy strand count fiber so we're going to offer a full suite of products, including dark fiber, Ethernet, and wavelengths to any of the surrounding enterprises or wholesale opportunities," Ortyl said.

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[6] Sean Buckley, Fierce Telecom, "PEG Bandwidth nabs W.L. Gore's fiber network, enhances Mid-Atlantic on-net building reach" (July 21, 2015) at http://www.fiercetelecom.com/story/peg-bandwidth-nabs-wl-gores-fiber-network-enhances-mid-atlantic-net-buildin/2015-07-21.

These are just a few examples of how the business case for fiber deployment has changed since 2002. These examples suggest that an efficient competitive entrant would not necessarily design its network in the same manner suggested by the CostQuest adaptation of the 2002 model. Fourth generation wireless has emerged with significant fiber and Ethernet backhaul requirements, and increasingly small cell deployments to efficiently utilize available spectrum. WiFi hot spots have proliferated, as have large-volume data users such as data centers, content distribution networks, carrier collocation facilities and traffic exchange points. In addition, more enterprise providers have adopted fiber and Ethernet connectivity, including large anchor tenants from industries such as hospitality, education, finance, and the public sector.

With these diverse needs, service providers and equipment suppliers have developed and standardized a wide range of carrier-class Ethernet services to meet the diverse needs of a diverse range of customers. Among others, carriers offer Ethernet Direct Internet Access, Ethernet Private Line, and Ethernet Virtual Private Line services. Different customers will use different types of services at different speeds. The CostQuest analysis depends on limited price data for only one type of service, Direct Internet Access. CostQuest also excludes value added services and customer premise equipment sold alongside the access service, which may generate margins that help to defray the cost of deployment. As with network profitability in general, analysis of isolated service components may not fully account for all sources of revenues and costs affecting profitability of the overall firm. Additionally, given the diversity of potential customers, some with very large capacity demand, using average revenues may not reflect the way an efficient provider enters a marketplace today, for example through signing up large anchor tenants and then serving incremental customers over the common infrastructure.

Another way in which the market has dramatically changed since 2002 is the wide-scale entry of the cable industry into enterprise markets utilizing in significant part pre-existing infrastructure. The cable industry has become a meaningful force in enterprise services over the last decade. Cable operators have migrated up-market, initially serving smaller businesses, but now serving increasingly larger enterprises. One can no longer analyze the enterprise markets based only on ILECs and CLECs. USTelecom has made multiple filings attesting to the cable industry's ability to provide carrier class services to enterprises and backhaul customers.[7]

Finally, in many respects, the CostQuest analysis is static. Even the sensitivity analysis for market share and business density – and in particular the average cost charts in Figures 5 and 6 – represent static assumptions. For one, Table 5, which shows a large range of market share and building density combinations, is still based on a constant 200 buildings per market assumption. It is unclear what the source of this assumption is, though it seems likely that it was backed into based on the 20 building assumption and the largest CLEC single market share of around 10 percent. Either way, it is unclear whether a constant of 200 buildings with variation in ring size reflects either current network design practices or the full breadth of today's market demand,

[7] See Ex Parte Letter of Glenn Reynolds, USTelecom, WC Docket 05-25 (December 3, 2012) and Ex Parte Letter of Glenn Reynolds, USTelecom, WC Docket 05-25 (June 4, 2014).

including mobile cell sites, small cells, WiFi hotspots, data centers, content distribution networks, collocation hotels, and enterprise fiber customers. But at least the sensitivity analysis shows a range of possible costs within those constraints.

On the other hand, the charts presented to show the alleged gaps between the average costs for ILECs and CLECs do not reflect even the full range of sensitivities in Table 5. For example, Figure 5, which depicts the impact of business density on average building cost, is based on static market shares of approximately 58 percent for ILECs and 10.5 percent for CLECs, as well as the 200 buildings per market assumption. This is essentially plotting two rows of data from Table 5, one reflecting current ILEC share and one reflecting CLEC share, based on the highest current single market share for a CLEC. Such static market share assumptions ignore the fact that ILEC market shares of connected buildings have been steadily declining while competitor shares have been rising. It also ignores the trend of non-ILEC consolidation through mergers and acquisitions.

Similarly, Figure 6 purports to show the impact of market share on average cost, using a constant assumption of a 30-mile fiber ring and, again, the 200 building assumption. It plots one column of data from Table 5. But this display presents several problems. First, as discussed above, the line may be lower or higher in different markets based on densities. Second, over time, non-ILECs are moving to the right along the line, with average costs declining, while ILECs are moving to the left along the line, with average costs rising. Third, the deployment decision is not made relative to where a non-ILEC is relative to an ILEC on the line, but where the non-ILEC is relative to the average revenues. Fourth, there are inducements for innovation: for a non-ILEC, to the extent there are ILEC profits relative to the market price, there is an incentive to enter low cost areas or to lower costs through innovation; or for an ILEC, to the extent its margins are pressured by non-ILEC entry or technological advantages, there are inducements to reduce costs through innovation; thus, over time, all of the lines should be shifting down as innovation lowers costs.

This is the competitive process that has been playing out since competition was introduced into the local network by the 1996 Act. Facilities-based last mile deployment by non-ILECs may not be happening at the pace new entrants and regulators might wish – though the pace may be slowed in part due to the availability of regulated wholesale alternatives. Regardless, non-ILECs continue to add buildings and other locations via their own last mile facilities, which indicates the process is working but has not yet fully played out. In a sense, parties seeking indefinite continuation of access to regulated wholesale inputs are asking the FCC to halt or significantly slow down this process. They would embed the status quo, assuming competitive investment can go no further, rather than enabling facilities-based competition to grow organically. The policy goal should be to monitor the evolving market to understand how competition is developing and where it can grow without regulated wholesale alternatives, and to encourage such growth and to encourage such growth through deregulation wherever feasible.