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*“Promoting Broadband Infrastructure Investment”* Hearing

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Thank you, Chairman Walden, and thank you members of the Subcommittee, for your kind invitation to participate in today’s hearing. And thank you, Grace, for your role in coordinating today’s event.

By way of introduction, I have been a financial analyst focusing on the cable and telecommunications industries for the past fourteen years. Before that I spent eleven years at the Boston Consulting Group advising telecommunications companies, so this is now my twenty-fifth year in the sector. I have spent much of that career focused on the issues of broadband deployment and microeconomics.

With that in mind, I thought I would share some general observations today about the economics of broadband.

First, I would start by stating the obvious. *Infrastructure deployment requires the expectation of a healthy return on capital.* That should be taken as a given, but all too often, in my experience, the issue of return on capital is either ignored or misunderstood in policy forums. It is not a matter of whether a business is or isn’t profitable, it is instead a matter of whether it is *sufficiently* profitable to warrant the high levels of capital investment required for the deployment of infrastructure.

In 2014, the largest companies in the cable industry earned a very healthy return. The physical assets of Comcast, Time Warner Cable, Charter and Cablevision – the four publicly traded U.S. cable operators during 2014 – all earned returns comfortably in excess of their cost of capital, with returns ranging from 13% to 33%.<sup>1</sup> Those returns are unusually high for capital intensive industries. On the other hand, it should be noted that the Cable industry earned returns below the cost of capital for decades; any long term investment in network infrastructure *has* to earn returns well in excess of the cost of capital during the maturity of that network to offset what are typically years, or even decades, of losses.

By contrast, the large incumbent telephone companies do not earn attractive returns in their wireline businesses. For example, a decade after first undertaking their FiOS fiber-to-the-home buildout to eighteen million homes, Verizon has not yet come close to earning a return in excess of their cost of capital. In 2014 their aggregate wired telecommunications business earned a

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<sup>1</sup> We are focused here on return on physical assets, excluding “goodwill,” or the premiums paid for past acquisitions.

paltry 1.2% return, against a cost of capital of roughly 5%. For the non-financial types in the room, that's the equivalent of borrowing money at 5% interest in order to earn interest of 1%. That's a good way to go bankrupt. No one would undertake to replicate those disastrous financial returns.

AT&T, which at around the same time began building a much less robust and therefore less costly broadband fiber-to-the-node network, has also earned poor returns. Their ROIC, or return on invested capital, has been declining for a decade and is, like Verizon's, well below the cost of capital. AT&T has committed to the FCC to make fiber available to a total of 11.7 million locations in their footprint in order to make their acquisition of DirecTV more palatable to policy-makers, but it is hard to be optimistic that they will do much better this time around.

That said, there have been some changes in the market that make deployment of competitive broadband networks less unattractive than it has been in the past. Corning has developed "bendable fiber" that has helped to lower the labor cost of deployment. And Google has popularized the concept of "demand aggregation," whereby communities pledge to subscribe to advanced network services before the service is built so that Google can target areas where the company has the best chance of earning an acceptable return. Some critics would call that "red-lining," as it typically means that broadband won't be built to lower income communities, but it has been successful in boosting overall project returns; think of it as a way to ensure that all the children in the class really are above average.

Still, the broader take-away here is that the returns to be had from overbuilding – that is, being the second or third broadband provider in a given market – are generally poor. Let that sink in for a moment. Stated simply, it means that market forces are unlikely to yield a competitive broadband market.

Neither, by the way, does wireless appear to offer the promise of imminent competition for incumbent broadband providers. Wireless networks simply aren't engineered for the kind of sustained throughput required for a wired-broadband-replacement service. And wireless networks, by the way, *also* generally earn relatively poor returns on capital – returns for Verizon and AT&T are middling, and for Sprint and T-Mobile are poor – as a consequence of aggressive price competition in the wireless market. Neither is satellite broadband a compelling replacement for wired broadband in any but the most rural areas. Costs are high, and it is the nature of a satellite connection that has to travel 22K miles and back that latency is going to be a problem.

So the simple economic reality is that overbuilding is necessarily going to be limited given the relatively poor financial returns that can be expected, and that alternatives are few and far between.

This naturally gives rise to the impulse among some to regulate the incumbent networks that are already there. That is, there is a not unreasonable assumption that any attempts to foster competition will ultimately be unsuccessful, and that regulation of incumbents (in this case, the cable operators) is therefore required. The counter argument, that Title II regulation will only stifle investment even among incumbents, and will thereby make the problem worse, and will in

the process generate unwelcome unintended consequences, is equally well-intentioned, and, unfortunately, is equally well supported by the historical evidence. There are no easy answers. I would submit only that the net neutrality debate and the controversy surrounding Title II reclassification is really a stand-in for what is, in my view, simply a question of micro-economics rather than morality, and we would all be well served to engage these questions as questions of economics rather than morality plays about good and evil.

I will conclude here by adding a few additional observations about the cable industry. As everyone understands, the cable *video* business is facing unprecedented pressure. Cord cutting has been talked about for years but is finally starting to show up in a meaningful way in the numbers. And soaring programming costs are eating away at video profit margins.

From a cable operator's perspective, the video business and the broadband business are opposite sides of the same coin. It is, after all, all one infrastructure. Pressure on the video profit pool will therefore naturally trigger a pricing response in broadband, where cable operators will have greater pricing leverage.

This may sound nefarious, but it is not intended to be so. It is simply an observation that cable operators have historically benefitted from the fact that their infrastructure can support two separate businesses, and each can be delivered at lower cost than if that were not the case. The ACA has made this case eloquently in arguing that, absent reforms to restrain the runaway growth in programming costs, video will become unprofitable and broadband will be left to carry the entire burden of incremental deployment. All else being equal, that will mean that even new builds of broadband will become increasingly economically challenged and therefore will become less and less likely. Or – and I am quick to add this is my own editorial rather than the ACA's point – they will simply have to sharply raise broadband prices. As an analyst, I would simply observe that the pressures on the video business are relatively broad based, and are attributable to more than just programming cost inflation, and that this may therefore be an unavoidable scenario.

I will leave my remarks there. If my remarks sound excessively gloomy, they are not meant to. The U.S. broadband infrastructure is the envy of the world, notwithstanding politicized and cherry-picked statistics that would suggest otherwise. It is simply the case that broadband is an infrastructure that is very difficult to support *two* of, and in some case, even *one* of. And I would submit that a clear-eyed acknowledgement of the microeconomics of the broadband business deserves, or even demands, a seat at the policy table.

Thank you, Mr. Chairman and Subcommittee members, for your time and for the opportunity to testify today.