

**REMARKS OF FCC COMMISSIONER AJIT PAI
BEFORE THE INTERNET INNOVATION ALLIANCE:
“THE IP TRANSITION: GREAT EXPECTATIONS OR BLEAK HOUSE?”**

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In debates about economic policy, there has long been tension between those whose primary concern is redistribution and those whose priority is growth. Or, to put it another way, some focus on how to divide the pie that we already have while others are more interested in making the pie larger.

We are now witnessing a similar phenomenon in the field of communications policy. Internet regulation has been the talk of the town recently. You know the buzzwords: Title II, Section 706, net neutrality, open Internet, paid prioritization, two-sided market, slow lanes, commercially reasonable. I'm surprised that no one has created a Net Neutrality Mad Libs game yet. So before today's event, I asked one of my staffers to name a verb with apocalyptic overtones, a network management practice, and a provision of the Communications Act. That generated the following sentence: The FCC must eliminate usage-based pricing using Section 215(b) of the Communications Act or else the Internet as we know it will explode.

Not to put too fine a point on it, as Charles Dickens first said—but this whole debate is a distraction. Instead of repeating the seemingly never-ending arguments about how to manage (or, depending on your perspective, micromanage) the networks that we currently have, we should prioritize policies that will encourage the private sector to expand and upgrade high-speed broadband networks. And that means that we need to concentrate on expediting the Internet Protocol (IP) Transition.

When it comes to the status of the IP Transition, I'm reminded of *A Tale of Two Cities*: “It was the best of times, it was the worst of times.” In the private sector, the IP Transition is proceeding apace. Packet switching has usurped circuit switching. Carriers are pushing fiber further into their networks and upgrading from DSL to IP-based technologies like carrier-grade Ethernet. Mobile providers have almost nationwide 4G footprints, each vying to improve upon LTE's baseline for greater speed and resiliency. Cable operators are on DOCSIS version 3.1—a standard promising speeds of up to 10 Gbps.

And the usual suspects aren't the only ones investing. Small entrepreneurs have built wireless ISPs from the ground up, using otherwise fallow spectrum to reach consumers in rural America. Satellite companies have followed suit, offering 12 Mbps service to anyone with a clear view of the southern sky. Electric utilities are beginning to invest in fiber projects that span their footprints. And online companies are exploring new ways to get their content to consumers, reportedly even bouncing signals off high-altitude balloons.

In short, we're in the midst of a competitive explosion in the broadband marketplace with 1,712 broadband providers investing in the United States. That's approximately 1,710 more providers than there were 40 years ago when Ma Bell was a legal monopoly and ARPANET a government project.

The result is that high-speed Internet access is more universal than ever. In 2012, wireless broadband was available to 99.8 percent of Americans and fixed broadband available to 96 percent of Americans. Subscription rates are jumping as well. In the first half of 2013, Americans signed up for an additional 34 million broadband connections—bringing the total to 163 million, or about one and a half per household. And that's only for connections that meet the FCC's definition of broadband. If you include connections good enough for email, web browsing, or VoIP, the number soars to 276 million.

The fact that the marketplace is embracing the IP Transition means we're in the best of times. Unfortunately, I can't say the same about the public sector. The government seems to be stuck in neutral

when it comes to modernizing its regulatory framework to account for the IP Transition. And it's unclear whether its next step will be to drive forward or to put the IP Transition into reverse.

What's sidetracked us? Our efforts have been plagued by three critical mistakes. To continue the Dickens theme, the first involves the past, the second involves the present, and the third involves the future. All three mistakes are coming together in the Title II debate. But before getting to Title II, let me discuss each of these errors.

First, we are bogged down in brouhahas from the past. The FCC obviously has plenty to do when it comes to preparing for the all-IP future. So we don't have time to waste on yesterday's battles. But that's precisely what we're doing. Consider the FCC's review of the enterprise data services market, better known as the special access proceeding.

Almost two years ago, the Commission suspended its deregulatory special access rules, promising that it would reach "final conclusions on the need for overall reform of the special access marketplace . . . in 2013." Back then, I said that for this to be true, the Office of Management and Budget (OMB) would need to approve our special access data collection by March 2013. It's sixteen months later, and we are still waiting for that approval. I'm not surprised; as I said at the time, the proffered "timeframe [was] just not realistic."

Part of the problem, no doubt, is the breathtaking scope of the endeavor. The Commission sought comment on reregulating the special access market in every conceivable way. It put on the table such things as regulating prices on a location-by-location basis or even mandating different prices on different floors of the same building. To justify these types of intrusive regulations, it teed up a one-time, complex market analysis that would require "panel regressions." These regressions, in turn, would incorporate at least thirteen different factors. And to collect the data for this analysis, the Commission proposed a nationwide data collection—seeking information about every cell tower, office building, school, college campus, factory, farm, and other enterprise facility in the country.

The numbers prove how daunting this task will be. According to OMB, this one-time data collection will require 6,400 responses, with respondents estimated to take 134 hours per response. That's 934,400 burden-hours in total, which translates into tens of millions of dollars in administrative costs—again, for a one-time data collection. And that's after the Wireline Competition Bureau purported to streamline the collection last year! It all reminds me of Dickens' aphorism that "The one great principle of the English law is to make business for itself."

Assuming that a data collection is eventually approved by OMB, how much time will Commission staff spend analyzing it? How much time will it take to formulate a proposed framework for reregulating the special access market? I can't quantify it, but I do feel confident in two answers: a lot and too much.

We should step back and ask what the point of all this is. After all, the most purchased and popular special access circuit is the T1 line, which offers subscribers just 1.5 Mbps. In other words, we have spent countless hours debating whether to suspend our rules, what data to collect, how to analyze that data, and whether we should reregulate the market . . . all for a product that does not even meet the FCC's definition of broadband. It took us six months to agree to set aside \$75 million to see whether providers will offer 25 Mbps service in rural America—and we're still mulling a data collection that will cost industry almost as much in order to study services 16 times slower.

The special access proceeding teaches us that we can't become mired in the disputes of the past. If we want to facilitate broadband deployment and competition, then we should focus on facilitating broadband deployment and competition. Collecting every last bit of data on last-generation services for the purpose of reregulating that market—that shouldn't even be on the agenda.

Second, we are failing to seize the present. When it comes to embracing the IP Transition, we can't keep putting off until the unspecified future the things we can and should do today, starting with modernizing our rules.

The Code of Federal Regulations remains replete with legacy regulations. Many of them are as tedious as they are pointless in the competitive, digital age. For instance, Part 61 contains 39 pages of tariffing rules. Those rules specify how carriers must calculate tariffs using CCLs, EUCLs, APIs, and CMTs. They outline how those calculations might differ for interLATA or intraLATA services. They even dictate the placement of a tariff's effective date in the lower right-hand corner of each page, as well as other minutiae. Now, way back in 1842, Dickens in real life wrote, "I am quite serious when I say that I do not believe there are, on the whole earth besides, so many intensified bores as in these United States." Can you imagine what he'd say if he had read Part 61?

We have the tools at our disposal to uproot these outdated regulations. But for some reason, we haven't been willing to use them. It reminds me of President Lincoln's famous comment on General McClellan during the Civil War: "If McClellan does not want to use the Army, I would like to borrow it for a time."

Consider the FCC's reluctance to exercise its forbearance authority under section 10 of the Communications Act. This statutory innovation gave the FCC much-needed flexibility to modernize its rules. But the FCC has been stingy about using it. And in recent years, it has actually made it *harder*, not easier, to grant forbearance from economic regulations.

In the *Qwest-Phoenix Order*, for instance, the Commission essentially presumed that all existing regulations are necessary and in the public interest, and it imposed high evidentiary hurdles on any party seeking relief. Perhaps unsurprisingly, the Commission denied Qwest relief despite that fact that Qwest faced direct competition from cable operators and over-the-top VoIP providers, along with wireless substitution. The *Qwest* decision rejects that wise Dickensian dictum: "No one is useless in this world who lightens the burden of it to anyone else." I have no doubt that Charles Dickens had in mind a forward-thinking view of forbearance.

Unfortunately, it appears that the FCC is not going to make itself useful in this regard anytime soon. Earlier this year, CenturyLink petitioned for forbearance from dominant carrier regulation and tariffing for its enterprise broadband services. This is the same relief that the FCC granted Qwest (now a CenturyLink subsidiary) just a few years ago.

The logic of the CenturyLink petition is straightforward: Neither Verizon nor AT&T nor Comcast nor Time Warner Cable nor Google nor Level 3 nor XO nor even CenturyLink within its Qwest territories has to comply with these legacy regulations, so why should CenturyLink be treated any differently in its non-Qwest territories? To ask the question should be to answer it.

Nevertheless, the FCC is gearing up for a data request so that it can graft a *Qwest-Phoenix* market analysis onto CenturyLink's petition. When you hear folks complain that the enterprise broadband market isn't robust enough, point them to this proceeding, which makes it harder for CenturyLink and others to compete.

There are also other areas critical to the IP Transition that are starving for attention but, like *Oliver Twist*, may be left begging "Please, FCC, I want some more."

One of them is numbering. Numbering may be arcane, but it's important. Our telephone numbering system needs to end its dependence on the public-switched telephone network (PSTN). Last year, we commenced a rulemaking to do just that. We proposed to review our cost allocation rules for numbering. We proposed to revise our numbering databases so that they would be ready for the all-IP future. And most importantly, we proposed to end our decades-old prohibition on VoIP providers getting direct access to numbers.

We even beta-tested the direct assignment of numbers to VoIP providers to see if any technical issues would arise. None did. Five VoIP providers participated in the six-month trial, and the Wireline Competition Bureau reported an unambiguous verdict: “[I]t is technically feasible for interconnected VoIP providers to obtain telephone numbers directly from the numbering administrators.” In other words, the tests could “not identify technical problems” to solve.

That means we’re ready to complete this rulemaking. But have we? Not yet. Will we? It’s TBD.

Another critical priority should be to make consumers aware that the IP Transition means better services. High-quality voice is a good example. Few people realize that the old PSTN is hardwired to capture and transmit only a fraction of the frequencies used by the human voice. HD Voice captures a much broader range of frequencies and incorporates new technologies like noise-cancelling dual microphones so that callers can have a conversation even when they are standing beside a freeway. I tried it out for myself at the FCC, courtesy of my friend Daniel Berninger, and I’m telling you, the difference was remarkable. Plenty of others will, too: Every improvement in voice quality will make it easier for hard-of-hearing Americans to converse without using a relay service, for example.

Now, some VoIP providers and wireless companies have begun rolling out HD Voice already, but the FCC seems to be slow to recognize this progress. We can remedy that delay by issuing a Notice of Inquiry on how to facilitate the nationwide transition to HD Voice. That’s important for all consumers—God bless us, every one.

Speaking of *A Christmas Carol*, *third*, we are becoming crippled by fear of the future. Embracing creative destruction means that something must be abandoned—and that something is the PSTN. Over 7 million households, or about one seventh of households that still had a copper landline, dropped it over the last year. Almost 40 percent of U.S. households have dropped landlines entirely, and only about a third are still on the PSTN.

This *should* be celebrated. For years, we have known that fiber is the fastest, most reliable way to transport data over long distances. What makes up the Internet backbone? Fiber. When companies invest millions to trench an undersea cable linking the continents, what do they use? Fiber. What’s the best way to improve a customer’s broadband Internet experience? Dig up the copper and deploy fiber to the node, to the curb, or to the home.

And yet, the loss of copper is causing consternation for some. Indeed, the fading copper field—see what I did there?—is bemoaned in much the same way as some film aficionados still lament the advent of color.

Alarmingly, there’s a pending proceeding at the FCC that could require the maintenance of copper networks in perpetuity, or at least so long as a tiny subset of customers wants to use them at subsidized rates. And I’ve read about state commissions examining their copper retirement policies on the notion that replacing copper with fiber somehow harms the consumer.

Here’s the simple truth: Fiber is better than copper. Twisted copper pairs are fragile. They corrode. They fail in adverse weather. They transmit information electrically, which increases their energy demands, limits the length of copper loops, and reduces the maximum speed of transmission.

Fiber, by contrast, is resilient. I’ve seen numbers that suggest fiber networks fail at only one-eighth the rate of copper networks. And fiber transmits data at the speed of light with reliability unheard of in the copper world. The mayor of Hummelstown, Pennsylvania—a 4,300-strong hamlet near Harrisburg which will soon become the state’s first “all-fiber” town—knows all this. As he put it, “This new technological advancement helps Hummelstown position itself better for the future.”

The FCC knows all this, too. In fact, it’s known it for more than a decade. That’s why our rules aim to spur the deployment of fiber.

But here's the thing. Running two networks is expensive. You cannot induce carriers to maximize fiber deployment if they have to maintain copper. And so the FCC's copper retirement rules are a necessary component of our fiber-deployment strategy.

Under those rules, carriers need not maintain their copper networks once they've been replaced with fiber and once the carrier has notified customers about the reconfigured networks. It's this regulatory certainty—the knowledge that investing in fiber means no more maintenance costs for aging copper infrastructure—that has spurred fiber deployment throughout the United States.

Any signal that we will backtrack on our copper retirement rules will harm broadband investment. We can't let fear of the future deter investment in the networks of the future. For if we do, we risk becoming the Circumlocution Office. Not familiar with this Dickensian bureaucracy? With your indulgence, and from *Little Dorrit*:

The Circumlocution Office was . . . the most important Department under Government. No public business of any kind could possibly be done at any time without the acquiescence of the Circumlocution Office. . . . It was equally impossible to do the plainest right and to undo the plainest wrong without the express authority of the Circumlocution Office. . . . Whatever was required to be done, the Circumlocution Office [worked] beforehand with all the public departments in the art of perceiving—HOW NOT TO DO IT.

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So, moving back to Title II, how does the ongoing debate about Title II regulation exemplify each of the mistakes that I've outlined above?

First, we are getting bogged down in a debate of the past. Indeed, it is a debate that harkens back to nineteenth-century railroad regulation. This debate is no fresher now than it was when the Supreme Court decided *Interstate Commerce Commission v. Baltimore & Ohio Railroad Co.*, 145 U.S. 263 (1892). The only difference is that we now know, or should, how common-carriage regulation can take us off track.

Second, we are failing to seize the present. Countless staff hours, meetings, and phone calls are being devoted to net neutrality. That's effort that isn't being devoted toward modernizing many of our rules to expedite the IP Transition.

And third, we are becoming crippled by fear of the future. In particular, the Title II discussion is being driven by a parade of horrors that is entirely hypothetical. But, as Dickens put it in *Great Expectations*, "Take nothing on its looks; take everything on evidence. There's no better rule." And the evidence in the Internet marketplace does not justify dramatic regulatory change solely for the purpose of assuaging fears that have not materialized.

The irony is we already know that the public-utility model, so beloved by Title II proponents, would deter innovation and drain private investment in broadband. The European experience is our benchmark. Europe chose to regulate broadband operators like public utilities; we did not. Today, only 54 percent of Europeans have access to 25 Mbps broadband speeds and per-household broadband investment is \$244. In America, those numbers are 82 percent and \$562, respectively. The European Commission itself has recognized that "Europe is losing the global race to build fast fixed broadband connections." But if we embrace Title II, our future would look a lot like Europe's present.

In sum, it is as true in the digital age as it was in Dickens' time that we should "reflect upon [our] present blessings—of which every man has many—not on [our] past misfortunes, of which all men have some." The U.S. broadband market is a success story worth celebrating. And that success was enabled by light-touch regulation. Where there are concrete "misfortunes," we can take targeted action. But

otherwise, we should recognize net neutrality and the Title II debate for what it is—a great distraction. And we should seize the moment to embrace the IP Transition and our all-IP future.