Remarks of FCC Commissioner Ajit Pai

"Unlocking Investment and Innovation in the Digital Age:
The Path to a 21st-Century FCC"

Carnegie Mellon University
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Audrey, thank you for that kind introduction. I also want to thank the Pittsburgh Technology Council for organizing today's event and Carnegie Mellon University for providing us with this great venue.

When I announced that I was coming to Pittsburgh to give my first major speech as an FCC Commissioner, many people asked me the same question: Why Pittsburgh? Well, the answer is quite simple; as part of my new diet, I wanted an excuse to try one of those famous Primanti Brothers sandwiches stuffed with French fries.

In all seriousness, though, Pittsburgh is the ideal setting for talking about unlocking investment and innovation in the digital age. Your city has been at the forefront of innovation in the communications sector. The nation's first commercial radio broadcast was made from a shed on top of the K Building at Westinghouse's East Pittsburgh Plant in Turtle Creek when KDKA aired live returns from the 1920 presidential election between Warren Harding and James Cox.

Our host today, Carnegie Mellon, has played a critical role in technological innovation. It was here in 1993 that the world's first wireless Internet network was constructed. That network, named "Wireless Andrew" after Andrew Carnegie and Andrew Mellon, was the forerunner of the Wi-Fi networks that we now all take for granted. The effort to build "Wireless Andrew" was led by Professor Alex Hills, who still teaches at Carnegie Mellon. All of us with mobile devices owe Professor Hills a debt of gratitude.

I also wanted to come to Pittsburgh for another reason: Just as the city sits at the junction of three rivers, it also stands at the crossroads of the old economy and the new economy. When many Americans think of Pittsburgh, the first thing that comes to mind is steel, both for the mills that used to dot the Western Pennsylvania landscape and for the name of the football team that represents the city so well. But as you know, most of those steel mills are now shuttered, and employment in the Pittsburgh-area steel industry has declined by at least ninety percent from its peak. The loss of those manufacturing jobs hit this region hard. Between 1960 and 2010, a time when the population of the United States grew by over seventy percent, the Pittsburgh metropolitan area lost approximately fifteen percent of its people. So many back in the 1970s and 1980s thought of Pittsburgh as a Rust Belt city whose best days were behind it.

What too many of them have yet to recognize, however, is that decline is not the last chapter of this city's story. Rather, Pittsburghers have rolled up their sleeves and gone to work, scrubbing away the rust and building up 21st century industries. Take, for example, the rise of Pittsburgh's high-tech economy. According to figures compiled by the Pittsburgh Technology Council, at the end of 2010, there were over nine thousand technology firms located in the

Pittsburgh metropolitan area. These companies employ more than 25 percent of the region's private-sector workforce and account for an even higher percentage of its private-sector wages. It should come as no surprise that Pittsburgh has been named one of America's Top Ten Tech Towns by Wired Magazine and one of America's Top Up-and-Coming Tech Cities by Forbes.

Key to Pittsburgh's ascent in the technology space has been its world-class educational institutions, such as Carnegie Mellon and the University of Pittsburgh. I recently spoke with the representative of a well-known international technology firm about why the company had decided to open an office in Pittsburgh. It was simple, she said: "We go where the talent is." And since Pittsburgh is home to some of the finest engineers in the world, it is natural that high-tech companies are coming here. Later today, I will be heading to Monroeville to visit one of these companies: Compunetix. Started locally in 1968, Compunetix today has a global reach. Employing more than 320 people in the Pittsburgh area and more than 650 people around the world, Compunetix is an industry leader in video conferencing, audio conferencing, and data collaboration.

In many ways, the story of Pittsburgh is a microcosm of the history of the United States. Over time, in a free-market economy, some established industries will fade and new ones will rise to take their place. The automobile crippled the buggy-whip business; the light bulb meant "lights out" for candle makers. Those transitions are tough on the incumbent industries, as this city well knows, but—again—we can see in Pittsburgh that there are more chapters to be written. As Ronald Reagan put it, "America remains a voyage of discovery, a land that has never become but is always in the act of becoming."

That sense of ever-renewing opportunity drew my parents to the United States from India more than forty years ago with just ten dollars and an old radio to their names. And perhaps because I still draw inspiration from their example, I remain fundamentally optimistic about the future of our country.

That having been said, something feels different in America today. Millions of jobs have disappeared in a host of industries, some fear permanently. And Americans are increasingly worried about where economic growth and job creation will come from. You can see the pessimism in the polls. In April, CBS and *The New York Times* asked Americans what lies in store for the next generation. The results were sobering. Almost half, 47 percent, of Americans believed that the next generation would be worse off than we are today, while less than one-quarter embraced the traditional American view that the next generation would be better off. I worry that many people are losing faith in a fundamental tenet of the American Dream: that our children will have a better life than we did.

One beacon of economic hope *should* be the information and communications technology (or ICT) sector. Unfortunately, recent numbers paint a dreary picture. According to figures released by the Labor Department less than two weeks ago, there are now fewer jobs in the information sector of our economy than at any point since November 1989. Just think about that: Despite the ubiquity of personal computers, the advent of the Internet, and the rise of smartphones, we now have fewer Americans working in the information space than we did more than two decades ago, when Bubby Brister was quarterbacking the Steelers. Over the last three-and-a-half years alone, 165,000 telecommunications jobs in the United States have disappeared—that's more than 15 percent. And since the government started keeping statistics

on the manufacturing of communications equipment, employment in that area has fallen by more than 42 percent.

This state of affairs is unacceptable. The ICT sector of our economy should not be shedding jobs at this rate—instead, it should be leading the way when it comes to job creation and economic growth. It may be clichéd to say that we are living in the information age, but it is in fact true. And given the ICT sector's potential, the FCC's top priority should be to reverse these trends.

In order to solve our growth problem, we must first identify its causes. So during my first two months in office, I have spent much of my time trying to do just that. I've met with those in the private sector who decide whether to make investments and to create jobs and have asked what's holding them back. The principal answer that I have received has been remarkably consistent, and it can be summed up in two words: "regulatory uncertainty."

Some of the factors that contribute to this uncertainty fall outside of the FCC's jurisdiction, such as taxes, health care, and financial regulation. But concerns are expressed regarding the FCC in two general ways. The first involves inaction, or delayed action, by the Commission. At first blush, it may seem odd for those in the private sector to be complaining that its regulator is moving too slowly. Entrepreneurs are usually happy to be left alone, free to innovate without government intervention.

But the communications industry often doesn't fit that stereotype given the FCC's pervasive role. If a company wants to market a new mobile device, it needs the FCC's approval. If a company wants to purchase another firm's spectrum licenses, it needs the FCC's approval. If a company wants to provide a new wireless service, it needs the FCC's approval. And if a company finds that there isn't any spectrum available and proposes the reallocation of inefficiently used spectrum, it needs the FCC's approval.

Given these responsibilities, the FCC must act with the same alacrity as the industry we oversee. That's not to say we should rush to regulate, but delays at the Commission have substantial real-world consequences: new technologies remain on the shelves; capital lies fallow; and entrepreneurs stop hiring or, even worse, reduce their workforce as they wait for regulatory uncertainty to work itself out. The FCC has long had a reputation in Washington as an agency that moves too slowly, and our current Chairman, Julius Genachowski, and the hardworking staff at the Commission have made improvements on this front by reducing the agency's backlog. But we need to do much more to fix the problem. As the pace of change in the industry accelerates, the costs and lost opportunities associated with delays at the FCC grow over time.

The second concern I have heard is about uncertainty over where the Commission is headed on the big issues. Some of that uncertainty stems from the anachronistic laws we are required to apply. Today, the FCC operates under a Communications Act that was last substantially revised in 1996—an Act that divides the communications marketplace into silos of technologies and services. But convergence and competition have rendered this approach hopelessly outdated. Cable operators offer phone and Internet services. Telecommunications carriers promote video service. Voice over Internet Protocol (or VoIP) providers sell voice service and video teleconferencing. Companies like Netflix use the Internet to deliver video service. And wireless providers, once known for selling phones the size of a brick, give consumers new, multifunctional ways to connect on the go.

Underlying this convergence has been a revolution in technologies. Analog signals have gone digital; coaxial cablecasting has given way to IP video; copper wires are now fiber; and first-generation cellular has been replaced with ultra-fast LTE. We are fast transitioning to an all-IP world.

Or we *should* be.

But the text of the Communications Act doesn't provide clear guidance on how IP-based services should be regulated, if at all, and the FCC has been unwilling to supply a definitive answer. Firms facing major investment decisions want to know how they are going to be regulated. If they don't get an answer, they will be reluctant to make long-term financial commitments.

I know that it has become fashionable in some quarters to dismiss "regulatory uncertainty" as a phantom, an excuse cooked up by corporate America for keeping cash on its balance sheets. But I am convinced that the problem is real – not only because industry leaders have emphasized it privately, but because it makes sense. After all, just think about how uncertainty affects you in your life. If you were looking for land on which to build a new house, for example, would you purchase a plot if the zoning board refused to tell you whether you could build the house? Probably not. As someone put it to me recently, "Regulatory uncertainty is business uncertainty." And when businesses are uncertain, they, like you or I, are hesitant to invest. It's therefore no surprise that billions of dollars of capital are staying on the sidelines in the communications industry.

The FCC's reluctance to tackle many of the big-ticket issues facing us is understandable. Making a decision will inevitably please one set of people and leave another group very unhappy. But we are put in office to make the tough decisions, and we must not shirk that responsibility. We must carefully study the issues, call them as we see them, and then move on to the next challenge.

Now, as is often the case in life, identifying problems is easier than coming up with solutions. And after two months in office, I'm not going to pretend that I have all of the answers. In fact, on the day that I leave the Commission, I am confident that I still won't have all of the answers (and that my wife will not hesitate to remind me of that fact). But I did want to share with you today three principles that I think should guide the FCC as we try to promote innovation, investment, and job creation in the months and years to come. And I want to offer some specific proposals for putting these principles into action.

The first principle is simple: **The FCC should be as nimble as the industry we oversee.** As the pace of private sector innovation accelerates, it is imperative that the FCC become more agile. Bureaucratic inertia should not be a barrier to the deployment of new services or capital investment. Rather, the Commission should facilitate economic growth and job creation by making decisions in a timely manner. As one Member of Congress put it to me last month, what we need from the FCC is speed.

Acting with dispatch should be a top priority at the agency, and to ensure that it is, I am proposing today that the Commission create an Office of Entrepreneurial Innovation (or OEI for short). OEI would have as its principal mission the promotion of innovation, including enforcement of Section 7 of the Communications Act. Now, you might be wondering: What is

Section 7 of the Communications Act? You're not alone; many communications lawyers don't know what it is.

Let me quote the important part of Section 7, the neglected stepchild of communications law: "The Commission shall determine whether any new technology or service proposed in a petition or application is in the public interest within one year after such petition or application is filed."

Looking at that provision, the message from Congress is clear: The Commission should make the deployment of new technologies and new services a priority, resolving any concerns about them within a year. Therefore, when a proposal is filed, OEI should decide within 60 days whether it qualifies for Section 7 treatment. If so, it should be placed on OEI's one-year "rocket docket." Additionally, OEI should assess agency proposals to ensure that new regulations don't slow down innovation. To be sure, these are ambitious objectives. But I think that it is past time for the Commission to tackle them head on.

Some might ask: Why do you need to create a new office to do that? Well, existing Bureaus and Offices at the FCC have many responsibilities, and handling petitions for new technologies or services is but one task among many. But if we create an Office of Entrepreneurial Innovation, shepherding proposals for new technologies or services through the FCC will become an institutional priority and send the right signals to the marketplace. Entrepreneurs need an advocate at the FCC—one that will hold us accountable if we delay, rather than decide. And if OEI succeeds in its mission, we will see faster innovation, greater investment, and more job creation.

We can accomplish this goal by transforming an existing office—the Office of Strategic Planning and Policy Analysis, which does not have a specific portfolio—into an office dedicated to innovation, coupling its existing resources with expert staff from the Wireless Telecommunications Bureau and the Office of Engineering and Technology.

Aside from Section 7's one-year time limit, we need to start taking our other statutory and internal deadlines more seriously. When Congress tells us to produce an annual report on a segment of the industry, we should do it each year, on time. When a court withholds judgment so that we have the first crack at an issue, we should respond promptly. And when we tell the industry that we'll review major transactions within 180 days, we should follow through. In fact, we should rededicate ourselves to making the transaction "shot clock" stick. Codifying it in our rules would be a start.

Additional transparency—and the accompanying scrutiny by Congress, the press, and the public—may be just the motivation we need to keep items moving. For example, if you dig for it, you can find how long it's taken the Commission to resolve specific transactions. But we should consolidate on a single page our performance in meeting the 180-day shot clock for reviewing transactions so that it's easy for watchdogs to figure out how we're doing. And this works for other deadlines as well: on a single webpage, just list the petition, its filing date, its status, and the relevant deadline. Shining a little more light on our proceedings would certainly give me an incentive to keep the process moving, and I bet it would help keep the rest of the Commission on time as well.

Taking existing deadlines seriously, however, just isn't enough. We must also establish them where none yet exist. For example, we should establish a nine-month deadline to act on

petitions for reconsideration and applications for review—basically, requests that the full Commission take a second look at an earlier decision. We should implement a suggestion from my friend Andy Schwartzman to use something like the Supreme Court's *cert*. process to speed our disposal of applications for review. And we should set a six-month deadline for acting on requests for a waiver of the Commission's rules. All of these improvements will send better signals to industry and the public in general as to what to expect and when to expect it.

This leads me to the second principle that should guide the Commission's efforts to promote economic growth and job creation: **The FCC should prioritize the removal of regulatory barriers to infrastructure investment.**

We need a modern communications infrastructure. The copper-wire networks of the past must become the fiber networks of the future; the 2G voice networks of yesteryear must evolve into 4G data networks. We need modern infrastructure to compete in the global economy. And we need it to create American jobs. Studies estimate that every $1 billion the private sector spends on fiber deployment will create between 15,000 and 20,000 new jobs. Many of these jobs are in construction, a field hard hit during the recession. And keep this in mind: Jobs building networks and laying fiber in the United States will be done by Americans. And those jobs will offer good wages and benefits.

Since taking office, I have heard many complaints that the FCC is currently standing in the way of infrastructure investment. As I mentioned earlier, capital expenditure is lagging because of uncertainty—in this case, uncertainty over how the Commission intends to regulate IP networks. And to unlock this investment, I believe that the Commission must clearly signal that IP networks will not be subject to a 20th century model of economic regulation.

That model, based on a monopolist providing voice services over copper-wire networks, is obsolete. Today, customers can obtain voice service from traditional incumbent carriers, competitive carriers, cable operators, or VoIP providers, not to mention from one of our numerous facilities-based wireless providers. And we are quickly headed to a future where voice is only a digital application riding on a broadband network. I applaud the Chairman and my fellow Commissioners for recognizing this fundamental technological and marketplace shift last year and responding appropriately by overhauling the Universal Service Fund and modernizing it to focus on broadband. In other areas, however, the Commission has been tardy in establishing a framework for the all-IP world.

It is time for the Commission to establish an IP Transition Task Force. This Task Force would develop a holistic set of recommendations for expediting the transition to an all-IP world and modernizing the Commission's regulations to account for this dramatic competitive revolution in the industry. Given the pace of change, the Commission should give the Task Force a strict deadline and follow up promptly: it should have nine months to develop recommendations, and the Commission should act on those recommendations within nine months of their release.

Although I would not want to prejudge the work of the Task Force, there are a few guidelines that I think should shape their deliberations. First, we must ensure that vital consumer protections remain in place. For instance, when consumers dial 911, they need to reach emergency personnel; it shouldn't matter whether they are using the public-switched telephone network (or PSTN), a VoIP application, or a wireless phone. Second, we must not import the broken, burdensome economic regulations of the PSTN into an all-IP world. No tariffs. No

arcane cost studies. And no hidden subsidies that distort competition to benefit companies, not consumers. But promises are not enough: I expect that the Task Force would recommend the repeal of old-world regulations that no longer make sense in a competitive all-IP world. While they remain on the books, wholesale expansion to IP may just be too tempting. Third, we must retain the ability to combat discrete market failures and protect consumers from anticompetitive harm. Fourth and finally, we must respect the statute Congress gave us and not overstep our authority.

One unnecessary barrier to infrastructure investment that we don't need a Task Force to identify for us can be found in the FCC's implementation of Section 652 of the Communications Act. That section generally bars certain transactions between cable operators and local exchange carriers (or LECs). I support using the Commission's forbearance authority to make clear that Section 652's requirements do not apply to transactions between cable operators and competitive LECs, or CLECs, who almost by definition do not exercise market power. Mergers between cable operators and CLECs are likely to increase, not decrease, competition, particularly in the enterprise market, as well as advance the deployment of infrastructure in downtown areas.

Finally, we must recognize that communications infrastructure requires not a one- or two-year investment, but a ten- or twenty-year commitment. As such, a constant stream of reforms every year or two is unlikely to give investors much certainty. Instead, the Commission needs a long-term strategy and must sometimes be patient before demanding more from the industry. Indeed, Congress recognized that smart infrastructure investment takes time when it instructed the Commission to make universal service support "predictable." Now we can argue over the proper size of the Universal Service Fund, but all of us should be able to agree that given its size, it should be distributed consistent with the law and common sense. For price-cap carriers and wireless providers, this means moving past the one-off distributions of funds in Phase I and moving onto the long-term support envisioned by Phase II of the Connect America Fund. For rate-of-return providers, this means rethinking the decision to limit investments and operating expenses using an analysis that changes each year. And for all providers, it means settling the nine-year-old contributions reform question so that companies can stop spending on lobbyists and start investing in next-generation networks.

Turning to the wireless world, the third principle that should guide our efforts to promote innovation, investment, and job creation is this: **The FCC should accelerate its efforts to allocate additional spectrum for mobile broadband.**

Much has been said and written recently about our impending spectrum shortage. In my college chemistry class, I learned the concept of a "rate-limiting step," which is the stage in a chemical reaction that determines the rate at which the entire reaction will come to completion. For the communications industry, putting more spectrum in commercial hands is the rate-limiting step. Whatever products are developed and whatever services are conceived, they will be useless if the wireless pathways are clogged, inefficiently used, or off-limits altogether. Simply put, with Americans' use of mobile devices skyrocketing, we need to free up substantially more spectrum for wireless broadband service.

Allocating additional spectrum for mobile broadband is important for another reason: It will facilitate private-sector investment and job creation. According to a recent study by Deloitte, a more rapid rollout of 4G wireless technology in the United States could produce as much as $28 billion in additional capital investment and create up to 400,000 more American

jobs by 2016. To meet these projections, however, we urgently need to take action to make available additional spectrum. As Deloitte put it, "Insufficient spectrum could cause the United States to go from leader to laggard in the global competition to claim the benefits of 4G technology."

The good news is that the FCC recognizes this problem. The Chairman's National Broadband Plan, which was released in March 2010, set two goals: first, to make available 300 MHz of additional spectrum for wireless broadband use within five years; and second, to free up 500 MHz of new spectrum for wireless broadband use within the next ten years. I strongly support these objectives. Unfortunately, it has been more than two years since the release of the National Broadband Plan, and we have fallen behind schedule in meeting these goals.

Here are the facts. Since the release of the National Broadband Plan, we have made available *no* new spectrum that can be used effectively for wireless broadband. The timeline set forth in the National Broadband Plan called for holding at least two major auctions of some of the spectrum it identified by 2011. We haven't done this. Indeed, the last major auction that we conducted for wireless broadband spectrum took place back in 2008. The timeline also called for the FCC to issue orders in 2010 and 2011 making available 90 MHz of spectrum currently used by satellite providers for terrestrial wireless broadband. But it is now 2012, and none of that spectrum can be used in that manner.

If we stay on our present course, we cannot meet the targets of the National Broadband Plan. In order to meet the first benchmark, we need to free up 300 MHz of spectrum for wireless broadband in the next 32 months. If we are to have any chance of meeting this goal, we will have to act quickly. To paraphrase the noted telecommunications policy expert Elvis Presley, we need a little less conversation, a little more action.

When it comes to spectrum policy, I believe in an "all of the above" approach. Does the FCC need to make available more spectrum bands for wireless broadband? Yes. Do we need to reform the federal government's management of its spectrum so that more can be made available for private-sector use? Yes. Does the FCC need to expedite its review of secondary market transactions? Yes. Is there a place for geographic spectrum sharing? Yes. Is there a place for unlicensed use? Yes. Do we need to do more to promote the efficient use of spectrum? The answer, again, is yes.

In the coming months, I will be setting forth a comprehensive strategy for meeting our nation's spectrum needs. Today, I want to offer three specific ideas that we could implement in the short-term to put us on the right path for meeting the targets established in the National Broadband Plan. First, by the end of September, the Commission should adopt service, technical, and licensing rules so that 40 MHz of AWS-4 spectrum can be used for terrestrial mobile broadband. According to one estimate, deploying this spectrum would create 28,000 jobs. Second, by the end of August, we should take action on pending petitions for reconsideration so that 4G LTE technology can be deployed in the so-called WCS, or Wireless Communications Services, band. Third, the Commission should kick-off the rulemaking process for implementing incentive auctions this fall and set a deadline to conduct those auctions no later than June 30, 2014. In all, these three actions alone could get us more than halfway to the 300 MHz goal envisioned in the National Broadband Plan.

Taken together, I believe that the principles and proposals that I have discussed today constitute a common-sense jobs and growth agenda for the ICT sector. Moreover, while

Washington often gets bogged down these days in partisan gridlock, this agenda fits squarely in a proud bipartisan tradition. It was Chairman Bill Kennard during the Clinton Administration who first applied a light regulatory touch to broadband, thus paving the way for tens of billions of dollars of private-sector infrastructure investment. During the Bush Administration, Chairman Michael Powell built upon Chairman Kennard's work and established a deregulatory framework for cable Internet service. Chairman Kevin Martin, in turn, built upon Chairman Powell's policies by creating a deregulatory framework for DSL service and spurring the deployment of fiber through reform of the video-franchising process. And Chairman Genachowski has been an eloquent advocate of the need to address our looming spectrum shortage.

Finally, the agenda that I have described today is a work in progress. This speech should be the beginning of a conversation, not the end of one. If you have thoughts on how the FCC can help accelerate economic growth and job creation, tell me. If you have a new idea for how the FCC can become more nimble, promote investment, or allocate additional spectrum for mobile broadband, let me know. Please do not hesitate to contact my office. We have an open-door policy, and we encourage you to take advantage of it. You can even reach out to me on Twitter; my handle is @ajitpaifcc. It doesn't matter whether you represent a Fortune 500 company, a start-up with three employees, a public interest group, or just yourself. A good idea is a good idea, and I want to hear as many of them as possible.

Although our nation has been going through tough times these last few years, I am confident that our economy will rebound strongly, and that the ICT sector can help lead the way. We see a glimpse of that future here in Pittsburgh. And if we pursue the right policies in Washington, DC, we can remove barriers to investment and innovation and unleash a wave of economic growth and job creation all across the country. Working together, I know we can make it happen. Thank you very much.