

**Remarks of  
Michael K. Powell  
Chairman  
Federal Communications Commission  
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Broadband is on the tip of everyone's tongue. It has certainly become the central communications policy objective in America. It is, at once, trumpeted as the elixir for everlasting life and the cure to all our ills. Though our euphoria for broadband may, at times, be quite over-inflated, I share the view that deployment will have very positive benefits for the Nation and the world.

I must say, however, I continue to find the broadband discussion and debate hazy and muddled. I have attended many conferences on the subject and often the central conclusion is nothing more than broadband is really great stuff and we all want it. What I think is lurking in many of these forums, is what role government should play in quenching our thirst. I believe to address that question we need to dig deeper than endorsing the

benefits of faster deployment and reciting the challenges. I believe we need to have a more focused discussion on a very key set of questions:

## **1. What is broadband?**

Oddly enough a clear, uniformly accepted definition evades us. It is accepted that whatever broadband is, it is fast (the Commission has defined it as 200kbs). We have very forceful debates about how fast is fast enough. I submit, however, that broadband is not a speed. It is a medium that offers a wide potential set of applications and uses. With the telephone, we knew what the “killer app” was. It was voice. The “broad” in broadband should be recognized as meaning more than the “fat, fast pipe.” It should represent the nearly infinite possible uses and applications that might be developed and that a consumer might use. I think broadband should be viewed holistically as a technical capability that can be matched to consumers’ broad communication, entertainment, information, and commercial desires.

I start by trying to come together on what are the indispensable components of broadband functionality. It is, to my mind, (1) a digital architecture, (2) capable of carrying IP or other multi-layered protocols, (3) that has an “always on” functionality, and (4) that is capable of scaling to

greater capacity and functionality as uses evolve and bandwidth hungry applications emerge.

I also believe that we should conceptualize broadband capability as a function that can ride on many different electronic platforms. Broadband is not a copper wire. It is not a coaxial cable. It is not a wireless channel. It is all of these things. The capability can ride on many platforms (and should) in order to tailor solutions to consumer patterns and interests.

## **2. How should we measure broadband deployment progress and success?**

As I have said, we all want some broadband. There also is some angst that it is not here, or that it is not coming fast enough. There is a feeling of disappointment and anxiety. Yet, before we argue for particular actions, especially government actions, we should have some common understanding of what to measure.

I believe that the key measure is *availability* of the service, not adoption rates. I emphasize availability, because there are many questions that remain as to what services consumers will value, and to what degree

they will be willing to subscribe. I am hesitant to let adoption rates drive government responses, for a developing market needs the cues provided by consumer free choice.

By some measures, we have fairly wide deployment of broadband service. According to J.P. Morgan, 73% of households have cable modem service available, and 45% of households have access to DSL. Combined, broadband availability is estimated to be this year almost 85%. The intriguing statistic is that though this many households have availability, only 12% of these households have chosen to subscribe.

There are many possible reasons for this demand gap. Consumers may not yet value the services at the prices they are being offered. That is, the prices may be too high, in the minds of consumers, for the value they get. This highlights the classic chicken and egg dilemma. Broadband applications that consumers value are not yet offered to justify broadband service, yet the lack of broadband subscribers inhibits subscription—similar problems exists in many network industries.

The content-egg/distribution-chicken is a common, and major obstacle in industries that have complimentary network effects. The CD player would not be successful without available CDs to play. Game consoles like PlayStation struggle with the same problem, and digital television is facing this challenge as well.

Broadband hungry applications are still trying to make their debut. It is important to observe that much of the broadband-intensive content that is likely to be the core of broadband applications (like movies and music) is in the hands of major copyright holders that are unlikely to make it widely available without stringent protections and a way to profit from its distribution (see, for example, the Napster experience). This will take some hard work and time.

There are many things, other than availability, that can and should be measured. Demand may not be the right measure to justify government intervention, but it tells us a great deal about how central this innovation is to our lives and how highly consumers value it. It is important to identify patterns of deployment to see if market failures are barring deployment in certain areas of our Nation. Policymakers that are concerned about

education, telemedicine, public health and safety, and other important areas may wish to focus on demographic differences as well.

**3. Do we have a problem that needs a solution, or are we arguing for an industrial policy?**

As we discuss and debate what to do, we must make clear what government role we are arguing for. On the one hand, there is the view that we are trying to study the market and diagnose problems that might be addressed. Here, I think we should be looking for clear market failures. I caution, however, that we have to thoughtfully distinguish between a true market failure, and what is simply hard or challenging. Market participants will pound away at difficult challenges in order to deliver service. They are very often capable of solving those problems through technological innovations, marketing, creative financing and many other skills that solid businesses possess. In struggling through the challenge, it will be common for some to want to try and leap ahead by securing government assistance. Market failure might demand a government response, but market challenges should be left to market players.

The broadband debate often echoes not as a discussion over the need for government solutions, but as a call for a national industrial policy to affirmatively drive broadband deployment. I will not dismiss that such an approach might have merit, though I am generally skeptical of this role for government (incidentally, it is the approach we took with digital television). Yet, we need to be very clear which exercise we are talking about, so as to focus our energies on the right problems and the right solutions.

#### **4. What are the tools and solutions available to government?**

A lot of energy has been expended on whether there is a case for government involvement, but it is often divorced from what form of involvement is possible or realistic. Affirmatively, government has only a handful of tools and it may be useful to tailor discussion about broadband deployment around them. Those tools are:

- **Directly paying for build-out, by subsidizing consumers or providers.**

Government can always, if it chooses, offer direct subsidies to pay producers to produce service or pay consumers to consume it. Such direct subsidization is fairly out of favor in the federal government these days,

generally, and would require the most compelling justifications. Of course, government sometimes compels carriers to pay a portion of the cost to subsidize consumers. This is what essentially we have in the universal service program for telephone service. This form of universal service, however, would have to be levied very broadly among producers and service providers, or we run the risk of only adding to the formidable expense of constructing these networks, and further restricting progress.

- **Indirectly paying, by offering tax incentives to either consumers or providers.**

A corollary to direct payment is tax breaks of all varieties. The federal government in recent years is somewhat more willing to consider targeted tax cuts to stimulate favored economic activity, but here too the burden of proof to justify a major program is fairly substantial. Again, such tax breaks could be targeted on either the supply side, or the demand side. Given the investment incentives needed to drive decisions to build the infrastructure, demand-side tax breaks may be more meritorious.

There are other forms of tax relief, however, that might be employed. One, very often debated, is to allow for more accelerated depreciation of

infrastructure and equipment. The faster one can depreciate assets, the greater tax advantage in any given year, which might stimulate high-tech investment generally. Given that a great deal of equipment being deployed for advanced services have much shorter useful lives than once assumed, this may be a fruitful area for consideration.

State and local governments have routinely demonstrated creative use of tax incentives and subsidies to attract investment. Whether it is attracting a new stadium, a manufacturing plant, a corporate headquarters, or a WallMart, States have a vast amount of experience in the art of attracting investment. I believe there is a great deal that can be done in using these methods to attract broadband investment, as well.

- **The Government can Aggregate Demand**

Governments can also use their resources to aggregate demand for new services that may bring in investment. Government might do this in two ways. First, as a large purchaser itself, it can demand high-speed broadband services for its operations that stimulate investment. The recent tragedy has brought renewed attention to security of networks, redundancy,

high-speed reliable capability and this may result in greater government expenditures on networks.

Government and community leaders can also attempt to organize communities and then partner with local broadband providers to bring in service. We have seen a number of very effective initiatives by local communities that aggregate demand in a manner that entices broadband providers to serve that community (for example, in Berkshire and Cape Cod, MA, and Evanston, IL). Additionally, efforts to build technology community centers, wire schools and libraries and other such efforts can make a community more attractive for broadband investment (we see this happening today, for instance, in Alaska).

I propose working with the Joint Federal-State Conference to identify successful community-industry partnerships, aggregate their experiences, and make them available to communities interested in employing successful approaches to bringing advanced services to their communities.

- **Removing Legal Barriers**

Clearly, legal restraints can retard deployment of new services. The government (as the author, keeper and enforcer of the laws) can look at modifying or relaxing laws and regulations that impede deployment. Let me offer some examples. I discussed earlier the chicken and egg problem of broadband content and distribution. Much of what is holding broadband content back is caused by copyright holders trying to protect their goods in a digitized environment (in other words, a perfect reproduction world). Stimulating content creation might involve a re-examination of the copyright laws. Arguably, VCRs would not be widely available today if Universal Studios had won its infringement case against Sony in 1984. They won in the Supreme Court by a vote of 5-4.

Another example is the regulations that govern rights of way, zoning, and building codes. I often hear venture capitalists and broadband providers complain that these local restrictions are some of the most vexing problems in bringing new services to consumers. No town likes a cell tower nestled among the fall foliage. Few cities welcome trenches through their streets during rush hour. Nonetheless, governments—principally state and local—control the terms and conditions of local upgrades and can be more pro-

active in facilitating deployment in their community, if they initiate broadband initiatives that encompass judgments about these rules.

Regulatory classification of broadband service and the terms of its regulation is also a critical area where government affects broadband investment. I believe strongly that broadband should exist in a minimally regulated space. Substantial investment is required to build these networks and we should limit regulatory costs and uncertainty. We should vigilantly guard against regulatory creep of existing models into broadband, in order to encourage investment. Moreover, very substantial questions remain about consumer demand for new applications. Innovation is critical and can be stifled by constricting regulations. Regulators absolutely retain a vital role, however; they should steward the development of a minimally regulated broadband regime, and they should focus their energies on demonstrable anticompetitive risks in provisioning.

A final area, admittedly of great controversy, is where government draws the line in its competition policy. In the 1900s, the government made a concerted decision to sanction monopoly in order to get the scale and scope to bring ubiquitous and affordable service to all Americans. It was

believed that telephony was a public good and was best provided by a single firm. It was a decision that certainly succeeded in its goal, but at some future cost. Such an approach requires heavy regulation to protect against the anticompetitive and anti-consumer tendencies of a monopolist. And, it requires heavy government management of expenses, revenues and rates. One can hear the faint sound of trolley cars clicking along in today's debates about how broadband will get to all Americans and who will do it.

Economic scale does matter and it does take a great deal of resources to deploy these networks. There will be a very strong pull towards greater concentration in these markets to get the job done and we will be forced to consider the trade-offs. I am equally convinced, however, that competition can exist in the race to deploy broadband platforms and that policy should not foreclose competition and jump on the monopoly trolley as it did in the early 1900s. No matter what your view, it is important for us to identify this issue—that competition policy must take account of our broadband deployment goals and that we have to calibrate our judgments and, most importantly, our expectations.

## **5. What Dangers must we avoid?**

As we wrestle with developing a coherent broadband policy, it is very important to hone in on dangers and pitfalls to consciously avoid. I have tried to identify a few that are critical in my own mind:

- **Avoid the “One-Wire” Problem**

We should strive with all our might to avoid the “one-wire” problem that precipitated heavy regulation and still confounds so many of our competitive objectives in telephone policy. So much of the government’s involvement in the regulation of telephone services, and the deep and legitimate concerns about anticompetitive and discriminatory behavior, stems from the fact that the telephone system evolved around a single loop bringing service into the home. That loop arguably became an essential facility—prohibitively expensive to duplicate by other would-be providers. That necessitated a hornets-nest of regulations to ensure some amount of non-discriminatory access to the customer.

This process is proving cumbersome and nearly intractable. If at all possible we should work to keep multiple platforms and routes to the home

open and viable in a broadband world. We need to keep incentives alive that encourage investment in alternate platforms (such as cable, wireless, and satellite) and push entrepreneurs to find creative ways to bypass incumbents and get into the home.

- **Achieve Universal Service, but in a Sound Economic Manner**

First principles first. It is beyond question that our objective has been, and should remain, achieving ubiquitous availability of service at affordable rates for all Americans. It is the right goal, and it is the law. I do not waiver in my commitment to that principle. Universal service has been very successful in bringing telephone service to Americans, and narrowband Internet services as well. Yet, the program we steward today was constructed on the presumption of a monopoly environment. It was an outgrowth of that turn of the century marriage between Ma Bell and Uncle Sam. It has also proven to be an under-appreciated obstacle to bringing competitive services to all Americans, after we sued for divorce in 1996. I think we have a golden opportunity with broadband to deploy new services to all Americans, while ensuring proper economic principles are preserved, so that those services are low priced, competitive, and innovative.

- **Be Cautious not to Embed Inferior Technology**

Government is a notoriously bad investor. It tends to buy high and sell low when it comes to predicting technology winners and losers. One lesson from all of this is that we should be careful to embrace too quickly any one technology or service. For example, I believe wiring of America's classrooms has been successful, but if starting again today we might have built wireless LANs in the schools rather than hardwire every classroom. It would have been cheaper and probably easier to upgrade and evolve as new applications arrived. Industrial policy overseas has often erred by placing its arms around a particular technology, a particular form of service, and, very often, a particular set of providers. This very often leads to expensive flops, when the real killer applications emerge and more elegant solutions are designed.

The market is the best vehicle designed by mankind for innovation, for technology change and evolution. I would caution we review fully the lessons of economic history to deepen our appreciation of that fact.

- **Do Not Misalign Incentives**

Government sometimes, resting on hubris I suppose, has a tendency to have inflated confidence in its ability to make, force or demand a result against the will of a market participant. The government sometimes acts like an indignant customer demanding to be served, but who has no intention of paying. We place orders for public policy widgets and expect them to be delivered at provider expense. This in some ways is like an unfunded mandate.

We have to recognize that a supplier at the end of the day is going to do very little to fill the order if it does not have an economical way of doing so and getting paid. These suppliers are normally owned by public shareholders—you and me—and their first fiduciary duty is to serve the public, by maximizing the interests of that segment of the public that owns the company. In setting out our policy goals, we must simultaneously attempt to support an economic environment that will allow the supplier to get adequately compensated, or we will have many years of dissatisfaction because the supplier will rarely fully perform. In short, we must be much better at trying to pursue public policy objectives that align provider

incentives, rather than act at cross-purposes with them. Government rarely has enough muscle to force private actors to their knees.

- **Avoid Heavy Regulatory Models**

I have said something of this already. But let me be more blunt.

When someone advocates regulatory regimes for broadband that look like, smell like, feel like common carriage, scream at them! They will almost always suggest it is just a “light touch.” Demand to see the size of the hand that is going to lay its finger on the market. Insist on knowing where it all stops. Require they explain who gets to make the key decisions—if it is enlightened regulators, rather than consumers and producers, walk out of the meeting.

Broadband is a synergetic product of two great waves crashing into each other. The first is the mature and heavy regulated world of communications. The second is the swift and unregulated peak of the computer revolution. The world waits to see whether the force of the second will subsume the regulatory energy contained in the first. It should and it will if we let nature take its course and not let the yellow submarine of central planning come crashing to the surface.

I hope my remarks have been helpful in focusing the debate on broadband policy. I thank you for inviting me to be with you today.