



## VIA ECFS

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street SW  
Washington DC 20554

Re: Broadband Industry Practices, WC Docket No. 07-52

Dear Ms. Dortch:

I am writing to commend the Commission on its order released today regarding Comcast. In all of my experience reviewing government decisions affecting the Internet, I have read none that are more subtle and sophisticated in their understanding of the Internet, and few that are as important for setting the conditions under which innovation and competition on the Internet will flourish.

As the Order makes clear, the Commission has clearly recognized the importance of the Internet as a *platform* for technological growth and innovation. It is also an extraordinarily important platform for free speech. Innovation and technological growth are essential components to economic prosperity. Free speech is the single most important element in a democracy.

Platforms depend upon common and public standards. The next Larry Page or Sergey Brin need to know that the “Internet” they build the next Google for is actually the “Internet” the next Google will run upon. The open standards process that the IETF has developed provide this assurance. By clearly articulating the rules by which data will be managed on the Internet, innovators can build applications and deploy content that rely upon those rules. There’s no need for a negotiation between innovators in their garage and the largest network providers for those innovators to develop the next “killer app.” Like the electricity grid, innovators know that they can simply plug their application into the Internet and — so long as the providers of access to that platform respect the platforms standards — the innovation will run. This was the purpose of the Internet’s “end-to-end design,” as network architects Jerome Salzer, David Clark and David Reed first described it: To enable innovation at the edge of the network without the innovators concerning themselves about complexity at the core.

Comcast's behavior, at least as detailed in the very careful and comprehensive order the Commission released today, poisons this environment for economic growth and innovation in at least three ways:

*First*, as the Order notes, by implementing non-standard network management technologies, Comcast weakens the value of the platform for all. If Comcast's behavior became common among broadband service providers, innovators developing new applications for the Internet would be required to tailor those applications to the specific local rules of the major carriers. That tailoring would increase costs and uncertainty, thereby reducing the return to Internet-based innovation.

*Second*, and again, as the Order notes, by keeping these modifications to the basic Internet protocol secret, Comcast's behavior only increases the cost that their nonstandard implementation imposes upon Internet innovation. Rather than simply reading a technical document that explains the local deviations from standard practices on Comcast's network, innovators who want to assure that their innovations actually run on the Comcast platform would be forced to run expensive tests of the applications or services on the Comcast network, essentially bearing the costs of reverse engineering a service that advertised itself as a standard Internet connection. Again, imagine the burden to GE if local electricity grids varied the voltage of their local electricity networks — sometimes running at 120v, sometimes at 220v. And then imagine the burden if those same grids varied the voltage secretly, without any notice to GE, or other innovators. The costs to innovation and economic growth obvious in this example are exactly the costs Comcast creates by its behavior.

*Third*, as the Order notes, by keeping these modifications secret, Comcast's behavior imposes a particularly harsh burden on new innovators. Anyone trying out a new application from a new company or developer begins with some skepticism about the quality of that application or innovation. Failures in the execution of that new application will be attributed by the user to the developer, not to the broadband service. Most users have no clue about the capacity of the broadband provider to interfere with the functioning of an application. Most would therefore assume that any failure is a failure in the application. Comcast's behavior would therefore particularly burden these start-up innovators.

These costs, of course, are obviously relevant to the Commission's concern of assuring the Internet remains a platform for growth and innovation. But the Order nicely illustrates how these costs are also linked to anticompetitive concerns. As the D.C. Circuit indicated in the Microsoft case, regulators have a particularly strong reason to police the behavior of a platform provider when that behavior is aimed at protecting the platform provider from new competition. This was also the Commission's concern in the Madison River Matter, where a DSL provider was alleged to have

blocked VOIP service, thereby protecting the telecom company's profits from traditional telephone markets.

In this case, the Commission has identified a legitimate concern that Comcast's behavior is directed towards interfering with a developing market of alternative video service. To the extent consumers find a reliable means for collecting and supplying video content to others, through, for example, applications such as Miro, these alternatives will provide competition to traditional, cable-television based models for delivering video content. The Commission in particular, and the U.S. government more generally, has an obvious interest in encouraging precisely this type of competition. For it is precisely this sort of competition that will continue to drive the costs of communication down, and widen the opportunities for speakers — from documentary filmmakers, to local priests sharing sermons — to make their speech available to others.

The need for the Commission to play this role as an ultimate check on private behavior that might pollute the environment for innovation is particularly acute on a free, public network such as the Internet. Obviously, there are plenty of private innovation platforms that don't require direct government oversight to protect the platform. Microsoft's Windows operating system is a ready example. If Dell started tinkering with Windows, disabling or modifying certain operating system functions, Microsoft would have an obvious interest in stopping Dell. Private law would give Microsoft adequate tools to protect its platform from the intermeddling by Dell. Through trademark, copyright, and patent law, Microsoft could use government power to force Dell to either comply with the Windows standards, or forbid Dell from distributing Windows on its PCs. No doubt that would be a kind of government regulation, but exercised by a private actor to advance its own private interests.

There is no "owner" of the Internet, however, who can likewise invoke private law to protect the platform of the Internet from the same sort of interference. The IETF doesn't own a trademark on "the Internet." The protocols and standards that it, and other equivalent bodies have deployed, don't carry with them the power to enforce particular implementations. Indeed, an important slice of that innovation environment, free software (governed, for example, by the Free Software Foundation's GPL) explicitly grants to everyone the right to modify the code however they want, so long as they abide by the requirement to make that modification available to others.

Comcast didn't invent the Internet. Indeed, it, and most other cable companies, were relatively slow to recognize the important value the Internet would provide both to the public and to companies providing Internet service. Instead, Comcast now seeks to benefit from the extraordinary economy that has developed around the Internet. It gets to enjoy that benefit "freely," meaning without paying anyone a licensing fee, or

without securing permission from anyone to deploy resources that link into this extraordinary network. That it can is of course a great benefit, not just to Comcast, but to the Nation. The free resource of the Internet has produced enormous commercial and economic value.

But if Comcast is to benefit from the Internet, it is perfectly reasonable that it be required to do so in a manner that doesn't pollute the value of the Internet for everyone else. Yet that is what Comcast has done here. By secretly adding a layer of secret sauce into the Internet that interferes with legitimate applications and network services, Comcast has injured the value of the Internet to other innovators. By denying that it has done this, it has added insult to that injury. The Commission has done us all a great service by stating clearly that it will assure that the platform for innovation that the Internet is will not be compromised by such behavior.

It was also important that the Commission clearly addressed a common slogan that Comcast had deployed in this matter that has no relation to the actual history of the Internet — namely, that the Internet was born free of regulation. It might be acceptable in a political campaign to continue that obvious canard. But in the context of this Commission, which was the enforcer of the very rules that created the opportunity for the narrowband Internet to take-off, it is extraordinary that a party would suggest that the Internet was a regulation-free zone. The Internet was made possible by a mix of minimal platform regulation. Even the presumptive Republican nominee for President enumerates a list of context in which “regulation is warranted.” And while there will always be argument about the proper mix, and while any sensible policy-maker would want to keep that regulation at an absolute minimum, the suggestion that any sensible policy-maker, including Congress, has ever suggested that the Internet “not be regulated” is either ignorance or deception.

Finally, let me note one other feature of this proceeding that has particularly troubled me. These are complicated questions. There's no doubt that networks will have to manage traffic. There's no doubt that certain types of content and applications will have to be regulated. Child pornography is the obvious case. But illegal activity extends far beyond that paradigmatic case.

In developing the standards for effecting both (1) the public interest in an open and vibrant Internet, as well as the public interest in controlling illegal content and activity, and (2) the private interest that companies such as Comcast can profit from Internet service, so that many companies such as Comcast choose to provide Internet service, the Commission has rightly chosen to move carefully through adjudication, against the background of clear standards articulated first by Chairman Powell, and then adopted by the Commission under Chairman Martin's leadership. That process will require at a minimum the good faith cooperation of anyone providing significant Internet service.

The most striking feature of the current proceeding to me, at least, was the character of the interaction between Comcast and the FCC about these matters. Of course anyone in dealing with the government has a right to defend his own interests. But no one has a right to mislead. That the Commission has identified statements made by Comcast that were, at a minimum, not true, raises significant questions about Comcast's behavior. Whether or not the Commission has the authority it claims in this particular case (and I am confident that it does), no company has the right to mislead the Commission in its proceedings.

Obviously, there are not sufficient facts yet known to know why statements that were not true were nonetheless made by Comcast. It could well be that Comcast's management didn't fully understand what its own technicians were doing. But when a company provides access to millions of Americans to the most important infrastructure in the digital age, at the very minimum, that company has an ethical obligation to deal truthfully with the regulator charged primarily with protecting that infrastructure from harmful behavior.

The Commission's order today has done a great service to our Nation. It will set a context that makes clear that those who wish to profit from the Internet do so without harming the Internet. And it will advance the objective of securing this infrastructure for innovation with the minimum regulatory oversight possible. On behalf of many, I am sure, let me express our thanks.

Sincerely,

Lawrence Lessig