

4/17: FCC Hearing on Broadband Network Management Practices

Panel Discussion 2 - Consumer Access to Emerging Internet Technologies and Applications

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The Internet Engineering Task Force (IETF) is a multinational body of engineers participating on a volunteer basis as individuals rather than as representatives of their employers or other affiliations. Over the past twenty years, the IETF has managed standardization for protocols such as TCP/IP, DNS, and protocols underlying email and the web. It is not a membership organization; participation in its meetings and mailing lists is open to all who wish to contribute to the IETF's work. The IETF is committed to its mission as described in RFC3935: "to produce high quality, relevant technical and engineering documents that influence the way people design, use, and manage the Internet in such a way as to make the Internet work better." As a purely technical body, the IETF does not establish consensus in matters of public policy.

The usage model of the Internet is changing, and traditional methods for managing high network load may no longer reflect the optimum responses to new applications. One example of this evolution are real-time applications, which suffer when exposed to significant latency. As link loads near capacity, latency is a common side-effect, and delay-intolerant applications bear the consequences.

New applications of the Internet inevitably introduce new challenges. While the IETF has not yet arrived at a consensus on a best current practice for managing resources in the face of competition between elastic and inelastic applications, various aspects of this problem space, including congestion control, quality-of-service, and friendliness of application behavior have been studied in the IETF for some time. It is likely that some of this previous work is relevant to the challenges raised by new applications; it is also likely that these new applications will require new thinking and some new technical development efforts. Some of these areas are within the IETF's expertise, and the IETF is considering whether it can make a useful contribution in this space.

In thinking about any potential IETF study of this or any other space, there are a few points about the IETF to keep in mind:

First, as a volunteer, consensus-based body, the IETF is highly dependent on its participants. Our ability to address technical problems is predicated on the contributions of informed engineers and computer scientists from the academic, operator and vendor communities, especially those with first-hand knowledge of the problem space. The key to tackling serious issues in deployments is reliable information – knowing what practices are followed by Internet Service Providers and application implementers. If the IETF is to address the evolving challenges associated with managing network resources, we will need the participation of Internet community members on the leading edge of application development and deployment in order to reach a well-informed basis for industry consensus.

Second, the IETF does not attempt to judge what is or is not "Internet service," a term that resists easy definition. In the marketplace today, there exists a variety of operational policies, and the IETF does not attempt to rate their respective propriety. Instead, the IETF looks at questions in more practical terms. For example, in order for application behavior to be deterministic, and to meet end-user expectations, the IETF notes in RFC4084 (BCP104) that "it is important that providers disclose the services they are making available and the filters and conditions they are imposing." RFC4084 goes on to recommend that

More generally, the provider should identify any actions of the service to block, restrict, or alter the destination of, the outbound use (i.e., the use of services not supplied by the provider or on the provider's network) of applications services.

Third, The IETF does not have a policing function. IETF specifications can detail the pros and cons of particular approaches to engineering, but implementers and operators must make their own informed decisions based on the technical trade-offs associated with solutions.

We appreciate the opportunity to participate in this forum today, and we look forward to responding to any questions you might have.