November 26, 2001

The Honorable Michael Powell
Chairman, Federal Communications Commission
445 12th Street NW
Washington, DC 20554

Dear Chairman Powell:

The FCC could do a great service to the American people by opening up wireless spectrum for innovative unlicensed activities. The remarkable success of wireless local area networks using the 802.11b (WiFi) protocol shows the potential of an "open spectrum" model. However, current spectrum allocation rules preclude development of this opportunity.

At your October 23 press conference, you declared that, "The widespread deployment of broadband infrastructure has become the central communications policy objective today." You also noted that, "Our nation's approach to spectrum allocation is seriously fractured." These two statements, which I strongly support, are related. By unleashing cooperative spread-spectrum and ultra-wideband technologies, the FCC could help overcome the broadband bottleneck our nation faces today.

Our spectrum allocation policies still assume the technology of the 1920s. With current levels of computing power, many users can cooperatively share spectrum in an efficient manner. A "spectrum commons" would mitigate the massive infrastructure build-out costs that stand in the way of universal broadband connectivity. At the same time, this approach would further the Commission's public interest goals.

The enclosed issue of *Release 1*.0 outlines the open spectrum concept and the marketplace developments that validate it. In particular, the rise of 802.11b devices illustrates the level of innovation that can occur when a single entity does not control spectrum exclusively.

The open spectrum model was first described in detail by Professor Yochai Benkler of New York University Law School in his 1998 article in the *Harvard Journal of Law and Technology*. It draws upon technical, legal, and operational activities by a number of experts including David Reed, Professor Lawrence Lessig, Paul Baran, Dewayne Hendricks, Dave Hughes and Tim Shepard. The FCC's Technological Advisory Council is examining unlicensed technologies, but its work has not yet received sufficient attention from the Commission itself.

The Commission has shown its willingness to undertake new approaches to spectrum policy with its recent lifting of spectrum caps. However, greater flexibility for spectrum licensees is not an alternative to innovation in unlicensed technology. Current FCC rules discourage researchers from exploring the technical boundaries of unlicensed wireless communications, and discourage investors from funding companies that might bring new devices and services to market.

I urge the Commission to take the following steps expeditiously:

- Designate significant additional spectrum blocks for unlicensed use.
- Create equipment-certification rules to ensure transmitters in the new unlicensed bands cooperate intelligently for maximum efficiency.
- Allow low-power ultra-wideband services to "overlay" on licensed bands.
- Promulgate an "intelligent radio bill of rights," as proposed by Bran Ferren of Applied Minds, to define the privileges and responsibilities of smart devices communicating over the airwaves.

Any of these changes would make new services possible; all of them together would lay the groundwork for a new era of communications.

In your October 23 press conference, you pledged to "continue strong support for unlicensed bands where feasible." While this endorsement is welcome, it is not enough. The Commission must actively reform its spectrum policies to encourage rather than prevent innovation.

Sincerely,

Kevin Werbach
Editor, *Release 1.0: Esther Dyson's Monthly Report*

CC: Commissioner Kathleen Abernathy
Commissioner Michael Copps
Commissioner Kevin Martin
Magalie Salas, Secretary (submitted as *Ex Parte* in ET Docket No. 98-153)
Bruce Franca, Acting Chief, Office of Engineering and Technology
Robert Pepper, Chief, Office of Plans and Policy
Bob Lucky, Chair, Technological Advisory Council