

March 2, 7, 9 & 14 (Lehr) – Spectrum Policy

This module of four lectures will focus on the rationales for regulating radio frequency (RF) spectrum and current topics associated with the reform of the mechanisms.

We will begin by considering the history of spectrum regulation and the evolution of wireless services from command and control assignment to auctions to the current debate over spectrum commons versus property rights. This will include discussion of issues pertaining to the economic and public policy rationales for spectrum regulation and why/how traditional mechanisms need to be modified in light of evolving technical and industry trends for wireless services. We will then move on to an introduction to the current debate over regulatory models to support licensed and unlicensed spectrum and proposals for spectrum management reform under consideration in the United States and Europe.

Assigned Readings for this module include :

Hazlett, Thomas (2001), "The Wireless Craze, The Unlimited Bandwidth Myth, The Spectrum Auction Faux Pas, and the Punchline to Ronald Coase's "Big Joke" An Essay on Airwave Allocation Policy," AEI-Brookings Joint Center for Regulatory Studies, Working Paper 01-01, January 2001.

Faulhaber, Gerald and David Farber. 2002. "Spectrum Management: Property Rights, Markets and the Commons." Wharton School Working Paper, University of Pennsylvania (presented at TPRC October 2002).

Kolodzy, Paul, Spectrum Policy Task Force, Office of Engineering & Technology, Federal Communications Commission, November 2002.

Kwerel, Evan and John Williams, "A Proposal for a Rapid Transition to Market Allocation of Spectrum," OPP Working Paper #38, Federal Communications Commission, November 2002.

William Lehr, "Economic Case for Dedicated Unlicensed Below 3GHz," mimeo, 2004.

Some questions to consider include:

- Please comment on the benefits/problems associated with traditional spectrum management policies.
- What ought to be the appropriate goals (roles) for spectrum management policy?
- What has changed in wireless technology, markets, and regulatory policy to make spectrum reform more likely today? What are the biggest challenges to achieving spectrum reform?

- Do you agree with the FCC's Spectrum Policy Task Force's recommendations regarding how policy should be reformed? Is this applicable elsewhere around the globe (e.g., in the developing world)?
- What are the benefits/problems with:
 - Spectrum auctions
 - Property rights applied to spectrum
 - Unlicensed spectrum access
- What are the benefits (costs) of allocating spectrum to unlicensed use instead of licensed use? Which model has produced more benefits to date? Is likely to produce more benefits in the future?

Additional (Optional) Readings (both lectures) Include:

(of these, the Marcus/WIK report provides a good recent summary overview of reform policies in a number of countries).

Baumol, William and Dorothy Robyn, "Toward an Evolutionary Regime for Spectrum Governance: Licensing or Unrestricted Policy?", AEI-Brookings Joint Center for Regulatory Studies, 2006.

Benkler, Yochai, "Some Economics of Wireless Communications," presented at TPRC October 2002.

Carter, Kenneth, Ahmed Lahjouji, and Neal McNeil, "Unlicensed and Unshackled: A Joint OSP-OET White Paper on Unlicensed Devices and Their Regulatory Issues," OSP Working Paper 39, Federal Communications Commission, May 2003.

Cave, Martin, "Reforming UK Spectrum Policy," White Paper prepared for UK Spectrum Management Review, March 2002.

Farquhar, Michele C. and Ari Q. Fitzgerald, "Legal and regulatory issues regarding spectrum rights trading," Telecommunications Policy, Volume 27, Issue 7, August 2003, Pages 527-532.

Lehr, William and Jon Crowcroft, "Managing a Spectrum Commons," IEEE DySPAN 2005, Baltimore, November 2005.

Lehr, William, Sharon Gillett, and Fuencisla Merino, "Software Radio: Implications for Wireless Services, Industry Structure, and Public Policy," Communications and Strategies, IDATE, Issue 49 (1st Quarter 2003) 15-42.

Lehr, William and Lee W. McKnight "Wireless Internet access: 3G vs. WiFi?," Telecommunications Policy, Volume 27, Issues 5-6, June-July 2003, Pages 351-370

Marcus, J., Lorenz Nett, Mark Scanlan, Ulrich Stumpf, Martin Cave, and Gerard Pogere, "Towards More Flexible Spectrum Regulation," WIK-Consult, Germany, December 2005.

Noam, Eli, "Beyond spectrum auctions. Taking the next step to open spectrum access," Telecommunications Policy, Volume 21, Issue 5, June 1997, Pages 461-475.

Owen, Bruce and Gregory Rosston, "Spectrum Allocation and the Internet," in William Lehr and Lorenzo Pupillo Cyber Policy and Economics in an Internet Age, Kluwer Academic Publishing: Boston, MA, 2002.

Oftel, Strategy for the future use of the Radio Spectrum in the UK, UK Spectrum Strategy Report, March 2002.

Werbach, Kevin, "Supercommons: Toward a Unified Theory of Wireless Communication," mimeo, 2003.

Werbach, Kevin, "Radio Revolution: The Coming Age of Unlicensed Wireless," New America Foundation, 2003.