I. INTRODUCTION

When Congress passed the Telecommunications Act of 1996 ("1996 Act")¹ it gave the Federal Communications Commission ("FCC" or "Commission") discretion to grant over-the-air broadcasters temporary licenses for additional spectrum in order to assist their transition to digital broadcasting.² The following year, the FCC voted to license the additional spectrum to broadcasters conditioned on eligibility requirements, construction schedules, and flexible use of the spectrum.³ The FCC also set 2006 as the target year for the return of the spectrum.⁴

However, on the issue of what the proper public interest obligations should be for digital TV broadcasters, the FCC balked, saying "[w]e are not resolving the debate today. Instead, at an appropriate time, we will issue a Notice to collect and consider all views."⁵ The refusal to address public interest obligations caused an outrage among public interest advocates.⁶ It also garnered a strong

¹ President and Co-Founder, Public Knowledge and a member of the Gore Commission. Portions of this essay were originally presented as part of a speech at The Gore Commission: 10 Years Later: The Public Interest Obligations of Digital TV Broadcasters in Perfect Hindsight, held at the National Press Club on October 3, 2008. The author wishes to thank Sarah Jameson and Michael Weinberg for their work in preparing this essay.


⁴ See id. ¶ 7.

⁵ Id. ¶ 50.

⁶ See, e.g., Paige Albinia & Bill McConnell, Gore Commission and then some,
response from critics who felt that broadcasters were given spectrum worth billions of dollars at no cost. At a minimum, the giveaway was a ten year loan with no accruing interest.

It was against this backdrop that President Clinton established the Advisory Committee on the Public Interest Obligations of Digital Television Broadcasters, or as it is more commonly known, the "Gore Commission." The Gore Commission's task was to examine the public interest principles that had applied to broadcasters for over seventy years and recommend how the principles could be applied in the digital age. It investigated forms that digital broadcasting might ultimately take and recommended obligations that were technologically and economically feasible, effective in serving the public interest, and sensitive to the free speech rights of broadcasters. The recommendations covered children's programming, free airtime for political candidates, television ratings, as well as other areas of public concern.

The twenty-two member Gore Commission was comprised of broadcasters, independent television producers, union representatives, and public interest advocates. Norman Ornstein, Resident Scholar of the American Enterprise Institute, and Leslie Moonves, then-President and CEO of CBS Television, chaired the Gore Commission. The members held five meetings over a period of six months—from October 1997 to April 1998—and heard from a variety of stakeholders including independent producers, educators, disability advocates, TV network presidents, public safety experts, and government officials. The deliberations over the recommendations were contentious, and strong recommendations were largely prevented from being considered due to the refusal of

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9 See id. at 43–45.
10 Id. at 43–45, 48.
11 See id. at 136.
12 Id. at 146–47.
13 Id. at 137–39.
the Chairs to take up or down votes.\textsuperscript{15}

In formulating its recommendations, the Gore Commission operated under three basic principles: 1) "the public, as well as broadcasters, should benefit from the transition to digital television;" 2) "flexibility is critical to accommodate unforeseen economic and technological developments;" and 3) "approaches that rely on information disclosures, voluntary self-regulation, and economic incentives," should be preferred over regulation.\textsuperscript{16} Under these three principles, the Gore Commission developed the following ten recommendations:

- "Digital broadcasters should be required to make enhanced disclosures of their public interest programming and activities on a quarterly basis, using standardized check\[lists]\";\textsuperscript{17}
- "The FCC should adopt a set of minimum public interest requirements for digital television broadcasters in the areas of community outreach, accountability, public service announcements, public service programming, and closed captioning";\textsuperscript{18}
- "Congress should create a trust fund to ensure enhanced and permanent funding for public broadcasting" and reserve an extra block of spectrum for noncommercial educational programming;\textsuperscript{19}
- "Digital broadcasters who choose to multiplex . . . should have the flexibility to choose between paying a fee, providing a multicast channel for public interest purposes, or making an in-kind contribution";\textsuperscript{20}
- "[T]he television broadcasting industry should voluntarily provide [five] minutes each night for candidate-centered discourse in the [thirty] days prior to an election . . . . [B]ans on the sale of airtime to state and local officials should be prohibited";\textsuperscript{21}
- Digital broadcasters should utilize digital closed captioning technologies to expand closed captioning on "public service announcements, public affairs programming, and political programming," engage in video description; and ensure "disability access to ancillary and supplementary services."\textsuperscript{22}

More than ten years later, the Gore Commission’s recommendations remain

\textsuperscript{15} See CHARTING THE DIGITAL BROADCASTING FUTURE, supra note 8, at 69–70.
\textsuperscript{16} Id. at xiii.
\textsuperscript{17} Id.
\textsuperscript{18} Id. While a majority of the Gore Commission would have preferred quantifiable minimums, a majority of the broadcasters on the Gore Commission prevented that from becoming a recommendation.
\textsuperscript{19} Id.
\textsuperscript{20} Id. at xiv.
\textsuperscript{21} Id.
\textsuperscript{22} Id.
largely unfulfilled. Other than the broadcaster public interest programming and disclosure requirement\(^{23}\) and the three-hour-per-week children’s educational and informational programming requirement for digital television broadcasts,\(^{24}\) little action has been taken by the FCC, Congress, or the broadcast industry to implement the recommendations. The trust fund to ensure funding for public broadcasters is nonexistent. As an industry, broadcasters have not provided the recommended free time for political discourse. The FCC has issued Notices of Inquiry and Notices of Proposed Rulemaking, but has yet to adopt a set of minimum public interest obligations.\(^{25}\)

While this inaction can be attributed to the political power of broadcasters and regulatory inertia in both Congress and the FCC, the inaction can also be attributed to some basic conceptual failures of the report generated by the Gore Commission itself. The longstanding hope that large companies would act as public trustees of the airwaves and provide the public with high-quality public interest programming—undermined well before 1997\(^{26}\)—has certainly proven unrealistic today.

This Essay is not an attempt to modernize and re-frame the recommendations of the Gore Commission. Instead, it argues for a new model of public interest that promotes abundance of spectrum instead of relying on the outdated notion that spectrum is physically scarce. Part II discusses the history of the spectrum scarcity rationale and the public trustee doctrine that has historically guided broadcast regulation. Part III describes how these theories, dating

\(\text{\textsuperscript{23}}\) See In re Standardized and Enhanced Disclosure Requirements for Television Broadcast Licensee Public Interest Obligations; Extension of the Filing Requirement For Children’s Television Programming Report (FCC Form 398), Report and Order, 23 F.C.C.R. 1274, apps. A-B (Nov. 27, 2008) (detailing the disclosure requirements). The National Association of Broadcasters opposes the disclosure requirements because it believes they are unduly burdensome. See In re Standardized and Enhanced Disclosure Requirements for Television Broadcast Licensee Public Interest Obligations; Extension of the Filing Requirement For Children’s Television Programming Report (FCC Form 398); Notice of Public Information Collection(s) Being Reviewed by the Federal Communications Commission, Comments of the National Association of Broadcasters, MM Docket Nos. 00-168, 00-44, OMB Control No. 3060-0214, at 1–6 (May 12, 2008) (accessible via FCC Electronic Comment Filing System).

\(\text{\textsuperscript{24}}\) See In re Children’s Television Obligations Of Digital Television Broadcasters, Report and Order and Further Proposed Rulemaking, 19 F.C.C.R. 22,943, ¶¶ 19–24 (Sept. 9, 2004) (stating that the three-hour programming requirement is to be applied to additional core program feeds that a digital broadcaster provides, and an incremental requirement will apply to channels of free programming).

\(\text{\textsuperscript{25}}\) See infra Part IV (discussing several FCC-issued Notices of Inquiry and Notices of Proposed Rulemaking that have examined spectrum allocation).

\(\text{\textsuperscript{26}}\) See, e.g., CHARTING THE DIGITAL BROADCASTING FUTURE, supra note 8, at 17–33 (analyzing the history of the application of the public interest standard and its outcomes); Ronald J. Krotoszynski, Jr., The Inevitable Wasteland: Why the Public Trustee Model of Broadcast Television Regulation Must Fail, 95 MICH. L. REV. 2101, 2101–05 (1996) (discussing the failure in enforcement of the public trustee standard).
from the 1920s and 30s, inhibit innovative uses of spectrum today. Part IV analyzes alternative models for spectrum allocation that rebut the scarcity presumption, and the benefits and hindrances presented by each. Part V proposes a new model of unlicensed spectrum allocation that focuses on abundance of spectrum for the digital age, allowing for increased innovation and spectrum utilization by the public.

II. HISTORICAL PERSPECTIVE OF SPECTRUM SCARCITY AND THE PUBLIC TRUSTEE DOCTRINE

A. Legislative History

The concept of spectrum scarcity is rooted in technical problems and limitations inherent in 1920s and 30s era broadcasting technology. At that time spectrum scarcity was a real and legitimate concern; radio was still in its infancy and broadcasters were largely unregulated. As the number of radio broadcasters increased, new frequency bands were added in an attempt to accommodate them. Eventually, entire bands of spectrum were allocated to broadcasting. Soon these bands filled with broadcasters, resulting in "a cacophony of signal interference." Something needed to change in order to prevent radio from smothering itself.

In 1927 the Federal Radio Commission ("FRC") was formed specifically to address these concerns. Prior to 1927, radio was regulated under the Radio Act of 1912, which required the Secretary of Commerce and Labor to issue broadcasting licenses upon application. One of the primary purposes of the Radio Act of 1927, was to "maintain the control of the United States over all 27 See Josephine Soriano, Note, The Digital Transition and the First Amendment: Is it Time to Reevaluate Red Lion's Scarcity Rationale?, 15 B.U. PUB. INT. L.J. 341, 344 (2006).
28 See CHARTING THE DIGITAL BROADCASTING FUTURE, supra note 8, at 18.
30 Id. at 93. Regular radio broadcasting began in 1920, when Westinghouse Electric—now known as CBS Corporation—upgraded an amateur transmitter into station KDKA, the purpose being to promote sales for its new receivers. By May 1922, over 200 licenses were issued, and the following year that number more than doubled, resulting in the first major radio interference. Id. at 65–67.
32 Radio Act of 1927, Pub. L. No. 69-632, §§ 3–4, 44 Stat. 1162, 1162–63 (creating the FRC and providing it authority to classify radio stations and designate service that use the spectrum); see STERLING & KITROSS, supra note 29, at 141–42.
33 Radio Act of 1912, Pub. L. No. 62-264, § 1, 37 Stat. 302; see STERLING & KITROSS, supra note 29, at 141 (explaining that between 1912 and 1927, "Congress made sporadic attempts to replace the obsolete 1912 Radio Act").
the channels of radio transmission; and to provide for the use of such channels, but not the ownership thereof, by persons . . . for limited periods of time, under licenses granted by Federal authority . . . ." The Radio Act of 1927 allowed the FRC to grant spectrum licenses based on a set of criteria, removing the mandatory grant provision of the Radio Act of 1912.\(^\text{35}\) In the Communications Act of 1934 ("1934 Act" or "Act"), Congress replaced the FRC with the FCC.\(^\text{36}\) The Act demonstrated Congressional recognition that the effective use of radio channels required exclusion, and as such, Congress retained the regulatory authority—now held by the FCC—to license exclusive users.\(^\text{37}\)

The FCC was charged with managing the airwaves in a fashion consistent with the "public interest, convenience, and necessity"—the public trustee doctrine.\(^\text{38}\) The public trustee doctrine grew up around this statutory public interest obligation: the FCC gave large, exclusive grants of spectrum to individual broadcasters who remained private entities.\(^\text{39}\) The spectrum was large enough to guarantee that even the primitive broadcasting technology of the 1930's would function without interference.\(^\text{40}\) In exchange for free, exclusive grants of public spectrum, broadcasters agreed to act as "public trustees" of the airwaves. As public trustees, broadcasters were to use their free spectrum to provide certain public interest programming, including coverage of local issues and public affairs, coverage of differing viewpoints on controversial issues of public importance, children's educational and informational programming, and general promotion political discourse.\(^\text{41}\) In theory, this meant that broadcasters would use the airwaves to inform and educate the public.\(^\text{42}\) In practice, how-

\(^\text{35}\) Id. § 3; Pub. L. No. 62-264, § 1.
\(^\text{37}\) Id. § 303(c).
\(^\text{38}\) Id. §§ 307, 309; see also 47 U.S.C. §§ 307, 309(a) (2000).
\(^\text{40}\) See CHARTING THE DIGITAL BROADCASTING FUTURE, supra note 8, at 19 ("Although the limited number of licensees was in one respect dictated by the physics of the electromagnetic spectrum . . . the 'scarcity' was also dictated by the Government licensing scheme . . .").
\(^\text{41}\) See, e.g., id. at 19–20 ("[B]roadcasters have affirmative statutory and regulatory obligations to serve the public in specific ways."). However, this was not always the case. Congress considered making broadcasters "common carriers" that would provide access to anyone who wanted it. Congress instead granted broadcasters exclusive use of wide bands of spectrum as public trustees, which guaranteed freedom from interference and allowed radio to flourish. See id. at 18–19.
\(^\text{42}\) See Reed E. Hundt, A New Paradigm for Broadcast Regulation, 15 J.L. & Com. 527, 528–30 (1996) (discussing the deficiencies of broadcasters in achieving the public interest
ever, the “balance between permitting commercial use of the public airwaves by the private sector and ensuring that... private use accords with the public’s view on the desirable use of [the spectrum]... has swung too far in the direction of private commercial use.” Further, due to the relative ambiguity in what constitutes the public interest, courts have played a role in determining if a broadcaster has met its obligation, and whether the imposition of the obligation was justified.

B. Judicial History

For most of the 20th century, the judiciary accepted spectrum scarcity as fact. In 1943, in the landmark case *NBC v. United States*, the Supreme Court carefully examined the history of spectrum regulation and accepted that there was a fixed natural limit to the number of radio stations that could exist:

The plight into which radio fell prior to 1927 was attributable to certain basic facts about radio as a means of communication—its facilities are limited; they are not available to all who may wish to use them; the radio spectrum simply is not large enough to accommodate everybody. There is a fixed natural limitation upon the number of stations that can operate without interfering with one another.

In upholding the FCC’s Chain Broadcasting rules—which protected affiliates from network control—the Court explained Congress’ belief that strict spectrum allocation and regulation was needed in order to “secure the maximum benefits of radio to all the people of the United States.” Even as broadcast technology improved, the judiciary’s approach to spectrum scarcity and the public trustee doctrine was static.

Twenty-five years later, in *Red Lion v. FCC* the Court reaffirmed the conclusions of *NBC*. In upholding the constitutionality of the Fairness Doctrine—a policy requiring broadcasters to provide overall balanced coverage of divergent views—the Court provided a detailed history of the evolution of

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43 *Id.* at 529.
44 See generally Nat’l Broad. Co. v. United States (*NBC*), 319 U.S. 190 (1943) (explaining and accepting the notion of spectrum scarcity); Tribune Co. v. FCC, 133 F.3d 61, 69 (D.C. Cir. 1998) (noting that the Supreme Court has suggested that it may, at the FCC’s signal, reconsider the notion of spectrum scarcity).
45 *NBC*, 319 U.S. at 213.
46 The FCC established Chain Broadcasting Regulations in 1941, which governed the licensing and content of chain broadcasting stations. NBC sued to enjoin the enforcement of the regulations. *Id.* at 193. The Court held that the FCC had the power to issue regulations pertaining to associations between broadcasting networks and their affiliated stations, otherwise known as “chain networks.” The Court stated that the Chain Broadcasting Regulations were simply the specification of the Commission’s conception of the “public interest.” *Id* at 224–25.
47 *Id.* at 217.
early spectrum regulation. The history was built on the assumption that unregulated frequencies cause chaos, which results in a "cacophony of competing voices" that made spectrum useless to anyone. The Court previously held that a state law requiring a newspaper to print a political candidate's response to a newspaper's critical coverage violated the First Amendment. However, in Red Lion, the Court cited a Senate report that stated that broadcasters could be subject to content regulation because of the limited existing spectrum. The Court concluded:

A license permits broadcasting, but the licensee has no constitutional right to be the one who holds the license or to monopolize a radio frequency to the exclusion of his fellow citizens. There is nothing in the First Amendment which prevents the Government from requiring a licensee to share his frequency with others . . . . It is the right of the viewers and listeners, not the right of the broadcasters, which is paramount.

As far as the Red Lion Court was concerned, the realities of spectrum scarcity had not changed since the 1930s; efficient broadcasting simply could not exist without strong federal regulation and spectrum apportionment.

FCC v. League of Women Voters marked the first time the Supreme Court recognized that the perceived truism of spectrum scarcity might not be an immutable fact. In a footnote, the Court noted that emerging technologies such as cable and satellite television challenged the assumption of spectrum scarcity. However, the Court indicated that it was unwilling to reexamine the spectrum scarcity absent a determination by Congress or the FCC that "some revision" of the "longstanding approach" was necessary.

Unfortunately, neither Congress nor the FCC has undertaken a reexamina-
tion of spectrum scarcity. Nearly a quarter century after *League of Women Voters*, both the FCC and Congress continue to base spectrum policy on the assumption that spectrum is scarce, and the only way for any wireless communication to function is by issuing a limited number of exclusive rights licenses. This is a mistake. The government and public interest groups' continued reliance on spectrum scarcity and the public trustee doctrine has resulted in few benefits for the public. At the same time, it has given broadcasters exclusive licenses, which allows them to make billions of dollars and keep out competition by claiming the special public trustee status.

Scarcity can no longer be the starting point for developing spectrum policy. In 1998, members of the Gore Commission still felt that a regulatory model grounded in spectrum scarcity did more good than harm. The scarcity model has failed. It is time for a fundamental break with the past and a new basis for spectrum policy.

Today, spectrum can be shared without interference in a way that was simply unimaginable eighty years ago. As a result, it is time to re-imagine the role of spectrum in society and to alter fundamentally the way in which it is regulated. Spectrum policy must be unshackled from the antiquated constructs guiding assumptions about radio technology that has dominated the past century. By recognizing that radio technology progressed significantly over the past eighty years, society can embrace the digital future.

### III. IMPACT TODAY

Regulatory reliance on spectrum scarcity and the public trustee doctrine have failed. Instead of promoting the needs of the public, these policies have

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58 Lower courts continue to recognize the decreasing connection between the spectrum scarcity doctrine and modern technological reality, as well as the criticism that it has received from outside observers. See *Turner Broad. Sys., Inc. v. FCC*, 512 U.S. 622, 638–39 (1994) (noting judicial and academic skeptics of spectrum scarcity, and declining to “question its continu[ed] validity” while simultaneously discussing the proliferation of advanced wireline technologies without such limitations); see also *Action for Children’s Television v. FCC*, 58 F.3d 654, 674–75 (D.C. Cir. 1995) (Edwards, C.J., dissenting) (describing the allowance of “reduced level[s] of First Amendment protection[s]” because of spectrum scarcity as “no longer responsible” and the “notion of spectrum scarcity” itself as “ indefensible”).

59 The Supreme Court continues to base its holdings on spectrum scarcity. In *Turner Broadcasting*, the Court based regulation of traditional broadcasters not on the potential for market manipulation, but on physical scarcity of frequencies. See *Turner Broad. Sys., Inc.*, 512 U.S. at 640.

60 See *CHARTING THE DIGITAL BROADCASTING FUTURE*, supra note 8, at 43–45 (relying on the fact that Congress, the executive branch, and courts consistently find that public interest obligations are appropriate—presumably always based on the scarcity rationale—to support its assertion of the public interest standard for digital broadcasts).

61 See infra Part V.
created rent-seeking opportunities for broadcasters, imposed restraints on speech without concomitant benefits, and constrained development of the spectrum.

First, by wrapping itself in the cloak of public trusteeship, the broadcast industry has claimed special status and obtained a litany of special benefits. For example, local cable systems—and to a lesser extent satellite providers—must carry broadcast television stations, and cable providers are prohibited from importing non-local broadcast signals. Further, broadcasters have a near monopoly on local programming and local advertising, and perhaps most importantly, broadcasters hold exclusive licenses—all in exchange for ever-decreasing, largely mediocre, public interest programming.

Other than sensationalist local news, local programming is virtually non-existent. Political discourse is limited largely to national candidates and political advertisements. Balanced coverage of critical issues is considered quaint. Broadcast stations neither editorialize, nor make their airwaves available to the public. Even if the government were to impose quantifiable minimums for public interest programming, the results would not be much better. As the experience of obligations for children’s television has shown, broadcasters will do the absolute minimum necessary to fulfill their public interest requirements, while taking the protections their status as public trustees bestows upon them.

63 See 47 C.F.R. § 76.92.
64 See CHARTING THE DIGITAL BROADCASTING FUTURE, supra note 8, at 130.
66 See Krotosynski, supra note 26, at 2118 & n.55.
Second, to the extent that the government uses the public trustee doctrine to impose behavioral regulation on broadcasters at all, it is used not to increase citizen access and public service programming, but instead to impose limitations on protected indecent or violent speech. While the intended purpose of the behavioral regulation flowing from the public trustee doctrine is to increase speech, these regulations have the opposite effect.

Finally, and perhaps most importantly, reliance on spectrum scarcity as a basis for broadcast regulation is wrong as a matter of fact. Vast technological changes render the notion of physical spectrum scarcity obsolete. Software-defined radios have the ability to listen before they talk and to change channels when they detect interference, thereby enabling spectrum sharing. To the extent there is spectrum scarcity today, it is not because of the fundamental nature of spectrum. Instead, it is because the government allocates spectrum scarcely.

According to a study by the New America Foundation, the current regulatory structure has created a situation where as much as two thirds of spectrum granted to an exclusive licensee goes unused for significant periods of time. Another report indicates that even in New York City during the 2004 Republican National Convention, spectrum occupancy was 13% or less.

In 2002, the FCC’s Spectrum Policy Task Force (“Task Force”) released a report on improving spectrum management in the United States. The report

70 See CBS Corp. v. FCC, 535 F.3d 167, 191 (3rd Cir. 2008).
73 See White Spaces Order, supra note 72, ¶ 55–57; SPECTRUM POLICY TASK FORCE REPORT, supra note 72, at 14.
76 See SPECTRUM POLICY TASK FORCE REPORT, supra note 72, at 1.
detailed how FCC regulations define spectrum in terms of frequency and geography.\textsuperscript{77} While these were practical ways to define spectrum in 1934, current technology provides policy makers the ability to regulate spectrum by the additional variable of time.\textsuperscript{78} When the Commission included a time dimension in its examination of spectrum management, it found wide swaths of unused and underutilized spectrum.\textsuperscript{79} There was a general recognition by the Task Force that current government regulations do not take advantage of recent advances made in radio technology.\textsuperscript{80} Moreover, modern spectrum assignment is done mostly in large blocks on an exclusive basis to one party.\textsuperscript{81} When the assigned party does not utilize its entire spectrum capacity at all times, the law prohibits any third party from using the fallow spectrum regardless of the value the third party might add.\textsuperscript{82}

Not surprisingly, as commercial broadcast technology has advanced beyond its Hoover-era roots, many of the limitations that once existed for spectrum use have been overcome or minimized. The political and judicial underpinnings of spectrum scarcity rest on engineering realities of the 1930s. At that time, it was taken as an undeniable truth that “spectrum simply [was] not large enough to accommodate everybody.”\textsuperscript{83} Radio of the 1920s and 30s was a classic commons,\textsuperscript{4} destined to tragedy without government intervention.

\textsuperscript{77} See id. at 14 (explaining the geographic and frequency definitions were due to technological limitations of radios).
\textsuperscript{78} See id.
\textsuperscript{79} Id. at 10–11. To test for underutilized spectrum, the FCC’s Enforcement Bureau “measured spectrum use below 1 GHz in Atlanta, Chicago, New Orleans, San Diego, and in a Washington, DC suburb during . . . July 2002.” Id. at 10. In its report, the Task Force cited data examining the New York State police dispatch channel. That report indicated that only 15% of the channel was typically in use, and use peaked at 85%. Id.
\textsuperscript{80} See id. at 14 (noting the ability of software-defined radios to take advantage of the time dimension and concluding that “[i]n order to be responsive to these increased technological capabilities, the Commission’s spectrum policies can and should remain technology agnostic”).
\textsuperscript{81} See, e.g., In re Service Rules for the 689-746, 747-762 and 777-792 MHz Bands; Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Section 68.4(a) of the Commission’s Rules Governing Hearing Aid- Compatible Telephones; Biennial Regulatory Review—Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services; Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission’s Rules; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band; Development of Operational, Technical and Spectrum Requirements Through the Year 2010; Declaratory Ruling on Reporting Requirement under Commission’s Part 1 Anti-Collusion Rule, Second Report and Order, 22 F.C.C.R. 15,289, ¶ 45 fig. 7 (July 31, 2007) (describing the auction of the 700 MHz band in several large blocks); see also 47 U.S.C. § 309(j) (2000) (authorizing auctions for mutually exclusive licenses).
\textsuperscript{82} See 47 U.S.C. § 307 (requiring a license to operate in any given spectrum).
\textsuperscript{83} Nat’l Broad. Co. v. United States, 319 U.S. 190, 213 (1943).
\textsuperscript{84} See id.; see also Matthew L. Spitzer, Controlling the Content of Print and Broadcast,
Pronouncement of bedrock technical "fact" in the early days of a technology has a tendency to look quaint in hindsight. It is instructive to remember another fact of radio around that time—as articulated by then Secretary of Commerce Herbert Hoover in an address at the Third National Radio Conference in 1924—"The quickest way to kill broadcasting would be to use it for direct advertising...if a speech by the President is to be used as the meat in a sandwich of two patent medicine advertisements there will be no radio left." As Hoover was unable to imagine a world in which direct advertising supported a wide range of broadcast content, he was also unable to envision a world in which government regulation actually created, not corrected, spectrum scarcity. It took only a few years to show that direct advertisements would fund national broadcast of a presidential speech. Eighty-five years after Hoover's comments at the Third National Radio Conference was called to bring order to the airwaves, it is time to update our understanding of spectrum. With the need for a new paradigm established, this Essay next examines alternative means of spectrum management and allocation.

IV. ALTERNATIVE MODELS FOR SPECTRUM ALLOCATION

There are a number of theories that address efficient use of spectrum put forth both by scholars and the FCC. In its Secondary Markets Initiative, the Commission took steps to "remove regulatory barriers and facilitate the development of secondary markets in spectrum usage rights among the Wireless Radio Services." In the fall of 2000, the Commission put out a Notice of Proposed Rulemaking ("NPRM") where it recognized that there may be some "unnecessary regulatory barriers" that prevent radio spectrum from being used
to its full potential in secondary markets.\textsuperscript{89} In the NPRM the Commission acknowledged that developing secondary markets would help to use spectrum in a more efficient manner and would also generally make more spectrum available.\textsuperscript{90} In 2003, the Commission established new policies for spectrum leasing arrangements and streamlined both spectrum licensing assignment and transfer of control procedures to encourage broader access to spectrum.\textsuperscript{91} The following year, the FCC established a "private commons" regulatory concept, which would allow a licensee or spectrum lessee to "make spectrum available to individual users or groups . . . that do not fit squarely within the current options for spectrum leasing . . . ."\textsuperscript{92} In other words, it would allow those who license spectrum to lease it to other parties.

While this was a step in the right direction, creating a private market for spectrum is not enough to make the most efficient use of the spectrum. To take advantage of and efficiently use all available spectrum, the manner of assignment—how spectrum is assigned and to whom it is assigned—must expand. The presumption that exclusively licensed spectrum is preferable to unlicensed shared spectrum directly inhibits the development of new technologies.\textsuperscript{93} Various theories have been put forward that address spectrum reallocation and the necessary change in policy that must occur for it to be most beneficial to the public.

A. Spectrum as Property

One model, put forth in the late 1950's by Professor Ronald Coase, views spectrum rights as property-like, enabling a secondary market for licenses.\textsuperscript{94} This regulatory alternative replaces licensing with a somewhat burdensome system of property rights in the spectrum.\textsuperscript{95} These ownership rights allow a

\textsuperscript{90} See id. ¶¶ 2–3.
\textsuperscript{93} For a comparison between usage of licensed and unlicensed shared spectrum, see William Lehr & Lee W. McKnight, Wireless Internet Access: 3G vs. WiFi?, 27 TELECOMM. POL'Y 351, 361–67 (2003).
\textsuperscript{95} Coase suggests that "[a] private-enterprise system cannot function properly unless
market in property rights to develop. Various types of property regimes have been proposed to govern rights in spectrum, but none have been adopted. However, this property rights model fails to take into account that by law current licensees cannot own spectrum. While licensees have exclusive control over their assigned spectrum, under the 1934 Act, ownership rights stay with the U.S. government:

It is the purpose of this chapter . . . to maintain the control of the United States over all the channels of radio transmission; and to provide for the use of such channels, but not the ownership thereof, by persons for limited periods of time, under licenses granted by Federal authority, and no such license shall be construed to create any right, beyond the terms, conditions, and periods of the license.

Even if Congress were to repeal this prohibition, market allocation and privatization of spectrum moves in precisely the wrong direction. Like the current exclusive licensing scheme, granting property rights in spectrum will limit users and uses instead of allowing a diversity of users and uses of a critical public resource.

Economists and scholars argue that a market-based spectrum allocation would ensure efficient allocation at the highest value. However, what may be most economically efficient in the short term may fail to serve the public adequately due to concentration of spectrum ownership and a lack of competition. Furthermore, scarcity and exclusivity are encouraged under a market based allocation model, rather than spectrum abundance and public use. Market

property rights are created in resources.” Id. at 14. Although Coase acknowledges the problems inherent in a property-rights model—valuation of spectrum, continued government use, the potential for violating international treaties, and increased transaction costs—he proposes that the property-rights system would be beneficial overall because it would solve the problem of interference among spectrum licensees and maximize output. Id. at 23–26, 28–34. He continues, that because “the problems faced in the broadcasting industry are not out of the ordinary,” the “usual solution (a mixture of transferable rights plus regulation)” would resolve the broadcasting industry’s problems much like it has in similar industries. Id. at 30.

Some analysts favor a modified property rights regime that allows for a commons for uses that do not interfere with the owner’s rights—property rights with an easement for non-interfering uses. A prominent example of this type of regime is Ultra-Wideband (“UWB”), a new technology that operates at very low power across a large span of available frequencies. See Faulhaber & Faber, supra note 87, at 18–20. UWB is unlikely to interfere with other uses, because of its very low emissions, but the transaction costs associated with gaining access to the necessary wide range of frequencies would be large. See id. at 1. Hence, it is argued that an easement is needed in order for technologies like this to flourish. See id. at 19–24.


See Faulhaber & Faber, supra note 87, at 5, 6.

based allocation continues to promote the idea that spectrum is scarce and encourages continuing current restrictive usage models. It is likely that if such a model is adopted, maximization of the potential of the spectrum will fail.

B. Hybrid

The FCC’s 2002 Spectrum Task Force proposed a hybrid of the property and commons models, depending on the character of the frequency.\textsuperscript{101} It indicated that the exclusive rights model was appropriate for frequencies where scarcity was relatively high and transaction costs associated with regulation were low—those below 5 MHz.\textsuperscript{102} The Task Force believed that the characteristics of these frequencies, in addition to “high level of incumbent use” made them most susceptible to interference issues and congestion.\textsuperscript{103} As a result, it recommended that exclusive use be auctioned and licensed to the highest bidder, thus assuring that this “scarce spectrum” would be put to its most economically efficient use.\textsuperscript{104} Conversely, the Task Force indicated that the commons model is appropriate in areas where spectrum is abundant and transaction costs associated with regulation are low.\textsuperscript{105} This would allow for maximum use and innovation in these areas.

The private commons concept put forward by the FCC is encouraging, but ultimately flawed. At the very least, the Commission recognizes that the current license-based structure for spectrum assignment limits innovation and diverse access.\textsuperscript{106} The private commons concept attempts to address concerns with quality-of-service on unlicensed spectrum by maintaining a private licensed-based structure.\textsuperscript{107} However, it is unclear why the FCC feels it necessary to privately license the commons. Creating a public commons between

\textsuperscript{101} See SPECTRUM POLICY TASK FORCE REPORT, supra note 72, at 17 (“[T]he Task Force advocates expanding the future use of two alternative regulatory models—one based on awarding exclusive spectrum usage rights and the other on creating unlicensed spectrum ‘commons’ . . . ”).
\textsuperscript{102} Id. at 38–39.
\textsuperscript{103} Id. at 38.
\textsuperscript{104} Id. at 38–39 (noting also that an exclusive use model does “not preclude the introduction of unlicensed ‘underlays’ into exclusive use bands”).
\textsuperscript{105} Id. at 39. The Task Force noted that the commons model is even more appropriate “where scarcity is low and transaction costs associated with market mechanisms are high.” Id.
\textsuperscript{106} See id. at 3 (finding that access to spectrum is a problem and that spectrum policy must evolve “[t]o increase opportunities for technologically innovative and economically efficient spectrum use”).
\textsuperscript{107} Some scholars have taken the private commons a step further, suggesting that real-time secondary markets would be the most beneficial medium for spectrum allocation. See Jon M. Peha & Sooksan Panichpapiboon, Real-time Secondary Markets for Spectrum, 28 TELECOMM. POL’Y 603, 603–16 (2004).
existing licensed bands would likely have a similar result, with the added benefit of preventing a private entity from charging rents or unfairly limiting access.

C. Towards Commons Based Approaches Based on Spectrum Abundance

Policy based on spectrum abundance should start with the presumption that—given a few simple right-of-way rules—a multitude of users and devices can effectively share the spectrum on an unlicensed basis. When regulators mistakenly associate property rights with spectrum licenses, they condemn society to a world with greatly diminished innovation. As detailed, the current system rests on the outdated assumption that exclusive licensing of spectrum is necessary for wireless communication to function. This is no longer the case. Regulators must reacquaint themselves with technological reality.

Public interest groups once used the scarcity rationale to justify regulations promoting diversity of viewpoints. Now, the primary impact of the scarcity rationale is the reduction of voices over the airwaves and the entrenchment of old-line media. It is time to abandon scarcity. Simple rules of the road—combined with modern radio technology—will allow thousands of speakers to share the spectrum without interfering with each other.

Professor Yochai Benkler argues for a spectrum-commons approach to spectrum regulation, where it is possible to regulate broadcasting with minimal government involvement. The spectrum commons approach "regards bandwidth as a common resource that all equipment can call on, subject to sharing protocols, rather than as a controlled resource that is always under the control of someone, be it a property owner, a government agency, or both."

Professor Kevin Werbach takes this approach a step further in proposing a

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109 See id. at 866 (arguing that spectrum reform proposals based on property ownership “make novel forms of communication impractical").

110 See supra Part III.

111 See Syracuse Peace Council v. FCC, 867 F.2d 654, 655–56, 685 (1989) (discussing Syracuse Peace Council's challenge to a Commission decision finding that the fairness doctrine is no longer in the public interest on the grounds that the fairness doctrine promotes viewpoint diversity).


114 Id. at 28.
“supercommons” model of spectrum management. Under this model, the default assumption for all spectrum—with the express exception of radio astronomy bands and public safety bands—is commons based. It refocuses wireless regulation away from spectrum and toward the devices used for communication.

In the supercommons, any person is able to broadcast as long as they do not interfere with another person. Principles of tort law would be borrowed and modified as appropriate to regulate the interaction between different broadcasters. In addition, safe harbors—in the form of FCC created technical standards or Patent and Trademark Office style review of proposed new devices—would provide innovators a degree of predictability and confidence that their devices would function properly. Essentially, the supercommons would allow for the commons as a baseline with some property rights. Anyone would be allowed to broadcast as long as he did not interfere with another person.

V. SPECTRUM ABUNDANCE: THE NEW PUBLIC INTEREST STANDARD—GIVING THE PUBLIC CONTROL OF SPECTRUM

It is time for government and the public interest community to change the conversation around spectrum; they should stop talking about spectrum scarcity and start talking about spectrum abundance. A new public interest standard should govern: The spectrum belongs to the public and the public controls the spectrum. The existing system of spectrum allocation is analogous to allowing one car on a highway at a time—doing so guarantees that the car will not crash into any other cars. While safe, this system is far from efficient; highways can handle more than one car at a time. Policymakers need to recognize that spectrum can handle more than one speaker at a time. The FCC should create right-of-way rules that let speakers do as they please as long as they do not interfere with others. Once those rules are in place, the FCC should enforce them, but otherwise allow speakers to go about their business. Transforming the FCC from gatekeepers into traffic cops will usher in the age of

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116 See id. at 934.
117 Id. at 917–26.
118 Id. at 914–15 (explaining that the supercommons “combines incremental experimentation from current baseline licenses with a universal access privilege wherever a transmission would not be harmful to other systems”).
119 See id. at 943–45 (explaining that the Patent and Trademark Office “engages in an initial review to determine if the trademark is confusingly similar to existing marks or is nontrademarkable”).
120 See id. at 915.
121 Analogously, Werbach points out that free access to highways facilitates better markets for cars. Id. at 952.
In a world of spectrum abundance, additional users increase—not decrease—the value of spectrum. Exclusivity is out and spectrum sharing is in. The airwaves truly do belong to the public—not as part of a one-sided trusteeship model—but to use as a means of communication for the masses. Giving the public control over its airwaves should be the public interest standard for the digital age.

This does not mean that spectrum should never be licensed or that auctions should be eliminated. Instead, those parties seeking exclusive licensing should be required to rebut the presumption of unlicensed public access. Services such as wireless telephony or emergency communications would be candidates for exclusive access to bands of spectrum. But under the new public interest standard, private users must demonstrate that the public will benefit more from exclusive access than public access. Only then should an auction be held to license the spectrum needed for the proposed exclusive use.

Having open spectrum as a default has a number of other ancillary benefits. As the Task Force articulated, the lack of licensing constraints will allow providers to build networks faster and at a lower cost, and will free speakers from the content constraints that government can impose under a licensing regime. Open spectrum will also encourage greater innovation. Currently, potential wireless innovators know that bringing innovations to market requires passing through a limited number of gatekeeper licensees. As we have seen in the case of wireless telephony, this has resulted in innovative devices and applications being kept off the market at the request of the network provider. If more unlicensed spectrum is made available, barriers to entry will be greatly reduced and technologies will quickly appear to enable the public to make better and more efficient use of the spectrum.

What happens to incumbent broadcasters under this new public interest standard? One can certainly make the case that, as a technical matter, broadcasters don’t really need spectrum. Must-carry rules guarantee access to the vast majority of Americans by way of cable and satellite television. If some enterprising cable company provided free or low cost set-top boxes to enable non-cable homes to receive broadcast signals, broadcasters would be able to give up their spectrum and simply become programmers.

As a political matter, forcing broadcasters off the spectrum they occupy is

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122 See SPECTRUM POLICY TASK FORCE REPORT, supra note 72, at 12–14.
123 Id. at 38–39.
125 See supra notes 62 & 63 and accompanying text.
infeasible; there are two other options. The first is simply to require broadcasters to pay the government a market rent for use of the spectrum. Particularly in light of the recent auction of broadcast spectrum by the FCC, policymakers and the public have a sense of the value of spectrum that broadcasters are currently using for free. The money collected could free public broadcasting from its government shackle, or could fund other public service media both in the online and offline world.

However, a better option might be to give broadcasters a choice: either keep the spectrum and pay for it, or give up the spectrum and keep their special protections such as must-carry, distant signal protections, and retransmission consent. It is likely that when forced to choose between the prestige of beaming a signal across the spectrum and the value of the special protections, broadcasters would admit the right to broadcast has a relatively low value to them and take the protections. This option has the added advantage of harnessing the interests of broadcasters to reduce scarcity, rather than attempting a wholesale restructuring of the system.

VI. CONCLUSION

So how can we move towards the spectrum abundance model of regulation? Congress, the FCC and the Department of Commerce have a number of options. A celebrated step towards abundance was taken in November 2008 when the FCC made the white spaces available for unlicensed use. The Commission recognized that white spaces could serve as a useful model for how a supercommons model of spectrum use can work.

The white spaces decision was a good first step, but the government must do more. The FCC should continue to utilize its Spectrum Policy Task Force and identify and make available spectrum either for licensed or unlicensed uses. Seven years ago the Task Force recognized that there is underutilized spectrum


128 See 47 U.S.C. §§ 325(b), 338, 534 (2000). Retransmission consent allows a broadcaster to refuse to allow a cable or satellite operator to carry a station, and also allows the broadcaster to demand financial or in-kind—usually in the form of carriage of commonly owned program channels—compensation for carriage. See id. § 325(b).

129 See White Spaces Order, supra note 72, ¶ 1.
and that it can be used on both a licensed and unlicensed basis. The next logical step is making use of the idle spectrum that is available. Furthermore, the Department of Commerce should identify spectrum that is underutilized by the government and make it available for allocation and assignment by the FCC. Once the FCC begins moving away from policies based on spectrum scarcity, it will be easier to set in place policies that allow for greater unlicensed uses of the spectrum.

It should come as no surprise to those who study communications technology and policy that ten years after its conclusion, the Gore Commission's recommendations are outdated. The tremendous explosion of digital technologies and software applications that could do everything from publish a book to make a phone call using Internet Protocol have made it possible to take a fact that went unchallenged for nearly eighty years—spectrum scarcity—and turn it into a fiction. This story can have a happy ending. The airwaves can actually be controlled and utilized by its owners—the public—adding much needed diversity to public discourse and injecting new innovation into the economy.

130 Spectrum Policy Task Force Report, supra note 72, at 17, 19.
TRADEMARK LAW AND THE REPERCUSSIONS OF VIRTUAL PROPERTY (IRL)

Melissa Ung†

I. INTRODUCTION

Jolex—a brand of luxury watches and accessories—is a status symbol of the elite. Businessmen, wealthy socialites, and lawyers sport Jolex watches like a five-year-old showing off a new toy at playtime. The Swiss movement technology found in every Jolex watch contributes to its reputation as a prestigious brand of watch of exceptional quality. Jolex’s legal team works diligently to protect its brand, quality of workmanship, and profitability of goods by ensuring that only official Jolex watches carry the name. Its trademark and product design are registered at the Patent and Trademark Office. One day, a Jolex representative finds “Sammy’s Store of Watches” selling watches touted as “The Original Jolex” in a virtual community online. The watches are not physical, yet “Sammy’s Store” charges real money for virtual watches using the Jolex name. Jolex finds that it has no remedy under current law to prevent Sammy from selling its virtual watches, either in the form of an injunction or compensation for misappropriation of intellectual property. Does this seem fair?

While the Jolex mark is fictional, the hypothetical described above is frequently experienced by companies such as Rolex. As of May 2007, Rolex, Chanel, Ferrari, Nike, Apple, and others found their brands infringed upon in

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2 BENJAMIN TYSON DURANSKE, VIRTUAL LAW: NAVIGATING THE LEGAL LANDSCAPE OF VIRTUAL WORLDS 150 (2008) [hereinafter DURANSKE, VIRTUAL LAW] (“At least forty stores . . . advertised virtual ‘Rolex’ and ‘Chanel’ watches, averaging around . . . (US $1.61). Neither Rolex nor Chanel ran any of these stores.”).