TELECOMMUNICATIONS LAW AND POLICY

TELECOMMUNICATIONS LAW AND POLICY

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<u>xx</u>

PREFACE

The theme of almost any law school casebook is apparent from the outset. An administrative law casebook, for example, pulls together materials about governmental administration. A copyright text similarly considers a particular combination of exclusive rights recognized in a range of creative works. Thus, even though an administrative law text will consider agencies as diverse as the Environmental Protection Agency and the Federal Aviation Administration and even though a copyright text will similarly examine works as varied as paintings, sculptures, and computer software, in each of these texts it is easy to understand why such seemingly disparate materials are bundled together into a single coherent conversation.

The implicit logic of a telecommunications text, however, may be less transparent. Why should statutes and regulations related to broadcast radio, broadcast television, cable, satellite, wireline telephony, cellular telephony, and the Internet all be considered in a single volume? Do these communication mechanisms really have that much in common? Why not divide the book into two, for example, featuring technologies used for one-to-many communication in one volume, and technologies used for one-to-one information exchanges in another? Why, in short, a book on telecommunications law writ large?

The insight, we think, is that telecommunications technologies are all to some degree substitutable, and therefore much of telecommunications law is about making sure that society uses the right resources to accomplish the right task. Television content, for example, can be delivered over the airwaves, but it also can be delivered by wire. Television by wire can be a pay service or an advertiser-supported service, just as broadcast television can operate in either form. Notably, shifting television from the airwaves to wires frees up the airwaves for other uses, such as cellular telephony.

Almost every telecommunications issue plays out exactly the way the television issue played out above: a question that starts by focusing on one telecommunications topic inevitably has implications for virtually every other. Thus, it is hard to consider any one branch of telecommunications in isolation. It is the combination of broadcast, cable, telephone, and Internet regulation that together determine how wire, air, and other telecommunications resources are allocated as between all their myriad competing uses. Because almost any telecommunications resource can be put to more than one telecommunications use, telecommunications topics are necessarily interconnected.



Information Pipelines into the Home. There are many pathways into the modern home, each to one degree or another capable of delivering information services.

This same point explains why sometimes this text will dabble into discussions of media that seem peripheral to telecommunications issues, for example the markets for videocassettes and music albums. After all, one question broadcast policy has to answer is the question of why any of the airwaves should be devoted to the delivery of music via radio given that music aficionados can purchase their favorite tunes at the local store or over the Internet. It might be that the airwaves could be put to better use by making possible various portable Internet services than by, instead, transmitting Eminem's latest musical offering. Here again, no telecommunications topic can be studied in complete isolation.

There are other reasons why broadcast radio, broadcast television, cable, satellite, wireline telephony, cellular telephony, and the Internet should all be brought together into a single conversation. For example, in all of these markets, one of the main concerns motivating regulation is the worry that competition is either unworkable or undesirable. To give but one example, policymakers have long worried that the economics of local telephone service are such that either only one firm can survive in the long run ("competition is unworkable") or a single firm can provide a given quality of phone service at lower total cost than can multiple competition as the principal mechanism for ensuring good performance. Similar arguments that regulation might have advantages over competition arise in every telecommunications market; this is therefore another reason to consider all of these topics in a single conversation.

Finally, any attempt at separating the various strands of telecommunications is further confounded by the phenomenon of technological convergence. Not only are broadcast, cable, telephony, and the Internet substitutable and interconnected, but also the lines between them are blurry, and becoming more so over time. More than merely substituting for each other, televisions, PREFACE

telephones, and computers increasingly are each other. That provides yet another reason to treat them all together in one coherent conversation.

Of course, this blurring of technological lines contrasts sharply with the regulatory regime, which has long put broadcast, cable, telephony, and the Internet into separate legal categories and subjected them to quite different rules and regulations. Technologies may be converging, but the legal world is still significantly balkanized. Indeed, one way to articulate the current state of telecommunications law is to say that society is today in the middle of a transition process that will likely result in not only technological but also legal convergence. But how long that transition will take, and on whose terms the law and the technology will converge, remain open issues. During this period, battles will therefore erupt not only over technology but also over the guiding legal regime. And the stakes for all players, including not only the firms but also the regulators, are quite high.

All of these considerations make both organizing and writing a casebook a major challenge. We would do a disservice to our readers—particularly as many are likely to be lawyers and law students—if we let a focus on technological convergence blur the important distinctions between the legal regimes for broadcast, cable, telephony, and the Internet. At the same time, we would fail to capture important technological developments if we treated these legal categories as wholly separating each technology from the others. We have therefore sought an approach that attempts to capture the richness and complexity of the regulatory regime while emphasizing the ways that telecommunications technologies cross the lines that regulators have written in the sand. Accordingly, we have organized the book along the four main dimensions suggested here—broadcast, cable, telephony, and advanced services—yet, at the same time, each section offers contrasts and questions that cross these somewhat artificial boundaries and thereby help to explain how telecommunications policy is necessarily linked from topic to topic.

Now, some acknowledgments. This text grew out of an earlier book written by Tom Krattenmaker, and so first and foremost our thanks to Tom for getting us started back in 2001. Karl Auerbach, Jack Balkin, Dale Hatfield, Karl Mannheim, John Roberts, Peter Shane, and Jim Speta also have contributed significantly to this project over the years. We owe each sincere thanks for helping us think through issues. Our thanks go to Stanley Besen and Lucas Powe as well. While their contributions came to us through Krattenmaker, those suggestions nevertheless benefit the book still today. Sincere thanks, too, to the family at Carolina Academic Press. Linda, you especially have been supportive of our work on this project; we genuinely appreciate everything you do for us and our readers. A growing army of assistants have helped us bring this project to completion, including, from the University of Chicago, Adam Bellack, Barry Blonien, Sapna Kumar, Martha Pacold and Danny Sokol; from Duke University, Neylân Gürel and Dana Norvell; from the University of San Diego, Mike Whittaker; and from Boalt Hall, Madeline Burgess, Elizabeth Field, Chris Swain, Larry Trask, and Steve Vercelloni. Their work taken together has been so valuable to us. Lastly, our families have been enormously patient as this

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xxiv	PREFACE	

project lurched forward, allowing us to work intensely when we needed to and being there to laugh with us when things were going wrong. To them, our love; nothing of what we do would matter without all of you in our lives.

One final word before we step aside: the materials included in this book have been ruthlessly edited for style, length, and clarity. To avoid clutter, we have left almost all of those changes unmarked. While we are confident that none of our edits altered the meaning of the relevant passages, we do want to warn readers that the materials have been edited so as to maximize their value in the educational setting and, thus, attorneys looking to cite materials in court documents are advised to look to the original sources before quoting any of the materials excerpted here.

With that, we welcome you to the text. We hope you find your study of telecommunications to be a rewarding one.

Stuart Benjamin Douglas Lichtman Howard Shelanski Philip Weiser

Part One

SPECTRUM AND BROADCAST

Many devices send and receive information by transmitting electromagnetic waves through the air. Conventional radio stations communicate this way. So do broadcast television stations, cellular telephones, and even more mundane technologies like garage door openers. The federal government regulates devices that use the airwaves in this manner, and in this Part of the textbook we consider both why the government regulates this use of the airwaves and how those regulations are structured.

We begin here primarily because this is where telecommunications regulation itself began. The Federal Communications Commission today has influence over everything from telephone service to broadband, but the agency was first created to ensure that private parties would be able to use the airwaves without interfering with one another's use. The best way to understand the Commission, then, is to start where it started: with the puzzle of how to allocate rights to something so ephemeral as air.

Although early materials in this Part touch on a wide variety of telecommunications services, later materials shift to focus exclusively on broadcast technologies like radio and television. This is again done for historical reasons. Although the airwaves are today used for a wide range of applications (ranging from cellular telephone service to satellite radio), in the beginning the airwaves were used almost exclusively to provide radio and television signals. Thus, many of the foundational discussions about telecommunications regulation are inseparably linked to specific concerns relevant primarily to broadcast. Obviously, later in the text, we will return to think about other technologies that use the airwaves to transmit information.

Chapter One

Why Regulate?

In this chapter, we consider the questions of what spectrum is and why the federal government regulates it.

03 80

§1.1 Introduction

Section 301 of the 1934 Communications Act announces that the federal government controls the spectrum, and that the government will permit "the use of such channels, but not the ownership thereof, by persons for limited periods of time, under licenses granted by Federal authority." For most readers, the fact that the federal government regulates the "airwaves" is at once familiar and alien.¹ It is familiar in the sense that we all know this is true. News articles regularly refer to the Federal Communications Commission and its decisions about whether a new cellular telephone service will be offered in a given geographic region or whether a television broadcaster will be fined for airing a naughty word. It is alien, however, in that in our daily lives it is rare to pause to think about what we mean when we say that information is traveling over the airwaves, let alone to puzzle about why government regulation of the spectrum is arguably appropriate.

Thus, in this chapter, we set out to lay this groundwork. We begin with a quick primer on the concept of spectrum. As we have already hinted, many technologies transmit information over the airwaves. It turns out that these technologies distinguish themselves by transmitting information at different frequencies (or wavelengths) and the radio spectrum (often simply called "the spectrum") is the term for the full range of frequencies at which information can be transmitted through the air.² The purpose of this primer is not to simulate a master class for engineers or physicists. Rather, the idea is to put forward enough information such that readers can appreciate the regulatory and policy materials that follow.

Next, we survey some history, specifically the early history of broadcast regulation. This history provides an important backdrop, introducing readers to the real events that first focused public attention on the various regulatory issues that are the concern of this book. Finally, we consider several possible

¹ Technically speaking, radio waves can travel in free space where there is no "air." Most popular accounts, however, refer to radio waves as using "airwaves," and we will use this convention as well.

² The "radio spectrum" is a subset of the larger electromagnetic spectrum, which includes gamma rays, ultraviolet waves, and other forms of electromagnetic radiation.

rationales for spectrum regulation. We focus primarily on the classic argument that spectrum must be regulated because spectrum is a scarce resource; but we also introduce some alternative theories, such as the possibility that spectrum regulation actually benefited and hence was sought by incumbent broadcasters, and the hypothesis that broadcast regulation in particular is necessary to counteract the influence of advertisers.

§ 1.2 Defining Spectrum

There are many ways to communicate at a distance. Young children coordinate from afar by shouting back and forth. Drivers on the road exchange information by using flashers, turn signals, and other visual cues. Ships once communicated through semaphore flags.

Broadcast technologies like radio and television allow individuals to communicate at a distance using radio waves that travel unfettered through the air. This is no small trick. The telegraph used wires to connect people in one city to people in another. The postal service originally carried notes by horseback and wagon. But the information transmitted through broadcast technology requires no carrying case, no dedicated path, and no container.

For the purposes of understanding telecommunications regulation, readers do not need detailed knowledge of exactly how radio-based communication works. Indeed, it is amazing how much of the regulatory infrastructure one can understand simply by reference to a mental image of a mountain climber generating smoke signals to warn other climbers of an approaching storm. Nonetheless, it is helpful to know a few details about how radio waves carry information from place to place.

Characteristics of Radio Waves

Modern communications technologies seem infinitely more advanced than smoke signals, but they have much in common: each transmits information to a receiver that processes the information. In this way, each can very quickly send information over a reasonably long distance. Employing telecommunications technologies rather than smoke signals means that more information can be packed into a second's worth of transmission and that the information can be transmitted over a longer distance. But, in essence, cellular telephony and radio broadcast systems are just the latest in an evolving technology for extending the speed and reach of information transmission.

One important characteristic of radio waves is the frequency of the wave. In normal usage, the word "frequency" refers to the number of times a given event repeats during a specific period. In telecommunications, the word has a similar meaning. Radio waves typically look a lot like any other wave—they start at zero, then move up and down in the pattern of a sine wave before returning to zero. Each movement from zero up to the crest, back through zero and down to the trough, and back up to zero again is a cycle. The unit of measurement of frequency is called a "hertz." A one hertz (Hz) wave completes one cycle every second, and a one kilohertz (KHz) wave accomplishes one thousand cycles in

that same amount of time. The physical distance between the crests of each wave constitute the wave length and it decreases as the frequency increases. Very long waves thus have very low frequencies because they repeat infrequently. Short waves have high frequencies because they recur more often.

For our purposes, we will use the term "spectrum" to refer to the range of radio wavelengths (i.e., frequencies) currently suitable for wireless transmission.³ Unsurprisingly, the usable spectrum—like chemistry's periodic table—has expanded substantially during the past 100 years. For example, when the FCC was first established in 1934, spectrum capacity was less than 300 megahertz (MHz), which is to say less than 300 million hertz. By the end of World War II, by contrast, usable spectrum had increased to 40 gigahertz (GHz), or 40 billion hertz.

Different frequencies of radio waves have somewhat different characteristics. Broadcasts at the very lowest frequencies require very large antennas because exceedingly long waves must be propagated. Radio waves in the medium frequency, which include AM radio broadcasts, are reflected back to earth by the ionosphere, particularly at night, thus considerably extending the reach of many of these signals.⁴ Transmissions in the very high frequency (VHF) and ultra high frequency (UHF) ranges are not reflected back to earth and so can usually be captured clearly only by a receiver that is within the transmitting antenna's line of sight. Above UHF, which includes the super high and extremely high frequencies, the wavelengths are so small that they can be packed into narrow focused beams of electromagnetic radiation, such as are employed in microwave and radar.

The different characteristics of the various frequencies are important to note, but there is no invariable requirement that a particular service use only an exact set of frequencies. Every service can operate on more than one set of frequencies, and every frequency is suitable for more than one service. Radio broad-casting, for example, takes place all the way from 535 KHz to 108 MHz. And cordless telephones operate at four different Commission-approved frequencies: 46-49 MHz, 900 MHz, 2.4 GHz, and 5.8 GHz.

That said, to generate a good quality signal for a given service, some bands are likely to be more desirable than others. Radio propagation characteristics, for instance, make certain frequency ranges more suitable for particular purposes than others. The presence of other services on a frequency also might matter. For example, given current technology, a mobile paging service within one slice of the spectrum can create spillover effects that would render a neighboring slice unsuitable for television (say, causing static) but satisfactory for some less complex or less delicate transmission.

³ The radio spectrum is conventionally treated as ranging from 3 KHz to 300 billion hertz (or gigahertz), although only not all of these frequencies are usable with current technology.

⁴ This also means that, for signals at these frequencies, the problem of interference is greater at night than during the day.

Separate from its location in the spectrum (wavelength), the extent of the spectrum that a signal occupies (bandwidth) is also often very important. The preferred amount of bandwidth for a particular use depends on the amount and types of information that must be impressed on the radio waves. For example, much more bandwidth is required to carry a color television signal than to carry the human voice. Indeed, because television signals contain an audio component, the point is axiomatic. The preferred amount of bandwidth also depends on the technology being employed. The same information subjected to traditional analog transmission methods will require more bandwidth than if transmitted using digital technology.

Transmitting Through the Air

When transmitting through the air, the radio waves can be radiated in all directions or to only a single point. Conventional broadcast television stations radiate in all directions; a series of microwave transmitters linked together into a 2000 mile hook-up, by contrast, each "radiate" only to a given area. The direction and characteristic of the radiated signal is determined by the size, shape, and direction of the transmitting antenna. Many services intentionally radiate. For example, television stations allow their signals to travel in all directions because their viewers are typically scattered throughout a geographic region. Cellular telephone transmissions similarly radiate, this time in order to make it possible for communication to occur between a moving caller and a stationary cellular tower. Multi-directional transmission similarly allows dispatchers and taxi drivers to converse via radio waves, even though the taxi drivers are constantly changing their geographic positions.

Whether transmitted through wire or air, a signal can be sent or radiated at varying degrees of power. Compare the transmitter in a cordless telephone handset to the broadcast transmitter for a major metropolitan TV station. The amount of transmission power affects both the distance over which the signal can be transmitted and the signal's clarity at its reception point.

A telecommunications system can be designed so that recipients are also transmitters. Where this two-way communication occurs, the system is usually termed "interactive." Ordinary telephone systems are interactive because one can both receive and transmit voice information through the telephone. Conventional television broadcast systems are not interactive, but the addition of a microwave transmitter from the television set to the broadcast station could alter that. Conventional cable television systems (as opposed to more modern ones capable of providing broadband Internet access) typically contain a relatively narrow "upstream" channel from the subscriber to the transmitting head-end that can be used for interactive applications.

Transmitting Using Wires

Just as radio waves can propagate through the air, they also can propagate down a wire. Wire is just a means of guiding electromagnetic signals. With excellent shielding (such as coaxial cable), a wire can convey over a distance a very large range of frequencies. For telecommunications, then, the medium of

transmission can be a wire or the airwaves—and in this text we ultimately will think about both wireline technologies like telegraph, wireline telephone, and cable television and also wireless ones like broadcast television, cellular telephony, and direct broadcast satellite. Historically, the main wire used by consumers has been the unshielded twisted pair copper wires conventionally used by local telephone companies. The advantages of such wires is that they are cheap and easy to splice. One disadvantage is that, because they are unshielded, they are subject to interference from nearby wires. Their bigger disadvantage, though, flows from the fact that different kinds of wires have different propagation characteristics—which means that some wires can carry higher frequencies than can others, resulting in greater capacity or bandwidth. Copper wires cannot transmit at high frequencies and thus have fairly low bandwidth.

Today, transmitting information by wire at higher bandwidth usually employs one of two technologies. Coaxial cable is a braided metallic cylinder surrounding a wire. The wire carries the radio waves while the cylinder prevents signals from other wires, or outside radiation, from interfering with the signals on the wire. The genius of coaxial cable is that the outside cylinder offers superior noise suppression while the braiding allows the cable to remain flexible. Moreover, the wire inside has greater capacity than do conventional unshielded twisted pair copper wires. Fiberoptic cable, a technology that entered widespread use in the 1980s, uses light traveling through a very thin glass fiber to transmit information. It has even greater bandwidth than coaxial cable. Fiberoptic cable forms the bulk of the long distance telephone network and the Internet backbone. It is particularly well suited for information transmitted at high bandwidth, for transmission over very long distances, and for carrying many signals within one cable.

When information is being transmitted by wire, the system may be designed so that many streams of information are in the wire and the recipient chooses one stream (an example here is cable television) or so that the wire leading directly to the recipient carries less information (wireline telephone for many years carried only one conversation at a time). In the latter case, decisions as to what information is sent to the recipient are made further up the wire by specialized computers called switches and routers.

Signal Modulation

Earlier we drew the analogy to smoke signals and pointed out that modern telecommunications technologies are not so different from this sort of more primitive communication mechanism. Nonetheless, to progress from smoke signals to wireless radio transmissions required that people learn to use electromagnetic radiation to carry information. This is what Marconi taught us. The radio waves he pioneered—waves that today carry sound, pictures, numbers, and other information through the air—are basically sine waves that are generated and modulated by a power source and then transmitted by that power source to a device (the receiver, radio, or TV set) that searches out the

sine wave and demodulates the signal to extract the information.⁵ Today, a perception exists that there are almost countless telecommunications products, markets, and technologies available. Yet virtually all of them are defined simply by the modulation technique and the transmission process they employ. That is, telecommunications technologies, and thus telecommunications markets, are usually defined by the manner in which information is modulated and the means by which that information is later demodulated.



Radio Waves. Radio waves are typically transmitted as sine waves. Two important attributes of the wave are its frequency and its amplitude.

Information can be modulated onto sine waves in one of two principal ways: (1) by varying the waves' strength (called amplitude modulation, or AM) or (2) by varying their frequency (termed frequency modulation, or FM). Amplitude modulation is attractive because it requires less of the available spectrum than does FM; amplitudes can be modulated while keeping frequency constant. The charm of FM, by contrast, is that in FM transmissions all of the electrical power necessary to generate the FM signal can also be employed to transmit it. AM "wastes" some power by investing it in varying amplitude.



Amplitude and Frequency Modulation. Information can be encoded on sine waves by means of amplitude modulation and also by means of frequency modulation. Compare the AM signal pictured here to the unmodified carrier baseline. Can you see how the amplitude of the AM signal could be used to communicate information? Similarly, compare the FM signal to the carrier baseline. Again, can you see how information might be contained in these patterns?

⁵ To "invent" broadcast radio, then, one had to discover how to modulate the human voice onto radio waves and then to demodulate that information at a receiver. Similarly, television requires the ability to break a picture down into bits of data (millions of points of light).

"Analog" and "digital" are terms frequently employed to describe two ways of transmitting information. Analog transmission employs a continuous signal varying the amplitude, frequency, or phase of a sine wave. To transmit a picture by analog signal requires that the carrier wave replicate the information contained in the picture. A digital system encodes the information in a binary digit (or digitized) form for transmission. The digital transmission of a series of pictures requires only that one send the information that differs from one frame to the next. Digital systems thus can compress information and be more efficient than analog systems.

Radio transmissions are subject to interference. Consequently, if a device is communicating information by varying its amplitude, other sources of electromagnetic radiation (say, a microwave oven or lightning) might result in the receiver misinterpreting relatively small changes in amplitude. In general, all background sources of interference are referred to as "noise" and any radio system must take into account the possibility that different sources of inference may exist at any given time. Digital systems are more resistant to such distortions creeping into the signal because they need only distinguish between two digital possibilities (a "1" or "0") as opposed to many possible analog signal levels. Relatedly, because digital technology—that is, the use of binary digits, or bits—is the essence of how computers operate, computer processing power can more easily be used in conjunction with digital transmission systems rather than analog ones. Indeed, computers can facilitate digital communication by engaging in error checking and other forms of digital processing that improve transmission reliability and quality.

To retrieve information that has been modulated, of course, one needs a receiver that can decode the signal. This can create substantial problems, particularly where different firms or individuals own the modulator and demodulator. For example, the benefits of owning an FM radio transmitter are slight if no one owns an FM radio receiver, and of course vice versa.

It admittedly simplifies matters somewhat to describe telecommunication as we have—simply as modulating and electronically transmitting information but most telecommunications technologies and markets are defined by these two characteristics. Thus, the difference between AM and FM radio is that one uses amplitude modulation and the other uses frequency modulation to modulate the sine waves. Analog television is simply a mixture of both modulation schemes. The visual pieces of information (pictures) are amplitude modulated while the audio pieces of information are frequency modulated.⁶ Communications satellites are very tall transmitting and receiving antennas, and CB radios are portable AM radio stations transmitting at very low power. Conventional telephone communication is like AM radio in that it requires little spectrum because it transmits only voice information, but is unlike radio in that it transmits locally by wire and so thus it is somewhat easier to exclude people

⁶ Of course, a television signal must convey more data than an FM radio signal, so a television broadcast requires more bandwidth in the spectrum than does an FM radio broadcast.

from listening in on the communication and there is less of a problem with congestion.

Similarly, altering the technology employed in a telecommunications system can change the effects it produces. For example, the extent to which a radio signal creates potential interference with other signals is reduced if the signal is not radiated in all directions, but is transmitted only from one point to another, or it is radiated at less power. The amount of information that can be transmitted through a cable of a certain size can be increased by switching from coaxial to fiber optic cable. The amount of spectrum necessary to transmit a television signal can be reduced if a digital, rather than an analog, signal can be employed. By increasing the power at which a satellite transmits television signals, one can reduce the size of the antenna necessary to receive those signals (and vice versa).

New Wireless Technologies

This book will spend a considerable amount of time discussing broadcasting as a quintessential use of the airwaves. This focus reflects the historical significance of broadcasting, which set many of the basic premises of the current regulatory regime for spectrum. It does not, however, reflect either the current technological or economic landscape. As we discuss in Chapter Eight, broadcasting is of decreasing relevance for most television viewers in that they receive TV programming via either cable or satellite connections. And, while broadcast is obviously still an important spectrum use, modern conversations about spectrum policy by necessity focus just as heavily on newer technologies like cellular telephony and Wi-Fi.⁷

The decline of broadcasting as a medium for transmitting television signals reflects an observation made by MIT Media Lab pioneer Nicholas Negroponte. As Negroponte noted, a generation of Americans who grew up watching TV delivered over the airwaves and talking on telephones connected by wires has given way to a generation who watches TV delivered by wire and talks on telephones linked through the air.⁸ As Negroponte appreciated, the airwaves are, relatively speaking, not well suited to delivering high bandwidth video signals, but are excellent for delivering voice conversations. Moreover, mobility in TV sets is not a particularly desirable feature—although there is some allure to carrying a portable television to class, we know; by contrast, Americans have learned to love mobile phones and they are now more popular than their landline counterparts.

The technology that gave rise to mobile telephones was invented at Bell Labs in the middle of the twentieth century. The basic technological insight behind the invention was that wireless communications did not need to be

⁷ "Wi-Fi" refers to wireless local area networks that use a particular set of specifications (known as 802.11) developed by the Institute of Electrical and Electronics Engineers or IEEE.

⁸ Nicholas Negroponte, Wireless Revisited, Wired (Aug. 1997), http://www.wired.com/wired/archive/5.08/negroponte pr.html.

broadcast at high power, but rather could be delivered to limited areas at lower power through a "cellular" architecture. The service thus became known as cellular telephony.⁹ The FCC has designated spectrum licenses differently, so certain licensees hold rights to provide "cellular" service and others hold the right to provide higher-capacity "personal communications systems" (or PCS). Both services use cells and towers, however, so we will stick to the popular term and refer to mobile telephone service as cellular service.



Cellular Telephony. The panel to the left shows the basic concept: as the portable communications equipment moves away from one receiver, it moves toward another, and thus service is maintained. The panel on the right shows how cells are used to divide a service area into smaller geographic cells. The more cells, the lower the necessary transmission power, and the greater the maximum number of simultaneous users.

As the diagram above indicates, the relevant geographic area ("service area") for mobile telephone systems is broken into discrete "cells," each of which is served by its own receiving and transmitting equipment. Cellular telephones, then, can transmit signals at relatively low power but, because so many cells are established, the transmissions can usually nevertheless be picked up by some nearby cell tower. As the cellular phone moves, its signals are picked up by the (new) nearest cell site, and so the cellular phone can move from site to site while remaining in constant contact with the telephone network. Indeed, so long as there is a cell tower in the vicinity, that tower will pick up the mobile telephone's transmission and relay it to its destination.

The modern architecture of cellular telephone technology took hold in the 1980s and launched what continues to be a revolution in wireless technology. The original systems relied on the basic technology developed in Bell Labs, known as the Advanced Mobile Phone System, or AMPS. The FCC mandated that each licensed provider—and there were two in each geographic area and scores throughout the country—adopt this technology, ensuring that there was one compatible technology through the country. Consequently, customers of different systems could use their handset to operate anywhere by "roaming" on systems operated by a firm other than their provider.

In Europe, the European Telecommunications Standards Institute (ETSI) mandated that all providers adopt the same digital second generation system ("Global System for Mobile Communications" or GSM). In the U.S., by

⁹ The FCC classifies all commercially available mobile services in the category of "commercial mobile radio services," or CMRS. See 47 C.F.R. §20.3.

contrast, cellular providers were free to adopt any technology they chose (provided they allowed the system to revert to the analog AMPS standard) and a number of different alternatives emerged. The principal rival to GSM is one called "Code Division Multiple Access" (or CDMA). This technology takes advantage of a concept known as "spread spectrum," which uses several frequencies at once, managing them by algorithms that can flexibly allocate bandwidth. By contrast, rival systems like GSM divide up transmissions by time (time division multiple access or TDMA) or by frequency (frequency division multiple access or FDMA) and are generally not as efficient in terms of the bandwidth they consume.

The concept of spread spectrum is hardly unique to CDMA. Many wireless local area networks (for example, Wi-Fi systems) similarly rely on this concept to enable wireless modems to operate effectively and, up to a point, dynamically avoid interference with one another. Similarly, the technique of "frequency hopping," which is often used in spread spectrum systems, enables technology that, among other things, is responsible for the wireless earpieces used in conjunction with cellular telephones.

Another emerging technology is the use of "cognitive radio" systems. Such systems, which often rely on software-defined radios, promise to facilitate greater levels of spectrum efficiency. Traditionally, even for CDMA-based networks, radio transmissions operated using a limited number of frequencies. Cognitive radio systems, by contrast, can be engineered to operate over a broad range of frequencies and to opportunistically use available spectrum otherwise left unused.

The Spectrum as a Resource

In almost every case, more than one telecommunications technology can accomplish a given end. Transoceanic cables can substitute for geostationary orbiting satellites. Telephone calls and television signals can be transmitted by wire or over the air. A weak signal can be strengthened by boosting the power at which it is radiated or by using a relay station to capture and retransmit the signal. In much the same way, coaxial or fiberoptic cables will periodically have repeaters that strengthen the signal over long distances. Multi-channel packages of television signals can be sent to the home by cable or satellite.

Choosing a telecommunications technology is therefore like choosing virtually any other good. One compares price and quality. There are many ways to transfer data from one place to another. For a specific task, some are cheaper, some are faster, some are more reliable. The distinct advantage of spectrum, for instance, is mobility and the absence of the large infrastructure investment associated with wired systems. Wireline communication, in turn, offers enhanced privacy. Should one write, phone, email, or instant message? Presumably, the choice is made by comparing the costs and benefits of each. Further, as new desires arise, new configurations of telecommunications technology will be developed to create cost effective ways of satisfying these desires. Cable television wedded the use of wires and radio technology to serve the desires of viewers for more signals of greater clarity. Cellular telephone

combined the same technologies to increase accessibility at some cost in clarity and in the ability to exclude unwanted listeners.

The government treats spectrum as if it were a natural resource, one to be allocated both to specific uses and assigned to specific users. This is a helpful way to look at spectrum in that it reminds us that spectrum shares many basic properties with other natural resources. For example:

Spectrum can help to create both wealth and value. People are often willing to pay substantial sums for the ability to send or receive large quantities of data quickly and from far away.

Spectrum can be used in varying amounts for the same purpose. To get a television signal from a New York stage to a Los Angeles nightclub one could use no spectrum (send it via wire, door to door), some spectrum (wire from New York to Los Angeles, but broadcast to the nightclub), or nothing but spectrum (transmit directly from stage to satellite, which transmits, in turn, directly to the nightclub).

Spectrum use is costly in that any spectrum committed to one use can no longer be employed toward a different valuable end. If one person is broadcasting a television signal on channel two in New York, that means someone else cannot use those frequencies for mobile telephony, FM stereo, or dispatching ambulances.

Lastly, while the absolute amount of available spectrum is finite, the amount of usable spectrum can be increased with appropriate investments in technology. Not only do improvements in technology add to the range of usable spectrum, but also within any existing range of usable frequencies spectrum capacity can be increased by advances in technology. To pick one notable example, digital compression allows a broadcaster to send much more information over the same amount of spectrum that would otherwise be occupied by an uncompressed analog signal. In short: "With airwaves, as with other media, the more you spend, the more you can send: it all comes down to engineering and smart management."¹⁰

§ 1.3 The Early History of Broadcast

There are many ways to begin the story of wireless services.¹¹ One approach would be to start with the work of Joseph Henry and Michael Faraday, two physicists whose work in the late 1800s showed that one device can induce electric current in another without the two sharing any physical connection. Such a story would focus on the scientific marvel at work here—something both the readers and authors of this casebook likely take for granted.

¹⁰ Peter Huber, Law and Disorder in Cyberspace 75 (1995).

¹¹ Many sources recount the early history of broadcasting. Among the best: Susan Douglas, Inventing American Broadcasting 1899-1922 (1987); Erik Barnouw, A Tower in Babel (1966); Susan Smulyan, Selling Radio: The Commercialization of American Broadcasting 1920-1934 (1994).

Another approach would be to start in 1899, when a young entrepreneur named Marconi showed the world that Henry's and Faraday's scientific accomplishment had significant commercial application as well. Marconi developed what modern audiences might conceptualize as a basic walkie-talkie, and on October 1, 1899 he used it to provide up-to-the-minute news coverage of the America's Cup yacht race. Marconi stationed his men on boats and had them radio information back to dry land. It was for both Marconi specifically and broadcast technology more generally a public relations coup: news coverage of the race focused more on Marconi's amazing "wireless" invention than it did on the race itself.¹²

Our approach, however, is to start not with these key scientific and entrepreneurial events, but instead with the event that first triggered substantial government interest in regulating the radio spectrum. That event was the sinking of the Titanic in 1912. At the time the Titanic went down, the only significant spectrum regulation in effect was a law passed in 1910 that required passenger ships above a certain size to carry wireless sets.¹³ The theory behind that law was simple: in the event of an emergency, wireless would allow ship operators to call for help.

The Titanic tragedy suggested, however, that this sort of light-handed regulation was insufficient. There were two significant problems with the existing regulation. First, while the law required ships to carry wireless sets, it imposed on those ships no obligation to keep their wireless sets manned or even operational. So the California—a ship that was a mere twenty miles away from the Titanic on that fateful night—never heard the Titanic's distress call. The California had cut its engines in order to more slowly navigate the dangerous waters that both it and the Titanic faced, and the wireless device on board had no independent power supply.

Second, the law as it stood in 1912 focused only on wireless equipment, saying nothing about the airwaves the equipment used. This led to what might be thought of as the second tragedy of the Titanic: not only did the ship sink, but information about the sinking was significantly misreported in the days following the accident. In one case, for example, the question "are all Titanic passengers safe?" was mistakenly interpreted by an amateur wireless operator and reported in the news media to be the affirmative statement that all passengers were in fact safe.¹⁴ In another, congested airwaves caused a message from the ship that picked up Titanic survivors to be combined with an unrelated message about a failed oil tanker, the result being an errant report that the Titanic was being safely towed to Halifax.¹⁵ This confusion and misinformation surely added to the heartache for concerned friends and families; it also contributed to a general sense that it was time to regulate spectrum—in particular broadcasting—more significantly.

¹² Douglas, *supra* note 11, at 19.

^{13 36} Stat. 629 (1910).

¹⁴ Douglas, *supra* note 11, at 227.

¹⁵ Id.

Not that Congressional leaders were reluctant to regulate. The Navy had for some time been calling for further government intervention, its concern being that "outside unrecognized stations" (i.e., amateur forerunners to radio stations) were cluttering the airwaves and drowning out official military messages. And the Navy had also by this time fallen victim to several hoaxes where one or another amateur wireless operator would impersonate a Navy official and give a ship false orders. Even before the Titanic, then, Navy officials had been pushing for increased regulation—even military control—of the airwaves.

The sinking of the Titanic provided a focal point for action, however, and so a few months after that tragedy Congress passed the Radio Act of 1912.¹⁶ As Thomas Krattenmaker and Lucas Powe explain in the excerpt below, this would turn out to be a key piece of legislation in that it established several concepts that continue to influence spectrum policy through the present day:

First, the federal government would control broadcasting. No one could broadcast without a license. Second, the spectrum would be allocated among uses and users. Thus the military obtained excellent wavelengths. Ships were given their own block. And amateurs, those unrecognized stations, were relegated to oblivion. They could listen anywhere along the spectrum, but could transmit only on what at that time were technologically unusable short waves. Third, some communication was more important than others and the government would determine which was which. Distress calls took precedence. Then came the Navy; operators near a military installation had to reduce transmitting power to just one kilowatt. If war came, there was no doubt about military paramountcy. After the military, commercial use was next; amateur was last.¹⁷

A few years later, World War I would reaffirm these priorities and principles. Wireless communication was a military tool during wartime, with the Navy using wireless both to coordinate the fleet in battle and to pass timely information to the troops. Wireless played a significant propaganda role as well. German authorities used friendly wireless operators in the United States to disseminate information from the German perspective, at least until April 1917 when federal authorities seized the handful of wireless stations then in operation (approximately eighty in total) and stopped the German transmissions. Perhaps the war's most significant effect on spectrum policy, however, was the fact that many American soldiers were trained in the use of the wireless. When the war ended, those soldiers returned to civilian life and brought with them an enthusiasm for, and understanding of, wireless broadcast.

^{16 37} Stat. 302 (1912).

¹⁷ Thomas Krattenmaker & Lucas A. Powe, Jr., Regulating Broadcast Programming 6 (1994).

Herbert Hoover and the Early Growth of Radio¹⁸

All this led to the airing of the 1920 presidential election results by Westinghouse's station KDKA and the Detroit News' WWJ. Their broadcasts made the medium famous. Yet despite these successes, there were only five new applications for station licenses during the next year.¹⁹ Then, following the broadcast of the 1921 World Series between the Yankees and the Giants on WJZ, broadcasting as we know it took off.

One important reason for the early growth of commercial radio broadcasting was that it found a sympathetic champion in its licensor, Secretary of Commerce Herbert Hoover. Hoover remolded the Radio Act of 1912 from its original emphasis on wireless point to point telegraphy to one that fostered a wider use of the newly emerging technology. The Radio Act had created a division among military, commercial (meaning for profit, for example telegraphy), and amateur uses. Hoover subdivided the commercial category, creating a separate grouping called "broadcasting" to satisfy the needs of the thousands of Americans purchasing receiving sets.²⁰ True amateurs were forced to use undesirable wavelengths under 200 meters, but the "more powerful and sophisticated amateur stations" were re-licensed under this new "commercial" category and authorized to use 360 meters (833.3 kilocycles).²¹ "Broadcasting"— propagating a signal for all to receive—thus became a permissible commercial venture, just as "telegraphy"—transmitting personal messages from point to point—had been for some time.

As both champion of the new industry and the official in charge of licensing, Hoover now faced a problem that would plague him and the industry throughout the early years: signal interference. The periodical Radio Broadcast editorialized in both October and November of 1921 about the crowding of the air and its "resulting interference of signals between the several stations, which made listening no pleasure."²² The problem would only get worse as demand grew. In 1922, seventy-seven broadcast licenses were issued in March, followed by seventy-six in April, ninety-seven in May, seventy-two in June, and seventy-six in July. By the end of 1922, nearly six hundred stations were on the air and interference was pervasive.

Attempting to achieve both consensus and legislation, Hoover called, in 1922, what would be the first of four National Radio Conferences. Hoover keynoted the Conference and actively participated in its deliberations, which emphasized the public good that came from this new service.

Hoover thought broadcasting used "a great national asset" (the spectrum) and believed "it becomes of primary public interest to say who is to do the

¹⁸ This material is adopted, with permission, from Krattenmaker & Powe, supra note 17.

¹⁹ Lucas A. Powe, Jr., American Broadcasting and the First Amendment 52-54 (1987).

²⁰ Barnouw, *supra* note 11, at 91.

²¹ Douglas, *supra* note 11, at 301.

²² Powe, *supra* note 19, at 54-55.
broadcasting, under what circumstances, and with what type of material."²³ Hoover opened the Conference by noting "this is one of the few instances where the country is unanimous in its desire for more regulation."²⁴ At its end, the conferees—broadcasters, manufacturers, and a handful of other important players—unanimously resolved: "It is the sense of the Conference that Radio Communication is a public utility and as such should be regulated and controlled by the Federal Government in the public interest."²⁵

When Congress did not act, Hoover took action on his own. In December 1922, Hoover expanded the frequencies available for commercial broadcasting from enough to support two stations per city to three and reassigned broadcasters to these frequencies.²⁶ To prevent further congestion resulting from added applications in the expanding industry, he would either deny applications or require some form of time sharing between broadcasters. Hoover's policies, however, were undermined two months after they were announced. In Hoover v. Intercity Radio Co., 286 F. 1003 (D.C. Cir. 1923), the U.S. Court of Appeals for the District of Columbia Circuit held that Hoover had the discretion under the Radio Act to select a frequency and set the hours of use, but that he lacked discretion to deny any application for a license.

With chaos looming again, Hoover called a second National Radio Conference. When it convened in late March 1923, Hoover had its recommend-dations already prepared.²⁷ They included invasion of the areas reserved for the government, moving maritime uses to a lower frequency than the Radio Act prescribed, and creating three different power levels for stations. Ignoring the contrary conclusion of Intercity Radio, the Conference declared, as Hoover had planned, that he had full authority "to regulate hours and wavelengths of operation of stations when such action is necessary to prevent interference detrimental to the public good."²⁸

Following the Conference, Hoover once again reallocated broadcasters, this time squarely contrary to the express language of the Radio Act. He moved commercial users into spectrum reserved for government. The Navy was also moved from its statutory spectrum space, but voiced no objections because the move necessitated purchasing new and better equipment.²⁹ Broadcasters were placed between 550 and 1365 kilocycles. In an article entitled "Secretary

²³ "Speech to the First National Radio Conference," February 27, 1922. Document No. 209 Hoover Collection, Stanford University, quoted in Daniel E. Garvey, "Secretary Hoover and the Quest for Broadcast Regulation," 3 Journalism History No. 3 at 66, 67 (1976).

²⁴ George Archer, History of Radio to 1926, at 249 (1938).

²⁵ Hearings Before the Committee on the Merchant Marine and Fisheries, House of Representatives on H.R. 11964, 67th Cong. 4th Sess. 32 (1926).

²⁶ Phillip T. Rosen, The Modern Stentors 54 (1981).

²⁷ Id. at 56.

²⁸ Barnouw, supra note 11, at 121.

²⁹ Rosen, supra note 26, at 58.

Hoover Acts," Radio Broadcast noted that the broadcast interference problem had been "suddenly remedied" without passage of any legislation.³⁰

The expanded band, combined with a downturn in radio revenues, allowed Hoover to give licenses to all who asked.³¹ Half of the outlets were associated with either manufacturers or retailers of electrical appliances.³² Newspaper publishers were another typical sponsor.³³ Sales of radio sets mushroomed and 10 percent of the population owned one by the end of 1924.³⁴

The Rise and Fall of Hoover's Policies

By the end of 1925, 578 stations were broadcasting, and the band was full again.³⁵ Furthermore, as the industry matured, stations began to broadcast for longer hours and with increased power, resulting in widespread interference. Hoover first addressed this problem by urging stations to work out time sharing agreements or to agree to have one station buy the other's license. Often these measures worked; sometimes they did not. In Cincinnati, two stations on the same frequency could not find a satisfactory solution and simply broadcast simultaneously for weeks.³⁶ When private parties could not agree, Hoover again stepped in. Sometimes he ordered time sharing. Sometimes he demonstrated how excruciatingly slow the application process could be.³⁷ Eventually, after the fourth National Radio Conference in November 1925, Hoover announced that no more applications (including those for increased power) would be granted.³⁸

Hoover thus completed an administrative tour de force, creating a working policy directly contrary to the one enshrined in law—one that ignored both the Radio Act and Intercity Radio. But it was not to last.

Hoover's outlaw edifice came tumbling down in December 1925 when the Chicago-based Zenith Corporation jumped from 930 KHz to 910 KHz for its Chicago broadcasts. Hoover had assigned Zenith 930 KHz. But, because this was the same frequency that General Electric had previously obtained in Denver, Hoover had limited Zenith to Thursdays between 10 p.m. and midnight, and only if GE chose not to broadcast then. Finding the limitations unacceptable, Zenith bolted for clearer air at 910 KHz, a Canadian frequency,

³⁴ Id. at 69.

36 Id. at 59.

³⁰ Quoted in *id.* at 57.

³¹ Powe, supra note 19, at 57.

³² Rosen, supra note 26, at 62.

³³ Newspaper publishers got involved with radio in part as a way to sell newspapers. The idea: listeners might purchase newspapers in order to find out what times particular radio programs would air. A famous newspaper-backed station (WGN, or "World's Greatest Newspaper") is considered later in these materials.

³⁵ Powe, supra note 19, at 58.

³⁷ Thomas W. Hazlett, The Rationality of Broadcast Regulation, 33 J. Law & Economics 133, 146 (1990).

³⁸ Rosen, *supra* note 26, at 79-80.

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ceded by treaty.³⁹ When Hoover, now without options, moved against Zenith, his whole regulatory house of cards collapsed. The federal district judge read the Radio Act as the D.C. Circuit had in Intercity Broadcasting; Hoover's duty was to license, not to impose restrictions.⁴⁰ He could encourage time sharing, but imposing it was beyond his power.

Hoover did not appeal; instead he arranged for the acting attorney general to state that the Zenith opinion was correct.⁴¹ The next day, Hoover ran up the white flag and announced that he was out of the business of regulation.⁴² The result of this capitulation, which Hoover knew was inevitable, was chaos.

Louis Caldwell, the first general counsel of the Federal Radio Commission, described the six months following Zenith: "Nearly 200 new broadcasting stations crowded into channels already congested with about 550 stations. Existing stations 'jumped' their waves and increased their power at will; reception was practically ruined for the listening public, and anarchy reigned in the realm of radio."⁴³ As the Supreme Court subsequently noted, "the result was confusion and chaos. With everybody on the air, nobody could be heard."⁴⁴

The Radio Act of 1927

The manufactured dispute between Zenith's president, Eugene McDonald, and Hoover produced what both wanted: action by a Congress heretofore unwilling to act.⁴⁵ The Radio Act of 1927, 44 Stat. 1162, enacting ideas that had been in the legislative hopper since the first National Radio Conference, replaced the statute enacted after the Titanic disaster and gave the nation a legal regime focused on the newly emerged commercial radio broadcasting industry.

The new Radio Act put first things first. Although the 1912 Act had required a license to use the air, it had been silent on the issue of ownership of the airwaves. The 1927 Act was not. It bluntly declared that there could be no private ownership of the airwaves; they were public and use could only occur with the government's permission. That permission, in the form of a license, would be granted without charge, but for no more than three years.

Congress knew that these licenses could not be granted to all comers. Thus, unlike the old Radio Act, the 1927 Act had to give the licensor guidance as to which applications should prevail. Any number of standards was possible: for example, first come, first served; a lottery; or an auction. Congress, however, had determined that the license should be free, so the idea of an auction was out. Adopting the idea that Hoover had articulated at the first National Radio Conference, Congress instead required licensees to render public service in

³⁹ Powe, *supra* note 19, at 59.

⁴⁰ United States v. Zenith Radio Corp., 12 F.2d 614 (N.D. Ill. 1926).

⁴¹ 35 Opinions of the Attorney General 126 (1926).

⁴² NBC. v. United States, 319 U.S. 190, 212 (1943).

⁴³ Louis Caldwell, Clearing the Ether's Traffic Jam, Nation's Business, Nov. 1929, at 34-35.

⁴⁴ NBC v. United States, 319 U.S. at 212.

⁴⁵ Rosen, *supra* note 26, at 93-95.

exchange for the privilege of using the now federally owned spectrum. Licenses would be granted according to the needs of the "public interest, convenience, or necessity"—a standard already in use in the public utilities and transportation areas.

The House of Representatives wanted to leave licensing power with the Secretary of Commerce. The Senate did not, instead preferring an independent regulatory commission. The Act reflected a compromise between the two. For one year, a geographically balanced five member commission was to exercise the government's licensing function; then that function would revert to the Secretary of Commerce. Senator Clarence Dill of Washington, the Senate's expert on radio and a key figure in drafting the Act, liked the compromise because, understanding both Congress and bureaucracy, he believed "if we ever got a Commission we would never get rid of it."⁴⁶ He was right. Congress ultimately abandoned the provision to return powers to the Commerce Department, and the successor to the "one year agency," the Federal Communications Commission, remains with us.

Finally, Congress understood that it did not want to create a National Board of Censors. Thus, section 29 of the Act made it plain that the licensing power did not include the power of censorship and licensing therefore could not "interfere with the right of free speech by means of radio communications."⁴⁷ Congress did not clarify how the mandate in section 29 would mesh with the equally strong mandate to award licenses in the public interest. By default that issue was left for future resolution by the Commission and the courts.

Principal Features of the 1927 Act

This background reveals that a central feature of the 1927 Radio Act was its deliberate choice to preclude private ownership of spectrum rights while licensing those rights for brief periods to private users free of charge. As we will see later in the book, nothing in the nature of broadcasting or the electromagnetic spectrum made that choice inevitable, but in fact no other alternatives were seriously considered. Senator Dill stated that "the one principle regarding radio that must always be adhered to, as basic and fundamental, is that government must always retain complete and absolute control of the right to use the air."⁴⁸ A contemporaneous analysis in the Yale Law Journal stated: "the idea that the 'government owns the ether' was an *idée fixe* in the debates of Congress."⁴⁹ Enacting this idea meant that administrators would parcel out, among competing technologies, permitted uses of the spectrum. Administrators also would select, from among competing applicants, which subset would become spectrum licensees. In short, government ownership meant government control—a point probably not lost on lawmakers of the time.

⁴⁶ Quoted in Barnouw, supra note 11, at 199.

^{47 44} Stat. 1162, at 1171, Section 29 (1927).

⁴⁸ Clarence Dill, A Traffic Cop for the Air, 75 Review of Reviews 181, 184 (1927).

⁴⁹ Note, Federal Control of Radio Broadcasting, 39 Yale L. J. 244, 250 (1929).

Congress deferred most issues to the future, of course, choosing the relatively amorphous public interest standard as a codification of whatever standards would ultimately be applied. This was probably a welcome result from Hoover's perspective. Hoover had always understood that there would be some sort of amorphous quid pro quo for licensing: "It becomes of primary public interest to say who is to do the broadcasting, under what circumstances, and with what type of material."⁵⁰ And in broadcast—as distinct from comparable regulations applicable to transportation or public utilities—that public interest quid pro quo would determine not only the issues of the need for service and who would provide it, but also the somewhat novel issue of what the service itself would be.

The broadcast establishment, which accurately assumed that regulation would prefer its interests to those of the marginal stations and potential entrants, fully concurred in a public interest regulatory scheme. Each National Radio Conference endorsed Hoover's program. When Hoover, in 1925, stated that "we can surely agree that no one can raise a cry of deprivation of free speech if he is compelled to prove that there is something more than naked commercial selfishness in his purpose,"⁵¹ the National Association of Broadcasters agreed: "The test of the broadcasting privilege [must] be based on the needs of the public."⁵²

House sponsor Wallace White of Maine echoed the point after House passage of the Act. Under the Radio Act of 1912, an individual could "demand a license whether he will render service to the public thereunder or not." No longer. One of the "great advantages" of the 1927 Act is the requirement of service to the public.⁵³ As his Senate counterpart, Clarence Dill, so vigorously put it, "Of one thing I am absolutely certain. Uncle Sam should not only police this 'new beat'; he should see to it that no one uses it who does not promise to be good and well behaved."⁵⁴

The Federal Radio Commission

What did the public interest mean? That would be left to the Federal Radio Commission (FRC). The charm of the public interest standard, Dill noted, was its vagueness and breadth: "It covers just about everything."⁵⁵

⁵⁰ Speech to first National Radio Conference, quoted in Garvey, *supra* note 23, at 67.

⁵¹ Opening address to the fourth National Radio Conference, reprinted in Radio Control, Hearings Before the Senate Interstate Commerce Committee, 69th Cong. 1st Sess. 56 (1926).

⁵² Resolution of the National Association of Broadcasters (NAB), presented at the fourth National Radio Conference, quoted in *id.* at 59.

⁵³ Wallace White, "Unscrambling the Ether," The Literary Digest, March 5, 1927, at 7.

⁵⁴ Dill, *supra* note 48, at 181.

⁵⁵ Quoted in Powe, *supra* note 19, at 61. William Mayton, The Illegitimacy of the Public Interest Standard at the FCC, 38 Emory L.J. 715 (1989), presents a contrary argument, suggesting that the Communications Act (which was based on the Radio Act) did not intend to give the FCC anything more than the powers of a traffic cop. This neglects the significance of the National Radio Conferences as well as the statements of Dill and White

The FRC, with but one confirmed member, no staff, and no appropriation, got off to a shaky start. But its First Annual Report defined the task ahead in a manner that set the regulatory agenda for decades: section 29 prohibits censorship, but "the physical facts of radio transmission compel what is, in effect, a censorship of the most extraordinary kind. There is a definite limit, and a very low one, to the number of broadcasting stations which can operate simultaneously." Consequently, some applicants must be told "there is no room for you." In making these determinations, the key policy question would be how to "measure the conflicting claims of grand opera and religious services, of market reports and direct advertising, of jazz orchestras and lectures on the diseases of hogs."⁵⁶

The answer that unfolded over the next three years was a two step process. In its first step, the FRC reclassified and reordered broadcast stations while refusing to expand the broadcast band. The outcome continued Hoover's policy of favoring larger, established commercial broadcasters. The second step was acknowledging that programming counted and weeding out those stations that aired the less favored types. The first step slew the weak; the second destroyed the different.

Structuring the Broadcast Industry

The initial task facing the Commission was to decide how many stations to allow on the air, where they would be located, and under what conditions they would be operated. This task was made more complex by a 1928 amendment to the Radio Act that mandated an equalization of stations across five geographical zones.⁵⁷ Offered by Congressman E.L. Davis of Tennessee, it sought to replace stations in the more populous East with newcomers in the South and West. Toward the end of the summer of 1928, the FRC issued General Order Number 40, which enunciated the general principles to govern the allocations of frequencies and power nationwide.

Possibly the most important decision made at this time was the decision not to increase the broadcast band.⁵⁸ Instead, the Commission simply changed the assignments of 94 percent of all broadcast stations, making assignments that favored applicants with superior technical equipment, adequate finances, experienced personnel, and the ability to operate without interruption. These were Hoover's policies, and they favored established commercial broadcasters.⁵⁹ The Commission knew that there would be a reaction to all the redistributions, and it "launched an educational and public relations campaign to counteract this threat. Its press releases explained that the familiar broadcasting band originally

57 45 Stat. 373 (1928).

about control. The Commission may well have reached for even more power than it was granted, and perhaps compliant courts, especially the Supreme Court, too readily rubber-stamped the Commission, but the FRC understood it would have to look at programming and there was ample legislative support for just such a view.

⁵⁶ Federal Radio Commission, First Annual Report 6 (1927).

⁵⁸ Hazlett, *supra* note 37, at 155.

⁵⁹ Rosen, *supra* note 26, at 133.

established by Secretary Hoover had been retained in order to reduce inconvenience to listeners.⁶⁰ That is, listeners would not be troubled by having to choose between retaining their old sets limited to the stations already available on them or purchasing newer ones that could receive added stations (made available by broadening the band).⁶¹

With the implementation of General Order Number 40, the Commission finished its dealings with the traditional aspect of the public interest: determining whether a service shall be offered and quantitatively what it shall be. Next it turned to a new question: qualitatively, what shall the service be?

Defining Permissible Broadcasting

By the summer of 1928, the Commission believed that whatever section 29 might say about censorship, the Commission had to evaluate programming:

Since the number of channels is limited and the number of persons desiring to broadcast is far greater than can be accommodated, the Commission must determine from among the applicants before it which of them will, if licensed, best serve the public. In a measure, perhaps, all of them give more or less adequate service. Those who give the least, however, must be sacrificed for those who give the most. The emphasis must be first and foremost on the interest, the convenience, and the necessity of the listening public, and not on the interest, convenience, or necessity of the individual broadcaster.⁶²

The Commission then admonished those stations playing phonograph records, because such a station would not give the public anything it could not receive elsewhere in the community.⁶³

Over the next year, the Commission turned on what it called "propaganda stations (a term which is here used for the sake of convenience and not in a derogatory sense)."⁶⁴ A year earlier it had warned New York socialist station WEVD (named for the socialist leader Eugene Victor Debs) to "operate with due regard for the opinions of others."⁶⁵ The Commission, relying on scarcity, asserted that stations should aim their programs at everyone. There was "not room in the broadcast band for every school of thought, religious, political, social, and economic, each to have its separate broadcasting stations, its mouth piece in the ether. If franchises are extended to some it gives them an unfair advantage over others, and results in a corresponding cutting down of general

⁶⁰ Id. at 135.

⁶¹ Hazlett, supra note 37, at 155-56.

⁶² Statement of the Commission, August 23, 1928, reproduced as Appendix F in Second Annual Report 166, 170 (1928).

⁶³ Id. at 168.

⁶⁴ FRC, Third Annual Report 34 (1929) (reporting Great Lakes Broadcasting).

⁶⁵ FRC, Second Annual Report 156 (1928) (reporting decisions of August 22, 1928).

public service stations.⁶⁶ Thus when the Chicago Federation of Labor applied for an increase in power and hours for its station WCFL, arguing that it broadcast programs of particular interest to organized labor and that there were sufficient listeners to justify the increase, the Commission responded that "there is no place for a station catering to any group. All stations should cater to the general public and serve public interest against group or class interest."⁶⁷

The Commission campaigned against what it feared would be a balkanizing of the dial. "If, therefore, all the programs transmitted are intended for, and interesting or valuable to, only a small portion of that public, the rest of the listeners are being discriminated against." Broadcasters should strive for "a well-rounded program" where the needs of all potential listeners are met.⁶⁸ It did not matter whether there were several stations in the area. Each station was required to serve all potential listeners.

It was also not relevant whether the station was popular. If the station was not meeting the needs of its community, then it could be replaced even if it was highly popular. Commission actions against the Reverend Bob ("Fighting Bob") Shuler⁶⁹ and the famous "goat gland doctor," John R. Brinkley,⁷⁰ illustrate this principle. Further, each case generated appellate litigation that fully vindicated the FRC, setting a judicial pattern of deference that continued over the decades.

The Shuler Case

In 1926 a wealthy widow from Berkeley, impressed by one of Shuler's indignant sermons, gave him \$25,000 to purchase KGEF Los Angeles, a one kilowatt station broadcasting 23½ hours a week on a shared frequency. Shuler broadcast his sermons each Sunday and took two additional weekday hours for himself. On Tuesdays he hosted the "Bob Shuler Question Hour" and on Thursdays he gave "Bob Shuler's Civic Talk."

As a rigid moralist with an intense dislike for prostitution and alcohol, Shuler found an incredible array of targets in prohibition era Los Angeles. During his two evening hours he railed against local corruption. Over the years Shuler built such a following that commercial stations were unable to sell advertising time opposite these two programs. Question Hour was the fourth most popular show in the market, and audience surveys showed that "Fighting Bob" reached an audience of about 600,000 as he lashed out at an imperfect world.

Shuler's application for renewal in 1930 stated that KGEF had "thrown the pitiless spotlight of publicity on corrupt public officials and on agencies of immorality, thereby gladly gaining their enmity and open threats to 'get' this station's license." No lie. The FRC hit Shuler with a hearing that aired charges

⁶⁶ FRC, Third Annual Report at 32.

⁶⁷ Id. at 36 (reporting Chicago Federation of Labor).

⁶⁸ Id. at 34.

⁶⁹ All of the facts about Shuler are taken from Powe, *supra* note 19, at 13-18.

⁷⁰ The facts about Brinkley are also taken from *id.* at 23-27.

that he had used his station irresponsibly in attacking virtually all aspects of Los Angeles city government. The hearing lasted sixteen days, and at its end the hearing examiner ruled for Shuler.

Shuler's opponents then went to the full Commission, which reversed and ordered KGEF off the air immediately. The Commission concluded that Shuler had used his station as a forum for outrageous and unfounded attacks on public officials "which have not only been bitter and personal in their nature, but often times based upon ignorance of fact for which little effort has been made to ascertain the truth. [Shuler] has vigorously attacked by name public officials and individuals whom he has conceived to be moral enemies of society or foes of the proper enforcement of the law. He has believed it his duty to denounce by name any enterprise, organization, or individual he personally thinks is dishonest or untrustworthy. Shuler testified that it was his purpose 'to try and make it hard for the bad man to do wrong in the community." The finding was, in the Commission's words, that his broadcasts were "sensational rather than instructive."⁷¹

The Brinkley Case

The FRC believed "Fighting Bob" Shuler had been operating KGEF as a personal outlet, a category that the Commission had ranked even lower than propaganda stations. That spelled nothing but trouble for Brinkley, the "goat gland doctor," whose KFKB was a personal outlet par excellence. Yet it was also the most popular station, not just in central Kansas, but in the entire United States, out-polling the runner up by a four to one margin. KFKB blanketed the area between the Rockies and the Mississippi and beyond, and Brinkley held his audience with an astute combination of fundamentalist theology and medical information. It was with the latter that Brinkley gained notoriety.

Brinkley's initial fame had come from his efforts to rejuvenate the male sex drive by implanting the gonads of a young Ozark goat in the patient's scrotum. A public spirited man, he even sponsored a Little League baseball team nicknamed the Brinkley Goats. Yet Brinkley understood that there was a limited future in goat gland transplants, and by the late 1920s his medical business focused on the prostate. Using both the mails and KFKB, Brinkley attempted to reach "the prostate man" and convince him that he had a problem that Brinkley could solve. "It certainly behooves a man who has an enlarged prostate to consider it, and we are indeed glad to hear from such men for we are convinced we can render [them] a real, genuine, and lasting service."

On a typical day Brinkley took to the air twice (after lunch and dinner) to speak on medical problems. The evening program would be a gland lecture, explaining the male change of life. "Our bodies are not holding up as well as those of our forefathers did. Enlargement of the prostate is on the increase." His other program was his "Medical Question Box." This grew out of his enormous daily mail. Typically he would pick up some letters on the way to the microphone, leaf through them, and choose which to read on the air. He would then

⁷¹ Trinity Methodist Church v. FRC, 62 F.2d 850 (D.C. Cir. 1932).

quickly give his diagnosis, and prescribe the medicine required—by number, e.g., "Brinkley's 2, 16, and 17. If his druggist hasn't got them, he should write and order them from the Milford Drug Company, Milford, Kansas." As this indicates, Brinkley had expanded into the pharmaceutical business.

Predictably, the "goat gland doctor" drew the ire of organized medicine which challenged both his right to broadcast and his right to practice medicine. On a single unlucky Friday the thirteenth, in June 1930, he lost both. The FRC found that Brinkley's "Medical Question Box" diagnosis "upon what symptoms may be recited by the patient in a letter addressed to him, is inimical to the public health and safety, and for that reason is not in the public interest"; furthermore, KFKB was a "mere" adjunct to his medical practice and insufficiently attuned to the needs of Kansas.⁷²

The Commission and the Courts

Both Shuler and Brinkley appealed to the D.C. Circuit. Both lost. These initial appellate decisions set a tone that would be adopted by the Supreme Court a decade later.

The court reviewing Brinkley's appeal agreed fully with the Commission that broadcasts should have a "public character. Obviously, there is no room in the broadcast band for every school of thought."⁷³ Broadcasting is "impressed with the public interest," and therefore the Commission "is necessarily called upon to consider the character and quality of the service to be rendered." The court summarily dismissed Brinkley's argument that the Commission had engaged in forbidden censorship. Section 29 went exclusively to prior scrutiny. What the Commission did, by contrast, was exercise its "undoubted right" to look at past performance. The court stated that, "in considering an application for a renewal of the license, an important consideration is the past conduct of the applicant, for 'by their fruits ye shall know them.' Matthew VII: 20."⁷⁴

The court treated Shuler's appeal similarly. There was no censorship or denial of free speech, "but merely the application of the regulatory power of Congress in a field within the scope of its legislative power."⁷⁵ Shuler remained free to "inspire political distrust and civic discord"; he simply couldn't demand

⁷² KFKB Broadcasting v. FRC, 47 F.2d 670, 672 (D.C. Cir. 1931). See also id. at 671 (noting the FRC's statement that "the operation of Station KFKB is conducted only in the personal interest of Dr. John R. Brinkley. While it is to be expected that a licensee of a radio broadcasting station will receive some remuneration for serving the public with radio programs, at the same time the interest of the listening public is paramount, and may not be subordinated to the interests of the station licensee."). On Dr. Brinkley, see R. Alton Lee, The Bizarre Careers of John R. Brinkley (2002).

⁷³ *KFKB*, 47 F.2d at 672. The Commission might have contrasted KFKB with a Gary, Indiana station that prevailed over a Chicago station because its programs were "musical, educational and instructive in their nature and [stressed] loyalty to the community and the Nation." *FRC v. Nelson Bros. Bond & Mortgage*, 289 U.S. 266, 271 (1933).

⁷⁴ KFKB, 47 F.2d at 672.

⁷⁵ Trinity Methodist Church, 62 F.2d at 851.

to use an instrumentality of interstate commerce "for such purposes."⁷⁶ The Commission was duty bound to look at Shuler's past broadcasts, and its conclusion that the public interest would not be served by re-licensing him was hardly arbitrary and capricious.⁷⁷

NOTES AND QUESTIONS

1. Telecommunications in Context. The evolution of telecommunication regulation is best understood in context. Real events focused public attention on the various issues that are the concern of this textbook; and those events inevitably influenced the debates that followed. The early history of spectrum regulation crystallizes this point well. For example, did you notice how Marconi and his contemporaries used the term "wireless" instead of, say, "radio" or "broadcast"? Do you see how these terms emphasize different aspects of the technology? How that emphasis might matter when it comes time to make important policy and regulatory choices?

2. Localism and Diversity. The early history of broadcast regulation exposes themes that will stay with us throughout the entire text. Two themes in particular are worth special mention here. First, notice the emphasis on localism, evidenced in these early materials by Congressman Davis's legislation mandating an approximate equalization of broadcast radio stations across five geographic zones. Localism in the broadcast setting (arguably) serves two goals: (1) by restricting the number of stations in large markets, it increases investment in broadcast infrastructure in smaller markets, thus ensuring that no one is left too far behind in the broadcast revolution; and (2) to the extent localism means local owners, localism helps to ensure that broadcasters will be part of, and thus perhaps more responsive to, the local community. Second, these early materials also emphasize the importance of diversity-phrased here as an obligation that each broadcaster strive to present a well-rounded menu of offerings that would appeal to a broad group of listeners. Diversity in all of its form is a central theme in broadcast regulation, a point later materials will reveal.

3. Shuler and Brinkley. What are we to make of the Shuler and Brinkley decisions? If Brinkley had chosen to write a newspaper column where readers would write in for advice and he would choose some subset of the letters and respond in print, would the Commission have had any power to stop him? Would the government have acted against him? Was there something special to the case because Brinkley was using the airwaves instead of the newspaper? Would Shuler have been treated differently were he writing a newspaper column instead of giving talks on the radio?

⁷⁶ Id. at 853.

⁷⁷ Id. at 852.

4. The **1934** Act. The Communications Act of 1934 ultimately replaced the Radio Act of 1927 and substituted the Federal Communications Commission (FCC) for the Federal Radio Commission. The 1934 Act made only minimal changes in broadcasting law; its principal purpose and effect was to take federal regulation of interstate telephone and telegraph service away from the Interstate Commerce Commission (ICC) and lodge those powers with the FCC.

5. Fundamental Issues. It is truly remarkable how the fundamental issues concerning spectrum regulation today are the same as they were back in the early days of broadcast. The early radio acts confronted such questions as: What rules and processes should govern allocation of spectrum rights to new technologies? Should government "own" the spectrum? Give it away? On the basis of comparing the merits of various programs? Measuring "merit" by its appeal to the public generally or to specific, "deserving" segments of the public? If the issues today are the same, but they lead to different policy responses, what might explain the change? Is it a function of differences in the technology? How the technology is perceived? Are we just more experienced today than we were back in 1927?

§ 1.4 Rationales for Regulation

Thus far we have discussed the history of spectrum regulation and the nature of spectrum. As to the latter, section 1.2 of this chapter pointed out that wireless frequencies are just a resource employed in assembling telecommunications services, much as wood pulp is a resource used in the production of newspapers and cotton fiber is a resource used in the production of shirts and socks. What remains to be explained is why the federal government is so involved in the allocation of frequencies given that—beyond establishing some basic property rules—it is not very involved at all with wood pulp or cotton fibers.

It may seem tempting to say that the federal government controls the spectrum because it "owns" the airwaves but does not own other resources.⁷⁸ But that just begs the question why the government asserts ownership over all the spectrum. The government once owned huge chunks of land that it sold (or gave) to settlers. Why shouldn't it have done the same thing with spectrum? The government could assume ownership of any property for public use via eminent domain so long as it paid just compensation. Why does it make sense for the government to do so with respect to the airwaves and not with respect to other resources?

To answer that question, we focus on the classic argument that has been made in favor of government regulation of spectrum: that the spectrum is scarce. Note that this argument arose principally in the broadcast context—as that was the main use of spectrum for much of the 20th century)—but it applies

⁷⁸ The relevant federal statute, 47 U.S.C. §301, does not explicitly claim government ownership of the spectrum, but instead asserts government control. That, however, is not central to the problem with this argument.

to spectrum regulation more generally. As you consider this argument, see if it helps you to answer the following questions: Why did the federal government decide to seize the spectrum and give an administrative agency, rather than producers, ultimate control over how producers would deliver information products over the air to consumers? Why did the government likewise give that same federal agency influence over the content of the information transmitted instead of simply allowing consumers to determine content through their viewing and purchasing decisions? Are there good reasons that we allocate spectrum to broadcasters through an administrative agency but ration their other equipment—say, antennas—through conventional markets?

§ 1.4.1 Scarcity/Interference

Two parties cannot broadcast on the same frequency, at the same time, in the same place, in the same direction without causing one another at least some interference. If two parents simultaneously call for their respective children from the same porch, on the same street, at the same time, the two messages will likely become incomprehensively garbled. Similarly, if one person starts tapping his finger in a pond, the ripples will travel cleanly until someone else starts tapping in that same water, at which time both patterns will likely be lost. One goal of telecommunications policy is to ensure that broadcasters do not interfere with one another in comparable ways, rendering each other's communications incomprehensible.

That goal turns out to be difficult to achieve. One problem is that interference can be caused not merely by other broadcasters, but also by natural phenomenon like thunderstorms. Lighting, after all, is an energy wave that propagates through the air, and to date the government has had no luck convincing lightning to confine itself to particular frequencies at particular times. Neon signs similarly put out electromagnetic waves that can interfere with licensed broadcast technology, as do the aforementioned garage door openers, let alone Wi-Fi modems. This means that any regulation designed to avoid interference between radio waves has to consider much more than just the obvious telecommunications sources.

A second complicating factor is that patterns of interference can arise in unexpected ways. For instance, radio station A might not interfere with radio station B at a time when those are the only two stations using the airwaves, but radio station A might interfere with station B when a new station C joins the spectrum. This problem is known as intermodulation. Similarly, stations A and B might not interfere during the day, but they might interfere at night, because radio waves travel differently depending on whether the sun is out. Policing interference is thus no simple matter; any rules must be sensitive to and account for various interactions between proximate radio waves.

Low levels of interference are ubiquitous. Every transmitter creates some interference, so even turning on a light creates a tiny amount of interference for nearby users of nearby frequencies. In some cases the interference is so small that it does not create a noticeable loss of signal quality. The real fear is of more

significant interference—one set of radio waves overlapping with another set to a sufficient degree that a receiver can hear neither clearly.

The reality of interference implies that there is another problem lurking in the policy space: scarcity. If two radio stations cannot both broadcast on the same frequency at the same time, and if there are a limited number of frequencies at which radio communication can take place, then at some point demand might exceed supply. How soon that constraint is reached depends heavily on government policy. If the government sets a low price for spectrum use, demand will quickly reach unsustainable levels. If the government pressures private parties to use wireline communications technologies where possible, a given amount of spectrum might be enough to serve all comers. Note that the government can also encourage firms to in essence increase the amount of spectrum available. After all, spectrum is just a fancy term for the range of frequencies at which today's technologies can communicate without wires. To the extent government policies encourage and reward research, any given range of frequencies can likely be further optimized to carry additional information, and new ranges of frequencies can surely come into productive use.

This idea—that spectrum is subject to interference and thus scarce—has long been the most common argument put forward in favor of government regulation of spectrum. The Supreme Court itself adopted this rationale in its earliest case addressing the government's control over the spectrum, NBC v. United States, 319 U.S. 190 (1943). The Court stated that

[There are] 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. Regulation of radio was therefore as vital to its development as traffic control was to the development of the automobile. In enacting the Radio Act of 1927, the first comprehensive scheme of control over radio communication, Congress acted upon the knowledge that if the potentialities of radio were not to be wasted, regulation was essential.

Id. at 213. As we will see in Chapter Five, the Supreme Court adopted similar reasoning in Red Lion Broadcasting Co. v. FCC, 395 U.S. 367, 399 (1969).

The Court was understandably concerned that interference would destroy the utility of the spectrum as a resource. As we have stressed, if two transmitters broadcast at the same time, on the same frequency, from the same location, in the same direction, and at the same power, neither of them is likely to be heard. But every rivalrous resource is subject to interference. If two people try to sit in the same desk chair at the same time they will interfere with each other. That's why we call such goods "rivalrous." Saying that wireless frequencies are scarce because of interference does not distinguish them from virtually every other good.

The Supreme Court in *NBC* and *Red Lion* emphasized that there was excess demand for the free broadcasting licenses provided by the government, and suggested that this highlighted the scarcity of spectrum. But, again, every productive resource—labor, steel, land, investment capital—is scarce in that (a) if given away at no charge people would request more of it than is available and (b) if we could create more of it, that additional increment also could be put to productive use. To say that spectrum is scarce in this way is quite true, then, but the statement fails to distinguish spectrum from virtually every other resource, most of which are not regulated.

One might want to argue that wireless frequencies are different from other resources in that the frequencies are finite, and most other resources are not. But, as we noted in section 1.2, the throughput of spectrum has increased dramatically over the years. Improvements in technology have greatly increased the range of usable spectrum, as higher and higher frequencies can be used to send data. And technology has also enabled us to send more and more data over the same swath of frequencies (through, for example, digital compression). Besides, at any given point there are only so many trees in the world, so many pounds of steel, and so on. Just as we could expend more resources to get more newsprint, we could expend more resources to increase the communications capacity of the spectrum.

The foregoing addresses the question whether spectrum is unusually scarce. The argument does not stop there, of course; the key assertion is that scarcity justifies government control. But to say that spectrum is "scarce" is only to say that the use of spectrum must be allocated among those who desire it. Use of any scarce resource must be allocated. In the U.S. economy this allocation usually is accomplished by prices set in open markets. It is unsatisfying, then, to say that administrative allocation of spectrum is necessary because of spectrum scarcity. The real issue seems to be whether spectrum is "scarce" in some special way (unlike, say, land or iron ore) that peculiarly requires a non-market allocation mechanism.

To return to the chair example above, two people cannot comfortably sit at the same time in the same desk chair, yet that fact has not led government to regulate chair use. Rather, ownership of the chair is taken to confer the authority to exclude others from sitting in it, and, with that property right in place, government regulation is deemed unnecessary. Thomas Hazlett puts the point this way: "The interference problem is [rightly understood to be] one of defining separate frequency 'properties,' but it is logically unconnected to the issue of who is to harvest those frequencies. To confuse the definition of spectrum rights with the assignment of spectrum rights is to believe that, to keep intruders out of (private) backyards, the government must own (or allocate) all housing. It is a public policy non sequitur."⁷⁹

⁷⁹ Thomas W. Hazlett, The Rationality of Broadcast Regulation, 33 J. Law & Econ. 133, 138 (1990).

A property rights approach was in fact taken early in the history of spectrum regulation. In Tribune Co. v. Oak Leaves Broadcasting,⁸⁰ the Chicago Tribune Company alleged that WGN (a radio station it owned) had been broadcasting daily for two years, had expended substantial money on equipment, and had a large and regular audience; and that the defendant, Oak Leaves, after jumping frequencies twice, had landed within 40 kilocycles of WGN's frequency. WGN asserted that Oak Leaves had moved in so close because it was an unpopular station. According to WGN, Oak Leaves' hope was that some of WGN's listeners would tune to the wrong station by accident. Oak Leaves essentially responded that the separation was ample and therefore it had not harmed WGN.

It is obvious from the opinion that the "thousands of affidavits"⁸¹ filed by the parties allowed the trial judge to learn a considerable amount about a new and complex industry. His opinion notes the local mores whereby all the Chicago stations went silent on a specific night so that their listeners could tune in distant stations. It also notes that the public had become educated in the use of radio and knew how to obtain the type of programming it desired. This would prove difficult, the judge concluded, unless at least a 50 kilocycle separation was maintained within a 100 mile radius.

The trial judge thus resolved the issue by defining property rights. Drawing analogies to the law of unfair competition and also the law of water rights, the judge concluded that, by reason of use and expenditure of money and effort, the plaintiff had under the Common Law acquired something "generally recognized" as property.⁸² According to the judge, 40 kilocycles was not a sufficient separation to respect that property, and so judgment came down in favor of the plaintiff.

Of course, the property rights approach did not carry the day. The federal government today regulates the spectrum, and the main justification put forth in support of that regulation is scarcity/interference. Thus, the question of whether something about telecommunications makes scarcity and interference unique deserves a closer look. It is to that endeavor we now turn, beginning with remarks given in 1959 before the FCC by Nobel Prize-winning economist Ronald Coase.

WHY NOT USE THE PRICING SYSTEM IN THE BROADCAST INDUSTRY?

Ronald Coase, Testimony before the FCC, December 1959 Reprinted in 4 Study of Radio & T.V. Broadcasting (No. 12782) (1959)

I appear before you with a strong conviction and a bold proposal. My conviction is that the principles under which the American economic system generally operates are fundamentally sound. My proposal is that the American broadcasting industry adopt those principles.

⁸⁰ Tribune Co. v. Oak Leaves Broadcasting Station (Ill. Cir. Ct. 1926), reprinted in 68 Cong. Rec. 215, 215-19 (1926).

⁸¹ Id. at 218.

^{82 68} Cong. Rec. at 219.

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In presenting my case, I suffer from the disadvantage that, at the outset, I must attack a position which, although I am convinced it is erroneous, is nonetheless firmly held by many of those most knowledgeable about the broadcasting industry. Most authorities argue that the administrative assignment of radio and television frequencies by the Commission is called for by the technology of the industry. The number of frequencies, we are told, is limited, and people want to use more of them than are available.

But the situation so described is in no sense peculiar to the broadcasting industry. All resources used in the economic system are limited in amount and are scarce in that people want to use more of them than exists. This is so whether we think of labor, land, or capital. However, we do not ordinarily consider that this situation calls for government regulation. It is true that some mechanism has to be employed to decide who, out of the many claimants, should be allowed to use the scarce resources. But the usual way of handling this problem in the American economic system is to employ the pricing mechanism, and this allocates resources to users without the need for government regulation.

This is the system under which broadcasting concerns obtain the labor, land, and capital equipment they require. There is no reason why the same system could not be adopted for radio and television frequencies. If these were disposed of by selling or leasing them to the highest bidder, there would be no need to use such criteria as proposed or past programming as a basis for the selection of broadcast station operators. Such a system would require a delimitation of the property rights acquired, and there would almost certainly also have to be some general regulation of a technical character. But such regulation would not preclude the existence of private rights in frequencies, just as zoning and other regulations do not preclude the existence of private property in houses.

Such a use of the pricing mechanisms would bring the same advantages to the radio and television industry as its use confers on the rest of the American economy. It would avoid the need for much of the costly and time-consuming procedures involved in the assignment of frequencies by the Commission. It would rule out inefficient use of frequencies by bringing any proposal for the use of such frequencies up against the test of the market, with its precise monetary measure of cost and benefit. It would avoid the threat to freedom of the press in its widest sense which is inherent in present procedures, weak though that threat may be at the moment. And it would avoid that arbitrary enrichment of private operators of radio and television stations which inevitably follows from the present system. A station operator who is granted a license to use a particular frequency in a particular place may be granted a very valuable right, one for which he would be willing to pay millions of dollars and which he would be forced to pay if others could bid for the frequency. We sometimes hear denunciations of giveaways and their corrupting influence. You, gentlemen, are administering what must be one of the biggest giveaways of all.

It has been my experience that such a suggestion as I have made horrifies my listeners. I am told that it is necessary to choose those who should operate radio and television stations to make sure that the public interest is served and that programs of the right kind are transmitted. But, put this way, the case for governmental selection of broadcast station operators represents a significant shift of position from that which justifies it on technological grounds. It is, of course, a tenable position. But if the object of the selection is, in part, directly or indirectly, to influence programming, we have to face squarely the issue of freedom of the press so far as broadcasting is concerned.

But in any case it may be doubted whether an indirect attempt to influence programming through the selection of broadcast station operators could ever be very effective. For over 30 years, the federal government has been selecting broadcast station operators on the basis, among other things, of their good character and their devotion to the public interest. By now one would expect the broadcasting industry to be a beacon of virtue, shining out in a wicked world. Such, I am afraid, is not the case.

NOTES AND QUESTIONS

1. Defining Property Rights. In order for a market system to work, the government would need to delimit specific bundles of rights that could then be recognized in particular users. Just as land ownership includes, among other things, the right to exclude others under certain circumstances and rights with respect to the use of natural resources above and below ground level, spectrum ownership, too, would have to be articulated in terms of specific rights to use and exclude. How difficult would that articulation be? More difficult than it is in other settings? Enough to explain why we regulate spectrum but not wood pulp? (Does the current system suffer from the same difficulties, or does government involvement mean that there is less of a need for clearly delimited rights?)

Think specifically about how you would define property rights in spectrum. Perhaps in terms of inputs, with the government recognizing in a particular party the (transferable?) right to build a tower of a certain height, at a particular location, transmitting a signal at a particular frequency and power level, during particular times, and in a particular direction? Indeed, a group of scholars in 1969 proposed just such a definition of spectrum property rights based on parameters of time, geographic area, power, and wave frequency.⁸³ What drawbacks do you see to such a style of rights definition? Are there other approaches that might prove more workable? What further parameters would need to be articulated beyond these technical ones in order to complete the definition of property rights in radio spectrum?

⁸³ Arthur S. Devan et al., A Property System for Market Allocation of the Electromagnetic Spectrum: A Legal-Economic-Engineering Study, 21 Stan. L. Rev. 1499 (1969).

2. The Coase Theorem. Coase is perhaps most famous for his work on the importance of transaction costs. Yet, might it be argued that, in his remarks before the FCC, Coase neglected the important role transaction costs play in the market for telecommunications services? Think about how many parties use spectrum on both the national and international level, both as suppliers of telecommunications services and as consumers of those services. Or how even a single radio signal at a relatively low energy level can still interfere with dozens of signals hundreds of miles away. Does Coase jump over this point too quickly? Are transaction costs a good reason for government regulation of the spectrum?

3. Zoning. Thus far, the theme of this section has been to point out that scarcity/interference is a common problem to which the typical response is not to regulate but instead to define property rights and then defer to market interactions. With respect to land ownership, however, government does regulate—in the form of zoning laws, tort suits for nuisance, and so on. Does Coase's attack call all these "regulations" into question? Conversely, does the existence of zoning law make you wonder whether Coase has missed something in his analysis of spectrum allocation?

Looked at another way, is there something special about both land and spectrum that distinguishes them from other goods? For example, the government uses land for public purposes (say, government buildings and public parks) and the government also has significant demand for spectrum (for example, military use and police radio). Does this fact help to explain why, in telecommunications and land use, scarcity/interference has led to government regulation whereas elsewhere it has led to more market-based solutions?

4. For Further Consideration. What is lost by the use of an administrative agency instead of market forces? Are there corresponding gains? Are traditional worries about markets-say, the fear of monopoly or concerns about wealth effects-somehow more salient in the telecommunications context? Can a market work in telecommunications given that, for services like broadcasting, the equipment that transmits signals is typically owned by one group (broadcasters) whereas the equipment that receives those signals is typically owned by another, independent group (consumers)? Is this why we regulate? If we ask broadcasters to bid for spectrum, would they consistently underbid, on the theory that broadcasters who rely on commercial advertisements for revenue likely are willing to pay less for the right to air any given program than viewers would pay were they paying for content directly? (If that is the case, is it an argument against free broadcast and in favor of subscription television instead?) Does regulation perhaps preserve for the government more flexibility than a market regime would? Given the newness of the technology, was that a good justification for at least the early pattern of regulation?

§ 1.4.2 Special Interest Protectionism

If scarcity/interference does not provide a convincing account for why it is that the government regulates spectrum, perhaps a more convincing account centers on the politics of government regulation. In the excerpt that follows, Thomas Hazlett offers an interpretation of the 1927 Act under which the primary motivation for the Act was not to reduce interference among broadcasters by asserting control over the airwaves, but rather to distribute the monetary rewards from broadcasting among certain politically dominant claimants. The 1927 Act was not, in his view, about efficiency, scarcity, or interference; it was about simple, run-of-the-mill rent seeking—albeit rent seeking with important First Amendment implications.

THE RATIONALITY OF U.S. REGULATION OF THE BROADCAST SPECTRUM

Thomas W. Hazlett, 33 J. Law & Econ. 133, 134, 143-44, 147-170 (1990)

[Spectrum rights were for many years awarded to private users on a no fee basis, thus conferring significant economic rents on private parties at substantial opportunity cost to the fisc. Moreover, Federal Communications Commission policies openly sought, virtually throughout the agency's entire life span, to restrict the number of licensed broadcasters in any given area to something below the number technically possible. These regulations were justified on an interference rationale. Economists, political scientists, and lawyers generally agree that the interference rationale for licensure is nonsensical. They describe the licensing policy as a logical but naive mistake in response to the "chaos" that existed before 1927.]⁸⁴

This article seeks to revise such thinking about the "wrongheadedness" of U.S. regulatory policy toward the broadcast spectrum. Rather than stumbling into a legal structure under erroneous pretenses, a careful examination of the early radio broadcasting market and the legislative history of the Federal Radio Act of 1927 reveals that subsequent decision making under the "public interest, convenience, or necessity" licensing standard was a compromise designed to generate significant rents for each constituency influential in the process. Most fundamentally, the nature of rights in the "ether" was precisely understood; the regulatory approach adopted chose not to reject or ignore them but to maximize their rent values as dictated by rational self interest.

I. A Market for the Ether

In the early days of radio (that is, pre-1927), there existed a very lively market in broadcast properties, sold with frequency rights attached. Station licenses were known to be scarce, were commonly taken to confer exclusive rights, and were traded freely, often at prices reflecting considerable rents. Indeed, the spectrum policy problem of this era (1923 26) was that the

⁸⁴ [Ed. For clarity and brevity, we paraphrase Hazlett here, using many of his phrases. Readers interested in Hazlett's fuller articulation of these introductory points are encouraged to consult the original article.]

Secretary of Commerce had been ordered to issue licenses to all comers, and the Secretary in the end relied on market transactions to solve that problem, minimizing broadcasting disruptions by engaging in the sorts of negotiations predicted by the Coase Theorem.

II. The "Breakdown of the Law"

The extent to which the businessmen, lawyers, and policymakers of the era understood that establishment of property rights in spectrum constituted the necessary and sufficient condition for the efficient functioning of the pricing system is revealed by the anticipation of, and reaction to, the seminal policy regime switch embodied in United States v. Zenith Radio Corp., which found the existing licensing method to be without force of law.⁸⁵ Secretary of Commerce Herbert Hoover had been assigning frequencies on a "first-comefirst-served" (or "priority-in-use") basis, either withholding licenses to latecomers or issuing them only on a time-sharing arrangement, and he was openly enforcing license transfer via sales of stations. As this was the case, the great calm prevailing in broadcasting prior to the Zenith decision (and the confirming opinion of the attorney general) was abundant proof that no "public interest" licensing standard was necessary to eliminate the externality problem. That the sole solution to interference lay in enforceable, excludable rights was a commonplace; Hoover was commended enthusiastically (indeed, fawningly) by the broadcast industry for enabling a smoothly functioning market, despite imposing no more than a noninterference rule for license issuance. It was not until the Radio Act of 1927 that any public interest standard was adopted, yet the market was thought to have worked well until July 8, 1926, when the acting Attorney General sided with Zenith and declared the federal government without authority to define rights to spectrum.

In fact, the federal court's overruling of Secretary Hoover's rights-definition rule in Zenith, not the "free market," was then universally credited with creating anarchy in radio broadcasting. A typical press report explained the property rights dilemma rather succinctly, if colorfully in December 1926:

Until last July, order was maintained on the broadcasting highways by the Department of Commerce, which assigned a channel to each station on which it could operate without bumping its neighbors. After the wave lengths were all assigned, the Department refused to create confusion by licensing more stations. Then court decisions and Attorney General's opinions denied the right of the Department to regulate in any respect, and threw open the radio door to every-one who wished to enter. The air was declared free—that is, free to the broadcasters; but it is not free to the listening public, who now have no liberty of choice in radio reception. They may be able to get a desired station, but they receive its programs only to the tune of disturbing squeals, whistles, or jumbled words from some unwelcome intruder. For as

⁸⁵ 12 F.2d 614 (N.D. Ill. 1926).

soon as the bars went down, the expected occurred. Since July, some seventy-five new stations have pushed their way into the crowded lanes, and a like number have added to the jumble by shifting wave lengths, all jostling each other and treading on the toes of the first comers, who, from the height of their respectability, style the intruders "pirates" and "wave jumpers." The disturbed public uses still stronger appellations.⁸⁶

So widespread was this understanding of the allocational importance of private property rights without a public interest award standard that a Yale Law Journal article of 1929 wrote plainly that, "in 1926, after a second adverse decision to the effect that the Secretary of Commerce had no power under the Act of 1912 to restrict the time of operation or frequency of any station, there came a period of unregulated confusion generally known as the 'breakdown of the law."⁸⁷ Similarly, Frank Rowley noted that "Until April, 1926, the situation was fairly well in hand. There was some interference, due to the surplus of stations over the number of available channels, but in almost every case, station owners showed a willingness to cooperate in making beneficial adjustments. In April, however, the comparative security of the broadcasting situation was disturbed by a decision in the Federal District Court for Northern Illinois in the case of United States v. Zenith Radio Corporation."⁸⁸

III. An Innocent Solution Preempted

As interference plagued much of the broadcast spectrum during the "breakdown" period, an end to radio interference was being crafted not only in Washington but also in the courts. If the common resource problem was clearly identified by contemporary analysts, so was its solution: "establishing legally the priority to an established wave length," as Radio Broadcast magazine then put it.⁸⁹ In the fall of 1926, a simple and compelling state court decision did just that.

[Hazlett here introduces Tribune Co. v. Oak Leaves Broadcasting Station, discussed earlier in this chapter.] Chancellor Francis S. Wilson decided Oak Leaves wholly within the spirit of a property rights solution to a common resource problem. The decision found that "unless some regulatory measures are provided for by Congress or rights recognized by State courts, the situation will result in chaos and a great detriment to the advancement of an industry which is only in its infancy."⁹⁰ It went on to analogize the right in broadcast frequencies to other long protected propertied interests.

While it is true that the case in question is novel in its newness, the situation is not devoid of legal equitable support. The same answer [that no rights in air

⁸⁶ The Survival of the Loudest, Independent 623 (December 11, 1926).

⁸⁷ Federal Control of Radio Broadcasting, 29 Yale L. J. 247 (1929).

⁸⁸ Frank S. Rowley, Problems on the Law of Radio Communication, 1 U. Cin. L. Rev. 5 (1927). This explanation became official doctrine in the Federal Radio Commission's first annual report. See Federal Radio Commission, Annual Report 10 (1927).

⁸⁹ The Courts Aid in the Radio Tangle, Radio Broadcast 358 (February 1927).

^{90 68} Cong. Rec. 219.

space exist] might be made, as was made in the beginning, that there was no property right, or could be, in a name or sign, but there has developed a long line of cases, both in the Federal and State courts, which has recognized under the law known as the law of unfair competition, the right to obtain a property right therein, provided that by reason of their use, he has succeeded in building up a business and creating a good will which has become known to the public and to the trade and which has served as a designation of some particular output so that it has become generally recognized as the property of such person.⁹¹

Using the further analogy of riparian rights, the Chancellor concluded "that a court of equity is compelled to recognize rights which have been acquired by reason of the outlay and expenditure of money and the investment of time. We are of the further opinion that, under the circumstances in this case, priority of time creates a superiority in right."⁹² Judge Wilson then issued an admonition to the respondents, pending a final hearing, for the "pirate" broadcaster to keep a distance of at least fifty kilocycles from the established WGN frequency. Owing to his fundamental understanding of radio law and the crucial nature of Oak Leaves to the policy outcome, I quote the magistrate's findings at length.

So far as broadcasting stations are concerned, there has almost grown up a custom which recognizes the rights of the various broadcasters, particularly in that certain broadcasters use certain hours of the day, while the other broadcasters remain silent during that particular period of time. Again, in this particular locality, a certain night is set aside as silent night, when all local broadcasters cease broadcasting in order that radio receivers may be able to tune in on outside distant stations.

Wave lengths have been bought and sold and broadcasting stations have changed hands for a consideration. Broadcasting stations have contracted with each other so as to broadcast without conflicting and in this manner be able to present their different programs to the waiting public. The public itself has become educated to the use of its receiving sets so as to be able to obtain certain particular items of news, speeches, or programs over its own particular sets.

The theory of the bill in this case is based upon the proposition that by usage of a particular wave length for a considerable length of time and by reason of the expenditure of a considerable amount of money in developing its broadcasting station and by usage of a particular wave length educating the public to know that that particular wave length is the wave length of the complainant and by furnishing programs which have been attractive and thereby cause a great number of people to listen in to their particular programs that the said complainant has created and carved out for itself a particular right or easement in and to the use of said wave length which should be recognized in a court of equity and that outsiders should not be allowed thereafter, except for good cause shown, to deprive them of that right and to make use of a field which had

⁹¹ Id. ⁹² Id.

been built up by the complainant at a considerable cost in money and a considerable time in pioneering.⁹³

In other words, private rights in the airwaves under common law were immediately recognized as a solution to the interference problem. Radio Broadcast noted in its February, 1927 issue that the case was key in "establishing legally the priority to an established wavelength," and concluded that "it establishes a most acceptable precedent."⁹⁴ Other stations beleaguered by spectrum trespassers quickly moved to file similar claims in state courts.

It was clear that a system of excludable, transferable property rights in spectrum (1) was widely understood as necessary and desirable so as to efficiently solve the radio allocation problem and (2) could well be expected to come by way of common law, via the priority in use principle. A single trial court decision would in no definitive way answer the national property rights question, but the analysis—and its political implications—were clear.

IV. The Agenda of The Regulators⁹⁵

The Congress responded to Oak Leaves instantly. After years of debate and delay on a radio law, both houses jumped to pass a December 1926 resolution stating that no private rights to the airwaves would be recognized as valid, mandating that broadcasters immediately sign waivers relinquishing all rights and disclaiming any vested interests. The power to require such was the Inter-state Commerce Clause, but the motive was that Congress was nervous that spectrum allocation would soon be a matter of private law.

Should those common law principles apportion the spectrum to private users, the "breakdown of the law" would be remedied, but the federal government's ability to control or even influence broadcasting would vanish. Compromise legislation was quickly hammered together; a bill creating an independent five member regulatory commission was passed by both houses, endorsed by Hoover, and signed by President Coolidge.

The policy debate was led by men who clearly understood—and articulated—that interference was not the problem, interference was the opportunity. The efficiency issues were demarcated from political distributional questions both in their words and their actions. In 1925, Herbert Hoover explicitly separated the respective issues of rights definition and political control over licensees thus:

It seems to me we have in this development of governmental relations two distinct problems. First, is a question of traffic

⁹³ Id. at 217.

⁹⁴ Radio Broadcast, supra note 89.

⁹⁵ [Ed. We have renumbered and also reordered sections of Hazlett's article so as to make it more accessible to new readers. Part IV, for example, was Part VII in the original, and it came before our Part V, which Hazlett put as Part VI. We have taken great care so as to ensure that Hazlett's argument is not in any way distorted by these changes, but readers are of course welcome to consult the original document.]

control. This must be a Federal responsibility. From an interference point of view every word broadcasted is an interstate word. Therefore radio is a 100 percent interstate question, and there is not an individual who has the most rudimentary knowledge of the art who does not realize that there must be a traffic policeman in the ether, or all service will be lost in complete chaos of interference. This is an administrative job, and for good administration must lie in a single responsibility.

The second question is the determination of who shall use the traffic channels and under what conditions. This is a very large discretionary or a semi-judicial function which should not devolve entirely upon any single official and is, I believe, a matter in which each local community should have a large voice—should in some fashion participate in a determination of who should use the channels available for broadcasting in that locality.

Senator C.C. Dill authored the bill that finally gained passage in 1927. He was equally unconfused as to the purpose of federal licensing. "Of one thing I am absolutely certain," he declared. "Uncle Sam should not only police this 'new beat'; he should see to it that no one uses it who does not promise to be good and well behaved."⁹⁶

Dill's concerns were devoted to monopoly and political fairness over the airwaves, both derived from his belief that radio broadcasting would become an important, powerful medium of expression. Instead, therefore, of rushing to protect this sector from regulation under the shield of the First Amendment, Dill saw his alternative priority clearly. "The principle regarding radio that must be adhered to, as basic and fundamental, is that the Government must always retain complete and absolute control of the right to use the air."⁹⁷

V. The Agenda of the Radio Broadcasting Interests

Broadcasters' agenda focused on "the non issuance of additional broadcasting licenses, the freedom from further division of time with other broadcasters, [and] the maintenance of the present distribution of frequency channels," as the 1925 Radio Conference's resolution put it.

This agenda was artfully accomplished. When the Federal Radio Commission (FRC) was born out of the Federal Radio Act of 1927, it immediately grandfathered rights for major broadcasters, while eliminating marginal competitors and all new entry. Indeed, the FRC restored order out of chaos by ordering stations to "return to their [original Commerce Department] assignments,"⁹⁸ thus revealing much about the previous rights regime and the privatization of airwave properties achieved in "the public interest."

⁹⁶ C.C. Dill, A Traffic Cop for the Air, 75 Rev. of Revs. 181 (February 1927).

⁹⁷ Id. at 184.

⁹⁸ Philip T. Rosen, The Modern Stentors: Radio Broadcasting and the Federal Government 1920-1934, at 125 (1980).

Still, the industry was most concerned about how the FRC would deal with "such dangerous propositions as the pressure to extend the broadcast band; the fatuous claims of the more recently licensed stations to a place in the ether; and the uneconomic proposals to split time on the air rather than eliminate excess stations wholesale," as one trade journal forthrightly summarized.⁹⁹

Radio men were quickly assured that the newly appointed commission was politically sensitive to their needs and aspirations. Only two months after its inception they could be relieved that the commissioners had acted wisely. "Broadening of the band was disposed of with a finality which leaves little hope for the revival of that pernicious proposition; division of time was frowned upon as uneconomical; the commissioners were convinced that less stations was the only answer."¹⁰⁰

And in the official rights allocation under the Federal Radio Commission in 1927-28, the agency chose to employ the market success standard of public interest—in essence, a simulated auction, with awardees keeping rents.

The commissioners agreed that the prevailing scarcity of channels required that those available be used economically, effectively, and as fully as possible. In practical terms, this meant that they favored the applicants with superior technical equipment, adequate financial resources, skilled personnel, and the ability to provide continuous service. According to this interpretation, established broadcasters with demonstrated ability best fulfilled the public interest standard. In most instances, priority and financial success guided the FRC in favoring one operator over another.¹⁰¹

VI. The 1927 Radio Act as an Equilibrium Political Solution

Although licensing control passed into the hands of an independent commission, economic allocation was not much affected vis-à-vis the rights established in the pre "breakdown" period. By virtually all accounts, the commission made legal what Secretary Hoover had accomplished via extralegal authority: it recognized priority in use rights to spectrum space, with discretionary power and time assignments favorable to those broadcasters serving larger audiences. Marginal broadcasters with irregular transmissions were expropriated altogether; nonprofit institutions were relegated to crowded spectrum "ghettos" where time was scarce and listenership difficult to attract. Many such licenses were soon withdrawn by their owners due to unsustainable financial losses.

The commission's "public interest" solution to the property right problem essentially accomplished the following:

(1) it served to establish quickly and cheaply de facto property rights to spectrum based on the priority-in-use rule;

⁹⁹ Welcome to the Radio Commission, Radio Broadcast 555 (April 1927).

¹⁰⁰ Stabilizing the Broadcast Situation, Radio Broadcast 79 (June 1927).

¹⁰¹ Rosen, supra note 98, at 133.

(2) it thinned out the spectrum by failing to renew licenses of 83 broadcasters in July 1927 and gave reduced power and time assignments to nonprofit organizations;

(3) it awarded enhanced power assignments (as high as 50,000 watts—up from 5,000 watts) to some fortunate large broad-casters, generally network affiliated;

(4) it established a rights enforcement mechanism, wherein license holders were to self police the airwaves by filing complaints against interfering broadcasters;

(5) it froze AM band width at essentially its 1924 size, using less than five percent of the then utilizable capacity for broadcasting.

This solution represented an optimum politically because each of the influential parties was given a share of the rents created in proportion to their political influence, making each better off than they would fare in alternative nonlicensing arrangements. Such rents emanated from the allocation of spectrum rights to private users on a nonfee basis and from entry restrictions enhancing the values thereby created. In that vested rights were developing, and lengthy, costly litigation would have followed had an expropriation of major broadcast license holders occurred, an outright nationalization of airwave property was not a desirable alternative for regulators. Such a course would also have carried the opportunity cost of an immediate loss of support by major broadcasters. It was far better for regulators to award broadcasters generous rents subject to "public interest" discretion in the licensing process that could be partially apportioned by incumbent officeholders.

What was evident was that the issuance of zero priced franchises could stimulate an effective rent seeking competition from constituencies willing and able to pay for the broadcasting privilege. For instance, Congress immediately acted to regulate content with such incumbent protectionist devices as the equal time rule (codified in the Radio Act), and the commission very quickly found it could exercise authority over broad forms of content, such as "fairness." And, of course, pure influence peddling in the procurement of licenses could yield both legal and extralegal benefits for incumbent Congressmen.

In summary, private spectrum rights were not rejected in favor of government allocation out of "ignorance" but were actually established as part of a hybrid regulatory system that respected vested rights in broadcast spectrum and even enhanced them in value via supply restriction. Such private rights were "purchased" by broadcaster subsidies to "public interest" concerns, a tax which initially amounted to little more than nominal acquiescence to (and political support for) a federal licensing authority but would, over time, include significant payments to unprofitable local programming, "fairness doctrine" regulation, extensive proof of commitment to "community" in station renewals, and the avoidance of broadcasting content offensive to the political party in power.

NOTES AND QUESTIONS

1. Evidence or Counter-Evidence? Private spectrum rights came to be politically unimaginable by the middle of the 20th century. Perhaps the most striking evidence is that, right after Coase delivered the talk excerpted earlier in this chapter, the floor was opened for questions and then-FCC Commissioner Philip Cross opened the question period by asking Coase, in all seriousness, "Are you spoofing us? Is this all a big joke?"¹⁰² When Coase wrote up those same ideas in a paper for the Rand Corporation, one referee who reviewed the document advised Rand to kill the project entirely, and another "stated that, by definition, the spectrum was a public good and consequently a market solution was not appropriate and that the project represented a waste of Rand's resources."¹⁰³ Does this suggest that policymakers in 1959 did not understand the possibilities for private ordering that Hazlett suggests policymakers had understood in 1927? Consider the following statement from the memorandum rejecting Coase's paper for Rand: "I am afraid that to issue [Coase's paper] . . . is asking for trouble in the Washington/ Big Business maelstrom because we haven't in the first place measured up to the intellectual requirements of the problem selected for study."¹⁰⁴ Were those in power unable to imagine private spectrum rights, or merely unwilling to part with the power that government control of the spectrum created?

2. Implications. Suppose, however, that Hazlett is correct and that, in 1927, the policy debate was indeed "led by men who clearly understood—and articulated—that interference was not the problem, interference was the opportunity." Where does that leave us? Should the newly-discovered motivations of the creators of the regulatory structure raise First Amendment concerns about that structure? In short, what should we do with the historical evidence Hazlett uncovers in this research?

§ 1.4.3 Consumer Preferences

In most markets, we assume that consumer preferences should be respected. That is, if consumers want their MTV, they should get it—even if that means fewer viewers are watching the nightly news or listening to congressional debates on C-SPAN. There is reason to wonder, however, whether the broadcast marketplace should, in fact, so completely respect consumer preferences, or whether instead regulation ought to constrain and mold consumer choice.

¹⁰² Ronald Coase, Comment on Thomas W. Hazlett: Assigning Property Rights to Radio Spectrum Users: Why Did FCC License Auctions Take 67 Years?, 41 J. Law. & Econ. 577, 579 (1998).

¹⁰³ Id. at 580.

¹⁰⁴ Id.

There are two principal arguments to consider here. First, there is what might be thought of as the paternalistic argument that, when it comes to information consumption, consumers don't know what is in their own long-term best interests. Cass Sunstein has made this argument, although he seems to object to the "paternalism" label:

> What people now prefer and believe may be a product of insufficient information, limited opportunities, legal constraints, or unjust background conditions. People may think as they do simply because they have not been provided with sufficient information and opportunities. It is not paternalistic, or an illegitimate interference with competing conceptions of the good, for a democracy to promote scrutiny and testing of preferences and beliefs through deliberative processes.

> It may seem controversial or strange to say that there is a problem for the Madisonian system if people do not seek serious coverage of serious issues. Perhaps this suggestion is unacceptably paternalistic; perhaps we should take people however we find them. But the system of deliberative democracy is not supposed simply to implement existing desires. Its far more ambitious goal is to create the preconditions for a well-functioning democratic process.¹⁰⁵

Second, there is an externality argument that similarly might cause us to question consumer sovereignty in broadcast markets, to wit: one person's consumption of broadcast content may affect another person's well-being. For example, some people believe that repeated exposure to television violence causes viewers to become more violent.¹⁰⁶ If that is true, then this is a negative externality, and because of this externality it might not be wise to allow viewers to determine for themselves how many hours of violent television they watch each week. Each viewer's choice, after all, neglects the harm that decision imposes on others.

A similar point can be made with respect to the decision to watch (and, in a subscription system, pay for) children's educational television. Educational television arguably creates a positive externality in that these programs help young viewers become more informed, and hence more productive, citizens. Because of this externality, if left to make their own decisions, children might not watch as much educational television as would be optimal from a societal perspective.¹⁰⁷

NOTES AND QUESTIONS

1. Distinctions. Are the "paternalistic" and "externality" arguments different, or does one simply recast the other in new words? Similarly, is there really a distinction between a "positive" and a "negative" exter-

¹⁰⁵ Cass R. Sunstein, Demoracy and the Problem of Free Speech, 19-21 (1993).

¹⁰⁶ We consider televised violence in Chapter Five.

¹⁰⁷ We also consider children's television in Chapter Five

nality in this setting, or does that distinction also collapse, depending on your political perspective?

2. Remedies. To whatever extent we find the paternalistic and externality arguments convincing, what types of responses might they justify? Consider, for example, educational television. If the FCC believes that it would benefit society to have more children watching educational television, is it a sufficient response for the government to increase the amount of educational television available—perhaps by, say, offering more funding to PBS? Must the government do more, perhaps both funding PBS and restricting the simultaneous broadcast of programs that children prefer? After all, merely having virtuous programming available will not change anything if nobody watches. Consider in this light news analyst Jeff Greenfield's remark that, "when you no longer need the skills of a safecracker to find PBS in most markets, you have to realize that the reason people aren't watching is that they don't want to."¹⁰⁸

3. Federal Support of Noncommercial Broadcasting. The federal government supports noncommercial programming in a variety of ways. First, since 1939 for radio and 1952 for broadcast television, the FCC has reserved frequencies explicitly for noncommercial educational uses.

Second, and as alluded to above, in addition to the spectrum licenses that all broadcasters received at no charge until 1997, noncommercial broadcasters receive direct government funding-most prominently through the Corporation for Public Broadcasting, a federally chartered nonprofit corporation that receives money from Congress and in turn funds various radio and television stations, including stations that are affiliated with the Public Broadcasting Service (PBS). This funding has been a source of periodic controversy, with some members of Congress suggesting that the federal government could better spend its money in other ways, and private parties at times challenging the government's relationship with noncommercial broadcasters on First Amendment grounds. One particularly notable controversy involved a statutory provision that forbade any noncommercial educational broadcasting station that received a grant from the Corporation for Public Broadcasting from "engaging] in editorializing."109 A sharply divided Supreme Court found the provision violative of the First Amendment in FCC v. League of Women Voters, 468 U.S. 364 (1984). More recently, after a state-owned public television broadcaster included in a congressional debate only those candidates with substantial popular support, a candidate who had little popular support filed suit alleging that the station had violated his First Amendment rights by excluding him from the debate. The Supreme Court ruled that the debate was a nonpublic forum from which the public broadcaster could exclude the candidate because it had engaged in a viewpoint-

¹⁰⁸ Quoted in Krattenmaker & Powe, supra note 17, at 314.

¹⁰⁹ Section 399 of the Public Broadcasting Act of 1967, Pub.L. 90-129, 81 Stat. 365.

neutral exercise of its journalistic discretion. Arkansas Educational Television Comm'n v. Forbes, 523 U.S. 666 (1998).

Third, several federal statutes give special treatment to noncommercial programming. For instance, the statute requiring cable operators to carry local broadcasters has a separate provision requiring cable operators to carry "noncommercial educational television stations," 47 U.S.C. §535; similarly, a statute governing direct broadcast satellite (DBS) providers requires that they devote a portion of their channel capacity "exclusively for noncommercial programming of an educational or informational nature," 47 U.S.C. §335.

4. Implications for Other Media. Neither the paternalistic argument nor the externality argument is specific to broadcast, or even to telecommunication more generally. Any form of communication (television, movies, street theater, even good old-fashioned conversation) can affect participants in ways they themselves might fail to account for and can also affect other people, even those not directly involved in the communication. As you read the remaining materials in this book, consider on what basis we might distinguish among different forms of telecommunication, and between telecommunication and communication more generally, and what sort of regulations those various distinctions might justify. Is broadcasting uniquely powerful? If so, is that an argument in favor of greater regulation, or greater freedom from regulation? Assuming that scarcity and interference do distinguish broadcasting, does that justify limiting non-meritorious programming, subsidizing meritorious programming, or both?

Chapter Two

THE FCC

This chapter introduces the core statutory structure under which telecommunication services are regulated and also the primary administrative agency that implements those provisions.

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§ 2.1 Introduction

There is a large and sometimes complex web of statutory provisions that govern the provision of telecommunications service in the United States. Throughout the book, we will be introducing the relevant provisions as they arise. Here, however, we thought it helpful to survey the landscape. Thus, the first section below sketches the basic flow and contours of the 1934 Communications Act and its many amendments.

After that, we offer a similarly high-level introduction to the Federal Communications Commission. The FCC is the federal agency that regulates most commercial uses of spectrum. We introduce some information about the operation of the Commission, and we outline the types of spectrum decisions the Commission makes. Subsequent chapters obviously flesh out all of those regulatory functions in richer detail.

§ 2.2 A Regulatory Overview

The governing statute for the regulation of telecommunications in the United States is the Communications Act of 1934, 47 U.S.C. §1 et seq., and the governing agency which the Act established to implement its provisions is the Federal Communications Commission. The 1934 Act brings together under one legal umbrella and one administrative body the regulation of all sectors of the telecommunications industry-from television to telephones, from cable to satellites, and everything in between. The Communications Act of 1934 has been amended numerous times, and several of those amendments have been sufficiently extensive that they are often referred to as Acts in and of themselves, despite their being incorporated into the 1934 Act. Principal examples of such amendments are the Cable Communications Policy Act of 1984, the Cable Television Consumer Protection and Competition Act of 1992, and the Telecommunications Act of 1996, all of which amended (among other things) scattered sections of 47 U.S.C. In this book, we will often refer to those laws by their own names, but readers should understand that, as a technical matter, they are statutory amendments to the 1934 Act.

Communications Regulation Before 1934

The 1934 Act was not the first communications statute passed in the United States. It was, however, the first statute to bring different areas of the telecommunications industry under one statutory title and one administrative agency. Before 1934, telegraph, telephone, and radio communications were governed by separate laws and separate governmental bodies. Radio, for example, was first regulated by the Radio Act of 1912 . That statute required all users of the radio spectrum to obtain a license and placed licensing authority with the U.S. Secretary of Commerce.¹ The thrust of the 1912 Act was to allocate different blocks of spectrum to different users-for example the military, commercial interests, and amateur radio operators-and to prioritize their access to the airwaves. Emergency signals such as marine distress calls had first priority for transmission, military signals came next, followed by commercial uses and, finally, amateur signals. Fifteen years later, Congress passed the Radio Act of 1927, which repealed the 1912 Act. Like its predecessor, the 1927 Act stipulated that spectrum could be used only upon grant of license; but it also formally declared the electromagnetic spectrum to be government property and moved the authority for issuing such licenses from the Secretary of Commerce to a new Federal Radio Commission.² The 1927 Act broadly defined radio communications as "any intelligence, message, signal, power, pictures, or communication of any nature transferred by electrical energy from one point to another without the aid of any wire connecting the points." 44 Stat. at 1173. Of the activities it covered, the Act particularly targeted commercial broadcasting. Importantly, this was the legislation that formally introduced the requirement that licensees serve the "public interest, convenience, or necessity"-of which there will be considerably more discussion later in the book. 44 Stat. at 1167. The Act did not in any way address wireline communications like telegraphy or telephony.

Regulation of telephone and telegraph services developed separately from regulation of radio in the early 1900s. For a time, telephone service was not regulated. The first statute to regulate telephone service was the Mann-Elkins Act of 1910,³ passed more than 15 years after the original Bell telephone patents had expired and well after numerous independent telephone carriers had entered into competition with the Bell system. The Mann-Elkins Act assigned regulatory jurisdiction over telephony to the Interstate Commerce Commission, which already had regulatory authority over the railroads as well as other network services. The mandate of the Act was fairly narrow by current standards. The Act categorized telephone service providers as "common carriers"—i.e. carriers that were "obligated to provide service on request at just

¹ Ch. 287, 37 Stat. 302 (1912) (repealed 1927). Congress had previously passed the Wireless Ship Act, ch. 379, 36 Stat. 629 (1910) (repealed 1954), which required all passenger ships to carry wireless sets. Both statutes are discussed in Chapter One

² Ch. 169, 44 Stat. 1162 (1927) (repealed 1934).

³ Mann-Elkins Act of 1910, ch. 309, 36 Stat. 539 (1910).

and reasonable rates, without unjust discrimination or undue preference."⁴ The ICC's charge was to enforce these common-carrier requirements. The Mann-Elkins Act, however, neither contained any requirement that telephone carriers file tariffs (rate plans) nor authorized the ICC to implement such a requirement. The Act thus gave the agency quite limited power, and it is perhaps not surprising that the ICC held only four proceedings to investigate telephone rates in the years from 1910 to 1934.⁵ While the ICC did try actively to regulate merger and acquisition behavior in the telephone industry, as an agency it was far more concerned with regulating railroads than with regulating telephones and, in the end, it played only a modest role in overseeing the performance of the telecommunications industry.

The ICC was not the only regulatory authority concerned with telecommunications, however. Unlike radio, telephony was subject not just to federal oversight, but to state regulation as well. State regulators reviewed rates, established accounting rules, and implemented service requirements related to local telephone service. As we will discuss in greater detail in Chapter Thirteen, the states' regulatory sphere was strictly limited to intrastate telephone service and its related facilities. But given that the vast bulk of telephone calls have typically been "local," this limitation did not mean that state commissions were weak or insignificant regulatory forces. Indeed, even today the boundary between state and federal regulatory jurisdiction over telephone carriers continues to be an area of both important and vigorous dispute.⁶

Regulatory Integration Under the 1934 Act

The Communications Act of 1934 thus accomplished an important organizational task. It extended jurisdiction over telecommunications to an expert agency rather than assigning such jurisdiction to entities, such as the ICC or the Department of Commerce, that had other concerns. But, instead of creating separate experts for each telecommunications field, the 1934 Act would ultimately be interpreted to have created a single expert agency with broad purview.⁷ The Radio Act of 1927 had created a focused agency for spectrum management (the Federal Radio Commission); the 1934 Act would now create a regulatory agency for telephony and charge that same agency with the duty to regulate the airwaves. That new agency was the Federal Communications Commission (FCC). The Act thus abolished the Federal Radio Commission, repealed the Mann-Elkins Act, and put an end to the fragmented jurisdiction that had existed until 1934:

⁴ Stat. 539, ch. 309 §§7, 12.

⁵ Peter W. Huber, Michael K. Kellogg and John Thorne, Federal Telecommunications Law 215 (2d ed. 1999).

⁶ We address jurisdictional issues primarily in Chapters Thirteen and Sixteen.

⁷ This was an open question in certain settings. For example, we will see in Chapter Eight that there was considerable doubt over whether the FCC had authority to regulate cable television under the 1934 Act. The Supreme Court ultimately held that it (for the most part) did, and Congress later amended the 1934 Act to make that authority explicit.

For the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all people of the United States, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges, for the purpose of the national defense, and for the purpose of securing a more effective execution of this policy by centralizing authority hereto granted by law to several agencies and by granting additional authority with respect to interstate and foreign commerce in wire and radio communication, there is created a commission to be known as the "Federal Communications Commission," which shall be constituted as hereinafter provided, and which shall execute and enforce the provisions of this chapter.⁸

The FCC was thus responsible for promulgating regulations to implement the 1934 Act, and for interpreting the many gaps and ambiguities that appeared throughout that lengthy statute. This implementing role was of immediate and substantial importance. For while the Act incorporated many aspects of preexisting regulation (like the licensing requirements for broadcasters, and common-carriage obligations for telephone companies), and the Act also preserved and even strengthened the jurisdiction of state regulators over intrastate telephony, it also markedly increased the scope of federal communications regulation. It was in the exercise of that new authority that the FCC would ultimately find its most significant powers.

The Structure of the 1934 Act

The 1934 Act is codified at Title 47 of the United States Code which, in turn, is divided into seven subchapters or "Titles" of its own. Titles I, IV, V, and VII set forth general provisions that relate either to the FCC itself or to issues that transcend any particular industry sector or category of service. Title I, for example, sets forth general provisions pertaining to the structure, jurisdiction, and operation of the Federal Communications Commission. 47 U.S.C. §§151-161. That title, as we discuss below, plays a special role as it provides the FCC with ancillary jurisdiction authority to act in a "common law-like" fashion to regulate new technologies. Titles IV and V, by contrast, address solely procedural matters, with the former focusing on enforcement jurisdiction and requirements for administrative proceedings and the latter focusing on penalties and forfeitures for violation of regulations under the Act. 47 U.S.C. §§410-416, 501-510. Title VII of the Act, which is entitled "Miscellaneous Provisions," covers issues ranging from the President's emergency powers in this area to closed captioning of video programming. 47 U.S.C. §§701-714.

⁸ 48 Stat. 1064, §1 (1934) (codified as amended at 47 U.S.C. §151). The section has been amended twice: in 1937 when the words "for the purpose of promoting safety of life and property through the use of wire and radio communication" were added, and in 1996, when the words "without discrimination on the bases of color, religion, national origin or sex" were added.

Titles II, III, and VI—the subchapters with which this book will be primarily concerned—differ in that they prescribe distinct sets of regulation for ostensibly distinct categories of services, service providers, and technologies.

Title II of the Act governs common carriers, and thus contains the principal set of substantive provisions pertaining to telephony. The provisions of Title II cover a vast number of topics—from rates, competition, and network interconnection to harassing phone calls, services for the disabled, and the regulation of payphones. 47 U.S.C. §§201-276. Although neither Title II nor any other subchapter of the Communications Act explicitly regulates the Internet, Title II contains provisions that affect network infrastructure essential to the Internet. (Moreover, the FCC has also regulated the Internet under its Title I authority.) We will examine many aspects of regulation under Title II (especially Title II as it was amended by the Telecommunications Act of 1996) in Chapters Thirteen through Eighteen of this book. The relation of Title II to the Internet will be discussed in Chapters Nineteen and Twenty.

Title III of the Act establishes the regulatory regime for radio spectrum and broadcast services. It, too, covers substantial ground, ranging from the licensing of spectrum and construction of radio facilities to more particular regulation of the content of broadcast communications. 47 U.S.C. §§301-399. The most important aspects of Title III for our purposes are those that involve the allocation of spectrum and those that impose restrictions and conditions on the use of that spectrum. We address the many interesting issues arising under Title III in Chapters One through Seven.

Finally, Title VI addresses "cable services" and, obviously, governs the regulation of cable television as well as many other services provided over the cable infrastructure. 47 U.S.C. §§601-641. Some of the provisions here also extend either implicitly or explicitly to other multichannel video programming distribution (MVPD) systems, for example direct broadcast satellite service and video services delivered over the telephone network. 47 U.S.C. §§651-653. The current Title VI was not, of course, part of the original 1934 Act, because cable service did not then exist. It was added over time through amendments to the Act, notably in the 1984 and 1992 Cable Acts mentioned above. (Before that time, the FCC relied on its Title I authority to regulate cable television.) We examine the regulation of cable television and related MVPD services in Chapters Eight through Twelve.

Overall, the structure of the Act follows the deceptively simple outlines of the telecommunications industry as Congress found it in 1934. On one hand were the "natural monopolies"—the telephone and telegraph companies that transmitted information by wire, operated as common carriers, and should therefore, it was assumed, be subject to classic public utility regulation. This is the intuitive logic behind Title II of the Act, which envisions the FCC regulating the entry, rates, and services of common carriers of telephonic communications (especially Bell); auditing their books; and assuring that they provide nondiscriminatory access to all.
On the other hand, in 1934 AM radio was gaining popularity throughout the country and radio stations were just beginning to link up into networks. These stations broadcast through the airwaves, and so the prime danger envisioned here was that these stations would interfere with each other if not legally constrained from doing so. Radio stations did not behave as common carriers, meanwhile, but rather selected programs to appeal to listeners and then sold commercial time to advertisers who thereby gained access to those listeners. Title III of the Act is directed at this commercial radio phenomenon, and thus it portrays a Commission particularly concerned with the licensing process—deciding who should be licensed to broadcast, on what frequencies, and in which communities. In contrast to Title II, the Act says nothing about controlling rates or providing equal access to broadcast stations. In fact, Title III specifically forbids the FCC from subjecting broadcasters to common carrier obligations.

Today, of course, some firms act like broadcasters but transmit by wire (e.g., cable television), while other firms act like common carriers but transmit through the airwaves (e.g., mobile telephone). As we shall discuss, the phenomenon of providing similar services based on different technologiessay, provide telephone service both by wire and by air-is known as "technological convergence." In the wake of technological convergence, different titles of the Act may thus apply to a single service, as in the case for mobile telephony where, for example, spectrum licensing provisions from Title III and network interconnection provisions from Title II are both relevant. And a single title of the Act may apply to multiple and very different services, as is plainly the case for Title III which, as we just pointed out, applies both to broadcast television and to cellular telephony. Moreover, in a classic case of technological convergence, networks that originally were used for one kind of service (e.g. video) are now increasingly capable of delivering multiple kinds of services (e.g. video and high-speed data transmission). In short, technology changes-and the Internet, in particular, which is a powerful force driving technological convergence-have ensured that neither the concepts of "broadcaster" nor "common carrier" has the unambiguous, objective implications assumed by Congress in 1934.

Other Relevant Statutes and Agencies

To be sure, the Communications Act of 1934 (including its amendments) is not the only statute relevant to the regulation of U.S. telecommunications. As we will see, antitrust and copyright laws have also been very important. The Copyright Act of 1976 specifically created compulsory licenses that allow cable operators to retransmit copyrighted content at regulated rates. And the Satellite Home Viewer Improvement Act of 1999 amended the Copyright Act to recognize a similar, but not quite identical, compulsory license in providers of direct broadcast satellite service. These provisions of the Copyright Act are considered in Chapter Nine. Similarly, one of the most important events in the history of American telecommunications—the breakup of the Bell Telephone System in 1984—resulted not from anything in the 1934 Act, but from an

antitrust suit under the Sherman Antitrust Act. That suit is considered in significant detail in Chapter Fourteen.

Just as the Communications Act is not the only law relevant for telecommunications in the United States, the FCC is not the only relevant federal agency or authority. The case that broke up Bell was brought by the Antitrust Division of the U.S. Department of Justice (although the FCC was involved). Since 1996, the Department of Justice also has had primary responsibility for reviewing mergers and acquisitions in all sectors of the communications industry. The respective roles of the antitrust agencies and the FCC in telecom mergers will be discussed in Chapter Twenty-One.

In addition, another Executive Branch entity, the National Telecommunications and Information Administration (NTIA) located within the Department of Commerce, plays two important roles. First, NTIA and the FCC together determine what parts of the electromagnetic spectrum will be reserved for federal government use. *See* 47 U.S.C. §902. (NTIA then manages all the spectrum assigned to the government.) In discharging these responsibilities, NTIA relies heavily on advice from the Interdepartment Radio Advisory Committee, which is composed of representatives from the various federal agencies that use the spectrum extensively. Second, NTIA bears principal responsibility for determining presidential policy on telecommunication issues. To this end, NTIA has a substantial research staff and frequently submits comments on major FCC policymaking proceedings.

The above agencies operate within the United States, but one international entity bears mention. Radio waves do not respect geopolitical boundaries, so it is necessary for spectrum allocation in the United States to conform to rules established by the International Telecommunications Union (ITU), an organization established by treaty. Particularly for terrestrial transmission of radio waves, ITU regulations are not typically very confining. Usually, within any range of the spectrum, international standards permit a wide variety of uses. Further, international law does not restrict any spectrum usage within a country so long as that use does not radiate into other countries.

While it is important to note the role of other agencies and government departments in regulating telecommunications, the FCC has the overwhelming share of authority in this domain. So, while other regulatory or enforcement entities will enter into the discussions in this book, our principal focus will be on the Federal Communications Commission and its activities—a topic to which we now turn.

§ 2.3 The Federal Communications Commission

Government regulation of the spectrum could have been achieved through a number of different mechanisms—utilizing courts, legislatures, and/or agencies, on the federal or state level. Admittedly, some approaches would have been more complicated than others. For example, leaving spectrum regulation to state entities might have introduced significant coordination, compliance, and enforcement costs because, whether intentional or no,

telecommunication broadcasts frequently cross state lines.⁹ Even assuming a preference for regulators with a national purview, there were still a number of options on the federal level. Spectrum regulation could have been left up to Congress, for example, or to a specialized federal court with national jurisdiction (like the Court of Appeals for the Federal Circuit, which hears all patent appeals). Regulatory authority could have been vested in an agency directly controlled by the President, for that matter, rather than the more independent FCC that eventually was created.¹⁰

There is of course no easy answer to this question of institutional design, but the main arguments that carried the day back in 1927 were, first, that an independent administrative agency could develop relevant expertise; and, second, that using an independent agency was the only way to sufficiently insulate spectrum decisions from the political process. As to expertise, the argument was that judges are generalists with too few resources at hand, and, though Congress and the executive branch have greater resources at their disposal, they lack the narrow focus that was thought to enhance the development of sound regulation in this complicated area.¹¹ As for insulation, an even bigger concern than their lack of expertise was the worry that both Congress and the executive branch were too political. During the time when the FRC and later the FCC were created, there was a widespread belief that politically insulated expert administrators would do a better job of managing complex regulatory undertakings than would their masters in Congress and the White House.¹²

Congress could have given commissioners life tenure and the further accouterments of even greater independence. But that likely would have seemed to be too much insulation. One person's insulation, after all, is another's unaccountability. So Congress settled upon a multi-member commission, currently with five commissioners each serving a five-year term of

⁹ Some commentators argue that the benefits of regulation by common-law courts outweigh the costs. See Peter Huber, Law and Disorder in Cyberspace (1997). And it is worth reflecting on the argument about state versus national borders. Spectrum does not respect national boundaries either, and yet we are governed by a federal commission and not a global one.

¹⁰ Recall that the original plan was for the Federal Radio Commission to regulate for just one year, and then for the Secretary of Commerce to take over.

¹¹ It is of course unclear whether a narrow focus is preferable. Do you want a regulating entity to have a broad perspective that looks at the whole economy or one that concentrates more narrowly on a given industry? Your answer may vary depending on the situation (and which answer aids your cause). What looks like admirable focus to one person may look like blinders to another. And note that, precisely because a narrowly focused agency deals with a smaller number of regulated entities than would an agency with a broader purview, the potential for capture by an interested party may be greater in the case of the narrowly focused agency.

¹² Although the FRC was created before the New Deal and the FCC was created during it, one commonality between the periods was a belief in the wisdom of governance via independent regulatory commissions. *See* Joseph B. Eastman, The Place of the Independent Commission, 12 Const. Rev. 95 (1928); James M. Landis, The Administrative Process (1938).

office. Replacements for commissioners who leave during their term serve only for the unexpired portion, and there can be no more than a bare majority (three, currently) of commissioners from any one political party. The President nominates commissioners and they are confirmed by the Senate, and the President designates one to serve as Chair, which means that the Chair is almost always from the President's party. These structural details are codified at 47 U.S.C. §154.

The Commission enjoys considerable discretion when it comes to guiding spectrum policy. Indeed, section 303 of the Communications Act of 1934 broadly states:

Except as otherwise provided in this Act, the Commission from time to time, as public convenience, interest, or necessity requires, shall—

(a) Classify radio stations;

(b) Prescribe the nature of the services to be rendered by each class of licensed stations and each station within any class;

(c) Assign bands of frequencies to the various classes of stations, and assign frequencies for each individual station and determine the power which each station shall use and the time during which it may operate;

(f) Make such regulations not inconsistent with law as it may deem necessary to prevent interference between stations; [and]

(r) Make such rules and regulations and prescribe such restrictions and conditions, not inconsistent with law, as may be necessary to carry out the provisions of this Act, or any international radio or wire communications treaty or convention.

This might sound like an enormous degree of discretion—and it is—but, in practice, there are constraints. First, courts have interpreted the "public interest, convenience, and necessity" as itself imposing some limitations on the FCC; indeed, they had to, as otherwise this would have been an unconstitutional delegation of the legislative power to an entity outside the legislative branch.¹³ Second, Congress can, and often does, give the FCC more specific mandates in particular contexts, such as legislation enacted in the 1990s requiring that spectrum be assigned via auction (which we discuss in Chapter Four). Third,

¹³ This issue was directly addressed in National Broadcasting Co. v. United States, 319 U.S. 190 (1943), where the Supreme Court rejected the argument that "public interest, convenience, or necessity" was unconstitutionally broad. The Court concluded that "the 'public interest, convenience, or necessity' is a criterion which is as concrete as the complicated factors for judgment in such a field of delegated authority permit," and that the terms do not convey unlimited powers to the FCC, as they indicate that the FCC should be guided by, for example, "the ability of the licensee to render the best practicable service to the community reached by his broadcasts." *Id.* at 216.

other statutes—most notably the Administrative Procedure Act¹⁴—impose additional constraints on agency actions and give individuals the right to sue the agency if it runs afoul of these requirements. So, for example, the FCC is required to follow certain rulemaking procedures that, among other things, give the public ample opportunity to comment on proposed regulations. The Government in the Sunshine Act similarly prohibits three or more Commissioners from deliberating on Commission business unless they announce the meeting seven days in advance and hold the meeting in public.¹⁵ Fourth and finally, the political branches can exercise control over the agency via ad hoc levers, such as reducing the FCC's budget, refusing to confirm newly appointed commissioners, or subjecting FCC actions to intensive public hearings and debate.

Within these guidelines, what sort of actions does the FCC take? As with all other administrative agencies, the FCC's formal actions fall primarily into one of two categories: adjudication and rulemaking. The division between the two can sometimes be murky, but the key distinguishing characteristics are generality versus specificity, and to a lesser extent prospectivity versus retrospectivity. Adjudications usually involve specific actions aimed at the past behavior of a small number of particular named parties, and rulemakings are broader orders that apply across-the-board and prospectively to a class of activities or people that are defined but not enumerated.

Adjudications are a significant part of the FCC's docket, as they include actions on possible rule violations, licensing disputes, and other proceedings focused on specific acts or actors. An example would be a hearing to determine whether the broadcast of a particular television program violated the Commission's rules barring indecency. When the FCC implements a statute, however, it usually does so via rulemaking. Congress enacts the statute and leaves some aspect of the statute's administration to the FCC, and the Commission assumes that responsibility by launching a rulemaking process. The materials in this textbook skew heavily toward rulemaking documents, as they are the main vehicle through which telecommunications regulation is implemented.

The rulemaking process formally begins with the Commission issuing a Notice of Proposed Rulemaking ("NPRM") or a Notice of Inquiry ("NOI"). An NPRM contains a discussion of the issues to be addressed and a proposed set of rules to address them, usually with some explanation of the basis for those proposals. The NPRM requests comments from interested parties on the proposed course of action. Of course, parties often communicate with the Commission before it issues an NPRM in the hope of influencing these proposals; but there is a statutorily mandated comment period after an NPRM is issued, so that even uninvolved parties have an opportunity to comment before any regulation takes effect. An NOI, meanwhile, raises the issue to be

¹⁴ 5 U.S.C. §551 et seq. (establishing processes and standards for agency decisionmaking as well as standards for judicial review of agency decisions).

^{15 5} U.S.C. §552b.

addressed and invites comments but usually does not propose any particular rules. An NPRM generally follows an NOI. After either an NPRM or an NOI, the FCC receives comments and sifts through them, and afterwards issues a rulemaking (often called a "Report and Order") in which it responds to the comments, issues final rules, and provides a statement of the basis and purpose of those rules.

This sounds streamlined, but often it is not. Frequently the FCC will issue an NPRM or NOI and later (sometimes in response to comments, sometimes on its own initiative, sometimes in response to external events) decide to issue a further NPRM or NOI, which creates a new round of comments and responses but on a refined set of issues. On the back end, a final order might not resolve all outstanding issues and might instead request comment on some additional matters. The result is that many orders are final orders as to some matters and an NPRM or NOI as to others. The possibility of multiple NPRMs and multiple orders, combined with the opportunities for communications to the Commission not only during the official comment period but also before a rulemaking formally commences, make for a more fluid rulemaking process than one might imagine from merely reading the statutory provisions that govern FCC behavior.

When a final Report and Order is issued, even that is not the end of the process. A party can petition the FCC for reconsideration, but the Commission rarely grants such requests. That is not surprising, as the whole point of soliciting comments after the issuance of proposed rules is to allow parties to present their arguments before final rules are issued. Other avenues for reconsideration are more promising, however. First, Congress can overturn an FCC decision by legislation. A second, and more common, path is that an aggrieved party can file suit challenging the agency action as inconsistent with federal law.

The rules governing suits against the FCC are, by and large, the same as those employed more generally in administrative law. This means that most agency final actions (whether rulemaking or adjudications), and some decisions not to act, can be appealed to a federal court. By statute, the United States Court of Appeals for the District of Columbia Circuit has exclusive jurisdiction to hear challenges to most licensing decisions made by the FCC. See 47 U.S.C. §402(b). Almost all other final FCC actions (including, notably, rulemaking proceedings) can be challenged in any United States Court of Appeals, though a disproportionate share are heard by the appeals court in the District of Columbia, which is where the FCC is located. See 47 U.S.C. §402(a), 28 U.S.C. §2342(1).

Most agency findings of fact, exercises of discretion, and policy judgments are subject to "arbitrary and capricious" review, under the catch-all provision of the Administrative Procedure Act that empowers courts to "set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. §706(2)(A). This is fairly lenient review, in which the court will inquire whether the agency

based its decision on substantial evidence, considered arguments on the opposite side, and explained the basis of its decision. The courts do not (or at least are not supposed to) substitute their judgments on the merits for those of the agency; that would defeat the purpose of having an expert agency in the first place.

Legal interpretations made by the agency are subject to a slightly different form of review. When, as is usually the case, the Commission makes such interpretations in a rulemaking, the interpretations are subject to Chevron analysis, named for the case Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984). Under Chevron, the court first determines "whether Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter" and there will be no deference to the agency's determination. Id. at 842. But "if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute," which entails quite considerable deference to the agency. Id. at 843. If the Commission makes a legal interpretation in a more informal context (such as an informal adjudication), then the deference accorded by a federal court will "depend upon the thoroughness evident in its consideration, the validity of its reasoning, its consistency with earlier and later pronouncements, and all those factors which give it power to persuade, if lacking power to control." United States v. Mead Corp., 533 U.S. 218, 228 (2001) (quoting Skidmore v. Swift, 323 U.S. 134, 140 (1944)).

Suits challenging FCC actions are frequently filed in response to major FCC actions, and sometimes they meet with success. A sizable percentage of the judicial opinions excerpted in this book, in fact, were brought as challenges to FCC rulemakings.

§ 2.4 An Overview of Spectrum Management

The FCC is in charge of regulating the private use of spectrum. But what exactly does it mean to regulate spectrum use?

The Commission's first step is to determine which services it will allow on which frequencies, and how many users it will allow to provide those services. This process (called allocation) entails the FCC deciding what services it is going to permit and the quantity and wavelengths of frequencies at which it will allow those services. As an example, the Commission might to decide to authorize FM radio broadcasting on the 20 megahertz between 88 MHz and 108 MHz. In any given allocation, the FCC can permit one service, several services, or any service, and can make its rules accordingly. And it can choose to grant licenses to one entity, a number of designated entities, or to leave a set of frequencies completely open for unlicensed use.

Once the Commission has determined the quantity and particular set of frequencies to allocate for a given service or services, it determines how (if at all) to allot licenses for the service, and what sort of service rules it will impose. That is, the Commission decides how big a range of frequencies each license

will cover (e.g., 100 licenses covering 20 kilohertz each, which totals 2 megahertz, or 20 licenses covering 100 kilohertz each, also totaling 2 megahertz); how much area each license is authorized to cover (e.g., Indiana alone, Indiana plus Ohio, or the entire United States); what the limits are on the power levels of the transmitters; and whether and how it will create buffers between users or between services to avoid interference. Taken together, these decisions are sometimes called the band plan.

The Commission's next step is to create rules for the assignment, transfer, renewal, and termination of licenses to use spectrum in ways consistent with the band plan. Over time, the Commission has varied its approach tremendously with respect to this task. In the beginning, licensees were chosen in merit-based hearings where each licensee was evaluated in terms of its ability to provide the service in question. Licenses lasted for a few years, after which time a licensee had to petition the Commission for renewal. Transfer was cumbersome and termination was a real threat. More recently, by contrast, the Commission typically assigns licenses using an auction mechanism where the licensee goes to the highest bidder. Renewals are almost never questioned, and licensees are for the most part free to transfer their licenses during the license term. Termination is unheard of.

Finally, a third task before the Commission is the articulation of any public trustee obligations that might come along with license ownership. Public trustee obligations can, in theory, be applied to any type of license. The most salient obligations, however, have been those aimed at broadcast licensees. Such obligations were in some sense the "price" of license ownership back when licenses were distributed at no charge. A licensee would receive his license at no monetary cost but, in exchange, the government would impose a set of obligations on the licensee—for example, to air educational programs for children and to present balanced news coverage. Public interest obligations have been part of spectrum regulation since the start; as we will see, however, in recent years many of these obligations have been significantly pared back.

The following three chapters focus on allocation (Chapter Three), assignment (Chapter Four), and public interest obligations (Chapter Five). We do not offer a separate chapter on allotment and service rules. Instead, we introduce those concepts more fully below, and then we further develop them as appropriate in the context of the other discussions.

NOTES AND QUESTIONS

1. The Land Analogy. In the chapters that follow, we will obviously say much more about each of these Commission tasks. For now, however, can you articulate comparable tasks that must be accomplished with respect to the allocation and use of land? Are zoning regulations the equivalent of the band plan? What are the rules that govern the initial assignment, transfer, and renewal of rights to land? Are there any public interest obligations imposed on land owners, akin to the public interest obligations imposed on spectrum licensees?

2. Left Hands and Right. What relationships do you see between the various tasks that the Commission performs? For example, if transfer is relatively easy to accomplish and not at all subject to Commission review, does it matter how the Commission initially assigns licenses? Whoever receives the licenses at first will simply turn around and sell it to the highest bidder, right? Similarly, if initial assignment is done by auction, is there any reason to in addition impose public interest obligations? After all, under an auction the government garners the full value of the license; why not use that money to fund educational television, subsidize telephone service, or accomplish any other public interest goal?

3. Neither Fish nor Fowl. FCC Commissioners sometimes view their job as akin to a federal judge. Other times, FCC Commissioners believe they are extensions of the legislative branch. Yet other times, FCC Commissioners believe they work for the President and are, in effect, an extension of the administration. What role do you think is appropriate? What are the advantages and disadvantages of each? Given the tasks before the Commission, can an FCC Commissioner be too political or not political enough in her orientation?

§ 2.5 Regulatory Tradeoffs and Allotment

The FCC has often articulated the goals of broadcast regulation to be competition and diversity. See, e.g., 1998 Biennial Regulatory Review, 13 FCC Rcd. 11,276 ¶4 (1998) ("For more than a half century, the Commission's regulation of broadcast service has been guided by the goals of promoting competition and diversity."). A third goal that the Commission sometimes includes with competition and diversity is localism. See, e.g., Broadcast Localism, 19 FCC Rcd. 12,425 ¶1 ("As with competition and diversity, localism has been a cornerstone of broadcast regulation for decades.").

These three goals are in tension with one another. Treating diversity as a goal separate and distinct from competition must mean that, in some cases, (small amounts of) competition should be sacrificed to achieve (larger amounts of) diversity. Such a concern with diversity might be justified either because of the perceived failure of competition to work adequately or because of a view that diversity may be more important than efficient competition.

The conflict between localism and the other goals, meanwhile, has been significant and foundational. The best example arises out of the allotment of broadcast television stations. The FCC chose to place at least one television station in as many communities as possible. The FCC could have designated single nationwide licenses as opposed to ones based in local communities. By so doing, a single firm could broadcast on channel 2 in a more effective fashion and without the need for as many empty stations that ensue when one firm broadcasts on channel 2 from, say, New York City and another firm broadcasts on channel 3 from Philadelphia. Because of interference concerns where two rival channel 2 stations might overlap (say, in Princeton, New Jersey), the result

of this policy is that large swaths of territory will not be within range of a channel 2 signal (New York City) or a channel 3 signal (Philadelphia). Creating nationwide licenses would have given individuals access to more stations (by avoiding interference problems created through assigning stations to each city).

The FCC's decision not to maximize the number of stations but instead to focus on ensuring local stations in each community thus meant that individuals would be able to see local news and weather, but it also reduced the number of broadcast networks that could be created—ensuring that, for decades, there would be only three commercial broadcast television networks. Even as of 1980, an FCC study found that although 92% of U.S. households could receive at least three commercial television channels, only 64% could receive a fourth channel, making it hard for a fourth network to compete.¹⁶ The irony is that the existence of only three national broadcast networks led the Commission to regulate the networks' behavior. The FCC, concerned that the existence of only three nationals with their affiliates and their program suppliers (discussed in Chapter Seven).

This is not to suggest that the Commission necessarily made a mistake in focusing on localism, but rather than the goals of competition, diversity, and localism are in tension with one another.¹⁷ With this as with every other decision that the FCC (or anyone else) makes, there are tradeoffs.

That said, some decisions on how to design the scope of spectrum licenses are widely recognized, in retrospect, to have been mistakes. There is broad agreement, for example, that regulators erred when they followed a local model for cellular providers. In that case, the decision to create a large number of locally-based licenses proved highly inefficient, because users wanted national service, and the FCC's initial decision was eventually overcome through market consolidation. But the FCC's decision to create local cellular licenses created inefficiencies and stalled the development of a more advanced infrastructure.

¹⁶ See 1 FCC Final Report, New Television Networks: Entry, Jurisdiction, Ownership, and Regulation 68 (1980); Christopher S. Yoo, The Rise and Demise of the Technology-Specific Approach to the First Amendment, 91 Geo. L.J. 245, 275-79, 279 n.175 (2003).

¹⁷ For a more negative view of the FCC's allotment decisions, see Thomas G. Krattenmaker & L. A. Powe, Jr., Converging First Amendment Principles for Converging Communications Media, 104 Yale L.J. 1719, 1736 (1995) (noting that the FCC's allocation plan "gave great weight to factors such as placing at least one transmitter in as many communities (and, therefore, congressional districts) as possible..., and for almost forty years guaranteed that there would be but three national networks. The allocation plan sacrificed viewer interests in access and diversity to narrow political concerns and entrenched industry goals.").

NOTES AND QUESTIONS

1. Broader Applications. The Commission has not emphasized localism or diversity in its regulation of telephony. Is that a mistake? How might they apply in the context of telephone regulation?

2. Principles. Is there any metric for the FCC to use in trading off among competition, diversity, and localism? Should it add other goals to those three, or subtract one or two? On what basis should it decide whether to do so?

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Jody Gruendel

From: Clay T. Whitehead
Sent: Monday, September 12, 2005 8:46 PM
To: Jody Gruendel
Subject: FW: Reading

Jody, we have this printed. Let's look at it and decide what to scan. Probably all of it, then send it to Lisa.

From: LSockett@aol.com [mailto:LSockett@aol.com] Sent: Monday, September 12, 2005 8:36 PM To: Clay T. Whitehead Subject: Re: Reading

In a message dated 9/12/2005 6:41:06 PM Eastern Standard Time, tom@cwx.com writes:

I can also provide the Open Skies document which would go well with that for Goldberg.

Could you e-mail or scan me a version of the Open Skies document to look at? I'll look at the cable document as a possibility for next week too. Thanks.

Lisa

OTP DOMSA Proposal - 10/28/11

FOR IMMEDIATE RELEASE

OFFICE OF THE WHITE HOUSE PRESS SECRETARY

THE WHITE HOUSE

PRESS CONFERENCE OF PETER M. FLANIGAN, ASSISTANT TO THE PRESIDENT, AND CLAY T. WHITEHEAD, STAFF ASSISTANT

AT 12:00 Noon, EST.

MR. ZIEGLER: I think you have had a minute to read over the statement in which the President announces the Administration's recommendation on the utilization of communication satellites for domestic telecommunications services.

Peter Flanigan, Assistant to the President, has been involved in the study group which led to this recommendation. Tom Whitehead, on Mr. Flanigan's staff, headed up the study group. They are here to discuss it with you.

I think Peter can take it from this point.

MR. FLANIGAN: Ladies and gentlemen, the issue of Federal policy regarding the use of satellites in domestic communications has been unresolved since 1965. When this Administration came into office, we determined that now was the time to resolve that as far as the Executive arm of Government policy is concerned.

Mr. Whitehead headed a working group that directed itself for several months to the economic and technological questions involved, and on the basis of those studies we have worked to prepare a policy statement that was agreed upon by the agencies in the Federal Executive branch that are involved in these matters.

The proposals were sent today to the FCC, which will now consider, presumably, filings for the establishment of satellite systems. They will determine whether or not they agree with this policy statement.

It has, for your information, been discussed with Chairman Burch. It has not been put before the whole Commission. Chairman Burch has not committed himself. He said he sees no objection to it, but it would be improper to say that the FCC agrees with the complete policy.

The statement you have recognizes that a flexible policy is necessary if we are to stimulate to the most extent innovative effort by private industry. We encourage commercial systems to be put up as soon as they are economic. We don't attempt to direct private industry to put them up before they themselves believe they are economic. We very much stress the need to set up a domestic satellite system so that it will be competitive. We think that in this area, particularly with regard to special services, that competition can be the regulating factor with regard to rates.

We further recognize that this is an area in which technological change will be very fast. We will know a great deal more about it in a few years. The economics of it are still all prospective, at least as far as domestic communications satellites are concerned. We will know more about that in a few years and we recommend that after some experience in these areas are gained, they again be reviewed by the FCC. We are not trying to establish for all time what we think the appropriate policy should be.

Because the subject has been discussed over a period of time, I am sure some of you have some familiarity with it, and have a few questions you would like to ask. We will be happy to give you any answers we can.

When you speak of satellites for domestic use, domestic satellite systems, you are speaking of satellites for communications within the United States?

MR. FLANIGAN: That is correct.

As you know, we already have them abroad, run by INTELSAT, of which COMSAT is our member and is operating that system.

Q As for wanting this competitive, does this mean that your position is that somebody other than AT&T should be operating satellites? I mean, somebody as well as AT&T?

MR. FLANIGAN: We say they may operate satellites, not that they should. If they have an economic venture, they would like to engage in, they certainly should have the right to do so.

For instance, if somebody wanted to put up a special service satellite to carry television channels to be used for massive movement of data for computers, there is no reason on earth in our view that they should not have the right to establish such a system.

Q I use this only as an example, but if a network, for example, a broadcast network, T.V. and radio, wanted to put up its on satellites, it is this paper's position that they should be so allowed to do?

MR. FLANIGAN: That is correct.

Q Would this also include ownership and operation of ground stations?

MR. FLANIGAN: Yes, it is a system.

MORE

Q How many separate systems do you think can be accommodated?

MR. WHITEHEAD: We looked at that in quite a bit of depth and it depends on a lot of factors, such as standards for antenna diameters, locations of the systems, which parts of the United States you want to serve. We concluded with the current economic state of the art, and serving the contiguous 48 States, that on the order of 15 to 20 satellite systems could be accommodated.

Q Is that just satellites or satellite systems?

MR. WHITEHEAD: Satellites.

Q How many systems?

MR. WHITEHEAD: That depends on how many satellites you want in your system. One system might have one satellite serving the contiguous United States and maybe another reaching out into Hawaii and Alaska. When you start talking about Hawaii and Alaska, you open up new orbital uses.

Q Did you say could or should be accommodated?

MR. WHITEHEAD: Could.

Q You are saying that the highest number of satellites you could have feasible over the United States would be 20?

MR. WHITEHEAD: If you wanted to serve the entire contiguous 48 States with one satellite, 20.

MR. ZIEGLER: I don't think that is clear.

Q Let me make an example. If I have a satellite system and it requires 10 satellites to use this system and put it up, does that mean that there will be room for only another ten satellites? How does this work?

MR. WHITEHEAD: What I am saying is that there is room up there for 15 to 20 satellites that will each cover all 48 contiguous States. A system that **exp**loyed ten satellites would leave room only for ten more. However, it is important to realize that not every satellite has to cover the entire contiguous 48 States.

Q You mean there is only enough room up there for 20 satellites? There is a lot of space.

MR. WHITEHEAD: It depends on the antenna diameters, the power of the satellites. The 20 figure I gave you is for the current state of the art. We feel it is quite feasible to expand that with larger antenna sizes, with more powerful satellites, so that the resources could be expanded to cover 40 or 50 satellites.

- 3 -

Q How about regional systems, like a system covering New England, would that add to that 20 or so?

- 4 -

MR. WHITEHEAD: A system covering New England only would not have to use one of those 20 slots.

Q In other words, if you are willing to double your investment to cover the entire United States, you would have room outside of the space for the 20?

MR. WHITEHEAD: That is correct.

Q In the old days, they were saying these satellites would make possible ten cent calls all across the United States -- a call anywhere would cost ten cents, and you would almost eliminate the fixed rates. Is that sort of rate reduction in prospect now?

MR. WHITEHEAD: I truthfully don't know. It would depend on the economics of how the telephone companies used it in their system.

Q How radical an effect is this going to have on the cost and the convenience?

MR. WHITEHEAD: Based on our study, we are uncertain whether or not telephone companies will find satellites useful for their providing of telephone service. It is very likely, therefore, that this will have no impact.

Q What is the big impact, CATV?

MR. WHITEHEAD: Distribution of television signals and high speed data.

Q Can you make a similar statement about television? How soon might a network put satellites up and what advantages might that bring to television?

MR. FLANIGAN: Let me bring up the fact that the 1965 date was the date that ABC suggested they wanted to put up their own system. That is an idea of the kind of enthusiasm.

Tom, why don't you follow that up.

MR. WHITEHEAD: The current estimates are that we could have a system in operation in two years.

Q Is it economically feasible that they might do that?

MR. WHITEHEAD: I don't know.

Q What advantages would that be to somebody's television reception?

MR. WHITEHEAD: Essentially, none.

MR. FLANIGAN: I would like to get back to telephone call rates. That is a question that ought to be directed to the FCC who controls those rates. They have been authorized to make a substantial investigation in the systems and that will continue to be in the telephone companies' rate basis for the determination of rates. Q What we are getting at is a question of logic. Does it not stand to reason that if a telephone company would employ a satellite for longline calls that the cost of these calls should go down?

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Q Or the profit of the company go up?

MR. FLANIGAN: If the investment in the satellite provides them with an ability to service the calls cheaper with regard to their whole system. I would think on the rates of users, that is a problem that the FCC addresses itself to and it is not one in rate cases, as you gentlemen know well, that the White House should involve itself.

Q Could I ask you about one of the key seriences in this statement? It says it is concluded that the Government policy is that we should go ahead with this, but there is no reason to call for an immediate establishment of a domestic satellite system as a matter of public policy.

That leads me to infer that somebody was in favor of this public policy of a satellite system. Could you give us a little background on that?

MR. FLANIGAN: Admittedly that sentence was added later and it was added for the reason that we are trying to say here that what we are clearing up is the Federal policy with regard to the use of these things. We are anxious to say now that our policy should not be inhibitant to the establishment of such a system by private enterprise.

We are not trying to suggest that now is the time they must do it. They have to make up their own minds, based on the economic results to them of establishing a satellite system.

Q Was there a faction or a force in the communications community that said it ought to be done as public policy?

MR. FLANIGAN: Do you mean it ought to be done by the public?

Q Right.

MR. FLANIGAN: Well, there was a point of view that one system only, strictly regulated, made available to all users, was a solution here. We thought that that was not as flexible, would not serve as well the public as the availability of the systems proposed here.

Q Wasn't that point of view advanced by COMSAT primarily and by AT&T at first?

MR. FLANIGAN: I think that is correct. They are aware of this, and perhaps are not universally enthusiastic.

Q They were briefed on this, I understand, yesterday. Were both COMSAT and AT&T briefed on this in advance?

MR. FLANIGAN: They have been informed. AT&T came in to see us and asked what was going on and we told them. It is interesting. This has not obviously be unknown in the communications industry that this problem was being considered. ATET told us when they came in here and requested an opportunity to talk to us, that their own position had changed rather substantially by virtue of this study, and that they were not discouraged by the direction in which this study was going.

Q Why should AT&T have any advance knowledge of the findings of this study?

MR. FLANIGAN: Because they called and asked about it.

 $\ensuremath{\mathbb{Q}}$ If I called and asked, would I have gotten that advance knowledge?

MR. FLANIGAN: If another communications company called up and said they would like to express their opinion with regard to the study that was broadly reported to be underway, we would have said we would be glad to have your opinion.

Q But what you are saying is that you gave AT&T information about what was in your recommendation, which is different, I think.

MR. FLANIGAN: When they came in and said we believe that initially there ought to be one single system, we said, well, there is certainly an alternative to that. We think that you have to equally consider several systems with free entry, and they have continued to give us their opinion on this thing, and we have discussed the alternatives. We did not release to them, to my knowledge, the results of our policy discussions.

Q I thought that is what you were saying you did yesterday.

MR. FLANIGAN: I did not say that.

Q Didn't Mr. McCormack from COMSAT come over yesterday for a briefing?

MR. WHITEHEAD: We discussed it with him.

Q How about AT&T?

MR. WHITEHEAD: We discussed it with them.

Q Who is the AT&T representative?

MR. WHITEHEAD: Their Vice President for Government Relations.

Q What is his name?

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MR. WHITEHEAD: Mr. Crossland.

Q How binding is this policy on the FCC?

MR. WHITEHEAD: It is not binding. The FCC is the regulatory agency, and this is our recommendation to them.

Q When will they decide on this?

MR. WHITEHEAD: The Chairman has indicated publicly that he puts this high on his agenda.

Q How high?

MR. WHITEHEAD: You will have to ask the Chairman.

Q Does he have to have a request from some specific agency before the FCC can act or can they issue a statement of public policy first, and then entertain requests to go ahead with the system?

MR. WHITEHEAD: I believe they can do it later.

Q You said a moment ago we can have a system in operation in two years. What do you mean by that, one domestic system?

MR. WHITEHEAD: I am saying that from my conversations with the communications companies they indicate that it is technologically feasible to have a system operating in two years. It takes a two-year lead-time.

Q How do you respond to the COMSAT position that it is the only one under law that is entitled to launch a commercial satellite under its charter through the Congress?

MR. WHITEHEAD: Well, COMSAT has never really taken that position formally. We considered it at first, in looking at the act, and we concluded to the contrary.

Q You say no legislation is needed for this?

MR. WHITEHEAD: That is correct.

Q How are people going to get satellites launched?

MR. WHITEHEAD: NASA would provide launches on a cost reimbursable basis.

Q Are they authorized to do that?

MR. WHITEHEAD: They believe they are.

MR. FLANIGAN: Didn't they do it for COMSAT?

MR. WHITEHEAD: Yes.

MR. FLANIGAN: There are others who requested it, and they believe they have the right to do it.

Q Could the networks combine to put up one system which all of them could use or would each network have to put up a system of its own?

MR. WHITEHEAD: Under this this policy, it would be their choice.

Q They could do either. But it is technically possible for all to use one system?

MR. WHITEHEAD: I believe it is.

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Q Are there any anti-trust implications in that?

MR. WHITEHEAD: Yes, there are. In the memo to the Chairman, you will see a requirement that if a group of common users get together to set up a system, we believe there should be some policies that require them to allow some other similar user to come in.

Q Have they not indicated they want to do that as a threat to AT&T?

MR. WHITEHEAD: I don't know about their motives, but I think they are considering whether or not they want to do it.

Q Would this see the reduction of use in coaxial cables, microwave and other systems in commercial television?

MR. WHITEHEAD: No, we did not get into that at all. We were talking about how people should be allowed to get into the satellite business.

Q What is the criterion for somebody who wants to file, economic or technological?

MR. WHITEHEAD: That is set out in detail in our memorandum.

Q Is there a domestic satellite available now?

MR. WHITEHEAD: No.

Q They are all international?

MR. WHITEHEAD: Yes.

Q What is the possibility of the establishment of this for a public television network?

MR. WHITEHEAD: Well, I think if a system is set up for distributing television signals by COMSAT or AT&T or any other concern, I assume the public television network could buy space on that system. If the networks get together to set up their own jointly-owned system, then I think the corporation would consider joining with that.

Q What is the relationship of the domestic system to the INTELSAT system, as far as your policy is concerned?

MR. WHITEHEAD: There is really no necessary connection. It has to be technically compatible, of course.

Q Would the Ford Foundation subsidize public television with the network fees? Is there anything parallel to that in this?

MR. WHITEHEAD: As you know, the FCC is concerning itself with the question of rates for the corporation, and we view that as a separate matter. MR. FLANIGAN: It just is not touched here.

Q On the question of rates, could I get some clarification? In saying that economics should determine the rates, does this mean you are recommending the PCC should have no rate-making authority in the domestic satellite operation?

MR. FLANIGAN: That doesn't suggest it with regard to telephone companies and the like. We are saying if a satellite system is there, such as one that is set up to carry masses of information for computers, that should not be regulated.

Q But only the telephone aspect should come under rate regulations?

MR. FLANIGAN: That is right.

MR. WHITEHEAD: We are saying that they should allow competition to regulate until they see some reason to come in.

Q Don't all these have to go through the FCC first?

MR. WHITEHEAD: Yes.

Q And therefore, wouldn't they be in a position in the judging process to determine whether the rates are reasonable?

MR. WHITEHEAD: That is right, they would be. What we are saying is that on specialized systems, that should not be a consideration.

Q What are the advantages of the system if it doesn't include the TV and doesn't do anything to the telephone business?

MR. WHITEHEAD: It presumably would give some of the users of telecommunications system more flexibility and economic savings. We assume these economic savings would be passed in someway to the general public.

Q What makes you say that?

MR. FLANIGAN: Competition.

Q Mr. Flanigan, on the advantages, the theroretical advantages, would they include being fool-proof, as far as weather is concerned, do you know?

Let me go a step further, It is traditional in our country that during bad weather, snow and ice, in Washington and other parts of the country, that telephone service conks out, and families are stranded. Is it possible that our telephone systems could fall back on a satellite, for example? That is why I asked is it fool-proof.

MR. WHITEHEAD: It is not fool proof. Satellites have different weather problems than others.

Q So that is not what you have in mind?

MR. WHITEHEAD: No.

Q How many circuits could one of these domestic satellites have, how many transmission costs operate out of it?

MR. WHITEHEAD: That is a pretty technical question depending on design, system parameters and so forth.

MR. FLANIGAN: What we have proposed to the FCC is the Executive branch's policy with regard to the use of domestic satellites. It is up to them now to determine whether they agree with this policy and to accept applications from users and for the users to determine whether it is in their best interest now to build one of these systems.

THE PRESS: Thank you.

END

(AT 12:28 P.M. EST.)

FOR IMMEDIATE RELEASE

Office of the White House Press Secretary

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THE WHITE HOUSE

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Public Policy Objectives

In telecommunications, the government's responsibility to safeguard and promote the public interest involves primarily the encouragement of reliable communications services for public, business, and government use at reasonable rates and the assurance of a healthy environment for continuing innovations in services and technology. This general goal must, of course, be made more specific for particular policy issues. In our review of the domestic satellite issue, we have concentrated on the following objectives:

- -- assuring full and timely benefit to the public of the economic and service potential of satellite technology.
- -- insuring maximum learning about the possibilities for satellite services.
- -- minimizing unnecessary regulatory and administrative impediments to technological and market development by the private sector.
- -- encouraging more vigorous innovation and flexibility within the communications industry to meet a constantly changing spectrum of public and private communications requirements at reasonable rates.
- -- discouraging anticompetitive practices -- such as discriminatory pricing or interconnection practices and cross-subsidization between public monopoly and private service offerings -- that inhibit the growth of a healthy structure in communications and related industries.
- -- assuring that national security and emergency preparedness needs are met.

The Technical Framework

The establishment and operation of domestic enterlite communications facilities is technically feasible within the present state of the art, and readily foreseeable technological advances will further enhance this capability. Technical considerations place no serious constraints on policies governing the ownership or mode of operation (specialized or multi-purpose) of domestic satellite communications facilities. These technical considerations, though of great importance in the detailed engineering, operations, and economics of specific systems, can be dealt with effectively under any reasonably foreseeable ownership arrangements. The issue of radio resource scarcity for satellite communications has been overstated to a significant degree. While the communications capacity of this resource is finite, the ability to accommodate additional radio services is greatly expandable through administrative, technological, and operational innovation. Both earth station and satellite design standards can be varied to assure adequate orbital capacity for both immediate requirements and likely near-term growth. Long-term growth can be accommodated through further refinement or additional frequency allocations, whichever is most economic.

Since some of the orbital locations and associated spectrum usage of interest for United States domestic satellites might also be potentially useful to other western hemisphere nations, a question of United States monopolization could conceivably arise. However, even 10 to 12 United States domestic satellites (a high estimate of likely early system development) would represent only a small fraction of the number which could be accommodated for western hemisphere use with the current state of the art. Therefore, orbital capacity is not expected to be a problem at this time. As demand for satellite communication expands, it may become necessary to evolve additional international coordinating mechanisms; but this would likely involve the establishment of appropriate technical standards rather than the rationing of orbital positions. This is expected to be a subject for discussion at the 1971 World Administrative Radio Conference.

The Economic Framework

The most immediate potential for domestic satellite communications seems to lie in long distance specialized transmission services -- such as one-way distribution of radio and television programs or two-way exchange of highspeed data or other wideband signals among thinly dispersed users. Common carriers have informed us that satellites do not appear economic at present for the routine transmission of public message traffic.

For the foreseeable future, satellite communications systems will require large initial investments, careful technical and economic planning, and complex technical management capabilities. The extensive, reliable, and low-cost terrestrial communications network already established in the United States makes domestic satellite systems competitive only where their unique capabilities offer significant advantages over terrestrial transmission. We therefore, expect the initial number of potential offerers of domestic satellite services to be small.

In the absence of clear economies of scale and overriding public interest considerations to the contrary, the American economy has relied on competitive private enterprise rather than regulated monopoly to assure technical and market innovation, long-run optimum use of resources, and industry flexibility. These are all conditions this Nation has found to encourage higherquality, lower-cost services responsive to consumer demand.

At this stage of domestic satellite planning, it is not possible to identify major economies of scale. Rather, it appears that a diversity of multiple satellite systems as well as multiple earth stations will be required to provide a full range of domestic services.

Further, we find no public interest grounds for establishing a monopoly in domestic satellite communications. The general public is not a direct user of such services. The provision of specialized transmission services and the carriage of bulk message traffic are quite different in character from the provision of switched public message (telephone) service upon which much of our monopoly theory of telecommunications regulation is based. There is no reason to expect that competition here would do other than to encourage new or lower-cost services, the benefits of which would indirectly accrue to the public. Competition in the offering of satellite services appears to hold forth greater benefit to the economy and the public than would a single chosen instrument. Detailed regulation of service rates and commercial rates of return are similarly predicated on natural monopoly conditions that should not exist with domestic satellite communications in the immediate future. Not only is competitive entry possible, but terrestrial communications pricing would act as an upper limit on prices chargeable for most satellite services. In these circumstances, competitive pressure, rather than regulatory constraints, should be permitted to limit rates for specialized services via domestic satellites.

The historical development of telecommunications policy, regulation, and industry structure has resulted in a blurred distinction between public and private interests. A confusing patchwork of cross-subsidization between public message and specialized service offerings has become the norm rather than the exception. Therefore, it is possible that satellite services could, through cost-reducing innovation and competition, cause some existing services now surviving on a cross-subsidized basis to become unecomomic. Even if the benefits of such cross-subsidization accrue to the public users rather than to private service offerings, however, there seems to be no merit in protecting suppliers of such services from fair competition. The primary imjact of such competition should be the provision of those services through lower-cost alternatives. Should such competition result in curtailment of some public services that are necessary as a matter of public policy, however, a direct public subsidy would in most cases be less costly to the public than forced cross-subsidization and restraint of competition.

Recommendation

Government policy should encourage and facilitate the development of commer-cial domestic satellite communications system to the extent that private enterprise finds them economically and operationally feasible. We find no reason to call for the immediate establishment of a domestic satellite system as a matter of public policy. Government should not seek to promote uneconomic systems or to dictate ownership arrangements; nor should coordinated planning or operation of such facilities be required except as essential to avoid harmful radio interference.

Subject to appropriate conditions to preclude harmful interference and anticompetitive practices, any financially qualified public or private entity, including Government corporations, should be permitted to establish and operate domestic satellite facilities for its own needs; join with related entities in common-user, cooperative facilities; establish facilities for lease to prospective users; or establish facilities to be used in providing specialized carrier services on a competitive basis. Within the constraints outlined below, common-carriers should be free to establish facilities for either switched public message or specialized services, or both.

The number or classes of potential offerers of satellite services should not be limited arbitrarily. Nor should there be any a priori ranking of potential types of systems (common-carrier vs. specialized carrier vs. private; or satellite vs. terrestrial). Only in the event that specific applications pose immediate and irreconcilable conflict in the use of radio and orbital resources would a priori public interest exclusion of proposals be warranted. In particular, the potential economic impact of private or common-user satellite systems on terrestrial common carriers or specialized carriers should not be a factor in the authorization of such systems.

All prospective entrants should be afforded equal opportunity to establish and operate domestic satellite communications facilities by adoption of the following guidelines:

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(1) Facilities to be established by independent entities for their own private use should be required to dedonstrate only the financial and technical qualifications to implement their system proposals. There is no valid public interest requirement in such cases to require a showing of economic viability or optimization, nor should the potential economic impact of such operations on common or specialized carriers be a factor in the authorization of such facilities.

(2) Facilities to be established as part of a common-user cooperative system should be authorized in accord with the same principles as for fully independent facilities. However, to avoid restraints on competition, the opportunity should be made available for all potential users of similar services to participate without discrimination in such cooperatives as a condition of their authorization.

(3) Facilities to be used by specialized carriers (i.e., carriers having no monopoly over switched public message services) should be authorized under essentially the same terms and conditions as private or common-user facilities. Furthermore, such specialized carriers should not be constrained to serve as a "carrier's carrier" nor to share ownership of space or earth station facilities with other carriers. We also urge the Commission to allow competition to limit the rates charged for specialized services via satellite. Specialized carriers should, however, be required to serve similar users at equal rates and on a non-discriminatory basis.

(4) Facilities to be used by common carriers solely for the transmission of switched public message services should be authorized under the same terms and conditions that apply for terrestrial radio facilities. However, facilities to be used by such carriers in the transmission of specialized message services should be authorized only after a determination by the Commission on each application, based on public evidentiary hearings, that no cross-subsidization between monopoly public message and specialized services would take place in the development, manufacture, installation, or operation of such facilities. This should not be interpreted, however, to preclude the legitimate economies of joint-use facilities.

(5) The use of leased facilities (satellite and/or earth stations) should be authorized under the same terms and conditions as owned facilities, with the responsibility for adherence to these conditions resting with the lessee. Rateregulated carriers should be permitted to include a portion of the lease costs of such facilities in their rate base.

(6) Local communications common carriers should be required to provide leased interconnection services for user access to earth stations at reasonable rates and without discrimination.

(7) Potential harmful interference between satellite systems and terrestrial installations should be resolved by the Commission according to established procedures. Satellite operating entities should have equal status with terrestrial users in interferanceproblems and in access to the radio spectrum. To accommodate new systems or services, the Commission should affirm its authority to modify or rescind, where appropriate, the operating rights of established spectrum users (satellite or terrestrial) where this would not significantly impair the quality of service or impose undue economic burdens; we believe the Commission should require compensation of the established users to be paid by the new entrant in such situations.

(8) The Commission may wish to establish a minimum acceptable earth station diameter, such as 30 feet, in order to accommodate an adequate number of initial United States domestic satellites in the 4 and 6 GHz spectrum allocations without excessive use of orbital resources. Although it is very unlikely that the number of satellites proposed during the initial filing period will approach the limit such a standard would impose, the standard should in that event be raised. Conversely, if applications were well below this number, and a reasonable case were inade on economic and operationsl grounds, the standard could be relaxed in specific cases. To the extent possible within the state of the art, the satellite antenna radiation pattern should encompass only the specific land areas to be served.

In a time of rapid technological, economic, and social change, we would be illadvised to adopt a definitive policy without the flexibility for future review or to adopt an overly restrictive policy simply because of our inability to predict future developments. We therefore recommend that the above policies be adopted on an interim basis, such as three to five years, to permit vigorous exploration and development of satellite service possibilities. During this period, the Commission should monitor the industry structure, service offerings, and rates to determine if natural monopoly or other conditions are developing that suggest more restrictive entry conditions or warrant direct rate regulation for specialized satellite services. At the end of the interim period, a full review of the policy and industry structure should be made.

It is most important that the establishment and operation of domestic satellite communications facilities be consistent with our obligations and commitments to INTELSAT and the International Telecommunications Union, with other foreign policy considerations, and with national security communications requirements. With respect to INTELSAT, it is particularly important that domestic systems not threaten the operational integrity or economic viability of the global services provided through that system. It is also important that provision be made for use of domestic satellite services by national security and emergency preparedness agencies when appropriate. We are satisfied that domestic satellite communications facilities authorized in accordance with the preceding recommendations will meet all these conditions. We further see no reason why the Communications Satellite Corporation, established by Congress as the chosen instrument for United States participation in INTELSAT, should not be permitted to compete for domestic satellite service on an equal basis under the above guidelines.

> Peter Flanigan Assistant to the President

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Office of the White House Press Secretary

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(5) The use of leased facilities (satellite and/or earth stations) should be authorized under the same terms and conditions as owned facilities, with the responsibility for adherence to these conditions resting with the lessee. Rateregulated carriers should be permitted to include a portion of the lease costs of such facilities in their rate base.

(6) Local communications common carriers should be required to provide leased interconnection services for user access to earth stations at reasonable rates and without discrimination.

(7) Potential harmful interference between satellite systems and terrestrial installations should be resolved by the Commission according to established procedures. Satellite operating entities should have equal status with terrestrial users in interferanceproblems and in access to the radio spectrum. To accommodate new systems or services, the Commission should affirm its authority to modify or rescind, where appropriate, the operating rights of established spectrum users (satellite or terrestrial) where this would not significantly impair the quality of service or impose undue economic burdens; we believe the Commission should require compensation of the established users to be paid by the new entrant in such situations.

(8) The Commission may wish to establish a minimum acceptable earth station diameter, such as 30 feet, in order to accommodate an adequate number of initial United States domestic satellites in the 4 and 6 GHz spectrum allocations without excessive use of orbital resources. Although it is very unlikely that the number of satellites proposed during the initial filing period will approach the limit such a standard would impose, the standard should in that event be raised. Conversely, if applications were well below this number, and a reasonable case were inade on economic and operationsl grounds, the standard could be relaxed in specific cases. To the extent possible within the state of the art, the satellite antenna radiation pattern should encompass only the specific land areas to be served.

In a time of rapid technological, economic, and social change, we would be illadvised to adopt a definitive policy without the flexibility for future review or to adopt an overly restrictive policy simply because of our inability to predict future developments. We therefore recommend that the above policies be adopted on an interim basis, such as three to five years, to permit vigorous exploration and development of satellite service possibilities. During this period, the Commission should monitor the industry structure, service offerings, and rates to determine if natural monopoly or other conditions are developing that suggest more restrictive entry conditions or warrant direct rate regulation for specialized satellite services. At the end of the interim period, a full review of the policy and industry structure should be made.

It is most important that the establishment and operation of domestic satellite communications facilities be consistent with our obligations and commitments to INTELSAT and the International Telecommunications Union, with other foreign policy considerations, and with national security communications requirements. With respect to INTELSAT, it is particularly important that domestic systems not threaten the operational integrity or economic viability of the global services provided through that system. It is also important that provision be made for use of domestic satellite services by national security and emergency preparedness agencies when appropriate. We are satisfied that domestic satellite communications facilities authorized in accordance with the preceding recommendations will meet all these conditions. We further see no reason why the Communications Satellite Corporation, established by Congress as the chosen instrument for United States participation in INTELSAT, should not be permitted to compete for domestic satellite service on an equal basis under the above guidelines.

> Peter Flanigan Assistant to the President

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THE WHITE HOUSE

WASHINGTON

December 20, 1969

DRAFT

MEMORANDUM FOR

Honorable Dean Burch Chairman Federal Communications Commission

Federal policy on domestic satellite communications has been long delayed. The Administration is concerned that the delay not be prolonged and that the policies adopted reflect all important dimensions of the public interest, including the international aspects of geostationary orbital and radio resources. Based on our review of relevant technical, economic, and public interest considerations, the Administration offers the following comments and recommendations to the Commission.

Public Policy Objectives

In telecommunications, the government's responsibility to safeguard and promote the public interest involves primarily the encouragement of reliable communications services for public, business, and government use at reasonable rates, and the assurance of a healthy environment for continuing innovations in services and technology. This general goal must, of course, be made more specific for particular policy issues. In our review of the domestic satellite issue, we have concentrated on the following objectives:

- -- assuring full and timely benefit to the public of the economic and service potential of satellite technology.
- -- insuring maximum learning about the possibilities for satellite services.
- -- minimizing unnecessary regulatory and administrative impediments to technological and market development by the private sector.

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- -- encouraging more vigorous innovation and flexibility within the communications industry to meet a constantly changing spectrum of public and private communications requirements at reasonable rates.
- discouraging anti-competitive practices -- such as discriminatory pricing or interconnection practices and cross-subsidization between public monopoly and private service
 offerings -- that inhibit the growth of a healthy structure in communications and related industries.

The Technical Framework

The establishment and operation of domestic satellite communications facilities is technically feasible within the present state of the art, and readily foresceable technological advances will further enhance this capability. Technical considerations place no serious constraints on policies governing the ownership or mode of operation (specialized or multi-purpose) of domestic satellite communications facilities. These technical considerations, though of great importance in the detailed engineering, operations, and economics of specific systems, can be dealt with effectively under any foreseeable ownership arrangements.

The issue of radio resource scarcity for satellite communications has been overstated to a significant degree. While the communications capacity of this resource is finite, the ability to accommodate additional radio services is greatly expandable through administrative, technological, and operational innovation. Both earth station and satellite design standards can be varied to assure adequate orbital capacity for both immediate requirements and likely near-term growth. Long-term growth can be accommodated through further refinement or additional frequency allocations, whichever is most economic.

Since some of the orbital locations and associated spectrum usage of interest for United States domestic satellites might also be potentially useful to other western hemisphere nations, a question of United States monopolization could conceivably arise. However, even 10 to 12 United States domestic satellites (a high estimate of likely early system development) would represent only a small fraction of the number which could be accommodated for western hemisphere use with the current state of the art. Therefore, orbital capacity is not expected to be a problem at this time. As demand for satellite communication expands, it may become

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necessary to evolve additional international coordinating mechanisms; but this would likely involve the establishment of appropriate technical standards rather than the rationing of orbital positions. This is expected to be a subject for discussion at the 1971 World Administrative Radio Conference.

The Economic Framework

The most immediate potential for domestic satellite communications seems to lie in long-distance specialized transmission services or such as one-way distribution of radio and television programs / twoway exchange of high speed data or other wideband signals among thinly dispersed users. Common carriers have informed us that satellites do not appear economic at present for the routine transmission of public message traffic.

For the foreseeable future, sallite communications systems will require large initial investments, careful technical and economic planning, and complex technical management capabilities. The extensive, reliable, and low-cost terrestrial communications network already established in the United States makes domestic satellite systems competitive only where their unique capabilities offer significant advantages over terrestrial transmission.

We, therefore, expect the initial number of potential offerors of domestic satellite services to be small.

In the absence of clear economies of scale and overriding public interest considerations to the contrary, the American economy has relied on competitive private enterprise rather than regulated monopoly to assure technical and market innovation, long-run optimum use of resources, and industry flexibility. These are all conditions this Nation has found to encourage higher-quality, lower-cost services responsive to consumer demand.

At this stage of domestic satellite planning, it is not possible to identify major economies of scale. Rather, it appears that a diversity of multiple satellite systems as well as multiple earth stations will be required to provide a full range of domestic services.

Further, we find no public interest grounds for establishing a monopoly in domestic satellite communications. The provision of specialized transmission services and the carriage of bulk message traffic is quite different in character from the provision of switched

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public message service upon which much of our monopoly theory of telecommunications regulation is based. Competition in the offering of satellite services appears to hold forth greater benefit to the public than would a single chosen instrument.

Detailed regulation of service rates and commercial rates of return are similarly predicated on natural monopoly conditions.

that should not exist with domestic satellite communications in the immediate future. Not only is competitive entry possible, but terrestrial communications pricing would act as an upper limit on prices chargeable for/satellite services. In these circumstances, competitive pressure, rather than regulatory constraints, should be permitted to limit rates for specialized services via domestic satellites.

The historical development of telecommunications policy, regulation, and industry structure has resulted in a blurred distinction between public and private interests. A confusing patchwork of crosssubsidization between public message and specialized service offerings has become the norm rather than the exception. Therefore, it is possible that satellite services could, through cost-reducing innovation and competition, cause some existing services now surviving on a cross-subsidized basis to become uneconomic. Even if the benefits of such cross-subsidization accrue to the public users rather than to private service offerings, however, there seems to be no merit in protecting suppliers of such services from fair competition. Should such competition result in curtailment of some public services that are necessary as a matter of public policy, a direct public subsidy would in most cases be less costly to the public than forced cross-subsidization and restraint of competition.

Recommendation

Government policy should encourage and facilitate the development of commercial domestic satellite communications systems to the extent that private enterprise finds them economically and operationally feasible. We find no reason to call for the immediate establishment of a domestic satellite system as a matter of public policy. Government should not seek to promote uncconomic

systems or to dictate ownership arrangements; nor should coordinated planning or operation of such facilities be required except as essential to avoid harmful radio interference.

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Subject to appropriate conditions to preclude harmful interference and anticompetitive practices, any financially qualified entity, public or private, should be permitted to establish and operate domestic satellite facilities for its own needs; join with related entities in common-user, cooperative facilities; establish facilities for lease to prospective users; or establish facilities to be used in providing specialized carrier services on a competitive basis. Subject to the constraints outlined below, common-carriers should be free to establish facilities for either switched public message or specialized services, or both.

The number or classes of potential offerors of satellite services should not be limited arbitrarily. Nor should there by any a priori ranking of potential types of systems (common-carrier vs. specialized carrier vs. private; or satellite vs. terrestrial). Only in the event that specific applications pose immediate and irreconcilable conflict in the use of radio and orbital resources would an a priori public interest exclusion of proposals be warranted. In particular, the potential economic impact of private or common-user satellite systems on terrestrial common-carriers or specialized carriers should not be a factor in the authorization of such systems.

All prospective entrants should be afforded equal opportunity to establish and operate domestic satellite communications facilities by adoption of the following guidelines.

(1) Facilities to be established by independent entities for their own private use should be required to demonstrate only the financial and technical qualifications to implement their system proposals. There is no valid public interest requirement in such cases to require a showing of economic viability or optimization, nor should the potential economic impact of such operations on common or specialized carriers be a factor in the authorization of such facilities.

(2) Facilities to be established as part of a common user cooperative system should be authorized in accord with the same restraints on competition, the opportunity should be made available for all potential users of similar services to participate without discrimination in such cooperatives as a condition of their authorization.

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(3) Facilities to be used by specialized carriers (i.e., carriers having no monopoly over switched public message services) should be authorized under essentially the same terms and conditions as private or common user facilities. Furthermore, such specialized carriers should not be constrained to serve as a "carrier's carrier" nor to share ownership of space or earth station facilities with other carriers, We also urge the Commission to allow competition to limit the rates charged for specialized services via satellite. Specialized carriers should, however, be required to serve similar users at equal rates and on a nondiscriminatory basis.

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(8) The Commission may wish to establish a minimum acceptable earth station diameter, such as 30 feet, in order to accommodate an adequate number of initial United States domestic satellites in the 4 and 6 GHz spectrum allocations without excessive use of orbital resources. Although it is very unlikely that the number of satellites proposed during the initial filing period will approach the limit such a standard would impose, the standard should in that event be raised. Conversely, if applications were well below this number, and a reasonable case were made on economic and operational grounds, the standard could be relaxed in specific cases. To the extent possible within the state of the art, the satellite antenna radiation pattern should encompass only the specific land areas to be served.

In a time of rapid technological, economic, and social change, we would be ill-advised to adopt a definitive policy without the flexibility for future review or to adopt an overly restrictive policy simply because of our inability to predict future developments. We, therefore, recommend that the above policies be adopted on an interim basis, such as three to five years, to permit vigorous exploration and development of satellite service possibilities. During this period, the Commission should monitor the industry structure and service offerings to determine if natural monopoly or other conditions are developing that suggest more restrictive entry conditions or warrant direct rate regulation for specialized satellite services. At the end of the interim period, a full review of the policy and industry structure should be made.

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	National Journal - White	e House proposes commissio	n permit satellite competition - January 31, 1970	
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	Notice of Proposed Rule	Making - Docket No. 16495	- March 20, 1970	
	Open Skies Approval - :	January 22, 1970		
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THE WHITE HOUSE

WASHINGTON

January 23, 1970

Attached is a copy of the memorandum to the Chairman of the Federal Communications Commission, containing the Administration's recommendations to the FCC for the use of communications satellites for domestic telecommunications services. Also attached is a copy of the White House press release.

,

Clay T. Whitehead Staff Assistant

JANUARY 23, 1970

FOR IMMEDIATE RELEASE

Office of the v hite House Press Secretary

THE WHITE HOUSE

The President today announced the Administration's recommendations on the utilization of communications satellites for domestic telecommunications services. The proposals for regulatory policies, which do not require new legislation, were set forth in a memorandum to the Federal Communications Commission. Satellites are currently used in international communications through the INTELSAT consortium, for which the Comsat Corporation is the United States representative. No satellite systems for domestic service have been approved by the FCC.

The Administration's proposals recognize that a flexible regulatory policy is required to stimulate vigorous and innovative exploration and development of satellite service possibilities. It was concluded that Government policy should encourage and facilitate the development of commercial domestic satellite communications systems to the extent that private enterprise finds them economically and operationally feasible, but that there is no reason to call for the immediate establishment of a domestic satellite system as a matter of public policy nor to promote uneconomic systems or dictate ownership arrange ments. However, the memorandum does express concern that the delay in adopting appropriate policies should not be prolonged.

Since no natural monopoly conditions appear to exist in the provision of specialized communications via satellite -- such as network television distribution and high-speed data transfer -- the Administration recommended relatively open entry and rate competition for such services subject to certain conditions. While the provision of standard telephone services by satellite may or may not be economic at this time, established procedures were recommended to be applied by the FCC for common carriers wishing to establish a satellite system for such use.

The proposed policy -- recommended for an interim period of 3 to 5 years -- is designed to allow competition to act within well-defined limits necessary to preclude anti-competitive practices and to assure that the competition works toward the public interest. It was concluded that the innovative potential is so great that no highly detailed regulatory process could be flexible enough to realize the potential benefits to the public and the economy that satellites might offer. It was also concluded that, under appropriate standards that could be established by the FCC, the likely use of orbital and radio spectrum resources would be far short of available resources so that systems need not be excluded arbitrarily on conservation grounds. A great deal of flexibility was designed into the policy proposals to accommodate likely technological and economic change and to permit selected policy changes as the need arises.

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14.	Carl Schwartz	225-5765		
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15.	Liz Shriver	833-8000		
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16.	Mr. Sodolski	659-2200		
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Katherine Johnson Aviation Week Magazine	737-6630	
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Tom Malia Telecommunications Reports	347-2654	
Pete Mosley Acrospace Daily	225-2941	
Bob Samuelson Washington Post	223-6000,	Ext. 632
Liz Shriver National Journal	833-8000	
Hal Taylor Electronic News	737-7090	
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Wednesday 1/21/70

5:00 Carl Schwartz in Congressman Pollock's office has called about the anticipated release of the "Whitehead Report" -- understands from some people in industry that it may have already been released or may be shortly.

> He will call back on Friday morning since his Congressman has been intimately involved in communications in Alaska -- and wants to get a copy as soon as it is released.

Tuesday 1/20/70

6:00 Leonard Zeidenberg has a deadline of Thursday on anything for the magazine; however, they don't go to print until Monday. If he could perhaps get an advance copy and hold it, it would help greatly.

> His question on whether or not there was anything the White House is likely to do in the near future that would have an impact on the FCC -- referred to any continuing interest on communications, telecommunications policy, etc. He knows about the Flanigan thing -- wonders what shape the FCC reorganization thing will take.

Tuesday

1/20/70

5:00 Len Zeidenberg called. He is doing a story on the FCC and he would like to know if there is anything that the White House is likely to do in the near future that will have an impact on the FCC.

Of course, he is also inquiring about the release date for the domestic satellite report.

1/19/70 Monday

10:00 Liz Shriver, National Journal, called. She is doing a story on domestic satellites this week. The deadline is tomorrow. She wants to talk with Tom about the White House Task Force and what it consists of.

833-8000

Friday 1/16/70

- 10:30
- John Morgan, Communications Workers, called about two things:
 - (1) Release date for Communications Satellite release.
 - (2) Article in the Star earlier this week.

FE7-7711

Thursday 1/15/70

10:20 Leonard Zeidenburg has just seen the Steve Aug story in the Star and would like to get your comments on it. Would like very much to talk with you as soon as he could. 6:20 Chris Lyden of the New York Times called.Wanted to know the status of the domestic satellite paper.

Said you owe him several lunches -- by now, it may even be a big dinner -- he's not sure.

Wednesday 1/14/70

Carl Schwartz, Congressman Pollock's Office, called. He wanted to get a copy of the "recently released domestic satellite report." I told him that the report had not gone out yet, but that we would call } im when it does go out.

225-5765

1:30

Wednesday 1/14/70

- 11:05 Bob Guthrie of the House Commerce Crite, said 225-3147 they had read in yesterday's paper that the domestic satellite report would be going out soon.
- 11:10 Advised Mr. Guthrie that the report will probably be coming out in a couple of weeks -- and that we will be in touch with them before it goes out.

Wednesday 1/14/70

Mr. Sodolski. EFF tronk industries Association, called. He wants to be called when the domestic satellite release goes out so he can come over and pick up a copy.

1.47-2200

Providey 1115.70

3:20 Junie's Baumg erner, Area Space Daily, eithel. The asked Events comment or whether the article by Steve Aug in the Star today was true. Eva told alm she had not seen it and could not comment on at. She teld Mr. commarner his name would be added to a list of reporters to be called when the Domest report goes out.

> 293-3400 Ext. 232

Tuesday 1/13/70

1:45 Hal Taylor called to see if we knew anything more definite about when the donestic satellite paper will be coming out; told him in about 2 weeks probably.

Taylor mentioned that Steve Aug had written an article for today's Star -- on the business section.

Wednesday 1/7/70

12:00 Liz Shriver of the National Journal wondered if she could come over and see you about the domestic satellite situation. Just what routinely went on -not content.

833-8000

Thursday 12/18/69

- 10:45 Chris Lyden called -- would like to know if there is any chance of the Domsat paper going out this week or next. Sure would hearing as soon as we know <u>anything</u>.
- 11:00 Hal Taylor of Electronics News also wants to know; their pap r goes to Pross tomorrow and if anything is cooking, he would like very much to know about it so it can be included.

Monday 12/15/69

5:00 Chris Lyden would like very much to talk to you --<u>if only for a minute</u> -- about when the <u>domestic satellite</u> paper will be out.

273-3100

Friday 12/12/69

10m Malia of <u>Telecommunications Reports</u> was checking on the domestic satellite situation; advised him that there still wasn't a release date.

He v ondered if it might be convenient for him to come over the forepart of next week -- to get acquainted and chat with you for a short time. 347-2654

Thursday 12/11/69

12:30 Chris Lyden called to talk with you.

293-3100

Basically he wanted some guidance as to the time table on the domestic satellite release.

pent . t

Monday 12/8/69

9:50 Katherine Johnsen of Aviation Week Magazine (McGraw-Hill) 737-6630 was calling about the release of the Domestic Satellite Report. Advised her that we didn't expect it to go out this week -- but possibly we would be sending our comments to the FCC some time next week.

She would appreciate knowing when we send them forward so she can meet her deadlines.

To: Tom	
Dill de	- DYOU WERE VISITED BY-
OF (Organization)	NIBC
PLEASE CALL	CODE/EXT. 362-400
WILL CALL AGAIN	IS WAITING TO SEE YOU
RETURNED YOUR CALL	WISHES AN APPOINTMENT
MESSAGE	1
Wanted	& Know
when a	10 out the him
the in	to a tele
	with you.
RECEIVED BY	DATE TIME
STANDARD FORM 63 REVISED AUGUST 1967 GSA FPMR (41 CFR) 101-11.6	opo:1000c43-10-00341-1 332-389 63-1

Monlay 12/1/69

11:20 John Morgan of Communication Workers of America called to find out when the report of the domestic satellite working group would be coming out.

> Tom asked me to advise him that our comments would be sent to FCC in approximately a week. There will be no report of the Task Force group on domestic satellites.

Wednescay 11/26/69

2:05 Stove Any of the Worling Star was checking to see when the Domsat repert micht be going out.

Advised that it was not expected this week.

Pete Mosley (Masley) 225-2941 Aerospace Daily

Domsat release

Tuesday 11/25/69

223-6000

Ext. 632

2:45 Bob Samuelson of the Washington Post was asking when the Domestic Satellite report might be coming out.

> He is planning to leave on Thursday afternoon for the weekend; however, if there might be a release around that time, he will change his plans and stay here so he can prepare his story.

Would appreciate as much word as you can give him.

No good lin -
Uctober 25, 1969

Mr. Clay T. Whitehead Executive office of the President The White House Mashington, L.C.

Lear Fom:

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Please contt forget me when your domostic satellite group is ready to report.

Infortunately, we have a long lead-time for our stories. If I get something on a Thursday, I can't get it into print for more than a week -- and we look silly. That's my proplem, of course, not yours.

but if you can work me in for an early briefing, it will be most appreciated.

Thanks and rook luck.

Sincepely,

William L. Hickman 400 National Press Fulleing Tashir ton, L. C. 2000:

73--6530 -- office 321-03/0 -- home

Thursday 10/23/69

347-2654

3:50 Fred Henck of Telecommunications Reports called to say that Tom Malia (who usually calls us) has been out of commission for several weeks -- with a slipped disc, in the hospital for about 10 days, etc. -- but is apparently is getting along fairly well.

Mr. Henck was wondering if there might be anything to tell him about the domestic satellite thing -- when the report might come out, etc.

Not vit

MEMORANDUM OF CALL	· ·
TO: Jon	
VOU WERE CALLED BY	- I YOU WERE VISITED BY-
PLEASE CALL	PHONE NO. 737-6630
WILL CALL AGAIN	IS WAITING TO SEE YOU
RETURNED YOUR CALL	WISHES AN APPOINTMENT
	esa C
1 20	A CAR
RECEIVED BY	DATE TIME
STANDARD FORM 63 REVISED AUGUST 1967	@PO:1969-048-16-80341-1 332-359 63-1

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Thursday 10/16/69

 12:50 Lds Vermillion (MeGraw Hill) would like a call. Has taked with Hale Montgomery of the Public Affairs Office at Compatiabout the letter Contrat sent to you. He suggested she call you -- as it is your letter. Says she doesn't know how you feel about reporters, but whatever you want to tell her, she'd appreciate it. 737-6630

Cole received Ehrlichman memo, Burch memo and press release

Jeb Magruder) received Burch memo and press release Alan Woods) Colson Dr. Drew Dr. Tom Moore

Friday 3/13/70

End

10:05 Mr. Hinchman has reviewed the Technical and Economic Reports -- has some doubts about whether it would be good to release them as they are.

Would appreciate a call at his home.

12:15 Mr. Washburn called. He has talked with the Governor today. The Governor can't understand why COMSAT should be "crying in its beer" about the domestic satellite thing. Mr. Washburn told him briefly about what you said yesterday and that you were going to talk with them today. Bill said he thought you were absolutely right and you couldn't expect any situation where the networks would be compelled to work through COMSAT. Mr. Washburn thought you would want his reaction before you miest with the COMSAT people today.

Gov Bill Serandon

Jan. 22, 1970

To: Chuck Colson

From: Tom Whitehead

I am attaching a copy of the Burch memo and press release that we discussed.

I am talking to AT&T and COMSAT personally and the Communications Workers also should be touched. Any other suggestions?

Jan. 22, 1970

To: Ken Cole

From: Tom Whitehead

I have to notify certain people in industry and on the Hill about the release time. Friday is much preferred. Please call as soon as possible.

Friday 1/23/70

11:05 Mr. Loftus, OEP, called about the suggested changes in the FCC memo. OEP can live with your "distillation" of Gen. Lincoln's recommendations. This, however, should not be construed as a total endorsement. They are not willing to act for DOD on this, and you should check with Mr. Froeke's Office if you want to get their concurrence to the changes.

Monday 1/26/70

11:00 After a request for a copy of the Technical Cmte. report on the domestic satellite policy. Tom advises that the technical and economic committee reports are internal working papers and are not for release.