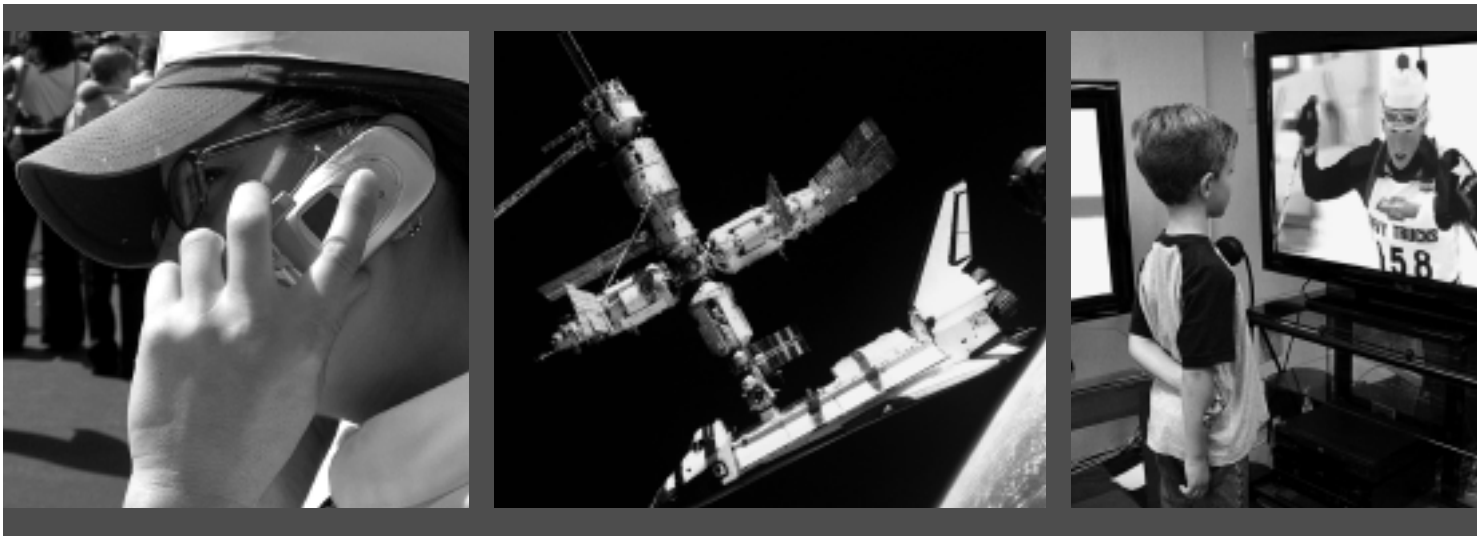
Spectrum Wars



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BY DREW CLARK ■

At last month's Consumer Electronics Show, the Las Vegas Convention Center's mammoth showroom was packed wall-to-wall with rows of shiny gadgets and devices that promise to make life more entertaining.

The Day After Tomorrow, the global-warming disaster movie, seemed to jump out of LG Electronics' 60-inch plasma TV screen. Nearby, Dolby's Digital Plus surround-sound speaker system blared out Aerosmith's "Walk This Way" at 120 decibels. In the automotive section, Sirius Satellite Radio tried to entice some of the 142,000 conventioneers to sign up at $13 a month for the joys of listening to National Football League games—and to Howard Stern's uncensored show—from their cars. Tech companies like Intel, Microsoft, Sony, and Hewlett Packard flaunted their "media center" computers that organize video games, movies, photos, and music and ship them wirelessly around the house. The televisions on display were bigger than ever—all the better for watching extravaganzas like Super Bowl XXXIX, which Fox was about to air in glorious high-definition.

The digital wares exhibited in Las Vegas have transformed nearly every American home. But in the case of one eye-popping technology—high-definition television—getting the hardware into the living room has taken two decades. Since the 1980s, HDTV has been a political football in Washington. Delivering stunningly clear images and surround sound was merely a challenge for engineers, but it has been an ongoing migraine headache for lawmakers sucked into a fight involving broadcasters, electronics manufacturers, cable television companies, and Hollywood studios.

It is only now, in 2005, that many consumers are seriously thinking of buying a big-screen, high-definition TV. And last week, a frustrated Federal Communications Commission that wants to kick the HDTV rollout into high gear sent the issue back to Congress, the place where the battle started years ago.

The reason this fight has dragged on for so long is that the air above the Las Vegas Convention Center is even more valuable than the land below. It is the medium for the most prized resource of the Information Age—the radio-frequency spectrum, popularly known as "the airwaves." Broadcasters use the spectrum to permeate every corner of America

GENERATIONS AGO, BROADCASTERS GOT THE RIGHT TO USE THE AIRWAVES—NOW WORTH BILLIONS OF DOLLARS—FOR FREE. EVER SINCE, THEY HAVE USED HEAVY LOBBYING AND POLITICAL FRIENDSHIPS TO STAVE OFF RIVALS. BUT AS THE DIGITAL AGE UNFOLDS, CHANGE IS IN THE AIR.

THE AIRWAVES:

The radio frequency spectrum has multiple purposes, among which are allowing Americans to use cellphones, satellites to beam transmissions, and police and fire departments to protect the public.

THIS PAGE, R-L: KRT/KAREN T. BORCHERS; AP/WATERTOWN DAILY TIMES/JOHN HART

with television and radio signals. Other radio frequencies along the same spectrum connect firefighters so they can save lives, and link police officers so they can track down suspects. The spectrum enables 176 million Americans to use their cellphones and BlackBerrys, and provides high-speed, or broadband, connections to the Internet.

The U.S. radio-frequency spectrum has no price tag attached to it, and how to calculate a dollar value for this asset is a subject of much debate. One group, the New America Foundation, has taken a stab at it, estimating that the spectrum's total value at auction would be more than $770 billion, double the Pentagon's yearly budget.

The spectrum is far more lucrative today than anyone dreamed possible back in 1927, when the federal government began regulating use of the spectrum by handing out licenses to radio broadcasters to transmit their signals. And because of the airwaves' immense value, the battle for control of the frequencies that make up the spectrum has been a premier influence-peddling bonanza in Washington.

From the beginning, the key combatant has been the National Association of Broadcasters, which organized itself into a lobby in the 1920s, even before the Federal Communications Commission was formed in 1934. For more than 75 years, the NAB has been fighting to help the broadcasting industry hold on to its slice of the spectrum—the frequencies TV and radio stations use for their broadcasts—in the face of demands from competing technologies and rival industries, and even public safety concerns.

In the 1980s, when the FCC appeared ready to reallocate some of the spectrum for public safety, the NAB persuaded Congress to block the commission and hold off the change because, the broadcasters said, they needed the spectrum to develop high-definition television. Yet soon thereafter, the broadcasters abandoned HDTV, and it nearly died.

Although HDTV finally seems ready to fulfill its promise, broadcasters continue to fight to keep control of nearly all of the best frequencies. Facing threats from cable and other rivals, broadcasters gain enormous leverage over their competitors by controlling valuable frequencies.

However, new digital technologies provide a fresh wave of compelling reasons to reallocate the airwaves. The new devices include handheld police video gear that can capture, send, and receive images from a crime scene; car-mounted navigation units that don't just pick up traffic reports, but receive street-by-street data and calculate alternative routes for drivers; tiny radio tags that retailers use to manage the inventories of every item in their stores; and much more.

Adding to the mounting pressure on broadcasters is the fact that police and fire departments cannot communicate effectively in emergencies. Moreover, the federal government is forfeiting tens of billions of dollars in revenue that would come from auctioning frequency licenses. And the public is deprived of more competition among telephone and cable companies. Because of the artificial scarcity caused by the broadcasters' tight grip on their spectrum space, opportunities for innovative technologies are limited.

The bottom line is that the war over the airwaves has continued to drag on because generations ago, the government handed out valuable frequencies to broadcasters for free, and other industries haven't been able to buy these desirable frequencies. For the broadcasters as well as their competitors, the battle over spectrum space has been a lobbying game.

BEACHFRONT PROPERTY

Airwaves were only air, until the Italian Guglielmo Marconi invented radio in 1896. By 1927, radio transmitters were so numerous, their signals were clashing. The government assigned various radio-spectrum frequencies to specific broadcasters. These radio wave signals travel at the speed of light and at different oscillation rates, or cycles per second. Frequencies are generally measured in megahertz, or millions of cycles per second. For example, tune in FM radio station 90.9, and you are receiving a signal sent through the air at 90.9 megahertz. Both AM and FM radio are at the low-frequency end of the spectrum chart. Police radios and broadcast television occupy the middle bands, going up to around 800 megahertz. (Each television station gets a bundle of frequencies—6 megahertz of bandwidth—because its signal has to carry more information than a radio signal.) Newer technologies like cellphones, satellite radios, and satellite televisions, work in the higher frequencies, from 1.9 to 12.2 gigahertz, or billions of cycles per second.

LIZ LYNCH

EDWARD FRITTS:

"There is a governmental interest in providing free over-the-air television."

Each of these technologies can work at different wavelengths. Yet some frequencies are intrinsically more attractive than others. Comparing them to real estate, some frequencies are like a barren desert, some are swampland, and some are beachfront property, because signals in the most sought-after frequencies are cheap to send and easy to receive. They pass through walls, trees, and high-rise buildings. Broadcasters are sitting on the beachfront because they got there first.

The NAB's clout in Washington stems from the fact that broadcasters operate in every congressional district, and they control what gets on the tube. The long-standing bargain with Capitol Hill legislators has been this: Broadcasters deliver free television to voters, make money by selling advertising time to sponsors, and make sure lawmakers get airtime and the ability to buy advertising time at the cheapest available rates. This arrangement helps most incumbents get re-elected. In return, broadcasters have the right to use the airwaves free of charge, and they are protected from anyone who wants to take away their exclusive right to the beachfront.

"With all of our warts and all of our wrinkles, there is a love affair [between] the American public and over-the-air television," said NAB President and CEO Edward Fritts in an interview. "There is a governmental interest in providing free over-the-air television," Fritts said. An "Ole Miss" classmate of Sen. Trent Lott, R-Miss., and a former Mississippi broadcaster who favors pinstripes and handkerchiefs, Fritts has led the association since 1982 and this week announced that he would step down once the board names a successor. He's been around Washington long enough to touch the life of nearly every member of Congress and to give the broadcast business a lot of help.

In the 1980s, Fritts worked with the Reagan administration to help kill the "fairness doctrine" that required broadcasters to give equal time to countervailing viewpoints. In 1992, he and his top lobbyists persuaded Congress to override a veto by then-President Bush and pass the Cable Television and Consumer Protection Competition Act, which put restrictions onto a burgeoning rival industry. Now Fritts is up against an array of new opponents: public safety officials, wireless carriers, and technology companies, as well as public-interest groups fed up with broadcasters.

The NAB's battle with public safety officials goes back to 1986, when the FCC was planning to allocate one-third of broadcasters' spectrum space for police, fire, and other public safety needs. Fritts and the NAB swung into action. They seized upon a new technology out of Japan called high-definition TV. Compared with the 45-year-old U.S. standard, the sharper, high-resolution images used twice as many lines on a television screen, and broadcasting a program required two television channels instead of one. For broadcasters, that was just the point: High-definition gave them a way to fend off the FCC's effort to grab frequencies back and turn them over to other uses. The broadcasters lobbied the agency to postpone the spectrum reallocation and to study the new technology.

The NAB worked its magic on Capitol Hill, inviting Japanese broadcaster NHK to Washington and rolling big-screen Sony TVs into a hearing in the Senate Caucus Room. Fear of Japanese competition was at fever pitch in Washington. Congress was stunned by the picture quality and frenzied at the prospect that the Japanese would outflank American manufacturers of televisions, just as they had done to the makers of videocassette recorders. Rep. Ed Markey, D-Mass., then-chairman of the House Commerce Telecommunications Subcommittee, took up their cause, and Congress pressured the FCC to leave the spectrum assignments alone on the condition that broadcasters develop HDTV.

Tom Hazlett, a telecommunications economist at the Manhattan Institute, believes that high-definition television was a poorly thought-out ruse broadcasters used to protect their spectrum space, and that they never intended to air HDTV. For them, it "was just a chit, a marker, that said, 'We [broadcasters] consider it ours,' " Hazlett said.

In 1987, then-FCC Chairman Dennis Patrick appointed former FCC Chairman Richard Wiley to head an advisory commission to investigate the technology. Wiley corralled broadcasters and electronics companies into a series of technical meetings, and their work dragged on for years. Japanese high-definition TV was analog and expensive. But the march of American technology led to the digitization of video. That enabled American engineers to stuff six times as much video into the same bandwidth. Digital HDTV was now possible within a single television channel. Fritts defends the efforts of the advisory committee, which completed its work and got FCC approval for the new standard in 1995. "We had over-the-air digital HDTV, and we leapfrogged the Japanese," he recalled.

But there was still a problem. Existing TV broadcasting equipment could not send digital signals, and existing analog television sets couldn't receive digital signals. Broadcasters would have to invest in new television cameras and tow-

ers for digital signals, and consumers would have to spend thousands of dollars apiece on new sets. During the transitional period, each broadcaster would need *two channels*, one for analog and one for digital.

Broadcasters turned to Congress, now in Republican hands, and lobbied for a new compact: We'll give you HDTV if you give us a second channel, for free, until Americans have made the switch. "It was understood that the channels would be loaned for a period of years to prevent consumers from losing television," said Robert Seidel, vice president of engineering for CBS Broadcasting.

But over at the FCC, then-Chairman Reed Hundt was profoundly skeptical of the whole HDTV venture. As Congress began rewriting the communication laws, Hundt was aghast at the way broadcasters were worming their way into the rewrite. "This second-channel policy was basically a bamboozle on the American public," Hundt said in an interview. He wanted to auction the spectrum and generate revenue for the federal government, just as he had already done with frequencies used by cellular and other companies. He and his chief of staff invited *New York Times* columnist William Safire to breakfast and asked, "Will you write some articles about this giveaway?"

Safire agreed. Hundt also asked Safire to get then-Senate Majority Leader Bob Dole, R-Kan., to back the FCC. One week after Safire's column came out in January 1996, Dole, who was running for president, went on the Senate floor and denounced the NAB-inspired plan as a "big, big corporate welfare project," a giveaway that would cost between $12 billion and $70 billion.

Broadcasters retaliated by preparing a mock advertisement featuring an unnamed congressman who wanted to "tax the airwaves." Recalls Hundt, "They showed it to a couple of people on Capitol Hill, and they said, 'This is what we will run against any congressman who votes against us.' The people willing to support Dole disappeared overnight."

Dole backed off, and the 1996 Telecommunications Act passed. The new law said the FCC should decide whether to give a second channel to each of the broadcasters. Before departing the Senate, Dole got a written promise, signed by congressional leaders and all five FCC commissioners, not to give away any digital channels until Congress gave its OK. But within two weeks of becoming the new Senate majority leader, Trent Lott, Fritts's college buddy, sent a new letter to the FCC, empowering the FCC to act on its own. The other shoe dropped in 1997, when Congress was drafting the Balanced Budget Act. Dole's argument about the value of the spectrum and the wrongness of giving parts of it away was gaining traction. The original version of the BBA directed broadcasters to give back the second channel by December 31, 2006. Congress also directed the FCC to give 24 megahertz (enough to carry four television channels) to police and fire officials, and to sell at least 36 megahertz (six channels) at auction to cellular carriers, generating revenue to help balance the federal budget.

But broadcasters had changed their view about HDTV. Once they got the second channel, said Fritts, broadcasters began to see digital television as "an enormous risk" and feared that the public would not move easily to a new type of television. Others stepped in on the broadcasters' behalf, including Rep. Billy Tauzin, R-La., who offered an amendment to the bill. It said the handover of the spectrum would happen only when 85 percent of all U.S. households owned digital-television equipment. The deadline became movable.

As of today, 22 months before the end-of-year 2006 target date, not even 3 percent of Americans have the televisions to receive digital broadcast signals. Many more have bought big-screen TVs to hook up to their cable and satellite system, but the sets came without tuners that can receive HDTV over the airwaves. At the current rate, broadcasters will be sitting on their prime beachfront property for years to come, even though many of their frequencies have long been promised to police, fire, and cellular services.

Some in Congress are angry. Rep. Joe Barton, R-Texas, chairman of the House Energy and Commerce Committee, says he will push for legislation early this year to force analog off the air by the original 2006 deadline. Given the NAB's opposition and clout, few people believe that's realistic. Outgoing FCC Chairman Michael Powell has another idea. Originally skeptical about HDTV, Powell now wants broadcasters to go all-digital as soon as possible. He calls his plan a painless way to complete the transition by December 31, 2008.

LIZ LYNCH

MICHAEL POWELL:
The FCC chairman wants to complete the transition to digital television as soon as possible.

Meanwhile, Markey, who first pushed for HDTV almost 20 years ago, says the situation has dragged on far too long. "When broadcasters came into my office in 1987 and asked to begin the process, I was told that they could serve the public interest in a much higher and better way. So now it is 18 years later," Markey says, laughing. "I am waiting to see the piece of paper that tells me what it is they will do with that additional 6 megahertz" that they've had for nearly two decades.

COMMUNICATION BREAKDOWN

Over the years, broadcasters have skillfully rebuffed efforts to deprive them of their frequencies. In the 1940s they killed an AT&T plan for mobile telephone service, delaying the arrival of cellphones for more than a generation. Public safety was also tuned out.

When the terrorists crashed the airplanes into the World Trade Center on September 11, 2001, the fire chiefs responding to the attack had no means of communicating with the police. Arriving on the scene, New York Fire Department Battalion Chief Joseph Pfeiffer could hear only two fire department channels and could not get reports on the towers from the police helicopters circling overhead.

New York City police officers, whose radios used 55 frequencies, heard the warnings from the helicopters, and most of them got out. Firefighters and fire chiefs, including special operations chief Ray Downey, heard nothing. These communication failures prompted the national 9/11 commission to recommend that broadcasters promptly vacate four television channels for public safety. It has yet to happen.

GETTY/RON AGAM

STATIC:

A lack of frequencies meant that police and firefighters could not communicate with one another on 9/11.

Moreover, this deadly situation was not new. After the 1993 bombing of the World Trade Center, police officers could not communicate with firefighters on the very next floor, according to Downey, who supervised those rescue efforts. In 1995, the same problems occurred after the bombing of the federal building in Oklahoma City. Downey, who led an NYFD contingent to aid the Oklahoma City rescue effort, had to send runners to coordinate orders.

A Public Safety Wireless Advisory Committee was formed in Washington, and it had one key recommendation: "Public safety agencies will not be able to adequately discharge their obligations to protect life and property" if they don't get more frequencies within five years. The report was released on September 11, 1996.

Five years later, Pfeiffer and Downey still didn't have the spectrum they needed. After the tragedy, fire and police officials boiled with anger. At an FCC field hearing in Brooklyn weeks after the towers came down, Peter Meade, chief of the Nassau County fire department on Long Island, spoke for many in his profession: "Television be damned," he said.

Meade coordinates police and fire frequencies in New York for the Association of Public-Safety Communications Officials-International. He and his public safety colleges in the organization took their outrage to Washington. They worked with Reps. Curt Weldon, R-Pa., and Jane Harman, D-Calif., on a bill forcing broadcasters to vacate television channels 63, 64, 68, and 69. It went nowhere. Reintroduced in the last Congress, the bill did get a hearing, at which Weldon, a beefy former firefighter, mourned Downey, who did not survive the towers' collapse.

"Is a TV show in my district in Pennsylvania more important than saving Ray Downey's life?" Weldon said at the hearing. Later, he said, "I am not speaking, I am *shouting* against the broadcasters."

The 9/11 report released in July 2004 upped the ante in the fight over the broadcasters' second channel. Then-Senate Commerce Committee Chairman John McCain, R-Ariz., revived his long-standing feud with the NAB. He was happy to make Weldon's bill a part of the intelligence reform package, and in committee he tried to force all broadcasters to give back their second channels by December 31, 2008. In the House, Barton also wanted a deadline, but two years earlier, at the end of 2006.

The NAB moved quickly, enlisting Sen. Conrad Burns, R-Mont., a former broadcaster, who introduced a compromise amendment setting the give-back date at the end of 2007, but only for a few stations. "This is public safety versus the NAB," McCain said, "and we will all be on record as to where we stand." Burns prevailed in the committee, 13-9. But in the House, Barton noted that under the Burns amendment, Congress wouldn't get back all 108 megahertz of bandwidth, and he nixed the deal. Barton preferred to wait until the next Congress. Broadcasters had won the day.

But since then the tide may have turned. "Broadcasters are at their strongest when they are up against the cable industry," says David Leach, a former House Democratic aide who now represents an NAB-affiliated group that manages technical details of the digital-television transition. "They are weakest when they are up against the public safety folks. Those guys have a need, and the broadcasters lose out.… The question isn't 'if' anymore, it is just a question of when."

WASTED SPECTRUM

For the FCC, September 11 demonstrated the importance of getting broadcasters out of the public safety zone. Less than a week after the attack, Chairman Powell and the four commissioners approved a plan by the Spectrum Clearing Alliance, a broadcasters group. Maverick broadcaster Lowell (Bud) Paxson, a member of the group and owner of 15 stations, spearheaded the deal. Under the plan, all TV broadcasters with channels numbered in the 60s would go digital-only immediately; the government would take back the frequencies used by stations broadcasting their analog signals on channel numbers 63, 64, 68, and 69. The frequencies making up those four channels would go to police and fire department communication officers. The broadcasters would then take the frequencies used by the six other channels and sell them to the spectrum-hungry wireless industry. But the deal had a flaw, and that was greed. It was expected to bring in billions, with Paxson and his allies pocketing two-thirds. To critics like then-Sen. Ernest Hollings, D-S.C., it looked like another giveaway.

The scheme backfired, and the NAB distanced itself from Paxson. Congress stopped the auction and rebuked Powell.

The failed deal also highlighted a grand irony of the spectrum wars. All told, the airwaves used by television broadcasters were appraised by Wall Street at $367 billion in 2001. Yet as an economic asset, they are practically worthless to broadcasters. That's because more than 85 percent of Americans with televisions now pay to watch cable or satellite transmissions and don't rely on over-the-air broadcasts. Cable subscribers don't need to use broadcast frequencies, because they get their signal from an underground wire. Nor do satellite customers, who use a small dish to receive high-frequency transmissions over spectrum frequencies that satellite companies EchoStar or DirecTV bought at auction. Broadcasters still pump out the signals, but hardly anyone is watching. In a given week, only 3 percent of TV homes that receive channels 62 through 69 watch those programs over the air, according to a study by Motorola. Simply put, the broadcasting spectrum is wasted.

Broadcasters point to the 73 million televisions—frequently second and third TV sets in a home—that are unconnected to a cable or a dish. And Fritts speaks rapturously about the broadcaster's place in American democracy. "When I say 'the public good,' I mean us," Fritts said in rallying his members at their most recent national convention. "At the NAB, we are constantly on guard to preserve and strengthen this valuable resource called free, over-the-air broadcasting." That argument still resonates on Capitol Hill.

LIZ LYNCH

CURT WELDON:

"I am not speaking. I am ***shouting*** against the broadcasters."

But the marketplace reality is that Americans have voted with their wallets: They prefer cable television. Both the broadcast barons and the cable cowboys know it. Robert Sachs, the CEO of the National Cable and Telecommunications Association who departs at the end of the month, says: "We are providing broadcasters a service with viewers that their inferior UHF signal may not otherwise be able to reach."

Where broadcasters rely exclusively on advertising, the cable industry has advertising as well as a second income stream: Cable systems string wires and sell television services that now average $45 a month per household. In 1980, when Ted Turner started CNN (the "Chicken Noodle Network," as it was lampooned at the time), only 22 percent of Americans had cable. By 1992, 62 percent of households subscribed. But high costs to subscribers—and skillful agitation by the NAB—whipped up a congressional backlash that led to price caps in that year's Cable Act.

Congress deregulated cable rates four years later in the Telecom Act. But that law didn't touch broadcasters' biggest coup: the requirement in the 1992 law that cable's privately built systems must carry all broadcast television programs. Before then, cable TV providers would drop less-popular broadcasters, like Paxson and the Home Shopping Network, for other cable channels. In the Cable Act debate, broadcasters countered that the public interest demanded that cable carry "free TV" without charge, and the new "must-carry" rule protected Paxson's stations. Meanwhile, the major networks and their local broadcasting affiliates knew that people wanted to watch ABC, CBS, Fox, and NBC, even over cable. They wanted to charge the cable operators a "retransmission consent" fee for their programs, and the law gave them that right, too. The double whammy tilted negotiating power to the broadcasters in their quest to have their programs carried on cable.

The law's consequence has been consolidation of the media business. Each broadcast network is now teamed up with a major Hollywood studio and a parcel of cable networks, content makers such as ESPN. Viacom, which owns CBS and Paramount Studios, has a strong incentive to use the popularity of its CBS Broadcast Network against a cable operator like Comcast Communications or Cox Communications. Want your customers to be able to see the show *Crime Scene Investigation*? Viacom will give you the CBS signal for free, if you pay for its Black Entertainment Television, Comedy Central, MTV, Nickelodeon, VH-1's music videos, Showtime, and men's entertainment on Spike TV.

Local broadcasters who had pinned their hopes for the future on digital television are left almost entirely out of this picture. "The broadcasters' days are numbered," said an influential telecommunications lobbyist who works for a major television network, speaking on condition of anonymity. There will always be a demand for local television news and other such programs, but in the future, they may not be "broadcast." Instead, they will be transmitted over cable, over fiber-optic Internet wires, over cellphones, or even over a Wireless Fidelity, or WiFi, broadband connection.

RIVAL VISIONS

But many of the local broadcasters in the NAB refuse to go away quietly. Capitol Broadcasting CEO Jim Goodmon is one of them. He is proud that Viacom does not own his CBS affiliate, WRAL-TV in Raleigh, N.C. Goodmon transmitted the first commercial high-definition telecast in July 1996 and has been on the air in high-definition ever since.

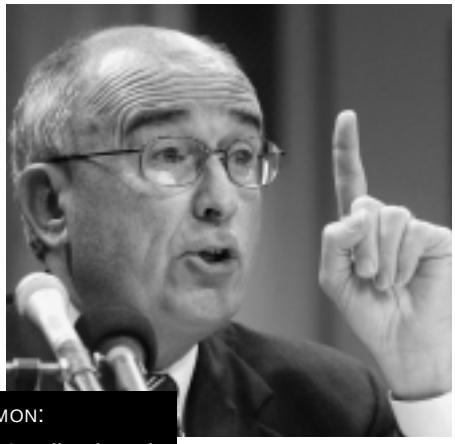
Yet Goodmon wasn't immune to the broadcasters' growing skepticism about HDTV. The nation's broadcasters collectively paid $3.5 billion to build new towers, buy new high-quality cameras, furnish sets with telegenic, real bookshelves, and foot the electricity bill for sending both digital and analog signals. But then they asked themselves, How would HDTV help lead to higher advertising rates? Eventually, broadcasters hit upon an idea. Let's imitate the cable industry. Let's use compression technology to fit four, five, or even six standard-definition signals into the same frequency, ditch HDTV, and charge consumers for a package of news, movies, and sports programs.

This idea was called "multicasting" because it sent multiple programs over the same digital bandwidth in the airwaves. True, they wouldn't be the same pretty pictures that broadcasters had dangled before members of Congress years earlier. And the relatively low image quality also gave heartburn to television manufacturers. Why would Americans spend thousands of dollars for a big screen if they

couldn't get high-definition? Some broadcasters, like CBS, rejected the new idea and stuck with a high-definition strategy. But ABC and NBC were set to go with multicasting. When Walt Disney top lobbyist Preston Padden said in 1997 that ABC would jettison HDTV and multicast several pay channels, McCain hauled him into a hearing. "It is a clear revocation of a commitment that was irrefutably made," McCain said.

For the next four or five years, the broadcast networks effectively abandoned digital-television programming. And broadcast station owners shrugged off FCC deadlines for transmitting digital television. HDTV went into slow motion, as two rival visions of television's future emerged.

One vision is held by digital-TV pioneers like Goodmon, who sees multicasting as his salvation. He is one of the 513 broadcasters who are multicasting local news, sports, and weather. (All digital sets can pick up multicasts.) Digital broadcasting has made him "three times better," Goodmon says, because he can stick with a breaking news story on one of his channels while putting the network feed on another. Recent advances in compression even allow him to multicast and send high-definition programs at the same time.



AP/RON EDMONDS

JIM GOODMON:
The North Carolina broadcaster is among those whose TV stations have embraced "multicasting."

The other vision is one driven by television manufacturers like LG and Samsung. Their model called for electronics companies to form business alliances to sell high-definition-ready plasma or liquid crystal display screens through consumer outlets like Best Buy. Retailers would then sign their customers up with DirecTV or EchoStar, which began airing high-definition content from HBO in 1999. The electronics industry has also heavily promoted the DVD, or digital versatile disc. It isn't quite high-definition, but the DVD's improved picture quality was enough to motivate many home-theater buffs to buy big-screen displays.

These divergent visions created an impasse. "I despaired that anyone was going to do anything on it," said Wiley, who had been the FCC chairman under President Ford and returned to lead the advisory committee in 1987. After the 2000 presidential election, Wiley went to lunch with Michael Powell, who was then rumored to be Bush's choice for FCC chairman, and Wiley said that Powell should do something about HDTV.

Powell was skeptical. He didn't commit to anything. Republicans weren't supposed to like anything about "industrial policy." But he became increasingly convinced that the beachfront property needed to be freed up. "I realized that this country was wasting way too much spectrum in broadcasting and it needs to get it back, and the only way to get it back is to get the transition over," Powell said in an interview.

In April 2002, Powell proposed voluntary action in which broadcasters would provide either high-definition programming or multiple channels during half of their prime-time schedule; cable operators would carry more high-definition signals over their own digital pipes; and television manufacturers would build sets with digital tuners capable of receiving the new broadcasts.

The broadcasters and cable operators agreed. But most of the TV makers balked. Gary Shapiro, head of the Consumer Electronics Association, said it made no sense to sell $200 digital tuners to everyone, when 9 out of 10 customers didn't need them because they got their primary signal from cable or satellite. The manufacturer Zenith took a different view, because it held patents on the tuner. Besides having Wiley's law firm in its corner, from 1999 to 2002 the company spent $700,000 lobbying just this single issue. Zenith's efforts gave Powell the support he needed to turn his "voluntary" plan into a requirement in August 2002. The CEA sued to stop the requirement, but lost; by July 1, 2007, high-definition tuners will be included in all new television sets.

Electronics firms got the message that Powell was serious about his plan for digital television. As Powell says, "Sometimes you play hardball." Within four months, they had negotiated a deal with the cable industry over a lingering copy-protection dispute. But Hollywood demanded more. Concerned about Internet piracy, Disney and News Corp. pressed the FCC to mandate all computer manufacturers to build an anti-piracy tool, called a"broadcast flag," into their product. Without the flag, Viacom threatened, it would pull all of its high-definition CBS programming off the air. Powell swallowed hard and, in November 2003, required that, too.

Everything seemed to be falling into place. Powell wanted to gift-wrap the digital-TV package for Congress and go down in history as the FCC chairman who wrestled down the broadcasters and won the spectrum back for the American people. Today, 1,430 of the 1,748 local television stations are digital, and most of them are delivering the HDTV broadcasts that the networks are finally providing. The electronics industry last year sold 7.2 million digital TVs, most of them high-definition—a 75 percent increase over 2003. But the venom between broadcasters and cable operators still stood in the way of completing this digital migration.

ENDGAME

In 1997, the Supreme Court had weighed in on the fight between cable and broadcasters over the "must-carry" law. Cable's free-speech rights were not violated by having to carry over-the-air analog broadcasts, the Court had said, in part because the burden was slight.

But the controversy picked right back up as soon as digital television came along. Broadcasters said that cable must carry both their analog signal and all of their digital signals, whether high-definition or multicast. "They are supposed to pick up our signals; that is part of the deal" that is America's television compact, Goodmon argues. "Cable is just a big antenna system with regard to broadcasters." The cable industry rejected that view as outdated. Cable argued that the high court limited mandatory carriage to a single program per broadcaster. It's not as though they didn't want to carry broadcasters' high-definition television;

they just wanted to be in control. The switch to digital gave cable a chance to wriggle free from the double whammy imposed by the combination of "must-carry" and "retransmission consent."

The FCC decided the "must-carry" issue in cable's favor in January 2001, under the outgoing Clinton administration. But during the four years that Powell has led the FCC, the NAB has demanded reconsideration. New compression techniques make the entire digital stream smaller than an analog single-program signal. The NBC network and its broadcast affiliates last year launched a localized multicast weather channel, and they say cable is blocking them from competing with its Weather Channel. NCTA's Sachs calls that ridiculous. Cable companies already retransmit 504 digital-television stations, he says, and are happy to carry more as long as broadcasters don't try to charge them, or force them to carry low-quality programs.

Sachs objects "to having broadcasters warehousing some of our bandwidth with low-value, low-budget programs."

The battle is now fully joined over what "television" means. Once upon a time, TV was what broadcasters put over the air on the scarce frequencies that the government gave them for free. They had to keep it clean and, every four years, send their news divisions to the national political conventions. Gradually, "TV" came to mean HBO and ESPN and Discovery and C-SPAN, as cable networks carved the American population up into marketing niches. The still-powerful broadcast networks say that digital television gives them a second chance. But to do what? They don't know. That's why the networks are the biggest players in the cable industry.

LIZ LYNCH

GIGI SOHN:

"Wouldn't it be better if we just took ***all*** the spectrum away?"

Meanwhile, all that beachfront property sits, vastly underutilized. Cable doesn't care about the spectrum, even though the cable industry may cause broadcasters to give it up. But as Powell came to realize, there are plenty of other people clamoring to get on the beach. "Rural broadband would be much more feasible" if WiFi providers could use the spectrum that broadcasters are supposed to vacate instead of their current desert territory at 2.4 gigahertz, said Peter Pitsch, Intel's director of communications policy. "Broadcasters' spectrum would provide a plethora of services that are far more important to the future of the country than digital reruns of *Friends*," said Gigi Sohn, president of the nonprofit Public Knowledge. A lifelong public-interest advocate who sided with broadcasters in their fight to get carried on cable, Sohn has abandoned a no-win effort to force "public-interest" obligations on broadcasters, she says. "Wouldn't it be better if we just took *all* the spectrum away?"

Try telling that to the NAB. Eager to end the digital-television transition with cooperation from the broadcasters, Powell urged them to compromise with cable. His patience with both industries waned in December 2003.

But Ken Ferree, his chief at the FCC's Media Bureau, warned Powell to wait. Ferree was no friend of broadcasters. "They would rather eat their children," he says, "than give up this spectrum." But achieving the transition would be easier if broadcasters had a clear right to put their programs on digital cable systems, he told Powell. It wasn't until 2004 that manufacturers were required to make digital TVs, which is why less than 3 percent of households are capable of receiving such broadcasts. Unless the FCC did something different, Ferree warned, it would take decades before the 85 percent requirement put in place by the Balanced Budget Act was met.

Ferree saw a better model in the experience in Germany. For those citizens of Berlin who didn't subscribe to cable, the city bought and gave converter boxes to each household. That way, any existing television could display digital pictures. In less than a year, Berlin had flipped its television system from analog to digital. The same approach could work in the United States, Ferree said. His idea for the United States was simple: Use cable and satellite television to reach the magic 85 percent threshold. Rather than force cable to carry broadcasters' analog programs, the FCC would require cable to carry broadcasters' digital programs by a set date: December 31, 2008.

Consumers with new televisions would get digital television over the air for free. For those without the expensive sets, cable and satellite systems would translate digital signals back into analog, to be seen on conventional televisions. Consumers without cable or satellite could buy, or get a subsidy to buy, a converter box for less than $50 a set.

Most important, through a simple bureaucratic rule change, the spectrum would finally be freed up.

Congress, of course, would have to agree to any subsidy. But appropriators could fund them out of the auction revenues they expect to receive. Unsurprisingly, however, broadcasters dumped on Ferree's plan, which Fritts mocked as a "spectrum reclamation project." Goodmon said the plan amounted to "quitting on the digital-television transition." Broadcasters refused to go along, even when Ferree included a sweetener: that cable would have to carry *all* their digital programs. Fritts also balked over making a deal with Sachs and the cable industry. Urged on by Jonathan Adelstein, one of the two Democrats on the FCC who favors strong "public-interest" requirements on broadcasters, NCTA instead contacted PBS and local public stations. Under a private agreement announced on January 31, all of public television's multiple program feeds will be carried on cable systems. The deal undercut the commercial broadcasters in the NAB. On February 10, on a 4-1 vote, Powell shot down their four-year quest for reconsideration. The broadcasters had lost.

"In Washington, there are no final victories and no final defeats," Fritts said after the vote. He says broadcasters will live to fight another day and is stoic as he prepares to continue his battle against cable—and public safety, and wireless, and high tech, and others. "We will meet them on the Capitol steps this session of Congress, to sort all of this out." ■

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