respectable cable audience of about one million viewers, although it would have reached perhaps 10 times as many viewers over broadcast channels.

Afterward, CBS television president Les Moonves responded to allegations of censorship by saying he was surprised to discover after viewing a rough cut that the series lacked balance. It was “somewhat one-sided and it wasn’t the movie I promised the public.” So how could The Reagans be too biased for CBS, but just about right for Showtime? Moonves explained to Time magazine’s Richard Zoglin, “When somebody’s paying $30 a month, that’s their decision. On a network, there’s a public trust to it. . . . A cable network can be a bit more one-sided and do an opinion piece.”

This episode at CBS Viacom illustrates the political pressures broadcast networks face and how cable operates under different rules. It further shows how the longstanding barriers between cable and broadcast properties have just about collapsed. In this chapter, we will see how principles of supply and demand gave rise to cable television, and how the upstart medium found its way to success beyond advertising revenues. We also will examine the idea of cable television competition and a principle about how media choices may vary, while the overall investment remains the same.

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Bruce Springsteen, “57 Channels (And Nothin’ On)”
from Human Touch album, 1992 Columbia Records
Cable television evolved from small-town systems hooked up to community antennas to multibillion-dollar enterprises. More than 9,300 systems weave their way across the national landscape, but their numbers are shrinking from a peak of more than 11,000 systems reached in the mid-1990s. Mergers and acquisitions are responsible for much of the decline—so many mergers, in fact, that today’s top 10 conglomerates serve more than 80 percent of basic cable subscribers in the United States.

What factors gave rise to such an industry? The first systems were designed to escape the freeze imposed on new TV stations in 1948. The FCC needed time to sort out its channel allocation map while selecting the color technology to replace black-and-white TV. The 108 stations on the air simply whetted the appetite of viewers wanting “radio with pictures.” Some could not wait for the thaw and began yanking distant TV signals from the sky. Their stories form the genesis of cable television, or, as it was known then, community antenna television (CATV).

Early Days of CATV

At first, appliance shopkeepers began to erect TV antennas in high places, hoping to capture distant programs and cascade them by wire down to neighbors in the “white areas” where TV screens turned to snow. Who would’ve bet that these early “mom and pop” systems would one day emerge to become lucrative television enterprises? Some people did and made a fortune; others simply lost their shirts.

FIRST MOM AND POP SYSTEM

The original parents of community antenna television lived in Astoria, Oregon. E. L. “Ed” Parsons was a radio station owner and engineer who ran a marine radio service for the Columbia River’s fishing boats. He and his wife, Grace, were impressed by a 1947 TV demonstration at a Chicago broadcasters’ convention. She had heard a new Seattle TV station would be on the air in 1948 televising a high school football game. Grace asked her husband, Ed, to figure out a way to close the distance between Astoria and KRSC (now KING-TV) in Seattle. Ed began scouting around for a point where that signal could be tuned in, and a location where he could place his antenna. He found that spot atop the Astoria Hotel across the street from his and Grace’s apartment, where they invited friends and family to watch the Thanksgiving Day event.

Soon, just about everyone had heard the news and wanted to see the furniture with pictures. The Parsonses discovered that if they were to have any peace, Ed would have to drop a cable down the elevator shaft to the hotel lobby and install a TV set there for others to watch. Soon, he had strung wire to local bars and about 25 “subscribing” neighbors, charging them $125 for the installation costs but without monthly fees. That was the beginning of community antenna television.1

APPLIANCE STORE OWNERS

The prospect of rooting for football teams on autumn afternoons inspired a TV appliance shopkeeper in Tuckerman, Arkansas, to build a 100-foot tower on his store’s roof. Jim Y. Davidson thought he could capture the TV signal from Memphis, Tennessee, 90 miles away. He carefully strung cable down to the American Legion Hall so that he and his friends could watch Ole Miss play Tennessee. Davidson thought he might like this new line of work, and so he created Davidco to begin shipping ready-made cable systems to towns and cities around the country.2

**Community antenna television (CATV)** Term used for local cable systems until satellite and microwave distribution prompted a change to simply “cable.”

**Microwave** Radio signals of at least 1,000 MHz carrying audio and video over long distances, either to satellites or to terrestrial relay towers.

**Headend** Technical center of a cable system where all programming is received, amplified and retransmitted.
Meanwhile, back east, families in the hills of Pennsylvania naturally wanted to get their first peek at “seeing radio.” An appliance store owner and lineman for Pennsylvania Power and Light, John Walson, hooked 700 homes to his antenna in Mahanoy City. In Lansford, Pennsylvania, another electronics appliance store owner, Robert Tarlton, was trying to figure out how to bring a signal in from Philadelphia’s WCAU-TV across Summit Hill. He began rounding up appliance shopkeepers to see if they would invest in his idea. They did and, in 1950, Panther Valley CATV was born.3

JERROLD: CATV’S PIONEER EQUIPMENT MANUFACTURER

The excitement surrounding this CATV system sparked the interest of a Philadelphia lawyer and future governor of Pennsylvania, Milton Jerrold Shapp. Shapp watched the Panther Valley cable workers stringing lines during the Thanksgiving holiday of 1950 and decided to get involved. He named his firm Jerrold Electronics and began supplying cable wire to the Lansford system. Community antenna television was no longer an experiment now; it was a growing enterprise. At first, CATV made money based on home-installation fees of between $100 and $200 rather than monthly cable bills, which then amounted to only a few dollars a month for system maintenance.4

For other CATV enterprises to get started, Shapp invited Wall Street investors to come on board. Three venture capital firms put up money in 1952 for a system in Williamsport, Pennsylvania. Within two years, the Williamsport franchise grew to become the largest in the country. Shapp and Bob Tarlton took to the road, spreading the good news of community antenna television.

The first CATV systems carried only 2 or 3 channels, but in larger towns that “fill-in” service was a welcome relief. When one or more network affiliates were missing, CATV operators would import channels from distant cities so viewers could see the Big Three network channels (ABC, CBS, NBC). They relied on microwave companies to bounce the signals back to the distribution center that became known as the headend. New amplifiers and other technical improvements

MILTON JERROLD SHAPP, FOUNDER OF JERROLD ELECTRONICS.

When public demand exceeds the supply of media products, private enterprise generates more media products.

CABLE’S EARLY WRANGLER

After reading about CATV in the newspaper, Daniels asked himself, Why not bring it to Wyoming? With an investment from AT&T and training from Marty Malarkey at Jerrold Electronics, he became the first cable operator to relay TV signals 120 miles from Denver to Casper.

Daniels’s salesmanship inspired others to enter the business, or at least to move forward in expanding their cable operations. In just five years, he made 147 deals for cable systems, involving $1.5 billion. Early cable giants such as TelePrompTer, Time Warner Cable, Cox Communications, Tele-Communications, Inc., and Sammons all give Daniels credit for either inspiring their start-ups or forging deals on their companies’ expansion.
allowed CATV operators to increase the number of channels to 5, and later to 12 choices. These early entrepreneurs responded to public demand by supplying new media products through the innovation of CATV, a new delivery system.

Open Skies

In the middle of the twentieth century, communication satellites were launched. Broadcast signals bounced off orbiting spheres focused on huge expanses of the earth. Satellite technology helped lift geographic barriers and became a key ingredient in cable television’s development. In 1972, the FCC encouraged cable networks to relay their signals via satellites by adopting an open-sky policy. This action gave the green light for cable companies to enter the domestic communication satellite business so long as they had the technical expertise and financial support to do so.

HBO’s Star is Born

A cable operator serving Lower Manhattan was having financial difficulties and imagined a way to make pay television work in the late 1960s. Charles F. (Chuck) Dolan’s
scheme came to him while aboard the Queen Elizabeth II on vacation; he was struck by an idea to save his struggling Sterling Manhattan Cable system—a pay TV channel devoted to movies and sports. He would label it the “Green Channel,” and would offer subscribers uncut movies, New York Knicks basketball, New York Rangers hockey, and live boxing matches from Madison Square Garden. Needing financial backing, Dolan presented his idea to Time Inc.’s board of directors in 1971, and they seemed to like it. Dolan told Time’s board of directors that one day HBO would become “the Macy’s of television [and it would] . . . use whatever efficient transmission systems become available, from microwave to satellite, to sell television programs worldwide.” He brought on board a lawyer, Gerald Levin, and a marketing specialist, Tony Thompson, and they decided a better name might be—Home Box Office (HBO).

On November 8, 1972, HBO aired its first film, Sometimes a Great Notion, at what proved to be an inauspicious occasion. The mayor of Wilkes-Barre, Pennsylvania, where HBO’s debut was held, was forced to cancel his appearance, and the local newspaper thought it unworthy of coverage. Yet, the event marked the inauguration of premium cable television, ushering in both a new format and a new stream of revenue. Satellites began feeding HBO’s programs in 1975. Its first satellite telecast to subscribers was “The Thrilla in Manila,” a live boxing match between Muhammad Ali and Joe Frazier.

Soon, HBO had competition. Viacom had been cobbled together in 1971 from some of CBS’s cable operations and syndication properties. Aspiring to become the nation’s leading cable programmer, Viacom began feeding its content by videotape and microwave until domestic satellites, or “domsats,” created a new system for networking. In 1978, Viacom launched Showtime as a competitor to HBO. The big winners were the telecommunication firms that auctioned off the transponders, satellite circuits that were leased to carry programming from earth to space for millions.

Domsats also provided another innovation for cable television—the superstation, a local TV station based in a major city but distributed nationwide on multiple cable systems. The same “bird” carrying the HBO signal would start carrying other passengers, including a struggling TV station in Atlanta, Georgia. When WTBS, an independent UHF station, was fed via satellite to cable systems in 1976, it became America’s first superstation. In turn, WTBS inspired other independent TV stations to seek a cable channel, while other programmers planned for niche networks of news, sports, and music to fill the cable menu of channels. The guiding spirit of this early activity was an Atlanta broadcaster by the name of Robert E. (Ted) Turner.

CABLE TIERS

Cable’s bottom line was secured not only by its power to retransmit local or distant channels but also by its programming options, which include premium channels and pay-per-view. Pay cable enables subscribers to buy programs by charging them more than the basic monthly fee. This fee structure is based on tiering, which gives the cable operator a menu of channels to sell based on levels or tiers of service. The basic service features local TV channels, public access, one or more distant superstations, and advertiser-supported networks, such as ESPN and CNN. (The average monthly fee for basic service was $36.59 in 2003.)

The cable operator also offers an expanded basic tier that includes channels such as Nickelodeon, A&E, and the Weather Channel. Above that tier is a premium offering with clusters or packages of commercial-free, pay-cable channels such as HBO and Showtime. Premium channels cost more, but a majority of the profits...
go to the cable operator through fee-splitting deals that may include promotional opportunities. Pay channels are devoted to movies, sports, or special events. For example, a film distributor will license a motion picture for a specific number of showings during a set period of time over the channel, or a promoter will license a sporting event or concert. Subscribers also can take a cluster of premium channels called mini-pays that are less expensive.
NEW CHOICES

Cable television companies create new choices of media in order to stay viable, and these options often relate to technical innovations. In 2004, for example, a consumer study showed that two-thirds of American adults preferred "à la carte" pricing and about 80 percent did not want to pay for à la carte packages that included channels they didn’t watch. A group of “Concerned Women for America” sponsored the poll, which was both criticized and praised. The cable industry challenged its methodology but members of Congress requested further study of à la carte pricing by the FCC. The economic structure of the industry is based on tiers, and pay-per-channel pricing would radically alter that system.

Meanwhile, the rollout of digital cable proved to be making promising financial gains. It not only expanded the number of channels to around 40 for the basic digital tier but it also gave rise to interactive television services such as digital video recorders (DVRs), video on demand (VOD), and interactive program guides (IPGs). The DVR is a tapeless video recorder that digitally records, stores, and plays back programming for cable customers. Video on demand is another digital innovation that resembles pay-per-view programming. It allows subscribers to order and watch movies on demand, as well as pausing, rewinding or fast-forwarding them. Subscription video-on-demand (SVOD), charges viewers a flat rate for unlimited access to a library of video offerings. Some have predicted that SVOD will become the model for the future of television using interactive program guides, which help viewers sort and select their TV shows on screen by title, topic, and time.

Using cable modems for high-speed Internet access has become the choice of about one in five cable subscribers and an estimated two-thirds of all broadband high-capacity digital customers. By mid-2004, there were 16.1 million cable modem users in the United States. Another innovation on the horizon is cable telephony, or voice-over Internet protocol (VoIP). It now serves about 2.5 million cable subscribers. Time Warner Cable partnered with MCI and Sprint to offer digital voice services, and Cablevision began offering New York City customers unlimited local and long-distance phone service for $35 a month. Within three years of its start-up, the number of digital cable customers in the United States surpassed 22.2 million.

RELATIVE CONSTANCY

These developments underscore another principle based on relative constancy. This idea holds that consumers will spend a relatively stable amount of their income on media activities, but those choices will vary. In other words, when viewers choose video on demand, they may quit using Blockbuster for video rentals, which is why the cable industry has been promoting bundling, combining media choices into one pay package per month. The principle of relative constancy implies that media must maximize their chances of persuading the consumers to make a favorable decision, which is achieved by offering more media options, greater control, and optimum convenience.

Cable’s Costs and Benefits

Cable television companies principally rely on two sources of revenue: subscriptions and advertising. Basic channels, such as VH1 and CNN, carry advertising. Others, such as American Movie Classics and HBO, rely on subscriber fees. Certain channels...
give the cable system slots for selling spots to local advertisers. As Figure 3.1 indicates, the breakdown of subscriber revenue from basic cable is about 56 percent, premium cable provides another 10 percent, and the rest comes from commercial advertising and other sources.

In terms of advertising, Figure 3.2 shows how the $16.4 billion in revenue was divided in 2003 across three commercial sources: cable networks (74%), local/spots (23%), and regional sports (3%). Other revenue streams for cable include home shopping commissions, telephony, and cable modems, which represent less than 2 percent of the total picture.

HOW IT ALL WORKS

The money invested in cable systems requires a healthy return from subscriber fees and advertising accounts. For example, there are costs associated with satellite receivers, dishes collecting video signals, as well as amplifiers and converters to send those signals down cable lines. Also, there is the cost of installation of fiber-optic lines, glass threads linked to coaxial cable drop lines. All are part of the system’s build-out costs.

Operating expenses take another bite out of the cable budget, which is one reason systems have been merging to shoulder expenses and take advantage of economies of scale. These consolidated groups of multiple system operators factor in the same expenses but on a much larger scale. There are, for example, the local franchise fees, copyright licenses, satellite and microwave costs, pole attachment fees, and access channels for public, educational, and government (PEG) programs. In addition, there are the costs charged by about 340 cable networks, which license their programs to each system operator.

CABLE FRANCHISES

Before a cable system bids for a local contract, it must first determine what kind of return it can expect on its investment. The cost of wiring neighborhoods is calculated according to its potential revenue, based on population density and demographics. The pass-by rate is the number of homes passed by the cable wire that might subscribe if they could, and penetration is the percentage of viewers who actually do. Generally, the higher the penetration, the larger the profits. In recent years, however, cable penetration has seen a decline from more than 69 percent in 2001 to about 67 percent penetration in 2003. The rate of subscribers who buy and then cancel cable service...
is called **churn**, which may be the result of rate increases, technical problems, or competition from other **multichannel video program distributors (MVPDs)**, such as home satellite television.

Because cable is either strung on poles or underground, it requires right-of-way easements and public notices. Cable franchises usually are given protection from competition because accommodating more than one system poses too many challenges, both technically and economically. That’s why cable has been called a **natural monopoly**. A few cable firms, however, are placed in competition in what have been described as **overbuild** situations. Whether one or more companies are involved, they must obtain permission from a local jurisdiction—usually a city council—which signs a franchise agreement that specifies fees and terms of service.

Franchising is more than just paperwork and political maneuvering. Some cities use franchise pacts to shore up public budgets. These agreements—usually lasting 10 or 15 years—cover everything from how many channels are offered to what percentage of the cable profits are paid to the government. Federal law has set the maximum franchise fee at 5 percent of gross revenues, but exacting fees for cable broadband is prohibited.

**BREAKDOWN OF THE CABLE SYSTEMS**

Think of the cable company as a distribution center. Programming comes into the **headend** by antenna from local channels, microwave relay antennas bring it in from more distant locations, and satellites beam down their cable networks. Programs are also produced at regional production centers, such as sports networks or at the cable company’s local production studio, but not all cable systems have such facilities.

Now, step back and view one cable system in total, as depicted in Figure 3.3. Originally, **cable systems** consisted of five components; the **headend**, the **trunk** cable, the **feeder** line, the **subscriber drop**, and **terminal** equipment. The headend is where TV signals from earth and space are received, then retransmitted as video and audio channels over the trunk, feeder, and drop lines to terminal equipment in each subscriber’s home. These systems relied primarily on coaxial cable (lines running parallel, or in **coax**, through conducting wire and a metal sheath). Coaxial signals, however, fade over distance, which is why early systems installed amplifiers every one-third of a mile to boost the signal power. In the 1990s, fiber-optic glass lines with digital equipment gave rise to higher-quality pictures and sound, greater bandwidth, and a wider array of channels. The resulting systems began to move beyond the tree-and-branch system into something more efficient, as shown in Figure 3.3.

Star patterns of hybrid **fiber/coaxial (HFC)** cable have replaced most trunk-and-branch systems. There are three points of transmission in the HFC system: at the **headend**, where the signal is retransmitted via fiber-optic lines to a **node**, where the video and audio signals are converted to analog for coaxial delivery to the home’s **terminal equipment**.

Cable channels are assigned frequencies, the same as broadcast channels, and the VHF channels use the same wavelength as broadcast channels but without the trouble of interference. Each fiber-optic strand can carry more than a million simultaneous signals through the cable without interference.

**GOING DIGITAL THROUGH FIBER**

Digital transmission converts light into pulses compatible with the computer’s binary language of ones and zeros. These pulses travel along hair-thin strands of glass that are braided together and polished at each end to carry light and images. Fiber-optic lines not only offer greater bandwidth but they are also better suited to handling digital information. Glass fibers carry laser energy generated by light-emitted diodes (LEDs), requiring fewer amplifiers than coaxial cable, which uses

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**Fiber-optic lines** Strands of flexible glass inside a cable transmitting pulses that carry video and audio information for cable television.

**Coaxial cable** Transmission line for cable television, using a center wire of aluminum or copper surrounded by a shield to prevent signal leakage.

**Franchise fees** Share of cable revenues dedicated to a governmental authority in exchange for an exclusive contract.

**Copyright** Ownership rights to literary, dramatic, musical, or artistic expressions.

**Public, educational, governmental (PEG)** Government term to describe dedicated-access channels on cable systems.

**Pass-by rate** All homes passed by a cable feeder line, as a percentage of all in turn, homes in the area.

**Penetration** Percentage of customers subscribing to cable, based on all the homes passed by the cable line.

**Churn** Dropout of pay-cable subscribers after a short period of service.

**Natural monopoly** Cable systems represent a type of an industry where the most efficient means of production and distribution are by a monopoly.

**Overbuild** Competition between two or more cable systems with lines passing the same households.

**Cable system** A wired network for distributing television programs on a subscription basis to homes in a single community.
copper and aluminum conductors, as shown in Figure 3.4. This allows for more channels using less bandwidth. The disadvantage to this system occurs when a fiber-optic line breaks. It is difficult to splice the threads, given the size and delicate nature of glass fiber. Nonetheless, the advantage of carrying more digital channels greater distances without amplification outweighs the disadvantages.

**DIGITAL HDTV**

One major advantage of digital cable is high-definition television (HDTV), a format affording cinema-quality pictures with CD-quality sound. Cable’s rollout of HDTV has not been without its problems, though. In 2002, the 10 largest MSOs pledged to the FCC that they would provide by 2003 a package of high-definition television (HDTV) services to subscribers who would pay for them. To support this promise, cable operators began ordering the necessary decoders to send HDTV signals directly to the newest digital TV sets, but the rollout was stalled by network programmers, which put cable systems in a difficult position.

Network programmers, such as ESPN and Discovery, promised to charge operators extra for HDTV because the shows were more expensive to produce. Cable owners
were reluctant to pass on additional HDTV charges to subscribers after already billing them for $85-plus billion dollars in improvements to upgrade systems to fiber and to handle digital, interactive communications. Financial burdens imposed by upgrades and consolidation debt left cable systems struggling to reduce costs. Regardless, the deadline was set and the FCC made it clear that the move from analog to digital television was going to take place by 2008, and the government expected cable to be on board.

**Merger Mania and Shakeouts**

How did the national cable industry grow from many small, independent systems to a few huge conglomerates? In many cases, smaller operators could not afford the equipment necessary to upgrade their cable systems, while larger firms could. When it came time to renew franchise agreements, MSOs impressed local politicians with their visionary plans to solve a host of problems, from burglar alarms to interactive billing. Older, smaller cable companies were simply overwhelmed and ended up cashing in their chips to larger firms with greater cash flow. That blue-sky era in cable is now over but not forgotten. Today, growth in the cable industry is primarily a result of two factors: *horizontal* and *vertical* integration.

**Horizontal Integration**

At one time, thousands of cable systems with about as many individual owners served the nation; today, the owners are consolidated and fewer in number. In 1975, the top 10 multiple system operators, or MSOs, reached 40 percent of the cable market; by 1990, the top 10 had 62 percent of the business. Today, the top 10 MSOs bill more than 80 percent of basic cable customers in the United States, and the largest one, Comcast Communications, reaches one-fifth of the nation’s cable customers, or about 21.4 million subscribers.

Simply stated, *horizontal integration* occurs when two or more companies in the same line of business join forces. It is a result of the urge to merge and is viewed as a management strategy. It also can be a giant step toward monopoly, which is why the government has safeguards to protect fair competition through agencies such as the Federal Communications Commission. In 2002, the FCC approved a $72 billion merger of Comcast and AT&T Broadband, creating the largest cable conglomerate in the nation. The lone dissenting vote on that deal was Commissioner Michael J. Copps, who called the deal a “huge consolidation of commercial power [with] potential for significant harm to consumers, the industry, and the country.” Copps predicted consumers would not likely see lower cable prices as a result, and this “megacombination” could use its power to deny competing multichannel video program distributors access to popular programs. What these mergers entail is often an assumption of debt and often downsizing that goes along with it. For example, the Comcast/AT&T merger took on an additional $30 billion in debt.

Some media mergers bear immediate consequences resulting in layoffs that sometimes reach the top of the organization. In 2001, AOL Time Warner formed the largest megamerger to date, but within two years the magic had gone out of the marriage. AOL’s Chair Stephen Case and former Time Warner Chief Executive Gerald Levin had both left the company, and AOL came under investigation by the Securities and Exchange Commission for its advertising revenue and subscriber accounting practices. In 2002, the company’s directors decided to remove AOL from the masthead and stock ticker, and reverted to its earlier name, Time Warner Entertainment (TWE), although it was a change in name only. Table 3.1 lists the top 10 MSOs in the nation with basic subscribers.
CHAPTER 3 Cable and Satellite

VERTICAL INTEGRATION

Huge media conglomerates are not always interested in the day-to-day affairs of the local franchises they own. However, they are interested in the money to be made by the production interests of their companies, which is why so many acquisitions involve the takeover of program networks. Having a hand in the affairs of production, distribution, and exhibition of media content is called vertical integration. It defines how media conglomerates have grasped key links in the chain, including the production studios, program networks, and system operators.

In the spring of 2004, the largest MSO in the country, Comcast, pursued a $48-billion bid for the Walt Disney Company that promised to add the ABC network 13 cable networks, 11 television and film production studios, 10 TV stations, and a host of other properties to Comcast’s stable of media. Disney rebuffed these unwanted advances; Comcast instead settled for a buyout of Tech TV.

Network Deals

The financial lure of consolidation also encouraged NBC and Vivendi Universal to merge in 2004. That deal meant the new NBC Universal would own one of the top-rated TV networks, NBC; a major movie studio; a TV production studio; seven cable channels, including USA and Sci Fi, and a group of 29 TV stations. The combined NBC and Universal studios would net profits from TV shows produced for both broadcast and cable networks, which is yet another example of vertical integration supporting the principle that the incentives of consolidation have led to larger media conglomerates.

Storm Clouds for Cable

Episodes of corruption, controversial content, and public access disputes have kept cable in the eye of the storm of public opinion. In 2004, the departure of one cable executive who helped bring television fame to Anna Nicole Smith and Howard Stern made news. E’s chief executive, Mindy Herman, a graduate of the University of Pennsylvania’s Wharton School of Business, exited her perch atop the network amid reports that she ran the cable channel as a tyrant, placed her baby shower on the company tab, and shook down her employees for gifts. Herman’s contract provided for a multimillion-dollar “golden parachute” that included a percentage of the E! channel’s financial gains on her watch, but she still had to return the money for the baby shower.

More recently, cable networks have stirred controversy by programming for the gay and lesbian audience. NBC Bravo’s Queer Eye for the Straight Guy and CBS Showtime’s Queer as Folk began breaking ground in sexually oriented content. MTV announced its plans to program a gay-styled network called Logo. Even the City of Brotherly Love opted for a cable advertising campaign designed to lure gays to Philadelphia. These developments underscore the principle of cable’s unique position with respect to controversial content. It can show more sex and violence because it is based on subscriber consent.

TABLE 3.1 Top Ten Cable System Operators in 2004

<table>
<thead>
<tr>
<th>RANK</th>
<th>MULTIPLE SYSTEM OPERATOR (MSO)</th>
<th>BASIC CUSTOMERS</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Comcast Cable Communications</td>
<td>21,468,000</td>
</tr>
<tr>
<td>2.</td>
<td>Time Warner Cable</td>
<td>10,919,000</td>
</tr>
<tr>
<td>3.</td>
<td>Charter Communications</td>
<td>6,431,300</td>
</tr>
<tr>
<td>4.</td>
<td>Cox Communications</td>
<td>6,338,300</td>
</tr>
<tr>
<td>5.</td>
<td>Adelphia Communications</td>
<td>5,469,800</td>
</tr>
<tr>
<td>6.</td>
<td>Cablevision Systems Corporation</td>
<td>2,944,000</td>
</tr>
<tr>
<td>7.</td>
<td>Bright House Networks</td>
<td>2,167,000</td>
</tr>
<tr>
<td>8.</td>
<td>MediaCom Communications Corporation</td>
<td>1,543,000</td>
</tr>
<tr>
<td>9.</td>
<td>Insight Communications</td>
<td>1,293,600</td>
</tr>
<tr>
<td>10.</td>
<td>CableOne</td>
<td>720,800</td>
</tr>
</tbody>
</table>

Source: NCTA
Ed Bowie runs the public access cable channel in the heart of Cajun country, Lafayette, Louisiana. Like the local cuisine, programming on Acadiana Open Channel (AOC) tends to be hot and spicy at times. The channel’s call-in shows have been flashpoints for racial tension in the community. Bowie came on board just as the Ku Klux Klan was making a quick exit from Acadiana Open Channel; a prosecutor had brought the on-air host to trial for allowing guests to wear their hoods and masks in the studio. The Klan show was replaced by Jabari Speaks, a talk show that critiques the African American experience in south Louisiana.

Bowie says AOC is like the community’s x-ray machine: “You don’t always want to know that you have cancer but sometimes you need that x-ray machine to look inside and see that you do.” Bowie, a Vietnam veteran, has to keep peace among radical factions who use the tools of his public access center. He has appeared in government chambers and before television news cameras to spread the message of tolerance that he sees embedded in the First Amendment. He believes that public access cable is vital to the community not only as an electronic soapbox but also as a means for neighbors to find out more about themselves and their community.

“We’re like the community’s x-ray machine.”

Acadiana Open Channel brings to cable television the civic leaders and public servants as well as the dissenters. Social service programs, produced by Goodwill and other community agencies, make up a large part of the program day at AOC, along with local government and the school board. In a media world dominated by commercial networks and homogenized content, public access is completely local and open, which is why Bowie believes it is important for cable television.
CHAPTER 3 Cable and Satellite

MORALITY IN MEDIA

Cable’s freedom from censorship allows it to take programming to new areas—some would say new depths—in terms of explicit language, sexual depictions, and gratuitous violence. Even basic channels, such as MTV, seem to find new ways to violate accepted norms. In June 2003, MTV responded to the nation’s growing restlessness with explicit content by censoring a music video. Calling it “livid and offensive,” MTV’s office of standards asked the cable channel producers to make cuts in the lyrics and imagery of Christina Aguilera’s video, “Can’t Keep Us Down.” Aguilera cried foul, charging that a male performer would not be subject to the same censorship, but acquiesced and edited her video, nonetheless.

Seven months later, the cable music channel found itself in the center of a larger controversy that illuminated broadcast and cable’s differing perspectives on indecency. MTV produced the Super Bowl halftime show for its sister network, CBS, and promoted it on the MTV website by announcing, “Janet Jackson’s Super Bowl Show Promises ‘Shocking Moments.’” After Kid Rock wore an American flag like a poncho and discarded it during his halftime performance, Janet Jackson took the stage with Justin Timberlake. Their duet provided the flashpoint for the Super Bowl event. Timberlake reached over to her costume and pulled at the breastplate, leaving Jackson’s right breast exposed for millions to see, including parents watching the game at home with their young children.

Afterward, NFL executives announced they were “extremely disappointed by elements of the MTV-produced halftime show,” adding “it’s unlikely MTV will produce another Super Bowl halftime.” MTV apologized for the incident, which Timberlake at first called a “wardrobe malfunction,” to the amusement of millions.

ELECTRONIC SOAPBOX

Public access channels are an ideal forum for democracy, giving citizens the chance to produce TV shows on a first-come, first-served basis and make use of electronic media. These public, educational, and government (PEG) channels are periodically threatened by extremists who test the bounds of the First Amendment, and cable firms trying to reduce expenses by eliminating them. The Supreme Court, however, has stood by public access channels, declaring them to be “an important outlet for community self expression” and a “response to the increasing concentration in public discourse.” Today, about 5,000 cable systems originate their own programming in studios, averaging 23 hours a week.

Cable’s Chronicle of Regulation

For years, cable regulation has been a tug of war between broadcasters and cable systems at federal, state, and local levels of governments. The Internal Revenue Service, for example, planned to levy an excise tax of 8 percent on the new industry in 1951. Cable leaders responded by forming the National Community Television Council at a hotel in Pottsville, Pennsylvania. A district court of appeals threw out the excise tax, and the organization endured. Today, the National Cable & Telecommunications Association (NCTA) represents cable system operators and their networks on a host of political and legal issues.
LEGAL FLIP-FLOPS

Because CATV was defined as a common carrier, a public communication relay that is nondiscriminatory in both content and service, the FCC took a hands-off approach to regulation at first. Independent UHF broadcasters were happy to have their channels extended via cable, but network affiliates did not wish to compete with distant channels that cable systems had harnessed by microwave relay and piped into local markets. In Wyoming, the Carter Mountain Transmission Company had relayed via microwave TV shows from Denver to three cable systems. At first, the FCC said it was okay, but when a Riverton, Wyoming, broadcaster protested, the commission turned an about-face. The agency concluded it would assess the economic consequences for local broadcasters before it approved any requests to import distant TV signals into a broadcaster's markets.8

CABLE'S EARLY ORDERS

The federal agency was now in an awkward position. It had touched a business that was supposedly beyond its reach. The FCC attempted to clear the air by issuing the First Report and Order in 1962, asserting, among other things, that the agency indeed had jurisdiction over the medium. CATV was “ancillary” to over-the-air television, the order said, and the FCC needed to protect the public’s interest in broadcasting.9

Anxiety among broadcasters started to rise as lobbyists for the NAB urged Congress to stop CATV systems from importing TV competition from distant cities. The FCC responded with its second report in 1966, extending its grasp over cable systems.10 That order effectively banned distant TV signals from large markets unless a cable system could show that it was in the public interest. In U.S. v. Southwestern Cable Co. (1968),11 the Supreme Court gave the final word upholding FCC jurisdiction. It could regulate cable so long as its rules were “reasonably ancillary” to broadcast services.

COPYRIGHT CONTROVERSY

Television stations were under the impression—by virtue of licensing agreements with networks, syndicators, and producers—that the shows they aired belonged to them and thus they were entitled to copyright payments. In 1976, the Copyright Act declared cable operators free to retransmit TV signals so long as they held compulsory licenses, which meant paying for programs from non-network sources. A copyright royalty panel was established to collect fees based on a share of each cable system’s subscriber receipts. That money would then become royalties to the TV program’s copyright holders. In 1993, Congress abolished the Copyright Royalty Tribunal and replaced it with a system based on arbitration panels appointed by the Librarian of Congress.

MUST-CARRY RULES

Perhaps the regulation that has created the most tension between broadcasters and cable companies has been must-carry. It holds that a cable operator must carry every TV station within a certain radius of its system. Generally, a cable system with 12 or more channels must-carry local TV stations on up to one-third of its channels. Some cable owners resented the rule because it meant valuable channels had to be assigned to broadcasters instead of more profitable programming. Must carry rules were twice rejected by federal courts for infringing on the First Amendment freedoms of cable operators. However, the Cable Television Consumer Protection and Competition Act of 1992 settled the question by providing broadcasters with the choice of either seeking payment from cable systems to retransmit their signals,
For some, cable television is a money-making machine; for others, it’s about channel choices, but for Anne Doris, the initial interest in cable “stemmed from a need to understand the technology.” A native of Guyana who holds degrees in journalism and business administration, she rose to become Cox Communications’ vice president and system manager for southern Arizona.

Doris is aware of the complaints about rising cable rates and customers switching to home satellite television. She agrees that “from a price standpoint, DBS [Direct Broadcast Satellite] is very competitive with cable,” however, she adds that “competition leads to stable, competitive pricing and I believe that is what has happened in the cable industry.”

Doris takes issue with consumer advocates who want to lower prices by giving cable customers à la carte choices. She cites the Discovery channel’s prediction that it would cost at least $8 per customer per month to watch cable on that basis. If all program networks charged as much, it would drive up cable rates and actually reduce the number of channels for viewers.

Instead, Doris subscribes to a business model based on a bundling strategy, where cable combines television channels with such services as broadband Internet access and cable’s telephone services, including voice-over Internet protocol (VoIP). She is wary, though, of what Washington might do to slow down this form of competition. “Regulatory uncertainty and the threat of unnecessary or overly burdensome regulation will affect whether and how VoIP services are deployed.” Any new rules should provide certainty to Wall Street, she says, and serve the best interest of cable customers.

Also, the cable industry hopes to avoid stricter controls on sexual and violent content. “Any attempts to regulate indecency on television must be sensitive to the legal and technological differences between broadcasting and cable,” Doris says. People don’t have to buy cable, and there are ways to block channels, “to limit what children or other family members can view on their televisions.”

The cable industry offers multiple career paths for college graduates in communication, as well as finance, marketing, and engineering. The best way to begin, Doris says, is to “seek out internships in the cable industry,” where students can fully appreciate what the digital future holds for them.
or simply accepting a guarantee for a spot on the cable dial. That law was upheld by the Supreme Court in 1997 (Turner Broadcast System, Inc. v. FCC).

**DIGITAL MUST-CARRY**

The government began in 2001 drafting new must-carry rules to make way for digital television. The Federal Communications Commission first ruled that a cable operator was not required to carry more than one digital channel for each local TV broadcaster. Yet, broadcasters asked why more channels could not be created on cable, especially since one of the selling points of digital compression was its ability to multicast programming and offer more standard-definition channels for local viewers. In 2004, the FCC Media Bureau proposed a new plan for obligating cable systems to give more channels to broadcasters.

The FCC said it was necessary to change the must-carry policy in order to encourage broadcast TV stations to return analog spectrum and convert to digital operations in a timely manner. Its proposal was one of a series of steps to facilitate digital broadcasting, but the NCTA protested and said that would neither help the digital transition nor improve the diversity of voices on cable systems.

### Alternatives to Cable

There are a number of alternative multichannel video program distributors (MVPDs) to cable for pay television programming. They include telephone companies’ video services, satellite master antenna television (SMATV) systems, and the over-the-air system known by the curious contradiction in terms, wireless cable. About 10 percent of America’s television households receive their programs from sources other than cable, known as ADS (alternative delivery systems). More than 22 percent of the MVPD market is made up of satellite television subscribers, and DirecTV and DISH’s numbers are steadily rising.

### SATELLITE COMPETITION

Satellite telecommunications is less than a half-century old, but in the last decade it has come into its own. The United States first began experimenting with the new technology after the Soviet Union launched into space its first satellite, Sputnik I, on October 4, 1957. The American people became alarmed by the prospect of Communist domination in outer space and prepared to join the space race. It was 1962, however, before AT&T’s Telstar I was able to capture microwave signals in orbit, amplify them billions of times, and bounce them back to earth. On July 10th, 1963, live scenes from France and England were relayed by television for several minutes before the orbiting Telstar satellite passed out of sight.

The problem of moving satellites “disappearing” from the antenna’s view required a solution. One had been conceived almost 20 years earlier by a British author and futurist, Arthur C. Clarke. In 1945, Clarke proposed the geostationary orbiting belt. According to the scientist, if a satellite were propelled to a certain distance above the earth and “parked” there, it could provide uninterrupted broadcasting signals. By 1963, Clarke’s vision had become a reality. The first geostationary earth orbiting (GEO) satellite was placed 22,300 miles above the planet in what is now called the Clarke belt. Figure 3.5 shows that at this orbit, between LEO (lower

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**Sputnik.** The space race began in earnest in 1957 when the Soviet Union launched this 184-pound aluminum sphere with nitrogen gas sealed inside. Four antennas bounced signals from the “baby moon” while it was in orbit.

**Alternative delivery systems (ADS)** Distribution of video and audio content other than by broadcast or cable, including satellite, telephone, and “wireless cable.”
Telecommunications satellites can be placed in geostationary (GEO) orbit 22,300 miles in space where they reach synchronous orbit with the earth. The so-called Clarke belt has no room left in its equatorial path, so telecommunications companies have contemplated higher elliptical orbits (HEOs) or lower earth orbits (LEOs) usually in polar orbits. Such paths fall out of view of the earth, and would require multiple relay satellites for data or television transmission.

Prior to 2000, the average number was 31, but by 2004, some satellites had up to 49 transponders. Their beams focused on different parts of the earth’s surface, with each part called a footprint, as shown in Figure 3.6.

In many respects, direct-broadcast-satellite (DBS) programming is similar to cable fare, but channels are received by a home antenna rather than through cable wire. The 18-inch dishes taking shows from DirecTV or DISH evolved from what were called television receive only (TVRO) antennas. These larger dishes, 10 feet in diameter or more, took about 75 channels of programming on a different wavelength, the C-band in the 3- to 6-giga Hertz range. Even today, there are about 500,000 satellite television homes receiving TVRO programming in the United States.

The FCC-approved “Ku-band” service emerged in 1980, and today there are 23 million DBS customers. The FCC awarded construction permits to eight applicants in the beginning, but all of them failed to meet their deadline for launching. Cable systems had pressured networks to keep programming away from home satellite television. Consequently, legislation was drafted to offer a solution in 1992. The same law that clarified must-carry rules for cable also guaranteed DBS access to network programming, and prohibited discriminatory fees for satellite television programs.

In 1994, two DBS applicants, Hughes Communications and USSB, became the first to launch home satellite TV services. Hughes established a subsidiary, DirecTV, which eventually took over USSB. In 1996, EchoStar launched its Digital Sky Highway (DISH) network. Hughes Electronics Corporation wanted out of the business by 2000, and EchoStar’s Charlie Ergen bid $20 billion for DirecTV, but the government blocked the merger on antitrust and public-interest grounds. Then, in 2003, Rupert Murdoch’s News Corporation came forward with an offer.

By a three-to-two vote, the FCC approved the takeover of Hughes’s DirecTV by News
Alternatives to Cable

Corporation, which a dissenting commissioner said violated the public-interest standard by placing “unprecedented control over local and national media properties in one global media empire.” DirecTV added a national video distribution platform with 12 million satellite customers in addition to News Corporation’s broadcast network (Fox) and its chain of TV stations that reach more than 44 percent of the nation’s television households. The megamerger deal recast the national media landscape, which Commissioner Jonathan Adelstein compared to putting a fox in charge of the hen house.

SMATV AND MMDS

Satellite delivery is also used to reach multiple dwelling units (MDUs), such as apartment complexes and hotels. It began cropping up all over the country in the 1950s and started piping television to businesses and to residential complexes. It was then called master antenna television or MATV, and was promoted by Milton Jerrold Shapp as a way for television retailers to display their TV sets for sale on the showroom floor. The master antenna idea caught the interest of apartment managers and hotel owners who wanted such a system to feed television signals to their housing and rental units.

After the first telecommunications satellites were launched, satellite master antenna television (SMATV) took over and began to compete with local cable companies. Motels and apartments began tacking television service to the bill and realized profits from pay movies and other special events. In 1991, the FCC gave SMATV companies a boost by designating microwave spectrum—73 channels—for them to use as links between apartment complexes and hotels.13

The government freed up combination of microwave channels in 1983 to allow for another competitor in the pay-television business. Eight channels that had been designated to schools and universities, known as instructional fixed television service (IFTS), and three used by businesses for point-to-point television programs called operational fixed service (OFS) were combined with eight more channels to form the new service. These multipoint microwave distribution systems (MMDS) are similar to cable but instead use a microwave transmitter to reach rooftop antennas. At last count, there are 290 wireless cable systems in the United States, serving about 200,000 subscribers.

TELEPHONE COMPANIES AND THE VIDEO BUSINESS

The breakup of AT&T in 1984 gave birth to seven regional telephone systems—sometimes called the baby bells or regional Bell operating companies (RBOCs). These companies were required by law to stay out of the long-distance phone and video business—something that cable systems and broadcasters lobbied to prevent. However, the 1996 Telecommunications Act changed the rules to allow RBOCs and other phone companies to become MVPDs.14 The first analog systems, known as video dial tone service (VDTS), enabled the phone company to serve as a carrier of programming similar to cable channels, but digital technology and the 1996 Telecommunications Act gave rise to open video systems (OVS). The FCC, however, has received about 20 applications from phone companies seeking to establish OVS networks in local communities.

DIGITAL FUTURE

Cable television fought the entry of phone companies into video delivery but countered by competing for telephone service and broadband Internet access. Over the past decade, cable systems have unleashed an array of digital services bundled together in one package. Cable high-speed modems with fast download times have attracted new business, while the phone company has invested in digital service lines
Cable careers vary by their focus and by their placement in the hierarchy of the business, but they have grown substantially in number over the past 20 years, from about 40,000 in 1981 to more than 130,000 today, according to industry estimates.15

There are job opportunities at the local cable system level, with multiple system operators, and at cable programming networks. Generally, MSOs hire people for positions in financial and legal offices, advertising sales and marketing, corporate engineering, public affairs, and operations management.

Most MSOs are headed by a chairman followed by a chief executive officer or president. Below him or her are offices for the chief operating officer and vice presidents of the various departments.

The general manager of a local cable system supervises all aspects of the operation: policies and programming, engineering, new services, and system expansion. The GM is also responsible for the budget, personnel decisions, employee benefits, and planning for future growth. He or she must work effectively with managers from other offices. For example, local managers rely on an administrative staff, also called the Customer Service Department, which includes billing clerks, accounts payable and receivable, and accountants. It coordinates the technical staff’s response to customer requests for new service or maintenance. Generally, a customer service representative handles calls about cable service and billing, and a dispatcher coordinates this information with the technical staff in the field.

The chief engineer will have working for him or her in the technical department the following personnel: cable installers to prepare homes for cable reception by running lines from utility poles to outlets in the home, trunk technicians to troubleshoot failures in the main line or feeder amplifiers, service technicians to respond to individual subscriber complaints, and bench technicians to run the cable system’s repair facility.

Marketing, advertising sales, and public affairs directors promote the image and services of the cable system in the community. The marketing director is charged with building the subscriber enrollment for the cable system as well as coordinating research, advertising, and promotions. This person recruits new subscribers through promotions with homes as well as hotels and apartment complexes needing hookups to the system. Advertising sales or account executives call on businesses, which may want to run commercial spots and reach niche audiences through cable channels. Researchers are often hired by cable systems to determine the demographic makeup of the local audience and determine how well the system is meeting their needs.

A public affairs director serves as a liaison between the cable system and the community and government leaders. This person also works with the local media to get the word out on projects and events the cable system has undertaken.

Career opportunities in television production vary from system to system. The programming and production staff creates local programs for some systems or works with the public access center, depending on the franchise’s obligations.16

Primarily, cable industry jobs are found in administration and clerical offices, advertising and sales, engineering/technical services, and customer services. However, more job opportunities have been created in broadband services and web operations. These include promoting and selling the cable’s broadband and on-line services as well as maintaining websites for the system.
Summary

In its early days, community antenna television was stimulated by public demand in response to news of broadcast television. The lack of local TV stations encouraged the invention of CATV to satisfy the demand through wired networks. As the number of cable systems grew, so did broadcasters’ concerns about the nature of the competition. In 1963, the FCC responded to lobbying efforts by the National Association of Broadcasters and began to exercise authority over cable television through its system of microwave relays. Those relays were employed to import distant TV signals. The FCC added to its mandate by requiring cable systems to carry television stations within the operator’s area of coverage. The so-called must-carry rule was upheld in court, but nowadays cable operators and broadcasters debate new must-carry regulations for digital television (DTV).

Beyond advertising, cable enterprises found new ways to make a profit by selling subscriptions to basic, premium, and pay-per-view channels. In the future, telecommunications firms will collect revenue from bundles of digital services, including video on demand, broadband Internet access, interactive video, and telephone services.

Television innovations based on satisfying the need for speed, mobility, and interactivity require a substantial investment, which relies on the economies of scale found in large corporations. The financial lure of media combinations has led to larger and larger conglomerations, which may pose a threat to free and fair competition.

Cable and satellite media understand the principle of relative constancy, which holds that although people’s choices vary in terms of media activities, the amount spent on them is about the same. Consequently, cable and satellite companies have used a strategy to encourage decisions in their favor by maximizing viewers’ choices, control, and convenience in choosing media activities.

In 2004, cable television angered some by pushing the envelope in terms of sexual content. Because it is based on subscriber consent, cable programs as a rule are more daring than broadcasting channels. However, producers and cable companies find themselves facing the threat of government regulation if they continue to offend viewers.

Broadcast stations and cable are also fending off newcomers in video delivery. Multichannel video program distributors include satellite systems, telephone programs, and broadband Internet. Alternative delivery systems for video, audio, and the Internet have made the future roadmap for electronic media more intriguing. Yet, with billions of dollars and global enterprises at stake, it is not a journey for the fainthearted or underfunded.

Food for Thought

1. Early cable entrepreneurs wanted to bring distant television signals to rural customers and recover a small profit. Today, concentration of cable systems in fewer hands has meant the virtual demise of locally owned cable companies. Do you consider that a good development? Why or why not?
2. Interactive television has been an ongoing experiment with cable and satellite companies. What types of interactive services would you like to receive?
3. Cable and satellite television recovers more of its revenue from subscribers than from advertising. Would you be willing to pay more for cable television if all channels were free of commercials?
4. The trend toward consolidation has meant that fewer people control both the channels we watch and how they are distributed including cable, satellite, and broadcast channels. Do you view this as a positive or negative trend? Why?
5. The number of public access channels has declined since it became an optional requirement in 1984. Do you think that every cable system should be required to have a community access channel? Explain your reasoning.
6. Satellites are becoming more popular because of their numerous channels and digital services. What factors would determine whether you subscribe to satellite, to cable, or to video delivery by another MUPD?
7. Cable companies are now competing for telephone service using the Internet. Would you be willing to switch to a cable supplier for telephone services? Why or why not?